THE ENVIRONMENTAL PROTECTION DEPARTMENT
ENVIRONMENTAL MONITORING SECTION

WSRC-TR-99-00386

Data Summary Report for Savannah River Integrator Operable Unit Fish Tissue

(U)

January 2000

Prepared for the U.S. Department of Energy under control contract no. AB60294N

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Data Summary Report for Savannah River Integrator Operable Unit Fish Tissue

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List of Acronyms and Abbreviations

The following acronyms and abbreviations are commonly used in Data Summary Reports:

°C	degrees Celsius
µS	microSiemens
µg/L	micrograms per liter
AA	atomic absorption
Bq	Becquerel
BRA	baseline risk assessment
CCB	continuing calibration blank sample
CCV	continuing calibration verification sample
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program
cm	centimeter(s)
CMS/FS	Corrective Measures Study/Feasibility Study
COC	chain of custody; chain-of-custody form
CPT	cone penetrometer test
CVAA	cold vapor atomic absorption analysis
DI	deionized (water)
DOE	United States Department of Energy
DPT	direct push technology
DQOs	data quality objectives
EDD	electronic data deliverable
EGG	Environmental Geochemistry Group
EM	EMS'Environmental Chemistry and Analysis Group (laboratory)

EMSL	EPA's Environmental Monitoring and Support Laboratory
EMS	Environmental Monitoring Section; also, EMS codes are used to qualify data
EP	Environmental Physics, Inc.
EPA	United States Environmental Protection Agency
EPD/EMS	Environmental Protection Department/Environmental Monitoring Section
EQL	estimated quantitation limit (for non-radiochemistry analyses)
ERA	Environmental Resource Associates
ERD	Environmental Restoration Department
ESC	expedited site characterization
ExR	Exploration Resources, Inc.
FG	Functional Guideline (FG codes are used to qualify analytical data)
ft	feet
GC	gas chromatography
GC/MS	gas chromatography/mass spectrometry
GE	General Engineering Laboratories, Inc.
GFAA	graphite furnace atomic absorption (metals analysis)
GIMS	Geochemical Information Management System
GP	Environmental Physics
GPR	ground penetrating radar
ICB	initial calibration blank
ICP	inductively coupled plasma (metals analysis)
ICS	interference check sample
ICSA	ICP interference check sample – interferents only
ICV	initial calibration verification
ID	identification
IDL	instrument detection limit

km	kilometer
LCS	laboratory control sample(s)
LDRR	laboratory data records review
LIMS	laboratory information management system
MAPEP	Mixed Analyte Performance Evaluation Program
MCL	maximum contaminant level
MDA	minimum detectable activity
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
ML	General Engineering's Mobile Laboratory, Aiken, SC
MS	matrix spike
MSA	method of standard addition
MSD	matrix spike duplicate
msl	mean sea level
ng/kg	nanograms per kilogram
ng/L	nanograms per liter
NPDES	National Pollutant Discharge Elimination System
OVA	organic vapor analyzer
PAH	polynuclear aromatic hydrocarbons
PAL	performance acceptance limit
PE	performance evaluation
PHA	pulse-height analysis; e.g., gamma PHA
PID	photoionization detector
r	correlation coefficient
RCRA	Resource Conservation and Recovery Act
Recra	Recra LabNet Philadelphia (formerly Roy F. Weston, Inc., Analytics Division)

RFI/RI	RCRA Facility Investigation/Remedial Investigation
RPD	relative percent difference
SAFER	Streamlined Approach for Environmental Restoration
SAIC	Science Applications International Corporation
SCDHEC	South Carolina Department of Health and Environmental Control
SGS	Site Geotechnical Services
SQL	sample quantitation limit
SRF	Savannah River Fish
SRS	Savannah River Site
SRTC	Savannah River Technology Center
ssDL	sample-specific detection limit
ssEQL	sample-specific estimated quantitation limit
ssMDL	sample-specific method detection limit
STORET	data coding system developed by EPA; STORET codes are used to qualify analytical results
SW-846	EPA's **Test Methods for Evaluating Solid Waste**
TAL	target analyte list
TCL	target compound list
TCLP	toxicity characteristic leaching procedure
TIC	tentatively identified compound
TNU	Thermo NUtech, a laboratory that is a subcontractor for Recra LabNet Philadelphia
USEPA	see EPA
UTM	Universal Transverse Mercator Zone 17 Coordinate System
VOA	volatile organic analyses
WA	laboratory code for Recra; used in data formats
WHC	Westinghouse Hanford Company
WPA	work plan assessment

WSRC	Westinghouse Savannah River Company

Executive Summary

Purpose

This report presents the results of the verification and validation of the analytical data for the Savannah River Fish (SRF) investigation. The data were validated to determine if the records conform to the technical criteria associated with definitive data. The investigation was conducted under the direction of the WSRC ERD. This report was prepared under the direction of EPD/EMS.

Data Usability

Sixteen environmental sample records and four QC records were rejected. Five radiological sample records were rejected due to fluctuations in the background count rate. Ten radiological sample records were rejected because of low abundance, and one cerium-144 sample record was rejected because of interference. Three radiological QC records (a method blank and two laboratory duplicates) were rejected because of low abundance and interference. One total recoverable mercury matrix spike was rejected due to low recovery. A detailed discussion may be found in subsection 2.3.6, *Rejected Data*.

Otherwise, the data from this project are considered to be representative of actual conditions at the unit being investigated.

Process and Documentation

Sample documentation and **COC maintenance** were reviewed by examining the EPD/EMS sample logbooks and COC forms. See subsections 2.3, *Data Quality Issues Summary*; 3.1.2, *Production of Chain-of-Custody Forms*; 3.2.2, *Sample Logbook Observations*; and 3.2.3, *Chain-of-Custody Observations*.

Sample holding times were checked by comparing the time between sample collection, extraction, and analysis with required holding times. Preservation was evaluated by reviewing cooler temperatures upon receipt at the laboratory. See subsections 2.3.4, *Holding Times and Preservation*, and 3.4, *Verification and Validation Issues*.

Analyte identification and **analyte quantitation** were verified as part of the computerized checking of the EDDs and during review of the analytical narratives. Anomalies were resolved with the laboratories whenever possible, and records not meeting specific criteria were qualified. See subsection 3.4, *Verification and Validation Issues*.

In evaluating **analytical error**, percent recoveries for QC samples were reviewed, and the QC sample and associated project sample data were qualified where necessary. RPDs between laboratory-generated duplicate sample analyses were calculated. The criteria for qualification are described in subsection 3.4.6, *Qualification of the Data*.

Field-generated blanks (field blanks, rinsates, and trip blanks) and **laboratory-generated blanks** (e.g., method blanks) were examined. See section 3.1, *Planning*, for an overview of the sampling plan for field-generated blanks and subsection 3.4.6, *Qualification of the Data*, for a discussion of the constituents detected in field-generated blanks. Laboratory-generated blanks were analyzed in ratios of at least one for every 20 samples.

Quantitation limits and **methods** used for the project are listed in Appendix A of this report, *Analytical Methods and Method Detection Limits*. Evaluations of **laboratory performance** against the standards of various certification programs are discussed in Appendix B, *Laboratory Performance Evaluation Results*. Appendix C, *Formats of the Data Files*, describes the **formats** used for the project data. Appendix D, *Data Tables*, contains **summary statistics** for the analytical data and the **results** sorted by sample location and by analyte. Appendix E, *Data Management/Administrative Files*, discusses the generation, processing, and storage of hard copy and computer **records** associated with the project. Appendix F, *Glossary*, defines **key terms** used in the report.

1.0 Project Summary

1.1 Objective

The objective of the Savannah River Fish project is to provide definitive-level data from the analysis of whole-body fish tissue in support of the SRS CERCLA program.

1.2 Overview

The Savannah River is defined under the South Carolina Pollution Control Act as a freshwater system. Freshwater systems are bodies of surface water that are suitable for primary- and secondary-contact recreation; a drinking water source after treatment; industrial and agricultural uses; and fishing, survival and propagation of a balanced indigenous aquatic community of fauna and flora. It borders SRS for a 35-mile stretch and is analyzed periodically to determine what effects, if any, the site's effluents have on the river water. Surveillance is performed along the Savannah River at points above and below SRS and below the point at which Plant Vogtle liquid discharges enter the river.

1.3 Project Affiliates

The project was completed by the following persons and/or organizations:

- Ron Malanowski was the WSRC ERD project team lead.
- Susan Dyer was the WSRC SGS project technical representative.
- Bob Craig was the WSRC EPD/EMS project technical member.
- EMS Environmental Sampling Group collected the samples.
- General Engineering Laboratories (GE), Charleston, SC, the primary laboratory, provided definitive-level inorganic and organic analyses under contract AA07208N. In the data set, the code assigned by EPD/EMS to identify this laboratory is GE. GE's affiliate, Environmental Physics (EP), Charleston, SC, performed definitive-level radiological analyses. In the data set, the code assigned to identify EP is GP.
- ExR of Athens, GA, validated the data and prepared this report.

1.4 Planning

Twenty-one fish samples were planned to be collected from seven sites along the Savannah River. The sites were planned as follows: above Steven's Creek Dam, river mile 157 (mouth of Upper Three Runs Creek), river mile 151 (mouth of Fourmile Branch), the Vogtle plant, river mile 141 (mouth of Steel Creek), river mile 129 (mouth of Lower Three Runs), and river mile 120. Each site was to be electrofished to collect three composite fish samples representing a benthic species, a predator species, and

a regional species. Each composite was to consist of a minimum of two fish and was to weigh at least 400g, which is the minimum mass for analytical purposes. At least one sample was to contain sufficient mass (600–1000g wet weight) to conduct duplicate analyses. The number of duplicate analyses and QA samples required was to be determined by the laboratory. Benthic composites were to be used for the duplicate analyses.

1.5 Field Sampling

Twenty-four regular fish samples and two duplicates were collected for analysis, and three trip blanks were included in the project for a total of 29 samples.

See subsection 3.1.3, *Sample Set*, for a complete list of the samples collected and analyzed.

1.6 Analysis

All fish samples were analyzed for RCRA metals, TCL volatiles, and the following radionuclides: gross alpha, nonvolatile beta, gamma spectroscopy, plutonium-239/240, strontium-89/90, tritium, and uranium-233/234. Duplicate samples were to be analyzed for the same constituents as the parent samples. Trip blanks were to be analyzed for TCL VOA.

See subsections 3.3.3, *List of Analytical Suites*, and Appendix A, *Analytical Methods and Method Detection Limits*.

1.7 Validation

Validation and verification activities, using definitive data requirements (EPA, 1993), assessed the quality of the definitive level data for the following issues:

- sample documentation
- maintenance of chain of custody
- adherence to sample holding time requirements
- achievement of contract-required quantitation limits
- analytical instrument calibration
- analyte identification
- analyte quantitation

Evaluation of each laboratory's performance in analyte identification and quantitation included examination of the following:

- analytical error
- contamination of blanks
- laboratory performance evaluation samples

- quantitation limit determination, if applicable

See section 3.0, *Validation*.

2.0 Data Quality Issues Overview

This section provides a summary of the major points affecting the quality of the data for this project.

2.1 Project Statistics

All of the 29 COCs generated for this project were used. Twenty-four fish samples and two field duplicates were collected; three trip blanks were also included. The total number of records for this project is given in Table 2.1.

Table 2.1 Number of Records

	Chemical Records	**Radiochemical Records**	**Totals**
Environmental Sample Records	1,376	884	2,260
QC Records	513	162	675
Calibration Records	0	0	0
Totals	1,889	1,046	2,935

Table 2.2 lists the number of sample and QC records that were qualified with *R*, *U*, *J*, or *UJ* Functional Guideline (FG) codes after verification and validation were performed.

Table 2.2 Number of Records Qualified as Rejected, Estimated, or Not Detected

Data Validation Records	**Sample Records**	**QC Records**	**Total**
Total Number of Analytical Records	2,260	675	2,935
Qualified Data			
Rejected Analytical Records	16	4	20
FG Code *U*	1,716	321	2,037
FG Code *J*	143	21	164
FG Code *UJ*	29	34	63

Table 2.3 summarizes the numbers of environmental samples assigned STORET (SC) or EMS Codes for the reasons listed in the table.

Table 2.3 Environmental Sample Analytical Record Qualification Summary

Reason for Qualification	**Number of Records Qualified**	**Percent of Total Sample Records**
Holding time exceedances	0	0.0
Sample preservation criteria not met	0	0.0

Table 2.3 Environmental Sample Analytical Record Qualification Summary (cont.)

Reason for Qualification	Number of Records Qualified	Percent of Total Sample Records
Instrument calibration, analyte identification, analyte quantitation criteria not met	0	0.0
Trip blank contamination	0	0.0
Rinsate blank contamination	0	0.0
Field blank contamination	0	0.0
Method blank contamination	14	0.62
Laboratory duplicate precision limit exceeded	3	0.13
Matrix spike criteria not met	5	0.22
Laboratory control sample criteria not met	0	0.0
Surrogate or tracer criteria not met	114	5.04
Totals	**136**	**6.02**

2.2 Program Description

This section discusses the validation of the data and gives a brief overview of the laboratories.

2.2.1 Verification and Validation Objectives

Data Quality Objectives

Definitive data, as defined in EPA, 1993, have been determined as most appropriate to meet the DQOs of this investigation. Validation and verification activities assessed the data in relation to these standards, especially with regard to the following issues:

- sample documentation
- maintenance of COC
- adherence to sample holding time and preservation requirements
- achievement of contract-required detection limits
- analyte identification
- analyte quantitation

Evaluation of each laboratory's performance for analyte identification and quantitation included examination of analytical error, blank contamination, and laboratory performance in the analysis of independent standards.

Each analytical record in the computer data files contains three qualifier fields: functional guideline (FG) code, STORET code, and EMS code. The FG code describes the analytical result. The STORET code describes issues arising during the analytical process. The EMS code contains additional information to aid the validators in qualifying results. The laboratories use these fields in reporting the data. During validation and verification of the analytical data, additional qualifiers may be applied to provide additional information about data quality.

Data Quality Levels

Definitive-level data are used for data collection activities that require a high degree of qualitative and quantitative accuracy for all findings. Rigorous methods of analysis and quality assurance are used for those samples considered essential in making a decision. This data level is intended to give the decision maker a level of confidence to make decisions regarding the following:

- treatment
- disposal
- site remediation and/or removal of pollutants
- health risk or environmental impact
- cleanup verification, pollutant source identification, delineation of contaminants
- other significant decisions where an action level is of concern

Only analyte-specific methods can be used for definitive-level data.

2.2.2 Verification and Validation Functions

The data verification process confirms that the required samples were collected and documented, the required analyses were performed on the samples, and the analytical results were reported correctly. The information evaluated during this process includes work plan sample lists, work plan analyte/compound lists, field logbooks, COC forms, and analytical results files.

Data reviewers use computer programs and look-up tables to review the computer data files of sample collection, shipping, and analytical data. Where applicable, the data were examined as follows:

- The following fields were checked to ensure that they were not blank: customer sample identification number, COC number (for groundwater samples) or soils sample number, sample collection date, laboratory receipt date, analysis date, analysis time, analytical method, laboratory code, laboratory sample identification number, analyte code (test name), ssMDL, ssEQL, analytical result, result units, counting uncertainty (for radionuclide analyses), nominal concentration (if applicable), wet weight or dry weight, dilution factor, instrument, analyst's initials, percent solids and sample fraction (soil/sediment only), sample matrix, preparation factor, and subcontract number.
- The following fields were checked to ensure that reported data were within an acceptable range of values: customer sample identification number, COC number, soils sample number, sample collection date, sample collection time, lab receipt date, extraction date, extraction time, analysis date, analysis time, analytical result, counting uncertainty, residual weight, nominal concentration, dilution factor, percent solids, and bottle label number.
- The following fields were checked against a look-up table or a list of valid codes: field QC code; extraction, digestion, or preparation method; analytical method; laboratory code; laboratory QC sample

code; analyte code; ssMDL; ssEQL; FG code; STORET code; EMS code; result units; percent recovery; sample fraction; sample matrix; and subcontract number.

The data validation process determines the usefulness of each analytical result based on QC and method requirements. The information evaluated during this process includes COC forms, analytical narrative summaries, and analytical result data files.

Data validation involves evaluating requirements in the following QC categories: holding times, sample preservation, instrument calibration, analyte identification/quantitation, blanks (trip, method, rinsate, and field blanks), laboratory control samples, duplicates (field and laboratory), matrix spikes, surrogates, and internal standards.

Data validation and qualification policies were developed from the following sources: quality control requirements in the analytical methods, data review guidelines provided by the US EPA, contract-specific WSRC requirements, and discussions with laboratory personnel.

Data Qualifiers

When analytical data are validated, the analytical results and the associated QC information are reviewed using criteria specific to the analysis performed. Data qualifiers are used during the data validation process to classify sample data as conforming to QC requirements.

The qualifiers used for data associated with this project are defined in *Appendix D*.

Precision

Precision measures the reproducibility of measurements under a given set of conditions. It is a quantitative measure of the variability of a group of measurements compared to its average value. Precision is reported in terms of the relative percent difference. The analytical results from the field replicate samples provide data on overall measurement precision; analytical results from the laboratory duplicates provide data on analytical precision. See Section 3.5.1.

Accuracy

Accuracy measures the bias in a measurement system; it is difficult to measure for the entire data collection activity. Sources of error are the sampling process, field contami-nation, preservation, handling, sample matrix, sample preparation, and sample analysis techniques. Sampling accuracy may be assessed by evaluating the results of rinsates, field blanks, and trip blanks. Analytical accuracy may be assessed through the use of known and unknown QC samples, matrix spikes, and method blanks. See Section 3.5.2.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter that is most concerned with the proper design of the sampling program and is best satisfied by making certain that sampling locations are selected properly and that a sufficient number of samples are collected.

Completeness

Completeness is defined as the percentage of measurements made that are judged to be valid measurements. It is important that critical samples are identified and that plans are made to achieve valid data for them. Completeness was not determined for this report.

Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. Sample data should be comparable with other measurement data for similar samples and sample conditions. This goal is achieved through using standard techniques to collect and analyze representative samples and through reporting analytical results in appropriate units. See Section 3.5.4.

2.2.3 Laboratories

GE of Charleston, SC, provided definitive-level inorganic and organic analyses under contract AA07208N. GE's affiliate, EP, of Charleston, SC, performed definitive-level radiological analyses.

2.3 Data Quality Issues Summary

This section provides a summary of the major data quality issues identified during the verification and validation process.

2.3.1 Missing Data

All planned data for collected environmental samples were received.

2.3.2 Extra Data

No data that had not been requested were received.

2.3.3 Sample Documentation

Because fish samples were sent to the laboratory frozen solid (0° C), cooler temperatures were not expected to have an impact on sample quality.

Table 2.4 Chain-of-Custody Documentation Summary

Description	Number	Percent
Missing transfer dates, times, and signatures	0	0
Missing transfer dates and/or times only	0	0
Missing transfer signatures only	0	0
Missing cooler number	0	0
Missing temperature	0	0
Missing COCs	0	0

Table 2.4 Chain-of-Custody Documentation Summary (cont.)

Description	Number	Percent
No problems	29	100
Total number of COCs used = 29		

2.3.4 Holding Times and Preservation

The holding time for the fish samples commenced at the preparation stage, not at the collection stage. As a result, all samples were analyzed within the holding time.

Table 2.5 Holding Time Exceedances

	Number of Records	Percentage of Total Sample Records
Detects Exceeding Holding Time	0	0.0
Non-detects Exceeding Holding Time	0	0.0
Total Analyses Exceeding Holding Time	0	0.0

2.3.5 Analytical Issues

As discussed in section 3.4.5, *Metals Data Evaluation*, nine antimony and eleven cadmium records were converted to nondetects due to interference. No other significant analytical issues were encountered during verification and validation of the analytical data.

2.3.6 Rejected Data

Fluctuations in the background count rate resulted in the laboratory rejecting one uranium-233/234 and four uranium-238 samples.

The laboratory rejected five lead-212, three cesium-137, one actinium-228, and one potassium-40 sample records due to low abundance and one cerium-144 sample record due to interference.

Additionally, an antimony-125 method blank, one lead-212 laboratory duplicate, and one actinium-228 laboratory duplicate records were rejected by the laboratory due to low abundance and interference.

One total recoverable mercury matrix spike was rejected due to low recovery.

Table 2.6 Summary of Rejected Records

	Number of Records	Number Rejected	Percent of Type Rejected	Percent of Total Records Rejected
Chemical				
QC Records	513	1	0.19	0.03
Environmental Sample Records	1,376	0	0.0	0.0
Radiochemical				
QC Records	162	3	1.85	0.10
Environmental Sample Records	884	16	1.81	0.55
Totals				
All Records	2,935	20	0.68	0.68

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3.0 Validation

3.1 Planning

There was no formal work plan for this project. A sampling and analysis plan, the Savannah River Fish Tissue Task Plan, was provided to EMS for project mobilization.

3.1.1 Planned Work

Sampling and analysis were conducted according to the Savannah River Fish Tissue Task Plan except as described in section 3.2.1.

Fish samples were to be collected from seven sampling sites via electrofishing, with three composite samples (one benthic, one predatory, and one regional species) to be taken from each location.

In order to fulfill EPA criteria for field sampling activities, trip blanks are used to monitor volatile contaminants during shipping and handling. Trip blanks consist of preserved DI water and are placed in the coolers with the VOA samples at the rate of one trip blank per cooler. The number of duplicate and other QA samples was to be determined by the laboratory; no split samples were planned for this project. Duplicate samples were to be analyzed for the same parameters as the associated samples.

Fish samples, consisting of composites of whole fish, were to be analyzed for TCL VOA, radionuclides (gross alpha, nonvolatile beta, gamma spectroscopy, plutonium 239/240 [plutonium series], strontium 89/90, tritium, and uranium 233/234 [uranium series]) and RCRA metals (antimony, arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, and zinc, plus iron and aluminum as required to confirm the presence of interferences). Trip blanks were to be analyzed for TCL VOA only.

3.1.2 Production of Chain-of-Custody Forms

COC forms containing the list of requested analyses were printed for each planned sample. Information completed on the twenty-nine COC forms generated included the following:

- EMS sample identification number (logbook page number for that sample)
- laboratory sample identification number (to be completed by the laboratory)
- sample collection date and time
- shipping information (including dates and signatures)
- cooler number and temperature upon arrival at the analytical laboratory

A peel-off section of each bottle label, printed with the bottle number, was affixed to the analysis request line on the COC form.

3.1.3 Sample Set

The following table provides details about the location and composition of the fish tissue samples.

Table 3.1 Fish Tissue Sample Details

Composited Sample	Log-book #	Sample	Location	UTM-E	UTM-N	Species	Trophic Level	Length (mm)	Weight (g)	K Factor[1]
SRF-06-02	117038	1	L3R Creek Mouth[2]	452033	3654459.8	Redbreast SF	Regional	188	120.9	1.8195
SRF-06-02	117038	2	L3R Creek Mouth	452033	3654459.8	Redbreast SF	Regional	192	143.5	2.0274
SRF-06-02	117038	3	L3R Creek Mouth	452033	3654459.8	Redbreast SF	Regional	120	30.8	1.7824
SRF-06-02	117038	4	L3R Creek Mouth	452033	3654459.8	Redbreast SF	Regional	140	49.4	1.8003
SRF-06-02	117038	5	L3R Creek Mouth	452033	3654459.8	Redbreast SF	Regional	190	123.6	1.802
SRF-06-01	117037	1	L3R Creek Mouth	452033	3654459.8	Spotted Sucker	Benthic	367	550	1.1127
SRF-06-01	117037	2	L3R Creek Mouth	452033	3654459.8	Spotted Sucker	Benthic	262	218.7	1.216
SRF-06-03	117039	1	L3R Creek Mouth	452033	3654459.8	Bowfin	Predator	572	2029.4	1.0844
SRF-06-03	117039	2	L3R Creek Mouth	452033	3654459.8	Bowfin	Predator	640	2829.8	1.0795
SRF-07-02	117042	1	US 301 Bridge[3]	452924	3644207	Redear SF	Regional	120	30.9	1.7882
SRF-07-02	117042	2	US 301 Bridge	452924	3644207	Redear SF	Regional	187	116.4	1.78
SRF-07-02	117042	3	US 301 Bridge	452924	3644207	Redear SF	Regional	179	120.2	2.0958
SRF-07-02	117042	4	US 301 Bridge	452924	3644207	Redear SF	Regional	208	140	1.5557
SRF-07-03	117043	1	US 301 Bridge	452924	3644207	Bowfin	Predator	570	1767.7	0.9545
SRF-07-03	117043	2	US 301 Bridge	452924	3644207	Bowfin	Predator	650	3039.3	1.1067
SRF-07-01	117041	1	US 301 Bridge	452924	3644207	Spotted	Benthic	395	623.6	1.0118

[1] $K = (W \times 10^5)/L^3$ where K is the condition factor; W = weight in g, and L = total length in mm. A low condition factor often indicates that a fish is in poor health.
[2] RM-129 Lower Three Runs Mouth
[3] Highway 301 at State Line

						Sucker				
SRF-07-01	117041	2	US 301 Bridge	452924	3644207	Spotted Sucker	Benthic	340	467.2	1.1887
SRF-05-02	117035	1	Steel Creek Mouth[4]	442307.2	3661941.1	Redear SF	Regional	260	316.8	1.8025
SRF-05-02	117035	2	Steel Creek Mouth	442307.2	3661941.1	Redear SF	Regional	250	263.7	1.6877
SRF-05-01	117034	1	Steel Creek Mouth	442307.2	3661941.1	Spotted Sucker	Benthic	363	507	1.06
SRF-05-01	117034	2	Steel Creek Mouth	442307.2	3661941.1	Spotted Sucker	Benthic	406	739.7	1.1053

Table 3.1 Fish Tissue Sample Details (cont.)

Composited Sample	Log-book #	Sample	Location	UTM-E	UTM-N	Species	Trophic Level	Length (mm)	Weight (g)	K Factor
SRF-05-03	117036	1	Steel Creek Mouth	442307.2	3661941.1	Bowfin	Predator	593	1918.1	0.9198
SRF-05-03	117036	2	Steel Creek Mouth	442307.2	3661941.1	Bowfin	Predator	620	2346.3	0.9845
SRF-04-02	117032	1	FM Creek Mouth[5]	429879.1	3667695.4	Redbreast SF	Regional	165	90.1	2.0057
SRF-04-02	117032	2	FM Creek Mouth	429879.1	3667695.4	Redbreast SF	Regional	110	28.8	2.1638
SRF-04-02	117032	3	FM Creek Mouth	429879.1	3667695.4	Redbreast SF	Regional	140	52.3	1.906
SRF-04-02	117032	4	FM Creek Mouth	429879.1	3667695.4	Redbreast SF	Regional	130	42.8	1.9481
SRF-04-02	117032	5	FM Creek Mouth	429879.1	3667695.4	Redbreast SF	Regional	150	66.9	1.9822

[4] Steel Creek/Pen Branch Mouth

[5] R-3B (Monthly Grab)

Table 3.1 Fish Tissue Sample Details (cont.)

Composited Sample	Log-book #	Sample	Location	UTM-E	UTM-N	Species	Trophic Level	Length (mm)	Weight (g)	K Factor
SRF-04-02	117032	6	FM Creek Mouth	429879.1	3667695.4	Redbreast SF	Regional	156	67.8	1.7859
SRF-04-02	117032	7	FM Creek Mouth	429879.1	3667695.4	Redbreast SF	Regional	199	162	2.0557
SRF-04-01	117031	1	FM Creek Mouth	429879.1	3667695.4	Spotted Sucker	Benthic	305	355.1	1.2516
SRF-04-01	117031	2	FM Creek Mouth	429879.1	3667695.4	Spotted Sucker	Benthic	362	546.6	1.1522
SRF-04-03	117033	1	FM Creek Mouth	429879.1	3667695.4	Bowfin	Predator	570	1585.1	0.8559
SRF-04-03	117033	2	FM Creek Mouth	429879.1	3667695.4	Bowfin	Predator	558	1474.8	0.8488
SRF-03-02	117028	1	U3R Creek Mouth[6]	427953.1	3675811.1	Redbreast SF	Regional	155	80.7	2.1671
SRF-03-02	117028	2	U3R Creek Mouth	427953.1	3675811.1	Redbreast SF	Regional	110	31.6	2.3742
SRF-03-02	117028	3	U3R Creek Mouth	427953.1	3675811.1	Redbreast SF	Regional	140	55.2	2.0117
SRF-03-02	117028	4	U3R Creek Mouth	427953.1	3675811.1	Redbreast SF	Regional	159	80.7	2.0076
SRF-03-02	117028	5	U3R Creek Mouth	427953.1	3675811.1	Redbreast SF	Regional	132	42.7	1.8565
SRF-03-02	117028	6	U3R Creek Mouth	427953.1	3675811.1	Redbreast SF	Regional	210	176.5	1.9058
SRF-03-02	117028	7	U3R Creek Mouth	427953.1	3675811.1	Redbreast SF	Regional	130	44.8	2.0391
SRF-03-02	117028	8	U3R Creek Mouth	427953.1	3675811.1	Redbreast SF	Regional	125	39.2	2.007

[6] RM 157.2 Upper Three Runs Mouth

Table 3.1 Fish Tissue Sample Details (cont.)

Composited Sample	Log-book #	Sample	Location	UTM-E	UTM-N	Species	Trophic Level	Length (mm)	Weight (g)	K Factor
SRF-03-01	117027	1	U3R Creek Mouth	427953.1	3675811.1	Spotted Sucker	Benthic	468	1006.3	0.9817
SRF-03-01	117027	2	U3R Creek Mouth	427953.1	3675811.1	Spotted Sucker	Benthic	422	724.3	0.9638
SRF-03-03	117029	1	U3R Creek Mouth	427953.1	3675811.1	Bowfin	Predator	552	1622.2	0.9645
SRF-03-03	117029	2	U3R Creek Mouth	427953.1	3675811.1	Bowfin	Predator	622	2482.9	1.0318
SRF-03-04	117030	1	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	114	30.3	2.0452
SRF-03-04	117030	2	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	187	134.2	2.0522
SRF-03-04	117030	3	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	132	44.2	1.9218
SRF-03-04	117030	4	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	125	36.2	1.8534
SRF-03-04	117030	5	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	126	41.6	2.0796
SRF-03-04	117030	6	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	125	36.4	1.8637
SRF-03-04	117030	7	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	121	32.1	1.812
SRF-03-04	117030	8	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	107	24.5	1.9999
SRF-03-04	117030	9	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	114	28.8	1.9439
SRF-03-04	117030	10	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	90	12.1	1.6598
SRF-03-04	117030	11	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	110	25.8	1.9384

Table 3.1 Fish Tissue Sample Details (cont.)

Composited Sample	Log-book #	Sample	Location	UTM-E	UTM-N	Species	Trophic Level	Length (mm)	Weight (g)	K Factor
SRF-03-04	117030	12	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	97	16	1.7531
SRF-03-04	117030	13	U3R Creek Mouth	427953.1	3675811.1	Bluegill SF	Regional	97	15.5	1.6983
SRF-02-02	117024	1	Augusta L&D[7]	411924.8	3692668.7	Redear SF	Regional	204	164.3	1.9353
SRF-02-02	117024	2	Augusta L&D	411924.8	3692668.7	Redear SF	Regional	219	218.6	2.0812
SRF-02-02	117024	3	Augusta L&D	411924.8	3692668.7	Redear SF	Regional	270	454	2.3066
SRF-02-01	117023	1	Augusta L&D	411924.8	3692668.7	Spotted Sucker	Benthic	422	888.2	1.1819
SRF-02-01	117023	2	Augusta L&D	411924.8	3692668.7	Spotted Sucker	Benthic	451	1006.7	1.0974
SRF-02-03	117025	1	Augusta L&D	411924.8	3692668.7	Bowfin	Predator	493	1232.6	1.0287
SRF-02-03	117025	2	Augusta L&D	411924.8	3692668.7	Bowfin	Predator	551	1562.5	0.934
SRF-01-02	117019	1	NA Rapids[8]	407789.7	3688856.8	Redear SF	Regional	242	327.8	2.3129
SRF-01-02	117019	2	NA Rapids	407789.7	3688856.8	Redear SF	Regional	155	94.1	2.5269
SRF-01-02	117019	3	NA Rapids	407789.7	3688856.8	Redear SF	Regional	126	50.5	2.5245
SRF-01-02	117019	4	NA Rapids	407789.7	3688856.8	Redear SF	Regional	120	34.2	1.9792

[7] Augusta Lock & Dam 614

[8] North Augusta Rapids

Table 3.1 Fish Tissue Sample Details (cont.)

Composited Sample	Log-book #	Sample	Location	UTM-E	UTM-N	Species	Trophic Level	Length (mm)	Weight (g)	K Factor
SRF-01-02	117019	5	NA Rapids	407789.7	3688856.8	Redear SF	Regional	104	26.5	2.3558
SRF-01-01	117018	1	NA Rapids	407789.7	3688856.8	Spotted Sucker	Benthic	436	955	1.1522
SRF-01-01	117018	2	NA Rapids	407789.7	3688856.8	Spotted Sucker	Benthic	432	1010.9	1.2539
SRF-01-03	117020	1	NA Rapids	407789.7	3688856.8	Bowfin	Predator	468	1132.9	1.1052
SRF-01-03	117020	2	NA Rapids	407789.7	3688856.8	Bowfin	Predator	551	1848.5	1.105
SRF-01-05	117022	1	NA Rapids	407789.7	3688856.8	Redbreast SF	Regional	158	81.8	2.0739
SRF-01-05	117022	2	NA Rapids	407789.7	3688856.8	Redbreast SF	Regional	179	102.3	1.7837
SRF-01-05	117022	3	NA Rapids	407789.7	3688856.8	Redbreast SF	Regional	127	39.6	1.9332
SRF-01-05	117022	4	NA Rapids	407789.7	3688856.8	Redbreast SF	Regional	120	33.2	1.9213
SRF-01-05	117022	5	NA Rapids	407789.7	3688856.8	Redbreast SF	Regional	117	38.8	2.4226
SRF-01-04	117021	1	NA Rapids	407789.7	3688856.8	Bluegill SF	Regional	189	173.9	2.5758
SRF-01-04	117021	2	NA Rapids	407789.7	3688856.8	Bluegill SF	Regional	157	89.9	2.3231
SRF-01-04	117021	3	NA Rapids	407789.7	3688856.8	Bluegill SF	Regional	163	104.1	2.4037
SRF-01-04	117021	4	NA Rapids	407789.7	3688856.8	Bluegill SF	Regional	91	14.2	1.8844
SRF-01-04	117021	5	NA Rapids	407789.7	3688856.8	Bluegill SF	Regional	152	85.8	2.4432

Table 3.1 Fish Tissue Sample Details (cont.)

Composited Sample	Log-book #	Sample	Location	UTM-E	UTM-N	Species	Trophic Level	Length (mm)	Weight (g)	K Factor
SRF-01-04	117021	6	NA Rapids	407789.7	3688856.8	Bluegill SF	Regional	137	56	2.1778
SRF-01-04	117021	7	NA Rapids	407789.7	3688856.8	Bluegill SF	Regional	105	27.9	2.4101

The following table lists each survey station ID, sample logbook ID, laboratory ID number, sample type, sample date, and the analyses requested for samples sent to the laboratories.

Table 3.2 Sample Set

Survey Station ID	Sample ID	Laboratory ID	Sample Type	Sample Date	Analyses Requested[9]
Samples and Duplicates					
SRF-01-01	117018	9907977-23	Fish Tissue	07/22/99	1, 2
SRF-01-02	117019	9907977-22	Fish Tissue	07/22/99	1, 2
SRF-01-03	117020	9907977-17	Fish Tissue	07/22/99	1, 2
SRF-01-04	117021	9907977-21	Fish Tissue	07/22/99	1, 2
SRF-01-05	117022	9907977-20	Fish Tissue	07/22/99	1, 2
SRF-02-01	117023	9907977-19	Fish Tissue	07/21/99	1, 2
SRF-02-02	117024	9907977-18	Fish Tissue	07/21/99	1, 2
SRF-02-03	117025	9907977-16	Fish Tissue	07/21/99	1, 2
SRF-02-03-A	117026	9907977-15	Duplicate	07/21/99	1, 2
SRF-03-01	117027	9907977-14	Fish Tissue	07/20/99	1, 2
SRF-03-02	117028	9907977-13	Fish Tissue	07/20/99	1, 2
SRF-03-03	117029	9907977-12	Fish Tissue	07/20/99	1, 2
SRF-03-04	117030	9907977-11	Fish Tissue	07/20/99	1, 2
SRF-04-01	117031	9907977-10	Fish Tissue	07/20/99	1, 2
SRF-04-02	117032	9907977-09	Fish Tissue	07/20/99	1, 2
SRF-04-03	117033	9907977-08	Fish Tissue	07/20/99	1, 2
SRF-05-01	117034	9907977-07	Fish Tissue	07/19/99	1, 2
SRF-05-02	117035	9907977-06	Fish Tissue	07/19/99	1, 2
SRF-05-03	117036	9907977-05	Fish Tissue	07/19/99	1, 2
SRF-06-01	117037	9907977-03	Fish Tissue	07/19/99	1, 2
SRF-06-02	117038	9907977-04	Fish Tissue	07/19/99	1, 2
SRF-06-03	117039	9907977-01	Fish Tissue	07/19/99	1, 2
SRF-06-03-A	117040	9907977-02	Duplicate	07/19/99	1, 2
SRF-07-01	117041	9907977-24	Fish Tissue	07/19/99	1, 2
SRF-07-02	117042	9907977-25	Fish Tissue	07/19/99	1, 2
SRF-07-03	117043	9907977-26	Fish Tissue	07/19/99	1, 2

[9] 1 = RCRA metals (antimony, arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, and zinc, plus iron and aluminum as required to confirm the presence of interferences); radionuclides (gross alpha, nonvolatile beta, gamma spectroscopy, plutonium-239/240 [plutonium series], strontium-89/90, tritium, uranium 233/234 [uranium series])

2 = TCL VOA

Table 3.2 Sample Set (cont.)

Survey Station ID	Sample ID	Laboratory ID	Sample Type	Sample Date	Analyses Requested
Trip Blanks					
SRF-TB-01-B	117044	9907977-27	Water	07/28/99	2
SRF-TB-02-B	117045	9907977-29	Water	07/28/99	2
SRF-TB-03-B	117046	9907977-28	Water	07/28/99	2

The following table lists the trip blank ID numbers and associated sample ID numbers for the samples.

Table 3.3 Trip Blanks and Associated Samples

Trip Blank ID	Associated Samples
SRF-TB-01-B	117037, 117038, 117039, 117040, 117041, 117042, 117043
SRF-TB-02-B	117027, 117028, 117029, 117030, 117031, 117032, 117033, 117034, 117035, 117036
SRF-TB-03-B	117018, 117019, 117020, 117021, 117022, 117023, 117024, 117025, 117026

3.2 Field Data Quality Issues

3.2.1 Discrepancies from the Planned Work

All of the 29 COCs generated for this project were used. This number includes three samples of regional fish not specified in the Savannah River Fish Tissue Task Plan. Three trip blanks – one for each of the three coolers required to ship samples to the laboratory – were used. Although the plan suggested that composites for the duplicate samples be taken from the benthic specimens, the actual duplicates were composed of predatory fish.

3.2.2 Sample Logbook Observations

There were no sample logbook observations that impacted data quality. Although one of three regional fish samples from the SRF-01 location was described as a "minimal weight sample; less than 300g," it was analyzed as planned.

3.2.3 Chain-of-Custody Observations

There were no significant COC observations

3.3 Analytical Data Quality Issues

3.3.1 The Laboratories

GE provided definitive-level inorganic and organic analyses under contract AA07208N. GE's affiliate, EP, performed definitive-level radiological analyses. Both laboratories have been certified by SCDHEC.

3.3.2 Laboratory Quality Control

The laboratories follow their own QA/QC plans, which are designed to measure and document the accuracy and precision for the various sample control and analytical methods they perform. The laboratories are guided by published method-specific QC requirements as well as other regulatory and contract-required QC procedures.

Appendix B describes performance evaluation studies in which the laboratories and their subcontractors participate.

3.3.3 List of Analytical Suites

- RCRA metals (antimony, arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, and zinc, plus iron and aluminum as required to confirm the presence of interferences)
- Radionuclides (gross alpha, nonvolatile beta, gamma spectroscopy, plutonium-239/40 [plutonium series], strontium-89/90, tritium, uranium 233/234 [uranium series])
- TCL VOA

See *Appendix A* for listings of the definitive-level suites, constituents analyzed, and analytical methods used.

3.3.4 Analytical Data Observations

The data are final and complete except as noted in this subsection. Data validation is also complete.

Some of the data did not meet all the criteria listed in EPA, 1993, as noted below:

- Analytical error determination (a measurement of method precision) was not performed; however, precision can be evaluated by referring to the tables in section 3.5, *Precision and Accuracy*, of this report.
- Total measurement error determination (measurement of overall precision from sample acquisition through analysis) was not performed because it requires independently collected samples from the same location, and this practice does not fit into the scope of the project work plan. Each sampling location was used during one sampling event.
- No adjustments to sample values were made for bias or precision.
- Using the criteria defined in EPA, 1993, matrix spike recoveries for an entire project are averaged, and all associated sample data are qualified on the basis of this average. Matrix spike-based qualification for this project, however, was done on a sample-by-sample basis, using the criteria in subsection 3.4.4, *Qualification of the Data.*
- One matrix spike could not be evaluated due to high concentration of the analyte in the sample, matrix interference, or dilution effects.

3.4 Verification and Validation Issues

3.4.1 Verification and Validation Process

The data verification process confirms that the required samples were collected and documented, the required analyses were performed on the samples, and the analytical results were reported correctly. The information evaluated during this process includes work plan assessment sample lists, work plan assessment analyte/compound lists, sample logbooks, COC forms, and analytical results files.

Data reviewers use computer programs and look-up tables to review the computer data files of sample collection, shipping, and analytical data. The data were examined as follows:

- The following fields were checked to ensure that they were not blank: customer sample identification number, COC number (for groundwater samples) or sample number (for soil or biological samples), sample collection date, laboratory receipt date, analysis date, analysis time, analytical method, laboratory code, laboratory sample identification number, analyte code (test name), ssMDL, ssEQL, analytical result, result units, counting uncertainty (for radionuclide analyses), nominal concentration (if applicable), wet weight or dry weight, dilution factor, instrument, analyst's initials, percent solids and sample fraction (soil/sediment only), sample matrix, preparation factor, and subcontract number.
- The following fields were checked to ensure that reported data were within an acceptable range of values: customer sample identification number, COC number, soils sample number, sample collection date, sample collection time, lab receipt date, extraction date, extraction time, analysis date, analysis time, analytical result, counting uncertainty, residual weight, nominal concentration, dilution factor, percent solids, and bottle label number.
- The following fields were checked against a look-up table or a list of valid codes: field QC code; extraction, digestion, or preparation method; analytical method; laboratory code; laboratory QC sample code; analyte code; ssMDL; ssEQL; FG code; STORET code; EMS code; result units; percent recovery; sample fraction; sample matrix; and subcontract number.

The data validation process determines the usefulness of each analytical result based on QC and method requirements. The information evaluated during this process includes COC forms, analytical narrative summaries, analytical result data files, and raw result and calibration data.

Data validation evaluates requirements in the following QC categories: holding times, sample preservation, instrument calibration, analyte identification, analyte quantitation (surrogates and internal standards), blanks (trip, method, rinsate, and field), laboratory control samples, matrix spikes, and duplicates (field and laboratory).

Data validation and qualification policies were developed from the following sources: EPA, 1986; EPA, 1988a; EPA, 1988b; EPA, 1990; EPA, 1991b; EPA, 1994a; EPA, 1994b; WHC, not dated; contract-specific WSRC requirements; and discussions with laboratory personnel.

The qualifiers are defined in the beginning of *Appendix D.*

3.4.2 Analytical Narrative Review

The EDDs and analytical narratives arrive from the laboratories and are logged in together. If the analytical narrative is missing, it is requested from the analytical laboratory. The narratives are reviewed and used as a reference throughout the data validation process. Discrepancies between the narratives and

the analytical data must be resolved by the analytical laboratory. The analytical narratives contain summaries of the following problems encountered by the laboratory:

- QC samples that do not meet the criteria specified by the analytical method
- matrix interference problems
- sample-specific adjustments to the method caused by high concentration of some analytes
- sample preservation and holding time problems
- instrument calibration problems
- contaminated blanks
- other laboratory QC issues

Additional information about the chain-of-custody data and analytical data is often found in the analytical narratives. Copies of the COC forms attached to the analytical narratives are used for data review.

3.4.3 Laboratory Data Records Review

Laboratory data records reviews (LDRRs) are conducted periodically at laboratories that perform environmental analyses for WSRC. The purpose of the reviews is to investigate technical validation issues discussed in the Data Quality Objectives for Superfund that are not adequately addressed by computer checking of the AN98 EDD, by review of analytical narratives, or by review of COC forms. These technical issues include instrument calibration, analyte identification, and analyte quantitation. The issues are addressed by examination of all initial calibration records for the period reviewed, examination of continuing calibration records for randomly selected dates within the period reviewed, and selected sample records from those dates.

The emphasis of the LDRR is on programmatic laboratory behavior; a judgment is formed on whether the laboratory is or is not in compliance with WSRC requirements. However, if during the review any QA/QC issues identified are judged to be significant enough to affect data usability (R- and U-qualifier issues), then the affected data are appropriately qualified. QA/QC issues that do not affect data usability (J-qualifier issues) are noted in the report but do not result in requalification of data.

The LDRR covering the period of sample analysis for this project was conducted at GE on December 8-10, 1999, by Jenny Blankenship, Tom Coffey, and Trina Fortier of ExR. The LDRR report was issued as ESH-EMS-2000016. No technical issues affecting data usability for this project were identified during the LDRR, and all data should be accepted as reported.

3.4.4 Radiological Data Review

On September 9, 1999, Thomas Coffey of ExR reviewed radiological data from GE for selected radionuclides from fish samples in order to evaluate data for false positives. No requalification was required based on the review.

3.4.5 Metals Data Evaluation

Analytical results for metals analyzed for this project by GE were reviewed to determine sample-specific detection limits and, if necessary, to requalify the analytical results based on these detection limits. The review identified twenty false positives, which were converted to nondetects.

Metals data are subject to low level false positives due to several factors, which apply in varying degrees to the ICP technology used for metals analyses for this project.

- First, the nominal method detection limit (MDL) obtained from an annual MDL study may not represent the true sensitivity of the instrument at the time of analysis. If the nominal MDL for a metal is 100 µg/kg, but the actual instrument sensitivity six months later is 180 µg/kg, then noise in the range of 100-180 µg/kg will be reported as detects.
- Second, the presence of dissolved solids or salts in the sample digestate may cause loss of instrument precision due to thermal effects. This precision loss is manifested by fluctuations of noise which can in turn be expressed as false low level analyte signals.
- Third, analyte-specific spectral interferences (AA, ICP/OES) or m/z interferences (ICP/MS) may result in a false positive of one metal in the presence of large concentrations of a second metal.

Algorithms were generated to estimate the magnitude of each of the three disturbances listed above, using laboratory quality control data and analysis of single-element standards as indicators.

- For the first mechanism, the true instrument sensitivity was estimated using interpretation of Initial Calibration Blanks (ICBs) that were analyzed by the lab on every analysis day. A true detection limit was calculated from the ICB data.
- For the second mechanism, an effective detection limit was obtained by interpretation of Interference Check Sample A (ICSA) analyses. These quality control standards contain high levels of dissolved solids and were analyzed by the lab on every analysis day.
- For the third mechanism, the sensitivity of the laboratory's instruments to selected spectral interferences was evaluated by submitting a population of single-element standards to the laboratory and evaluating the analytical results.

For each EPA6010B record, three different sample-specific detection limits were considered:

- the laboratory's reported ssMDL
- a sample-specific detection limit calculated from ICSA data (the ssICSA MDL)
- an sample-specific detection limit calculated from ICB data (the ssICB MDL)

At this point, two or three different sample-specific DLs were available for each record. The highest was chosen as the analytical record's sample-specific detection limit. For reported detects, if the new estimated ssDL exceeded the analytical result, the result was converted to a nondetect with UJ and 4 as the qualifiers, and the ssMDL was replaced with the new ssDL. If the new estimated ssDL also exceeded the reported ssEQL, the old ssEQL was replaced with the new estimated ssDL.

The twenty false positives determined by examination of the ssICSA MDLs and ssICB MDLs are listed in the following table.

Table 3.4 Metals Requalification Summary

Analyte	Number of Sample Records	Number of Detects	Number of False Positives Based on ss ICB MDL	Number of False Positives Based on ss ICSA MDL
Antimony	26	9	9	0

Arsenic	26	26	0	0
Barium	26	26	0	0
Cadmium	26	17	0	11
Chromium	26	26	0	0
Copper	26	26	0	0
Lead	26	23	0	0
Nickel	26	4	0	0
Selenium	26	26	0	0
Silver	26	10	0	0
Zinc	26	26	0	0
Totals	**286**	**219**	**9**	**11**

3.4.6 Qualification of the Data

Each sample was evaluated on the following issues during validation:

- holding time
- sample preservation
- analyte identification
- analyte quantitation: surrogate recovery and internal standards
- trip blanks
- field blanks
- rinsates
- method blanks
- laboratory control samples
- matrix spikes
- field duplicates
- laboratory duplicates
- internal standards
- additional information

Holding Time

Criteria

Each analysis was evaluated according to the holding time limits for preparation (extraction or digestion) and analysis given in the following table.

Table 3.5 Holding Time Criteria

Analytes	Reference	Extraction/Digestion	Analysis
Cation exchange capacity	EGG OH	NA	NA

Analytes	Reference	Extraction/Digestion	Analysis
Chloride, fluoride	EGG OH	NR	28 days from collection
Cyanide	EGG OH	NA	14 days from collection
Dioxins/Furans	EGG OH	30 days from collection	45 days from extraction
Hexavalent chromium (soil) Hexavalent chromium (water)	EGG OH	30 days (soil) NR (water)	7 days from extraction (soil) 24 hours from collection (water)
Mercury	EGG OH	NA	28 days from collection
Metals	EGG OH	NA	6 months from collection
Nitrate, nitrite	EGG OH	NA	48 hours from collection
Nitrate-nitrite	EGG OH	NR	28 days from collection
Nitrogen (Kjeldahl method)	EGG OH	NA	28 days from collection
Organic halogens, total	EGG OH	NR	28 days from collection
Orthophosphate	EGG OH	NA	48 hours from collection
Pesticide (soil)	EGG OH	14 days from collection	40 days from extraction
Pesticide (water)	EGG OH	7 days from collection	40 days from extraction
pH	EGG OH	NR	Immediate analysis
Phenols	EGG OH	NR	28 days from collection
Radionuclides	EGG OH	NA	6 months from collection
Semivolatile organics (soil)	EGG OH	14 days from collection	40 days from extraction
Semivolatile organics (water)	EGG OH	7 days from collection	40 days from extraction
Solids, total dissolved; Solids, total suspended	EGG OH	NR	7 days from collection
Specific conductance	EGG OH	NR	28 days from collection
Sulfate	EGG OH	NA	28 days from collection
Sulfide	EGG OH	NR	7 days from collection
Total organic carbon	EGG OH	NA	28 days from collection

Table 3.5 Holding Time Criteria (cont.)

Analytes	Reference	Extraction/Digestion	Analysis
Total phosphorus as P	EGG OH	NA	28 days from collection
Turbidity	EGG OH	NA	48 hours from collection
Volatile organics	EGG OH	NA	14 days from collection
TCLP Analytes			
Mercury	EGG OH	28 days from collection	28 days from extraction
Metals (except Mercury)	EGG OH	180 days from collection	180 days from extraction
Semivolatile organic compounds	EGG OH	14 days from collection to TCLP extraction + 7 days from TCLP extraction to prep extraction	40 days from preparative extra

Table 3.5 Holding Time Criteria (cont.)

Analytes	Reference	Extraction/Digestion	Analysis
Volatile organic compounds	EGG OH	14 days from collection	14 days from extraction

Action

When holding times are exceeded, the following qualifiers are applied:

STORET Code: *Q*

FG Code: *J*—for detects *UJ*—for nondetects

If holding time is exceeded by 200% or more, the following qualifiers are applied

STORET Code: *QL*

FG Code: *J*—for detects *R*—for nondetects

Findings

None of 2,260 environmental sample records were qualified.

Discussion

Most methods specify limits on the time that can pass between sample collection and extraction or analysis. When holding times are exceeded, sample integrity may be compromised due to chemical and/or physical effects that can bias sample results either positively or negatively.

Sample Preservation

Criteria

Sample preservation requirements are determined by regulatory guidance, method specifications, and laboratory protocols. General requirements follow.

Soil

Inorganics: Inorganic analyses for metals require that soil samples be kept between 2° and 6°C.

Organics: Organic analyses for chlorinated hydrocarbons, haloethers, PCBs, pesticides, phenols, phthalate esters, purgeable aromatic hydrocarbons, purgeable halocarbons, tetrachlorodibenzo-p-dioxin isomers, and total organic carbon also require that soil samples be kept between 2° and 6°C. Soil samples to be analyzed for nitroaromatics and isophorone, nitrosamines, or polynuclear aromatic hydrocarbons must be stored in the dark at temperatures between 2° and 6°C.

Water

Inorganics: Water samples collected for metals analyses should have nitric acid added so that pH is less than 2.

Organics: Water samples for all organic analyses should be kept between 2° and 6°C. Purgeable aromatic hydrocarbon analyses require that hydrochloric acid be added so that pH is less than 2, and total organic carbon analysis requires that hydrochloric acid or sulfuric acid be added so that pH is less than 2. Samples

for nitroaromatics and isophorone must be stored in the dark. Samples for pesticides analyses should have pH adjusted to between 5 and 9.

Soil and water samples for organic and inorganic analyses (excluding radiologicals and metals) must be shipped in coolers with temperatures of 4°C ± 2°C.

Biological Tissue

Refrigeration can be used for short-term storage of the samples. The samples should remain at 4°C ± 2°C. For long-term storage, the sample should be frozen as soon as possible after collection and remain frozen (0°C or less) until the time of sample preparation and analysis.

For biological tissue samples, the holding time is dependent upon the preservation method. If the sample has been frozen, the suggested holding times are as follows:

- 180 days for organics, mercury, and cyanide
- 365 days for inorganics and radionuclides

For samples that have been preserved by refrigeration at 4°C ± 2°C, the suggested holding times are those listed in the table of holding time criteria above.

Action

When cooler temperature requirements are not met, a *Y* STORET code is assigned.

If temperature is grossly exceeded (>12 degrees), nondetects are rejected and both nondetects and detects get an L STORET code in addition to the Y.

Under the current contracts, the laboratories do not report pH of samples requiring preservation. Thus, no assessment of the pH preservation criterion can be made.

Findings

None of 2,260 environmental sample records were qualified.

Discussion

Temperatures greater than the established limit may compromise the integrity and representativeness of the samples due to increased biological activity, hydrolysis of organic compounds, thermal degradation, and the loss of volatile and semivolatile compounds. The analytical results are expected to be biased low, and false negative results are possible. False positive results also are possible due to the effects of biological and chemical degradation and would most likely appear as TICs.

Analyte Quantitation: Surrogate Recovery

Criteria

- Pesticides by Method 8080: 60–150%, page D-56 PEST (EPA, 1991b)
- Semivolatiles by Method 8270: Table 8, page 8270-31 (EPA, 1986)
- Volatiles by Method 8240: Table 8, page 8240-38 (EPA, 1986)
- Volatiles by Method 8260: Table 9, page 8260-44 (EPA, 1986)

Action

Pesticides: When one or more surrogate recoveries are above or below QC limits, all analytes in the sample are qualified as follows:

EMS Code: *O*

FG Codes: *J*—for detects *UJ*—for nondetects when surrogate is low

[*null*]—for nondetects when surrogate is high

R—for nondetects when surrogate is very low and sample dilution is not a factor

Volatiles and/or semivolatiles: The data are qualified as above, and a STORET code is added as follows:

STORET Codes: *K*—if failed surrogates have high recoveries

L—if failed surrogates have low recoveries

For volatiles and semivolatiles, if one failed surrogate was high and another low, no STORET code is assigned.

Findings

One hundred fourteen of 2,260 environmental sample records were qualified.

Table 3.6 Surrogate Recoveries Outside EPA Recovery Limits

Sample ID	Analyte	Minimum (%)	Maximum (%)	Recovery (%)
Solids (method blanks)				
LB	Toluene-d8	81	117	80.7

Table 3.6 Surrogate Recoveries Outside EPA Recovery Limits (cont.)

Sample ID	Analyte	Minimum (%)	Maximum (%)	Recovery (%)
Fauna				
117018	p-Bromofluorobenzene	74	121	129
117019	p-Bromofluorobenzene	74	121	128
117021	p-Bromofluorobenzene	74	121	122
117021	p-Bromofluorobenzene	74	121	135
117021	p-Bromofluorobenzene	74	121	128
117022	p-Bromofluorobenzene	74	121	123
117023	p-Bromofluorobenzene	74	121	128
117024	p-Bromofluorobenzene	74	121	134
117025	p-Bromofluorobenzene	74	121	149
117031	p-Bromofluorobenzene	74	121	182
117033	p-Bromofluorobenzene	74	121	143
117034	p-Bromofluorobenzene	74	121	148
117036	p-Bromofluorobenzene	74	121	126

117037	Toluene-d8	81	117	121
117037	p-Bromofluorobenzene	74	121	176
117039	Dibromofluoromethane	80	120	79.1
117039	p-Bromofluorobenzene	74	121	126
117041	p-Bromofluorobenzene	74	121	154
117042	p-Bromofluorobenzene	74	121	128
117043	p-Bromofluorobenzene	74	121	178
117043	Toluene-d8	81	117	131

Discussion

When the surrogate percent recovery is high, the results for associated data may be biased positively. When the surrogate percent recovery is low, the results for associated data may be biased negatively, and the nondetected results should be considered questionable.

Trip Blanks

Criteria

Trip blanks were used to determine the existence and magnitude of contamination from shipping activities. Only data for the volatile organic fraction were evaluated based on trip blank results. The CLP 5×/10× rule was used for data qualification.

Action

When an analyte is detected in a trip blank, an EMS code is assigned to that analyte in the blank and to all samples that are shipped in the same cooler as the trip blank having positive results.

EMS Code: *8*

If the analyte concentration in a sample is less than five times that in the blank (less than 10 times for the common laboratory contaminants acetone, dichloromethane [methylene chloride], and methyl ethyl ketone), an FG code is assigned to that analyte in the sample.

FG Code: *U*

Findings

None of 2,260 environmental sample records were qualified.

Discussion

Volatile organic contamination can be introduced into a trip blank in three ways: during blank preparation at the laboratory; during storage of the trip blank in the cooler; or by cross-contamination from other samples. The contamination can cause false positives in the trip blank and in the samples exposed to contamination.

Field Blanks

Criteria

Field blanks are used to determine the existence and magnitude of contamination from the atmosphere at the sampling location. No field blanks were used in this project.

Action

When an analyte is detected in a field blank, an EMS code is assigned to that analyte in the blank and to all samples from the associated soil boring or well cluster having positive results. If the analyte concentration in a sample is less than five times that in the blank (less than 10 times for the common laboratory contaminants acetone, dichloromethane [methylene chloride], and methyl ethyl ketone), an FG code is assigned to that analyte in the sample.

The following qualifiers may be assigned:

EMS Code: *6*

FG Code: *U*

Discussion

Contamination can be introduced into a field blank while it is exposed to the atmosphere during the sampling process. The field blank is placed close to the sampling location, but far enough away so that the sampling activities do not affect it. The contamination can cause false positives in the field blank and in the samples exposed to atmospheric contamination.

Rinsates

Criteria

Rinsates are used to determine the existence and magnitude of contamination from field equipment cleaning activities. No rinsates were used in this project.

Action

When an analyte is detected in a rinsate, an EMS code is assigned to that analyte in the blank and in the associated sample having positive results. If the analyte concentration in a sample is less than five times that in the blank (less than 10 times for the common laboratory contaminants acetone, dichloromethane [methylene chloride], and methyl ethyl ketone), an FG code is assigned to that analyte in the sample.

The following qualifiers may be assigned:

EMS Code: *7*

FG Code: *U*

Method Blanks

Criteria

Method blanks are used to determine the existence and magnitude of contamination from laboratory activities. Method blanks with analytical results greater than the method detection limit are considered to be contaminated. The CLP 5×/10× rule is used for data qualification.

Action

When an analyte is detected in a method blank, a STORET code is assigned to that analyte in the blank. If the analyte concentration in a sample is less than five times that in the blank (less than 10 times for common laboratory contaminants), an FG code and STORET cdoe are assigned to that analyte in the

sample. For radionuclide analysis by alpha spectroscopy, an FG code is assigned to that analyte in the blank only if the result is greater than zero.

The following qualifiers may be assigned:

STORET Code: *V*

FG Code: *U*

Findings

Fourteen of 2,260 environmental sample records were qualified.

Table 3.7 Method Blank Contamination by GE

Analyte	Frequency Detected
Metals	
Nickel, total recoverable	1/2
Zinc, total recoverable	1/2
Volatile Organic Compounds	
Dichloromethane (Methylene chloride)	1/6

Table 3.8 Method Blank Contamination by EP

Analyte	Frequency Detected
Radionuclides	
Antimony-125	1/2

Discussion

Laboratory contamination of samples during preparation and/or analysis is monitored through the method blank. Laboratory procedures may cause false positive results in the method blanks for common laboratory contaminants.

Laboratory Control Samples

Criteria

- Dioxins/furans: 40–120% recovery (EPA, 1986)
- Inorganics: 80–120% recovery
- Pesticides: Page D-61 PEST (EPA, 1991b)
- Radiologicals: 80–120% (WHC, not dated)
- Semivolatiles: Table 7, page D-59 SV (EPA, 1991b)
- Volatiles: Table 7, page D-55 VOA (EPA, 1991b)

Action

If an LCS was not included in the preparation batch, all spike compounds for the associated samples are qualified with an EMS code. When the percent recovery for an analyte in the LCS is outside the QC limits, records for that analyte in the LCS and that analyte in each sample of the preparation batch are qualified with an EMS code.

LCS recovery below lower QC limit:

EMS Code:	*C*	
STORET Code	*L* or none	
FG Codes:	*R* or *J*—for detects	*R* or *UJ*—for nondetects

LCS recovery above upper QC limit:

EMS Code:	*C*	
STORET Code	*K*	
FG Codes:	*R* or *J*—for detects	*R* or none—for nondetects

Findings

None of 2,260 environmental sample records were qualified.

Discussion

LCS percent recoveries that exceed the upper QC limit could indicate a high bias for samples with positive results. Percent recoveries that are less than the lower QC limit could indicate a low bias for samples with positive results, and nondetect results should be considered questionable.

Matrix Spikes

Criteria

- Dioxins: 40–120% (EPA, 1986)
- Inorganics: Page 11 (EPA, 1988a)
- Pesticides: Page D-61 PEST (EPA, 1991b)
- Semivolatiles: Table 7, page D-59 SV (EPA, 1991b)
- Volatiles: Table 7, page D-55 VOA (EPA, 1991b)

Action

1. When an MS does not meet criteria, qualifiers are added only to the failed analyte in the MS, the parent sample, and any duplicates or re-runs of those samples. The data are qualified as follows:

EMS Code:	*I*	
FG Codes:	*J*—for detects	*UJ* or *R*—for nondetects when MS is low
		[*null*]—for chemical nondetects when MS is high
STORET Code:	*K*—if MS recoveries are above QC limits	

L—if MS recoveries are below QC limits

2. MS recovery limits do not apply when the spike concentration is less than 25% of the parent sample concentration. When this occurs, all samples in the batch are qualified as follows:

EMS Code: *5*

and the MS receives the FG and STORET codes appropriate for the recovery.

3. If the laboratory did not perform matrix spikes for nonradiological analyses, the following EMS code is used:

EMS Code: *I*

Findings

Five of 2,260 environmental sample records were qualified.

Table 3.9 Matrix Spike Recoveries Outside the EPA Recovery Limits by GE

Sample ID	Analyte	EPA Minimum (%)	EPA Maximum (%)	Recovery (%)
Metals				
117022	Manganese, total recoverable	75	125	128
117022	Mercury, total recoverable	75	125	9.18
117025	Mercury, total recoverable	75	125	71.8
117043	Silver, total recoverable	75	125	72.9
Volatile Organic Compounds				
117021	1,1-Dichloroethylene	59	172	42

Table 3.10 Matrix Spikes Rejected Due to Dilution Effects or Other Reason by GE

Sample ID	Laboratory ID	Analyte
Metals		
117022	9907977-20	Mercury, total recoverable

Discussion

When the matrix spike percent recovery for an analyte is high, the results for associated data may be biased positively. When the matrix spike percent recovery for an analyte is low, the results for associated data may be biased negatively, and the nondetected results should be considered questionable.

Field Duplicates

No qualification is performed based on field duplicates.

Laboratory Duplicates and Matrix Spike Duplicates

Criteria

- Inorganics: Page 10 (EPA, 1988a)
- Organics: The laboratories qualify on the basis of matrix spikes/duplicates. No additional qualification is done on this basis during validation.
- Radiologicals: (WHC, not dated); only soil samples are evaluated during validation.

The RPD of a sample and its associated laboratory duplicate must be 20% or less for water samples and 35% or less for soil samples. These method-required limits do not apply to results reported at levels less than five times the detection limit. When one result is less than 5 × the ssEQL, the difference between the two results must be less than the ssEQL (aqueous samples) or twice the ssEQL (solid samples). For radiological analyses, the second criterion is the absolute difference between the samples.

Action

For soil samples, when duplicate analysis results for a particular analyte fall outside the QC limits for the RPD, records for that analyte in the parent and duplicate samples are qualified for inorganics, and the MS and MSD are qualified for organics.

For water samples, when the RPD for a particular analyte is outside the appropriate QC limits, FG and EMS codes are assigned to that analyte in the parent and duplicate samples for inorganics or to the MS and MSD for organics, and EMS codes are assigned to that analyte in every sample in the same preparation batch.

EMS Code: *X*

FG Codes: *J*—for detects *UJ*—for nondetects

If no duplicates were analyzed, that analyte in every sample of the preparation batch is assigned the EMS code *X*.

Findings

Three of 2,260 environmental sample records were qualified.

Table 3.11 Laboratory Duplicate Results Outside RPD Limits for GE

Sample ID	Analyte	Sample Conc.	Duplicate Conc.	Unit	RPD (%)	Acceptance Limit (%)
117021	1,1-Dichloroethylene	105	223	mg/kg	71.9512	20

Discussion

Poor precision (i.e., high RPDs) can be caused by poor instrument performance, inconsis-tent application of method procedures, the heterogeneous nature of soil samples, or low quantities of an analyte in the sample.

3.5 Precision and Accuracy

This section discusses the analytical data in terms of the precision and accuracy indicators of data quality. Precision is determined from the field and laboratory duplicate analyses and indicates the consistency of field and laboratory techniques. Accuracy is determined from the laboratory control samples, surrogates, matrix spikes, and the results of the method, field, trip, and equipment blanks or rinsates and indicates the ability of the laboratory to generate correct results.

3.5.1 Precision

Precision is a measure of the repeatability of a measurement and is evaluated from the results of field and laboratory duplicate samples. Field duplicates measure the repeatability for the sampling and analytical techniques, and laboratory duplicates measure the ability of the laboratory to reproduce a result. Low precision can be caused by poor instrument performance, poor operator technique, inconsistent application of method protocols, laboratory environment, time between analyses, or by a difficult, heterogeneous sample matrix. Precision is especially important when the action limit approaches the quantitation limit. At least 5% of the samples are collected in duplicate.

The laboratory performs duplicate analyses on at least 10% of the samples received.

Precision is expressed in terms of the relative percent difference as follows:

$$\text{RPD} = \frac{|x - y|}{\left(\frac{x + y}{2}\right)} \times 100,$$

where x is the original sample result and y is the duplicate sample result. When one result of a duplicate pair is below the MDL, the ssEQL is used for that result in the calculation. For radiological analyses, when one result of a duplicate pair is below the MDA, the MDC is used for that result in the calculation. When both results are below the MDL, the RPD cannot be calculated.

The RPD should be less than 20% for water samples and less than 35% for soil samples when results are above the ssEQL. In the case where results are between the ssEQL and the MDL, the RPD should be less than 100% for water samples and less than 200% for soil samples.

The RPDs for the laboratory and field duplicates are listed in the following tables. The frequency out of range is the number of duplicates that had RPDs greater than the acceptance limit compared to the total number of pairs analyzed; the other columns provide the mean RPD, standard deviation, and the minimum and maximum RPDs. A standard deviation cannot be calculated when only one pair has at least one result above detection limits.

Table 3.12 Relative Percent Differences of Laboratory Duplicates by GE

Analyte	Frequency Out of Range	Mean RPD (%)	Std. Dev.	Minimum RPD (%)	Maximum RPD (%)
Water					
Volatile Organic Compounds					
Benzene	0/1	1.49733	–	1.497	1.497
Chlorobenzene	0/1	1.2848	–	1.285	1.285
1,1-Dichloroethylene	0/1	1.56775	–	1.568	1.568

Table 3.12 Relative Percent Differences of Laboratory Duplicates by GE (cont.)

Analyte	Frequency Out of Range	Mean RPD (%)	Std. Dev.	Minimum RPD (%)	Maximum RPD (%)
Toluene	0/1	0.685714	–	0.686	0.686
Trichloroethylene	0/1	2.17865	–	2.179	2.179
Fauna					
Metals (total recoverable)					
Antimony	0/2	4.20148	5.012	0.657	7.746
Arsenic	0/2	5.02736	3.160	2.793	7.262
Barium	0/2	7.38176	6.106	3.064	11.699
Cadmium	0/2	4.39492	3.377	2.007	6.783
Chromium	0/2	4.42521	3.553	1.913	6.938
Copper	0/2	4.83398	3.968	2.028	7.640
Lead	0/2	4.32301	3.916	1.554	7.092
Manganese	0/2	13.7278	11.087	5.888	21.567
Mercury	0/3	4.27687	5.236	0.000	10.117
Nickel	0/2	4.39474	3.421	1.976	6.814
Selenium	0/2	4.6728	3.245	2.378	6.967
Silver	0/2	5.59085	1.621	4.444	6.737
Zinc	0/2	8.18684	1.545	7.095	9.279
Volatile Organic Compounds					
Benzene	0/2	8.27667	11.069	0.449	16.104
Chlorobenzene	0/2	10.9628	13.012	1.762	20.163
1,1-Dichloroethylene	1/2	42.4272	41.753	12.903	71.951
Toluene	0/2	9.50538	6.459	4.938	14.072
Trichloroethylene	0/2	10.2107	12.033	1.702	18.719

Table 3.13 Relative Percent Differences of Laboratory Duplicates by EP

Analyte	Frequency Out of Range	Mean RPD (%)	Std. Dev.	Minimum RPD (%)	Maximum RPD (%)
Fauna					
Radionuclides					
Actinium-228	1/2	83.9623		83.962	83.962
Cesium-137	0/2	17.3913		17.391	17.391
Lead-212	1/2	56.0334	65.863	9.461	102.606
Nonvolatile beta	1/2	79.2378	110.676	0.978	157.498
Potassium-40	0/2	13.4358	13.968	3.559	23.313
Strontium-89/90	1/2	119.886		119.886	119.886

Table 3.14 Relative Percent Differences of Field Duplicates by GE

Analyte	Frequency Out of Range	Mean RPD (%)	Std. Dev.	Minimum RPD (%)	Maximum RPD (%)
Fauna					
Metals (total recoverable)					
Arsenic	0/2	25.776	5.601	21.815	29.737
Barium	2/2	54.3272	18.925	40.945	67.709
Calcium	1/2	35.9061	48.668	1.493	70.320
Chromium	0/2	6.57183	4.702	3.247	9.897
Copper	1/2	81.2295	72.612	29.885	132.574
Lead	1/2	82.9219	100.738	11.690	154.154
Magnesium	1/2	53.1418	50.862	17.177	89.107
Manganese	1/2	40.0161	38.394	12.867	67.165
Mercury	1/2	23.829	28.225	3.871	43.787
Selenium	1/2	42.2456	48.724	7.792	76.699
Silver	2/2	147.017	7.164	141.951	152.083
Zinc	2/2	48.1336	5.750	44.068	52.199
Volatile Organic Compounds					
Acetone	1/2	74.3854		74.385	74.385
Dichloromethane (Methylene chloride)	1/2	68.025	95.022	0.834	135.215
Ethylbenzene	0/2	24.8687		24.869	24.869
Toluene	1/2	114.163		114.163	114.163
Xylenes	2/2	101.446	55.125	62.467	140.426

Table 3.15 Relative Percent Differences of Field Duplicates by EP

Analyte	Frequency Out of Range	Mean RPD (%)	Std. Dev.	Minimum RPD (%)	Maximum RPD (%)
Fauna					
Radionuclides					
Cesium-137	2/2	166.228	6.286	161.783	170.672
Nonvolatile beta	1/2	90.0485	91.428	25.399	154.698
Potassium-40	1/2	76.5763	82.582	18.182	134.971
Strontium-89/90	1/2	49.505		49.505	49.505
Tritium	0/2	31.1688		31.169	31.169

3.5.2 Accuracy

Accuracy is defined as the closeness of agreement between an observed value and an accepted reference value. Accuracy is especially important when the concentration of concern approaches the quantitation

limit and/or the action limit. When the concentration is underestimated near the quantitation limit, the analyte may be present but reported as not detected. When the concentration is underestimated near the action limit, the analyte may be at a concentration that would require remediation, but the remediation would not be performed. When the concentration is overestimated near the quantitation limit, the analyte may not be present but reported as detected. When the concentration is overestimated near the action limit, the analyte may not be at a concentration that would require remediation, but the remediation would be performed. The sample types used to evaluate accuracy are performance evaluation studies (see *Appendix B)*, LCS/BSs, surrogate spikes, and matrix spikes.

Laboratory Control Samples

LCSs monitor the performance of all steps in the analysis process, including sample preparation, and are used to identify problems with the analytical procedure. LCSs for inorganic analyses are DI water that is spiked with the target analyte, digested, and analyzed with the regular samples. LCSs for organic analyses are DI water that is spiked with selected target analytes, extracted, and analyzed with the regular samples. The LCS spiking solutions or solid LCSs are obtained from EPA or a third-party supplier or are prepared in the laboratory from chemicals from a different source than the calibration standards. The following table lists the QC limits for each analyte.

Table 3.16 EPA Quality Control Limits for Laboratory Control Samples

Analyte	Limits for Aqueous Samples (%)	Limits for Soil Samples (%)
Dioxins/Furans[1]	**40–120**	**40–120**
Inorganics[2]	**80–120**	**80–120**
Pesticides[3]		
Aldrin	40–120	34–132
gamma-Benzene hexachloride (Lindane)	56–123	46–127
4,4´-DDT	38–127	23–134
Dieldrin	52–126	31–134
Endrin	56–121	42–139
Heptachlor	40–131	35–130
Radionuclides[4]	**80–120**	**80–120**

Table 3.16 EPA Quality Control Limits for Laboratory Control Samples (cont.)

Analyte	Limits for Aqueous Samples (%)	Limits for Soil Samples (%)
Semivolatiles[5]		

[1] Page 8280-17 (EPA, 1986)
[2] Page E-24 (EPA, 1988a) or as supplied with purchased solid LCS
[3] Page D-61 PEST (EPA, 1991b)
[4] (WHC, not dated)
[5] Table 7, page D-59 SV (EPA, 1991b)

Table 3.16 EPA Quality Control Limits for Laboratory Control Samples (cont.)

Analyte	Limits for Aqueous Samples (%)	Limits for Soil Samples (%)
Acenaphthene	46–118	31–137
4-Chloro-3-methylphenol	23–97	26–103
2-Chlorophenol	27–123	25–102
1,4-Dichlorobenzene	36–97	28–104
2,4-Dinitrotoluene	24–96	28–89
4-Nitrophenol	10–80	11–114
N-Nitrosodi-n-propylamine	41–116	41–126
Pentachlorophenol	9–103	17–109
Phenol	12–110	26–90
Pyrene	26–127	35–142
1,2,4-Trichlorobenzene	39–98	38–107
Volatiles[6]		
Benzene	76–127	66–142
Chlorobenzene	75–130	60–133
1,1-Dichloroethylene	61–145	59–172
Toluene	76–125	59–139
Trichloroethylene	71–120	62–137

The following tables list the statistical information for the percent recovery for LCSs by analyte. The frequency out of range is the number of LCSs that had percent recoveries outside the acceptance limits compared to the total number analyzed; the other columns provide the mean percent recovery, standard deviation, and the minimum and maximum percent recoveries.

The percent recovery is calculated as

$$\%R = \frac{SR}{SA} \times 100,$$

where %R = percent recovery

SR = LCS sample result

SA = spike-added result

[6] Table 7, page D-55 VOA (EPA, 1991b)

Table 3.17 Laboratory Control Sample Recoveries by GE

Analyte	Frequency Out of Range	Mean Recovery (%)	Std. Dev.	Minimum Recovery (%)	Maximum Recovery (%)
Fauna					
Metals (total recoverable)					
Antimony	0/2	104	2.82843	102	106
Arsenic	0/2	100.15	2.6163	98.3	102
Barium	0/2	100.7	4.6669	97.4	104
Cadmium	0/2	99.7	7.49533	94.4	105
Chromium	0/2	103.5	3.53553	101	106
Copper	0/2	102.5	2.12132	101	104
Lead	0/2	101.6	6.22254	97.2	106
Manganese	0/2	102.5	3.53553	100	105
Mercury	0/2	106.5	2.12132	105	108
Nickel	0/2	101.55	7.70746	96.1	107
Selenium	0/2	92.85	2.47487	91.1	94.6
Silver	0/2	105.5	3.53553	103	108
Zinc	0/2	98.75	4.59619	95.5	102
Volatile Organic Compounds					
Benzene	0/4	89.875	3.06309	86.8	93.2
Chlorobenzene	0/4	91.125	3.35398	87.2	94.8
1,1-Dichloroethylene	0/4	87.25	4.10325	82	91.8
Toluene	0/4	86.625	3.191	82.7	89.9
Trichloroethylene	0/4	101.875	4.13068	96.5	106
Water (trip blanks)					
Volatile Organic Compounds					
Benzene	0/2	92.6	2.26274	91	94.2
Chlorobenzene	0/2	92.25	3.3234	89.9	94.6
1,1-Dichloroethylene	0/2	90.2	2.54558	88.4	92
Toluene	0/2	90.4	2.12132	88.9	91.9
Trichloroethylene	0/2	92.9	2.68701	91	94.8

Table 3.18 Laboratory Control Sample Recoveries by EP

Analyte	Frequency Out of Range	Mean Recovery (%)	Std. Dev.	Minimum Recovery (%)	Maximum Recovery (%)
Cesium-137	0/2	102.5	0.707107	102	103
Gross alpha	0/2	108.5	4.94975	105	112
Nonvolatile beta	0/2	117	1.41421	116	118

Table 3.18 Laboratory Control Sample Recoveries by EP (cont.)

Analyte	Frequency Out of Range	Mean Recovery (%)	Std. Dev.	Minimum Recovery (%)	Maximum Recovery (%)
Plutonium-239/240	0/2	100.3	8.06102	94.6	106
Strontium-89/90	0/2	103.5	3.53553	101	106
Tritium	0/2	96.65	7.56604	91.3	102
Uranium-238	0/2	88.6	1.41421	87.6	89.6

Surrogates

Surrogates are analytes not normally found in environmental samples and are used to spike all samples, QC samples, and standards for organic analyses. Surrogates are added prior to analysis for VOAs and prior to extraction for semivolatiles, pesticides, and herbicides. Low surrogate recovery is a measure of the effect of the sample matrix, high analyte concentration, or poor instrument sensitivity on the sample analysis procedure. High surrogate recovery usually indicates instrument or sample preparation errors. The following table lists the recovery limits for each surrogate.

Table 3.19 EPA Quality Control Limits for Surrogates

Analyte	Limits for Aqueous Samples (%)	Limits for Soil Samples (%)
Pesticides[7]		
Decachlorobiphenyl	30–150	30–150
Dibutylchlorendate	30–150	30–150
Tetrachloro-m-xylene	30–150	30–150
Semivolatiles[8]		
2-Chlorophenol-d4 (advisory)	33–110	20–130
1,2-Dichlorobenzene-d4 (advisory)	16–110	20–130
2-Fluorobiphenyl	43–116	30–115
2-Fluorophenol	21–100	25–121
Nitrobenzene-d5	35–114	23–120
Phenol-d5	10–94	24–113
Phenol-d6	10–94	24–113
p-Terphenyl-d14	33–141	18–137
2,4,6-Tribromophenol	10–123	19–122

[7] Page D-56 PEST (EPA, 1991a)
[8] Table 8, page 8270C-31 (EPA, 1986)

Table 3.19 EPA Quality Control Limits for Surrogates (cont.)

Analyte	Limits for Aqueous Samples (%)	Limits for Soil Samples (%)
Volatiles (8260)[9]		
4-Bromofluorobenzene	86–115	74–121
Dibromofluoromethane-d4	86–118	80–120
1,2-Dichloroethane-d4	76–114	70–121
Toluene-d8	88–110	81–117

The following tables list the statistical information for the percent recovery for the surro-gates by analyte and laboratory. The frequency out-of-range is the number of surrogates that had percent recoveries outside the acceptance limits compared to the total number analyzed; the other columns provide the mean percent recovery, standard deviation, and the minimum and maximum percent recoveries.

Table 3.20 Surrogate Recoveries by GE

Analyte	Frequency Out of Range	Mean Recovery (%)	Std. Dev.	Minimum Recovery (%)	Maximum Recovery (%)
Solids (laboratory blanks)					
Volatile Organic Compounds					
p-Bromofluorobenzene	0/8	94.1875	7.04464	85.7	107
Toluene-d8	1/8	87.2625	4.91991	80.7	95.6
Dibromofluoromethane	0/8	100.213	6.70446	93	114
Water (trip blanks)					
Volatile Organic Compounds					
p-Bromofluorobenzene	0/9	92.6778	2.58736	88.9	96.3
Toluene-d8	0/9	102.667	2	100	105
Dibromofluoromethane	0/9	100.967	1.47309	98.6	103
Fauna					
Volatile Organic Compounds					
p-Bromofluorobenzene	18/30	126.26	24.6799	85.3	182
Toluene-d8	2/30	96.9133	10.9622	82.3	131
Dibromofluoromethane	1/30	93.7867	6.92993	79.1	113

Matrix Spikes

Matrix spikes are used to evaluate the effect of the sample matrix on the analytical procedure. Matrix spikes for at least 5% of the samples are prepared by adding a known quantity of the target analyte to the samples prior to sample preparation. All target analytes are spiked for the inorganic analyses. Selected

[9] Table 8, page 8260B-45 (EPA, 1986)

target analytes are used in the spiking solution for the organic analyses. Results from the matrix spikes are used to evaluate the extent of matrix interference.

The QC limits for matrix spikes are the same as those for LCSs except for inorganics, which have limits of 75–125%. Matrix spikes are rejected if the concentration of the analyte in the sample is more than four times the amount of the spike.

The following tables list the percent recovery for the matrix spikes. The frequency out of range is the number of matrix spikes that had percent recoveries outside the acceptance limits compared to the total number analyzed; the other columns provide the mean percent recovery, standard deviation, and the minimum and maximum percent recoveries.

Table 3.21 Matrix Spike Recoveries by GE

Analyte	Frequency Out of Range	Mean Recovery (%)	Std. Dev.	Minimum Recovery (%)	Maximum Recovery (%)
Water (trip blanks)					
Volatile Organic Compounds					
Benzene	0/2	93.55	0.919239	92.9	94.2
Chlorobenzene	0/2	93.35	0.919239	92.7	94
1,1-Dichloroethylene	0/2	89.3	1.13137	88.5	90.1
Toluene	0/2	87.5	0.282843	87.3	87.7
Trichloroethylene	0/2	91.85	1.3435	90.9	92.8
Fauna					
Metals (total recoverable)					
Antimony	0/4	99.7	5.55998	94.7	105
Arsenic	0/4	100.7	5.07412	95.6	106
Barium	0/4	100.85	5.12803	95.7	107
Cadmium	0/4	97.6	4.53358	93.3	102
Chromium	0/4	101.2	4.47512	97	106
Copper	0/4	103	2.94392	100	106
Lead	0/4	97.625	5.64764	92.5	103
Manganese	1/4	102.45	18.8647	85.8	128
Mercury	2/6	76.38	34.3831	9.18	101
Nickel	0/4	99.475	5.30118	94.5	105
Selenium	0/4	96.95	2.96929	93.8	100
Silver	1/4	91.475	19.1721	72.9	109
Zinc	0/4	100.35	10.1425	88.3	111

Table 3.21 Matrix Spike Recoveries by GE (cont.)

Analyte	Frequency Out of Range	Mean Recovery (%)	Std. Dev.	Minimum Recovery (%)	Maximum Recovery (%)
Volatile Organic Compounds					
Benzene	0/4	82.525	8.24919	70.6	88.3
Chlorobenzene	0/4	82.075	11.7102	66	91.4
1,1-Dichloroethylene	1/4	82.5	27.9537	42	106
Toluene	0/4	94.075	5.92192	86.1	99.1
Trichloroethylene	0/4	87.6	9.66678	73.6	94.7

Table 3.22 Matrix Spike Recoveries by EP

Analyte	Frequency Out of Range	Mean Recovery (%)	Std. Dev.	Minimum Recovery (%)	Maximum Recovery (%)
Fauna					
Radionuclides					
Gross alpha	0/2	100.25	19.4454	86.5	114
Nonvolatile beta	0/2	105	1.41421	104	106
Plutonium-239/240	0/2	98.1	0.141421	98	98.2
Strontium-89/90	0/2	92.7	13.1522	83.4	102
Tritium	0/2	97.3	8.06102	91.6	103
Uranium-238	0/2	93.2	4.38406	90.1	96.3

3.5.3 Contamination in Quality Control Samples

Method Blanks

Method blanks are used to determine the existence and magnitude of contamination resulting from the analytical process. Method blanks are analyte-free matrices (DI water for aqueous samples and sodium sulfate for solid samples) that are prepared in the same manner and at the same time as the samples. When method blanks have detectable concentrations of analytes, the laboratory must determine the cause and take corrective action to eliminate the contamination.

The following tables list the statistical information for the method blanks. The frequency detected column gives the number of method blanks analyzed for each analyte that had detectable concentrations compared to the total number analyzed. The other columns list the mean result, standard deviation, minimum and maximum results, and reporting unit. When the analyte is not detected, the mean and minimum and maximum results are the ssEQLs for the method blanks.

Table 3.23 Analytes Detected in Method Blanks by GE

Analyte	Frequency Detected	Mean Result	Std. Dev.	Min./Max. Result	Unit
Solids					
Metals (EPA6010B, except as noted)					
Antimony	0/2	500	0	500/500	µg/kg
Arsenic	0/2	250	0	250/250	µg/kg
Barium	0/2	250	0	250/250	µg/kg
Cadmium	0/2	250	0	250/250	µg/kg
Chromium	0/2	250	0	250/250	µg/kg
Copper	0/2	250	0	250/250	µg/kg
Lead	0/2	250	0	250/250	µg/kg
Manganese	0/2	500	0	500/500	µg/kg
Mercury (EPA7471A)	0/3	33.3	0	33.3/33.3	µg/kg
Nickel	1/2	212.5	53.033	175/250	µg/kg
Selenium	0/2	250	0	250/250	µg/kg
Silver	0/2	250	0	250/250	µg/kg
Zinc	1/2	230	28.2843	210/250	µg/kg
Volatile Organic Compounds					
Acetone	0/4	25	0	25/25	µg/kg
Benzene	0/4	1	0	1/1	µg/kg
Bromodichloromethane	0/4	1	0	1/1	µg/kg
Bromoform	0/4	1	0	1/1	µg/kg
Bromomethane (Methyl bromide)	0/4	1	0	1/1	µg/kg
Carbon disulfide	0/4	5	0	5/5	µg/kg
Carbon tetrachloride	0/4	1	0	1/1	µg/kg
Chlorobenzene	0/4	1	0	1/1	µg/kg
Chloroethane	0/4	1	0	1/1	µg/kg
Chloroethene (Vinyl chloride)	0/4	1	0	1/1	µg/kg
Chloroform	0/4	1	0	1/1	µg/kg
Chloromethane (Methyl chloride)	0/4	1	0	1/1	µg/kg
Dibromochloromethane	0/4	1	0	1/1	µg/kg
1,1-Dichloroethane	0/4	1	0	1/1	µg/kg
1,2-Dichloroethane	0/4	1	0	1/1	µg/kg
1,1-Dichloroethylene	0/4	1	0	1/1	µg/kg
1,2-Dichloroethylene	0/4	10	0	10/10	µg/kg
Dichloromethane (Methylene chloride)	0/4	5	0	5/5	µg/kg
1,2-Dichloropropane	0/4	1	0	1/1	µg/kg
cis-1,3-Dichloropropene	0/4	1	0	1/1	µg/kg

Table 3.23 Analytes Detected in Method Blanks by GE (cont.)

Analyte	Frequency Detected	Mean Result	Std. Dev.	Min./Max. Result	Unit
trans-1,3-Dichloropropene	0/4	1	0	1/1	µg/kg
Ethylbenzene	0/4	1	0	1/1	µg/kg
2-Hexanone	0/4	5	0	5/5	µg/kg
Methyl ethyl ketone	0/4	5	0	5/5	µg/kg
Methyl isobutyl ketone	0/4	5	0	5/5	µg/kg
Styrene	0/4	1	0	1/1	µg/kg
1,1,2,2-Tetrachloroethane	0/4	1	0	1/1	µg/kg
Tetrachloroethylene	0/4	1	0	1/1	µg/kg
Toluene	0/4	1	0	1/1	µg/kg
1,1,1-Trichloroethane	0/4	1	0	1/1	µg/kg
1,1,2-Trichloroethane	0/4	1	0	1/1	µg/kg
Trichloroethylene	0/4	1	0	1/1	µg/kg
Vinyl acetate	0/4	15	0	15/15	µg/kg
Xylenes	0/4	5	0	5/5	µg/kg
Water					
Volatile Organic Compounds					
Acetone	0/2	5	0	5/5	µg/L
Benzene	0/2	1	0	1/1	µg/L
Bromodichloromethane	0/2	1	0	1/1	µg/L
Bromoform	0/2	1	0	1/1	µg/L
Bromomethane (Methyl bromide)	0/2	1	0	1/1	µg/L
Carbon disulfide	0/2	5	0	5/5	µg/L
Carbon tetrachloride	0/2	1	0	1/1	µg/L
Chlorobenzene	0/2	1	0	1/1	µg/L
Chloroethane	0/2	1	0	1/1	µg/L
Chloroethene (Vinyl chloride)	0/2	1	0	1/1	µg/L
Chloroform	0/2	1	0	1/1	µg/L
Chloromethane (Methyl chloride)	0/2	1	0	1/1	µg/L
Dibromochloromethane	0/2	1	0	1/1	µg/L
1,1-Dichloroethane	0/2	1	0	1/1	µg/L
1,2-Dichloroethane	0/2	1	0	1/1	µg/L
cis-1,2-Dichloroethylene	0/2	1	0	1/1	µg/L
trans-1,2-Dichloroethylene	0/2	1	0	1/1	µg/L
1,1-Dichloroethylene	0/2	1	0	1/1	µg/L
Dichloromethane (Methylene chloride)	1/2	3.905	1.54856	2.81/5	µg/L
1,2-Dichloropropane	0/2	1	0	1/1	µg/L
cis-1,3-Dichloropropene	0/2	1	0	1/1	µg/L
trans-1,3-Dichloropropene	0/2	1	0	1/1	µg/L
Ethylbenzene	0/2	1	0	1/1	µg/L

Table 3.23 Analytes Detected in Method Blanks by GE (cont.)

Analyte	Frequency Detected	Mean Result	Std. Dev.	Min./Max. Result	Unit
2-Hexanone	0/2	5	0	5/5	µg/L
Methyl ethyl ketone	0/2	10	0	10/10	µg/L
Methyl isobutyl ketone	0/2	5	0	5/5	µg/L
Styrene	0/2	1	0	1/1	µg/L
1,1,2,2-Tetrachloroethane	0/2	1	0	1/1	µg/L
Tetrachloroethylene	0/2	1	0	1/1	µg/L
Toluene	0/2	1	0	1/1	µg/L
1,1,1-Trichloroethane	0/2	1	0	1/1	µg/L
1,1,2-Trichloroethane	0/2	1	0	1/1	µg/L
Trichloroethylene	0/2	1	0	1/1	µg/L
Xylenes	0/2	2	0	2/2	µg/L

Table 3.24 Analytes Detected in Method Blanks by EP

Analyte	Frequency Detected	Mean Result	Std. Dev.	Min./Max. Result	Unit
Solids					
Radionuclides					
EPA905					
Strontium-89/90	0/2	-0.23935	0.220122	-0.395/-0.0837	pCi/g
EPIA-001B					
Gross alpha	0/2	-0.0685	0.184555	-0.199/0.062	pCi/g
Nonvolatile beta	0/2	0.339	0.14425	0.237/0.441	pCi/g
EPIA-002B					
Tritium	0/2	-0.073	0.103238	-0.146/0	pCi/g
EPIA-011B					
Uranium-233/234	0/2	0.00297	0.0018809	0.00164/0.0043	pCi/g
Uranium-235	0/2	0.000776	0.00153301	-0.000308/0.00186	pCi/g
Uranium-238	0/2	0.00345	0.000113137	0.00337/0.00353	pCi/g
EPIA-012B					
Plutonium-238	0/2	0.000343	0.00155139	-0.000754/0.00144	pCi/g
Plutonium-239/240	0/2	0.000422	0.00108612	-0.000346/0.00119	pCi/g
EPIA-013B					
Actinium-228	0/2	0.01535	0.00205061	0.0139/0.0168	pCi/g
Antimony-124	0/2	0.01482	0.0136896	0.00514/0.0245	pCi/g
Antimony-125	1/2	0.03664	0.059199	-0.00522/0.0785	pCi/g

Table 3.24 Analytes Detected in Method Blanks by EP (cont.)

Analyte	Frequency Detected	Mean Result	Std. Dev.	Min./Max. Result	Unit
Barium-133	0/2	-0.007355	0.000869741	-0.00797/-0.00674	pCi/g
Cerium-144	0/2	-0.01475	0.0542351	-0.0531/0.0236	pCi/g
Cesium-134	0/2	0.00165	0.0239709	-0.0153/0.0186	pCi/g
Cesium-137	0/2	0.0193	0.00707107	0.0143/0.0243	pCi/g
Cobalt-57	0/2	0.0029305	0.00542987	-0.000909/0.00677	pCi/g
Cobalt-58	0/2	-8.5e-05	0.0115471	-0.00825/0.00808	pCi/g
Cobalt-60	0/2	0.00744	0.00125865	0.00655/0.00833	pCi/g
Europium-152	0/2	0.0032	0.0370524	-0.023/0.0294	pCi/g
Europium-154	0/2	0.0571	0.0110309	0.0493/0.0649	pCi/g
Europium-155	0/2	0.0263	0.00692965	0.0214/0.0312	pCi/g
Lead-212	0/2	0.014085	0.0182646	0.00117/0.027	pCi/g
Manganese-54	0/2	-0.001704	0.00220052	-0.00326/-0.000148	pCi/g
Neptunium-239	0/2	-0.0252	0.0118794	-0.0336/-0.0168	pCi/g
Potassium-40	0/2	0.0622	0.0333754	0.0386/0.0858	pCi/g
Promethium-144	0/2	0.002205	0.00709228	-0.00281/0.00722	pCi/g
Promethium-146	0/2	0.00534	0.00598212	0.00111/0.00957	pCi/g
Ruthenium-106	0/2	0.011295	0.0227759	-0.00481/0.0274	pCi/g
Sodium-22	0/2	0.02055	0.00388909	0.0178/0.0233	pCi/g
Tin-113	0/2	-0.003625	0.0105712	-0.0111/0.00385	pCi/g
Yttrium-88	0/2	0.0121	0.0127279	0.0031/0.0211	pCi/g
Zinc-65	0/2	0.00485	0.036416	-0.0209/0.0306	pCi/g
Zirconium-95	0/2	-0.011235	0.00178898	-0.0125/-0.00997	pCi/g

Field Blanks

Field blanks are used to identify possible sources of contamination from the processing and shipping of samples. Field blanks consist of DI water or dry quartz sand sealed in sample bottles prior to sampling, opened in the field during sampling, resealed, and shipped to the laboratory with the samples. Positive results from field blanks can result from contami-nated sample bottles, contaminated DI water or quartz sand, vapors in the air during sampling, contamination during shipping or analysis, or analytical bias. The results from all samples in the sample delivery group are evaluated to determine the cause of the contamination and the corrective action to be taken.

This project did not use field blanks.

Trip Blanks

Trip blanks are used to detect contamination by volatile substances during shipping, primarily due to the breaking of the seal on the vial caused by depressurization during air transport. Trip blanks are analyzed for VOAs only. Trip blanks are prepared by the EPD/EMS laboratory for groundwater studies and by the analytical laboratory for other studies. If prepared by the analytical laboratory, trip blanks are shipped to EPD/EMS with the sample containers. The blanks are prepared by adding preservative to a 40-mL vial, filling it completely with DI water (no air bubbles), and sealing the top with a Teflon-lined septum cap. If

a trip blank is found to be contaminated, the results from all samples shipped in the same cooler are evaluated to determine the extent of the contamination and the corrective action to be taken.

The following tables list the statistical information for the trip blanks. The frequency detected is the number of trip blanks analyzed for each analyte that had detectable concentrations compared to the total number analyzed. The other columns list the mean result, standard deviation, minimum and maximum results, and reporting unit. When the analyte is not detected, the mean and minimum and maximum results are the ssEQLs for the trip blanks.

Table 3.25 Analytes Detected in Trip Blanks by GE

Analyte	Frequency Detected	Mean Result	Std. Dev.	Min./Max. Result	Unit
Volatile Organic Compounds					
Acetone	0/3	5	0	5/5	µg/L
Benzene	0/3	1	0	1/1	µg/L
Bromodichloromethane	0/3	1	0	1/1	µg/L
Bromoform	0/3	1	0	1/1	µg/L
Bromomethane (Methyl bromide)	0/3	1	0	1/1	µg/L
Carbon disulfide	0/3	5	0	5/5	µg/L
Carbon tetrachloride	0/3	1	0	1/1	µg/L
Chlorobenzene	0/3	1	0	1/1	µg/L
Chloroethane	0/3	1	0	1/1	µg/L
Chloroethene (Vinyl chloride)	0/3	1	0	1/1	µg/L
Chloroform	0/3	1	0	1/1	µg/L
Chloromethane (Methyl chloride)	0/3	1	0	1/1	µg/L
Dibromochloromethane	0/3	1	0	1/1	µg/L
1,1-Dichloroethane	0/3	1	0	1/1	µg/L
1,2-Dichloroethane	0/3	1	0	1/1	µg/L
cis-1,2-Dichloroethylene	0/3	1	0	1/1	µg/L
trans-1,2-Dichloroethylene	0/3	1	0	1/1	µg/L
1,1-Dichloroethylene	0/3	1	0	1/1	µg/L
Dichloromethane (Methylene chloride)	0/3	3.84667	0.404516	3.39/4.16	µg/L
1,2-Dichloropropane	0/3	1	0	1/1	µg/L
cis-1,3-Dichloropropene	0/3	1	0	1/1	µg/L
trans-1,3-Dichloropropene	0/3	1	0	1/1	µg/L

Table 3.25 Analytes Detected in Trip Blanks by GE (cont.)

Analyte	Frequency Detected	Mean Result	Std. Dev.	Min./Max. Result	Unit
Ethylbenzene	0/3	1	0	1/1	µg/L
2-Hexanone	0/3	5	0	5/5	µg/L
Methyl ethyl ketone	0/3	10	0	10/10	µg/L

Table 3.25 Analytes Detected in Trip Blanks by GE (cont.)

Analyte	Frequency Detected	Mean Result	Std. Dev.	Min./Max. Result	Unit
Methyl isobutyl ketone	0/3	5	0	5/5	µg/L
Styrene	0/3	1	0	1/1	µg/L
1,1,2,2-Tetrachloroethane	0/3	1	0	1/1	µg/L
Tetrachloroethylene	0/3	1	0	1/1	µg/L
Toluene	0/3	1	0	1/1	µg/L
1,1,1-Trichloroethane	0/3	1	0	1/1	µg/L
1,1,2-Trichloroethane	0/3	1	0	1/1	µg/L
Trichloroethylene	0/3	1	0	1/1	µg/L
Xylenes	0/3	2	0	2/2	µg/L

Rinsates

Rinsates are used to determine if sampling equipment that has been cleaned in the field is contaminated. Prior to sampling, DI water is poured over or pumped through portions of the sampling equipment that come in contact with the sample. If the rinsate is contaminated, the field cleaning procedure must be evaluated to determine the cause of the contamination. Results for all samples collected with equipment cleaned in the field must be evaluated to determine if the contamination is isolated or generalized.

This project did not use rinsates.

3.5.4 Comparability

The comparability of the data from the laboratories is based on results from split samples. No split samples were planned for this project.

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4.0 References

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Appendix A: Analytical Methods and Method Detection Limits

In the following tables of analytical methods and detection limits, the MDL column reports the matrix-specific method detection limit (MDL). The MDL takes into account the reagents, sample matrix, and preparation steps of a specific analytical method and is defined as the minimum concentration that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.

Table A.1 Analytical Methods and Detection Limits for Liquid Matrices by GE

Analyte	Method	MDL	Units
Volatile Organic Compounds			
Acetone	EPA8260B	3.7	µg/L
Benzene	EPA8260B	0.3	µg/L
Bromodichloromethane	EPA8260B	0.4	µg/L
Bromoform	EPA8260B	0.4	µg/L
Bromomethane (Methyl bromide)	EPA8260B	0.3	µg/L
Carbon disulfide	EPA8260B	1.8	µg/L
Carbon tetrachloride	EPA8260B	0.2	µg/L
Chlorobenzene	EPA8260B	0.3	µg/L
Chloroethane	EPA8260B	0.3	µg/L
Chloroethene (Vinyl chloride)	EPA8260B	0.4	µg/L
Chloroform	EPA8260B	0.7	µg/L
Chloromethane (Methyl chloride)	EPA8260B	0.2	µg/L
Dibromochloromethane	EPA8260B	0.3	µg/L
1,1-Dichloroethane	EPA8260B	0.4	µg/L
1,2-Dichloroethane	EPA8260B	0.2	µg/L
cis-1,2-Dichloroethylene	EPA8260B	0.7	µg/L
1,1-Dichloroethylene	EPA8260B	0.7	µg/L
trans-1,2-Dichloroethylene	EPA8260B	0.7	µg/L
Dichloromethane (Methylene chloride)	EPA8260B	1.2	µg/L
1,2-Dichloropropane	EPA8260B	0.2	µg/L
cis-1,3-Dichloropropene	EPA8260B	0.3	µg/L
trans-1,3-Dichloropropene	EPA8260B	0.3	µg/L
Ethylbenzene	EPA8260B	0.3	µg/L
2-Hexanone	EPA8260B	3.2	µg/L
Methyl ethyl ketone	EPA8260B	5.9	µg/L
Methyl isobutyl ketone	EPA8260B	1.6	µg/L
Styrene	EPA8260B	0.2	µg/L
1,1,2,2-Tetrachloroethane	EPA8260B	0.5	µg/L
Tetrachloroethylene	EPA8260B	0.7	µg/L

Table A.1 Analytical Methods and Detection Limits for Liquid Matrices by GE (cont.)

Analyte	Method	MDL	Units
Toluene	EPA8260B	0.5	µg/L
1,1,1-Trichloroethane	EPA8260B	0.2	µg/L
1,1,2-Trichloroethane	EPA8260B	0.4	µg/L
Trichloroethylene	EPA8260B	0.6	µg/L
Xylenes	EPA8260B	1.1	µg/L

Table A.2 Analytical Methods and Detection Limits for Solid Matrices by GE

Analyte	Method	MDL	Units
Metals (total recoverable)			
Antimony	EPA6010B	3.82191	µg/kg
Arsenic	EPA6010B	4.56228	µg/kg
Barium	EPA6010B	0.5427	µg/kg
Cadmium	EPA6010B	0.3819	µg/kg
Calcium	EPA6010B	69.723486	µg/kg
Chromium	EPA6010B	0.7638	µg/kg
Copper	EPA6010B	1.3467	µg/kg
Lead	EPA6010B	1.5879	µg/kg
Magnesium	EPA6010B	5.08254	µg/kg
Manganese	EPA6010B	7.1355	µg/kg
Mercury	EPA7471A	0.0135	µg/kg
Nickel	EPA6010B	0.6432	µg/kg
Selenium	EPA6010B	2.7135	µg/kg
Silver	EPA6010B	0.6231	µg/kg
Zinc	EPA6010B	3.7185	µg/kg
Volatile Organic Compounds			
Acetone	EPA8260B	10.3	µg/kg
Benzene	EPA8260B	0.5	µg/kg
Bromodichloromethane	EPA8260B	0.1	µg/kg
Bromoform	EPA8260B	0.3	µg/kg
Bromomethane (Methyl bromide)	EPA8260B	0.3	µg/kg
Carbon disulfide	EPA8260B	0.3	µg/kg
Carbon tetrachloride	EPA8260B	0.5	µg/kg
Chlorobenzene	EPA8260B	0.3	µg/kg
Chloroethane	EPA8260B	0.3	µg/kg
Chloroethene (Vinyl chloride)	EPA8260B	0.4	µg/kg
Chloroform	EPA8260B	0.1	µg/kg
Chloromethane (Methyl chloride)	EPA8260B	0.2	µg/kg
Dibromochloromethane	EPA8260B	0.2	µg/kg

Table A.2 Analytical Methods and Detection Limits for Solid Matrices by GE (cont.)

Analyte	Method	MDL	Units
1,1-Dichloroethane	EPA8260B	0.1	µg/kg
1,2-Dichloroethane	EPA8260B	0.2	µg/kg
1,1-Dichloroethylene	EPA8260B	0.3	µg/kg
1,2-Dichloroethylene	EPA8260B	0.25	µg/kg
Dichloromethane (Methylene chloride)	EPA8260B	1.4	µg/kg
1,2-Dichloropropane	EPA8260B	0.2	µg/kg
cis-1,3-Dichloropropene	EPA8260B	0.2	µg/kg
trans-1,3-Dichloropropene	EPA8260B	0.3	µg/kg
Ethylbenzene	EPA8260B	0.3	µg/kg
2-Hexanone	EPA8260B	2.8	µg/kg
Methyl ethyl ketone	EPA8260B	3.2	µg/kg
Methyl isobutyl ketone	EPA8260B	3.1	µg/kg
Styrene	EPA8260B	0.3	µg/kg
1,1,2,2-Tetrachloroethane	EPA8260B	0.6	µg/kg
Tetrachloroethylene	EPA8260B	0.4	µg/kg
Toluene	EPA8260B	0.9	µg/kg
1,1,1-Trichloroethane	EPA8260B	0.1	µg/kg
1,1,2-Trichloroethane	EPA8260B	0.3	µg/kg
Trichloroethylene	EPA8260B	0.3	µg/kg
Vinyl acetate	EPA8260B	2.1	µg/kg
Xylenes	EPA8260B	1	µg/kg

In the following table of analytical methods and minimum detectable activities, the MDA column reports the mean matrix-specific minimum detectable activity. The MDA takes into account the reagents, sample matrix, and preparation steps of a specific analytical method and is defined as the smallest quantity of a radionuclide that can be detected in a sample with a 95% confidence level.

Table A.3 Analytical Methods and Minimum Detectable Activities for Solid Matrices by EP

Analyte	Method	MDA	Units
Radionuclides			
Actinium-228	EPIA-013B	0.232567	pCi/g
Antimony-124	EPIA-013B	0.0730367	pCi/g
Antimony-125	EPIA-013B	0.127987	pCi/g
Barium-133	EPIA-013B	0.05736	pCi/g
Cerium-144	EPIA-013B	0.2415	pCi/g
Cesium-134	EPIA-013B	0.0501567	pCi/g

Table A.3 Analytical Methods and Minimum Detectable Activities for Solid Matrices by EP (cont.)

Analyte	Method	MDA	Units
Cesium-137	EPIA-013B	0.112288	pCi/g
Cobalt-57	EPIA-013B	0.0303867	pCi/g
Cobalt-58	EPIA-013B	0.0667867	pCi/g
Cobalt-60	EPIA-013B	0.0607933	pCi/g
Europium-152	EPIA-013B	0.133373	pCi/g
Europium-154	EPIA-013B	0.164903	pCi/g
Europium-155	EPIA-013B	0.114703	pCi/g
Gross alpha	EPIA-001B	1.26465	pCi/g
Lead-212	EPIA-013B	0.08758	pCi/g
Manganese-54	EPIA-013B	0.0554	pCi/g
Neptunium-239	EPIA-013B	0.211233	pCi/g
Nonvolatile beta	EPIA-001B	1.54818	pCi/g
Plutonium-238	EPIA-012B	0.0193297	pCi/g
Plutonium-239/240	EPIA-012B	0.0177774	pCi/g
Potassium-40	EPIA-013B	0.579533	pCi/g
Promethium-144	EPIA-013B	0.05522	pCi/g
Promethium-146	EPIA-013B	0.0596267	pCi/g
Ruthenium-106	EPIA-013B	0.483	pCi/g
Sodium-22	EPIA-013B	0.0583467	pCi/g
Strontium-89/90	EPA905	0.547006	pCi/g
Tin-113	EPIA-013B	0.0672833	pCi/g
Tritium	EPIA-002B	0.164682	pCi/g
Uranium-233/234	EPIA-011B	0.0250363	pCi/g
Uranium-235	EPIA-011B	0.0203993	pCi/g
Uranium-238	EPIA-011B	0.0169079	pCi/g
Yttrium-88	EPIA-013B	0.0709367	pCi/g
Zinc-65	EPIA-013B	0.124837	pCi/g
Zirconium-95	EPIA-013B	0.123257	pCi/g

Appendix B: Laboratory Performance Evaluation Results

This appendix contains recent performance evaluation results for the laboratories that report data for soils and groundwater samples. Not all laboratories report data for each project.

B.1 EPA Performance Evaluation Study Results

EPA conducts the water pollution (WP) and water supply (WS) performance evaluation studies biannually to certify laboratories for specific analyses. EPA's Environmental Monitoring Systems Laboratory (EMSL) of Cincinnati, OH, distributes water samples spiked with known concentrations of constituents found in polluted waters and potable water and submits them to laboratories seeking certification to analyze wastewater and potable water. EMSL evaluates the results, using limits statistically based on the performance of approximately 100 top-rated laboratories that analyze each constituent by the same procedure as the laboratory being evaluated.

Recra reported results for WP039 (May 1998); EMAX, GE, and Recra reported results for WP040 (November 1998).

The results for WP039 are listed in table B.1. The results for Recra were all acceptable. However, the results for chemical oxygen demand and methylene chloride were close to the acceptance limits; Recra was instructed to check for error.

The results for WP040 are listed in table B.2. For EMAX, results were outside acceptance limits for antimony, fluoride, and total phenolics. Results for lead, vanadium, and chlorobenzene were close to the acceptance limits; EMAX was instructed to check for error. Results for GE were outside acceptance limits for nitrogen (Kjeldahl), chemical oxygen demand, aroclor 1016/1242, and for all volatile halocarbons reported (1,2-dichloroethane, chloroform, 1,1,1-trichloroethane, trichloroethene, carbon tetrachloride, tetrachloroethene, bromodichloromethane, dibromochloromethane, bromoform, methylene chloride, and chlorobenzene). The results for Recra were outside acceptance limits for chemical oxygen demand, total organic carbon and PCB 1016/1242 in oil. The results for PCB 1254 in oil were close to the acceptance limits; Recra was instructed to check for error.

Recra reported results for WS040 (March 1998), and EMAX and GE reported results for WS041 (September 1998).

The results for WS040 are listed in table B.3. The results for Recra were all acceptable.

The results for WS041 are listed in table B.4. The results for EMAX were outside acceptance limits for nitrate as nitrogen, dichloromethane, 1,3-dichloropropene, turbidity, and total organic carbon. For GE, results were outside acceptance limits for orthophosphate as P, 2,4-D, trans-1,2-dichloroethylene, 1,2,4-trichlorobenzene, sulfate, and total organic carbon.

Throughout section B.1, D.L. means detection limit and NR means that a result was not reported by the laboratory.

The following conventions are used in the tables:

- ***Bold Italic*** indicates that the laboratory was asked to check for error.
- **Bold** shows that the reported values were outside acceptance limits.

Table B.1 WP039 Results for Recra

Analyte	Recra Result	True Value	Acceptance Limits
Trace Metals (µg/L)			
Aluminum	525	489	420–562
Antimony	265	277	198–325
Arsenic	880	864	739–1010
Beryllium	193	191	170–214
Cadmium	34.9	33.9	28.7–39.1
Chromium	215	216	189–244
Cobalt	81.7	82.3	71.5–92.4
Copper	76.3	74.3	68.2–84.3
Iron	193	191	165–218
Lead	1939	1900	1690–2110
Manganese	544	530	485–587
Mercury	0.524	0.563	0.307–0.782
Molybdenum	643	589	521–662
Nickel	736	702	674–780
Selenium	798	760	625–862
Silver	137	130	118–150
Strontium	6.67	6.34	5.37–7.59
Thallium	148	141	121–167
Titanium	89.5	88.2	77.3–98.2
Vanadium	1417	1420	1320–1560
Zinc	139	131	113–150
Minerals (mg/L, except as noted)			
Alkalinity (as $CaCO_3$), total	39.1	36.8	32.3–44.7
Calcium	2.60	2.51	1.98–3.23
Chloride	11.1	10.8	8.30–12.7
Fluoride	3.98	3.80	3.37–4.24
Hardness (as $CaCO_3$), total	14.9	14.8	11.7–18.8
Magnesium	2.18	2.08	1.84–2.37
Potassium	30.3	30.0	24.4–35.3
Sodium	32.5	31.8	28.0–36.2
Specific conductance (µS/cm)	286	296	271–313
Sulfate	60.6	58.0	49.0–67.3
Total dissolved solids at 180° C	145	156	127–200
Nutrients (mg/L)			
Ammonia nitrogen	0.904	0.840	0.594–1.13
Nitrate nitrogen	1.06	1.10	0.868–1.31

Table B.1 WP039 Results for Recra (cont.)

Analyte	Recra Result	True Value	Acceptance Limits
Nitrogen by Kjeldahl method	0.453	0.360	D.L.–0.907

Table B.1 WP039 Results for Recra (cont.)

Analyte	Recra Result	True Value	Acceptance Limits
Orthophosphate	0.250	0.250	0.203–0.296
Total phosphorus	0.207	0.170	0.150–0.252
Demands (mg/L)			
5-day Biochemical oxygen demand	103	119	63.5–174
Carbonaceous BOD	87.0	100	41.2–159
Chemical oxygen demand	***146***	192	139–232
Total organic carbon	75.4	76.0	63.6–86.4
PCBs (µg/L)			
PCB 1016/1242	5.70	6.40	2.55–8.54
PCB 1254	2.75	3.29	1.45–4.34
PCBs in Oil (mg/kg)			
PCB 1016/1242	30.6	41.7	6.01–57.7
PCB 1260	13.9	16.6	2.93–23.7
Pesticides (µg/L)			
Aldrin	1.38	1.48	0.354–2.12
Chlordane	11.6	12.7	5.86–18.9
p,p´-DDD	2.23	2.35	1.19–2.94
p,p´-DDE	1.55	1.47	0.791–2.56
p,p´-DDT	2.93	3.25	1.07–3.76
Dieldrin	1.72	1.72	0.949–2.14
Heptachlor	0.750	0.764	0.236–1.03
Heptachlor epoxide	0.480	0.586	0.317–0.693
Volatile Halocarbons (µg/L)			
Bromodichloromethane	18.8	21.6	15.7–25.8
Bromoform	32.2	36.8	21.7–47.5
Carbon tetrachloride	13.8	15.2	8.37–20.9
Chlorobenzene	14.3	16.6	11.8–20.6
Chloroform	23.4	27.2	18.5–33.3
Dibromochloromethane	18.1	20.4	13.7–25.0
1,2-Dichloroethane	19.7	22.8	15.8–28.9
Methylene chloride	***23.7***	33.6	21.8–41.8
Tetrachloroethylene	14.2	17.5	11.1–22.3
1,1,1-Trichloroethane	15.5	17.4	11.3–23.3
Trichloroethylene	10.5	12.7	7.88–15.3
Volatile Aromatics (µg/L)			
Benzene	38.3	46.4	35.0–57.9
1,2-Dichlorobenzene	11.0	13.8	9.42–16.2
1,3-Dichlorobenzene	18.1	22.4	15.7–26.4
1,4-Dichlorobenzene	16.0	18.8	13.6–23.9
Ethylbenzene	22.8	27.3	19.2–34.5

Table B.1 WP039 Results for Recra (cont.)

Analyte	Recra Result	True Value	Acceptance Limits
Toluene	51.7	62.6	46.5–76.5
Miscellaneous Parameters (mg/L, except as noted)			
Cyanide, total	0.705	0.639	0.447–0.836
Nonfilterable residue	76.3	96.0	36.8–109
Oil and grease (Freon extraction)	41.0	44.0	31.0–49.2
pH (pH units)	5.01	5.03	4.93–5.14
Phenolics, total	0.942	0.799	0.443–1.15
Residual chlorine, total	0.350	0.280	0.229–0.439

Table B.2 WP040 Results for EMAX, GE, and Recra

Analyte	EMAX Result	GE Result	Recra Result	True Value	Acceptance Limits
Trace Metals (µg/L)					
Aluminum	2970	3160	3192	3105	2740–3440
Antimony	**364**	512	485	499	381–590
Arsenic	153	174	160	160	128–190
Beryllium	37.2	36.8	37.4	36.9	33.1–42.2
Cadmium	159	174	172	170	147–193
Chromium	638	667	661	650	579–726
Cobalt	491	521	513	503	449–561
Copper	712	714	709	700	654–781
Iron	815	855	879	834	744–936
Lead	***64.3***	68.1	75	70.6	61.7–83.3
Manganese	229	242	246	240	216–259
Mercury	0.932	1.2	1.06	1.15	0.813–1.47
Molybdenum	16	17.9	19	18.2	14–22
Nickel	2510	2680	2627	2501	2340–2860
Selenium	231	264	246	260	189–297
Silver	801	834	**708**	851	736–930
Strontium	296	306	312	301	263–342
Thallium	838	896	871	841	747–970
Titanium	160	157	165	160	142–177
Vanadium	***3930***	4200	4405	4202	3880–4640
Zinc	633	646	644	631	563–709
Minerals (mg/L, except as noted)					
Alkalinity (as $CaCO_3$), total	43.5	40	41.1	42.4	35.5–48.1
Calcium	28.3	30.1	30.2	29	25.1–33.2

Table B.2 WP040 Results for EMAX, GE, and Recra (cont.)

Analyte	EMAX Result	GE Result	Recra Result	True Value	Acceptance Limits
Chloride	79.9	74.7	75.4	74.9	68.1–83.2
Fluoride	**4.65**	0.784	0.912	0.860	0.738–1.05
Hardness (as $CaCO_3$), total	102	108	106	105	93.3–119
Magnesium	7.63	8.03	8.36	8	7.06–8.86
Potassium	25.8	26.7	27	25	21.4–28.8
Sodium	38.9	41.8	39.4	39	35.7–44.1
Specific conductance (µS/cm)	517	508	502	525	471–544
Sulfate	66.6	66.9	71.7	69	58.3–78.4
Total dissolved solids at 180° C	297	283	274	274	230–337
Nutrients (mg/L)					
Ammonia nitrogen	4.86	4.65	4.83	4.80	3.89–5.84
Nitrate nitrogen	12.3	11.8	12.3	12	10.1–13.9
Nitrogen by Kjeldahl method	NR	**3**	5.33	5.4	4.02–6.79
Orthophosphate	0.606	0.614	0.579	0.580	0.496–0.669
Total phosphorus	NR	4.12	3.85	4	3.3–4.68
Demands (mg/L)					
Chemical oxygen demand	61.2	**21.9**	**28.4**	60.7	42.5–73.5
Total organic carbon	24.9	25.6	**12**	24	20.7–28.1
5-day Biological oxygen demand	NR	44	NR	37.6	17.7–57.2
Carbonaceous biological oxygen demand	NR	43	NR	31.9	14.5–53.4
PCBs (µg/L)					
PCB 1016/1242	NR	**1.9**	NR	NR	Not present
PCB 1232	4.89	NR	4.48	4.73	1.1–7.18
PCB 1260	3.42	3.1	3.04	3.24	1.29–4.6
PCBs in Oil (mg/kg)					
PCB 1016/1242	33.3	31.2	**3.76**	38.7	3.96–57.2
PCB 1254	18.5	19.8	***3.28***	24	D.L.–40.2
Pesticides (µg/L)					
Aldrin	0.952	0.77	0.87	0.940	0.164–1.45
Chlordane	5.37	4.2	4.12	4.81	2.08–6.8
p,p´-DDD	4.90	5.84	5.06	5.25	3.21–7.12
p,p´-DDE	4.59	3.52	3.79	3.64	1.74–5.1
p,p´-DDT	6.85	7.76	7.85	8.42	2.61–12.7
Dieldrin	2.84	2.72	2.75	2.78	1.55–3.96
Heptachlor	2.29	2.36	2.46	2.49	0.837–3.41
Heptachlor epoxide	1.85	1.68	1.76	1.98	1.13–2.42
Volatile Halocarbons (µg/L)					
Bromodichloromethane	13.8	**22.9**	17	16.5	10.9–19.8

Table B.2 WP040 Results for EMAX, GE, and Recra (cont.)

Analyte	EMAX Result	GE Result	Recra Result	True Value	Acceptance Limits
Bromoform	12	**26.2**	15.1	14.7	8.12–18.7
Carbon tetrachloride	25	**33.6**	27.5	26.3	16.3–32.9
Chlorobenzene	***28.8***	**40.7**	24.6	24.7	17.6–29.3
Chloroform	16	**24.7**	18.8	18.4	13.7–21.7
Dibromochloromethane	36.7	**53.6**	32.2	32.7	21.4–40.6
1,2-Dichloroethane	16	**19.2**	17.2	14.6	9.85–18.5
Methylene chloride	41	**75.3**	33.6	44.1	29.7–58.8
Tetrachloroethene	36	**51.4**	31.6	32.5	21.6–39.5
1,1,1-Trichloroethane	29	**43.6**	34.6	32.8	22.2–41.1
Trichloroethene	21.7	**30.9**	23.3	23.4	15.6–29.8
Volatile Aromatics (µg/L)					
Benzene	28.7	26.1	24.2	25.7	21.9–33.7
1,2-Dichlorobenzene	33	39.4	34.2	36.3	27.1–45.1
1,3-Dichlorobenzene	31	37.9	31.3	33.7	23.7–40.4
1,4-Dichlorobenzene	40.4	46.5	39.7	41.6	30.4–52.3
Ethylbenzene	41.1	40	38.6	42.6	29.9–54
Toluene	32.6	31.5	26.9	32.3	23.9–39.8
Miscellaneous Parameters (mg/L, except as noted)					
Cyanide, total	0.133	0.129	0.122	0.140	0.089–0.184
Nonfilterable residue	NR	50	34.9	64.0	12.4–80.7
Oil and grease (hexane extraction)	18.2	NR	NR	19.1	5.65–28.7
Oil and grease (Freon extraction)	NR	19.1	21.4	19.1	5.9–27.5
pH (pH units)	8.7	8.55	8.54	8.6	8.31–8.92
Phenolics, total	**0.866**	0.038	0.076	0.0668	0.0261–0.108
Residual chlorine, total	1.18	1.06	1.08	0.930	0.811–1.32

Table B.3 WS040 Results for Recra

Analyte	Recra Result	True Value	Acceptance Limits
Trace Metals, (µg/L)			
Antimony	15.1	13.0	9.1–16.9
Arsenic	108	102	89.3–113
Barium	2724	2700	2300–3110
Beryllium	6.62	6.60	5.61–7.59
Boron	1150	1150	1050–1290
Cadmium	6.17	6.31	5.05–7.57

Table B.3 WS040 Results for Recra (cont.)

Analyte	Recra Result	True Value	Acceptance Limits
Chromium	91.8	90.9	77.3–105
Copper	1675	1700	1530–1870
Lead	71.9	71.0	49.7–92.3
Manganese	32.4	32.0	27.7–35.2
Mercury	1.35	1.50	1.05–1.95
Molybdenum	34.8	35.0	29.6–40.1
Nickel	25.7	25.0	21.3–28.8
Selenium	67.5	74.0	59.2–88.8
Thallium	11.7	10.0	7.00–13.0
Zinc	1726	1700	1620–1850
Nitrate/Nitrite/Fluoride (mg/L)			
Fluoride	1.27	1.29	1.16–1.43
Nitrate as N	6.66	7.10	6.39–7.81
Nitrite as N	1.31	1.30	1.11–1.50
Orthophosphate as P	0.789	0.820	0.745–0.895
Insecticides (µg/L)			
Alachlor	19.4	17.7	9.74–25.7
Aldrin	1.81	1.87	0.605–2.45
Atrazine	23.3	24.7	13.6–35.8
Chlordane (total)	11.7	11.8	6.49–17.1
Dieldrin	3.12	2.87	1.86–3.71
Endrin	0.88	0.867	0.607–1.13
Heptachlor	2.32	2.33	1.28–3.38
Heptachlor epoxide	1.48	1.48	0.814–2.15
Hexachlorobenzene	3.11	2.90	1.43–3.82
Hexachlorocyclopentadiene	0.552	1.22	0.187–1.68
Lindane	1.80	1.77	0.974–2.57
Methoxychlor	49.2	42.8	23.5–62.1
Propachlor	3.34	3.18	1.9–4.29
Simazine	30.8	34.3	4.97–50.8
Toxaphene	17.1	16.5	8.08–23.9
Trifluralin	2.06	2.62	1.04–3.57
Herbicides (µg/L)			
2,4-D	43.4	45.0	22.5–67.5
Dalapon	128	132	D.L.–185
Dicamba	118	87.2	40.1–127
Dinoseb	11.6	12.7	D.L.–20.2
Pentachlorophenol	24.7	22.3	11.2–33.5
Picloram	40.9	44.0	D.L.–62.9
2,4,5-TP (Silvex)	18.3	18.1	9.05–27.2

Table B.3 WS040 Results for Recra (cont.)

Analyte	Recra Result	True Value	Acceptance Limits
Polynuclear Aromatic Hydrocarbons (µg/L)			
Benzo[*a*]pyrene	1.07	1.48	0.373–1.97
Adipate/Phthalates (µg/L)			
Di-(2-ethylhexyl) adipate	13.6	15.8	5.85–22.7
Di-(2-ethylhexyl) phthalate	25.1	32.4	10.3–42.0
Trihalomethanes (µg/L)			
Bromodichloromethane	19.2	19.8	15.8–23.8
Bromoform	14.5	12.7	10.2–15.2
Chlorodibromomethane	17.1	15.6	12.5–18.7
Chloroform	27.3	27.4	21.9–32.9
Total trihalomethane	78.1	75.5	60.4–90.6
Volatile Organic Compounds (µg/L)			
Benzene	16.6	16.7	13.4–20.0
Carbon tetrachloride	9.44	8.90	5.34–12.5
Chlorobenzene	21.2	22.9	18.3–27.5
2-Chlorotoluene	11.0	10.2	7.28–12.5
1,2-Dibromo-3-chloropropane	0.437	0.527	0.316–0.738
1,2-Dichlorobenzene	16.7	18.4	14.7–22.1
1,3-Dichlorobenzene	21.4	18.3	13.8–22.5
1,4-Dichlorobenzene	10.9	11.6	9.28–13.9
1,2-Dichloroethane	18.1	17.2	13.8–20.6
1,1-Dichloroethylene	20.2	18.3	14.6–22.0
cis-1,2-Dichloroethylene	18.1	18.4	14.7–22.1
trans-1,2-Dichloroethylene	24.6	26.8	21.4–32.2
Dichloromethane	7.11	6.20	3.72–8.68
1,2-Dichloropropane	19.0	19.0	15.2–22.8
cis-1,3-Dichloropropene	5.92	7.42	4.15–7.52
trans-1,3-Dichloropropene	6.97	8.60	4.49–8.92
Ethylbenzene	16.5	17.8	14.2–21.4
Ethylene dibromide	0.603	0.638	0.383–0.893
Hexachlorobutadiene	16.2	15.3	11.5–19.8
Styrene	18.6	18.9	15.1–22.7
1,1,1,2-Tetrachloroethane	13.3	13.3	9.87–15.2
Tetrachloroethylene	13.4	14.7	11.8–17.6
Toluene	13.0	14.6	11.7–17.5
1,2,4-Trichlorobenzene	11.6	12.3	9.84–14.8
1,1,1-Trichloroethane	7.39	7.20	4.32–10.1
1,1,2-Trichloroethane	15.6	17.2	13.8–20.6
Trichloroethylene	6.13	5.80	3.48–8.14
1,2,3-Trichloropropane	17.9	18.7	12.0–22.8

Table B.3 WS040 Results for Recra (cont.)

Analyte	Recra Result	True Value	Acceptance Limits
Vinyl chloride	32.3	27.2	16.3–38.1
Xylenes (total)	30.1	30.3	24.2–36.4
Inorganic Disinfection Byproducts (µg/L)			
Bromate	43.0	36.0	15.0–57.6
Bromide	363	379	310–452
Chlorate	114	110	85.5–134
Chlorite	482	420	259–660
Miscellaneous Analytes (mg/L except as noted)			
Residual free chlorine	0.27	0.240	0.0199–0.460
Turbidity (NTU)	8.49	7.80	7.00–9.67
Total filterable residue	215	232	147–380
Calcium hardness (mg $CaCO_3$/L)	92.2	95.0	88.0–104
pH (units)	9.15	9.13	8.93–9.33
Alkalinity (mg $CaCO_3$/L)	37.1	34.4	32.8–39.6
Sodium	16.0	15.8	14.4–17.8
Sulfate	222	225	202–247
Cyanide (total)	0.506	0.554	0.416–0.693
Total organic carbon	3.82	3.70	3.27–4.54

Table B.4 WS041 Results for EMAX and GE

Analyte	EMAX Result	GE Result	True Value	Acceptance Limits
Trace Metals (µg/L)				
Antimony	31.6	33.5	31.4	22–40.8
Arsenic	60.7	69.4	65.6	58.2–72.9
Beryllium	2.57	2.74	2.58	2.19–2.97
Boron	866	814	790	736–874
Cadmium	18	20.1	18.2	14.6–21.8
Chromium	53.1	56.8	55.5	47.2–63.8
Copper	697	700	702	632–772
Manganese	177	189	183	167–196
Mercury	5.71	5.28	5.82	4.07–7.57
Molybdenum	79.1	75	76.7	66.2–86.4
Nickel	352	372	352	299–405
Selenium	41.1	49.9	46.3	37–55.6
Thallium	3.27	3.49	3.5	2.45–4.55
Zinc	390	423	402	359–441

Table B.4 WS041 Results for EMAX and GE (cont.)

Analyte	EMAX Result	GE Result	True Value	Acceptance Limits
Fluoride/Nitrate/Nitrite (mg/L)				
Fluoride	6.2	5.87	6.2	5.58–6.82
Nitrate as N	**17.1**	14.9	15.0	13.5–16.5
Nitrite as N	1.87	1.64	1.7	1.45–1.96
Orthophosphate as P	1.22	**1.17**	1.3	1.19–1.39
Insecticides (µg/L)				
Aldrin	0.762	0.833	1.23	0.505–1.56
Chlordane, total	3.24	2.3	2.9	1.6–4.21
Dieldrin	0.959	0.79	0.920	0.622–1.14
Endrin	0.852	0.795	0.789	0.552–1.03
Heptachlor	0.521	0.567	0.83	0.457–1.2
Heptachlor epoxide	0.610	0.529	0.630	0.347–0.914
Hexachlorocyclopentadiene	0.635	NR	1.93	0.0861–2.58
Hexachlorobenzene	0.541	NR	1.03	0.426–1.23
Lindane	1.76	1.98	2.5	1.38–3.63
Methoxychlor	25.9	23.8	26.8	14.7–38.9
Propachlor	3.78	NR	5.02	3.14–6.8
Toxaphene	6.47	6.5	6.9	3.8–10
Trifluralin	2.04	NR	3.82	1.55–5.4
Herbicides (µg/L)				
Acifluorfen	50	NR	72.1	25.4–101
2,4-D	42	**18.2**	73.1	36.6–110
Dalapon	95.7	71.5	183	D.L.–258
Dinoseb	15.1	19.2	27.6	0.568–41.9
Dicamba	75.6	88	123	32.1–167
Pentachlorophenol	19.5	NR	34.6	17.3–51.9
Picloram	19.9	NR	62.1	D.L.–86.9
2,4,5-TP (Silvex)	19.4	17.6	24.1	12.1–36.2
Polynuclear Aromatic Hydrocarbons (µg/L)				
Benzo[*a*]pyrene	NR	2.23	2.37	0.502–2.87
Trihalomethanes (µg/L)				
Bromodichloromethane	13	10.5	12.3	9.84–14.8
Bromoform	19.5	19	16.6	13.3–19.9
Chlorodibromomethane	21.3	17.5	19.4	15.5–23.3
Chloroform	13.7	12.1	14.4	11.5–17.3
Trihalomethane, total	67.5	59.1	62.7	50.2–75.2
Volatile Organic Compounds (µg/L)				
Benzene	19.1	16.7	18.7	15–22.4
Carbon tetrachloride	14.4	12	14.2	11.4–17

Table B.4 WS041 Results for EMAX and GE (cont.)

Analyte	EMAX Result	GE Result	True Value	Acceptance Limits
Chlorobenzene	19.1	16.6	18.6	14.9–22.3
1,2-Dibromo-3-chloropropane	0.386	0.49	0.451	0.271–0.631
1,2-Dichlorobenzene	12.3	10.5	11.3	9.04–13.6
1,4-Dichlorobenzene	16	16.7	15.8	12.6–19
1,2-Dichloroethane	14.7	13.5	13.7	11–16.4
1,1-Dichloroethylene	6.17	5.18	5.25	3.15–7.35
cis-1,2-Dichloroethylene	22.2	21	25.3	20.2–30.4
trans-1,2-Dichloroethylene	18.6	**14**	18.5	14.8–22.2
Dichloromethane	**19.6**	14.1	15.9	12.7–19.1
1,2-Dichloropropane	15.6	14.5	15.4	12.3–18.5
2,2-Dichloropropane	NR	11.7	12/7	9.73–14.4
cis-1,3-Dichloropropene	17.2	12.9	15.2	12.1–17.4
trans-1,3-Dichloropropene	**16.2**	11.6	13.7	10–15.6
Ethylbenzene	15.5	13.8	14.7	11.8–17.6
Ethylene dibromide (EDB)	0.291	0.37	0.344	0.206–0.482
Hexachlorobutadiene	12.6	10.8	11.6	8.53–14.5
Styrene	13.7	12.2	12.4	9.92–14.9
1,1,1,2-Tetrachloroethane	15.9	13.8	15.2	12–17.5
Tetrachloroethylene	11.6	9.64	11.5	9.2–13.8
Toluene	19.2	17.4	18.7	15–22.4
1,2,3-Trichlorobenzene	20.3	13	18.4	12.7–21.5
1,2,4-Trichlorobenzene	15.1	**7.81**	14.2	11.4–17
1,1,1-Trichloroethane	12.2	10.9	12.6	10.1–15.1
1,1,2-Trichloroethane	14.2	13.4	13.3	10.6–16
Trichloroethylene	6.84	6.14	6.87	4.12–9.62
1,2,3-Trichloropropane	16.8	16.7	14.8	10.2–18
Vinyl chloride	26.4	27	22.3	13.4–31.2
Xylenes, total	31.8	29.8	30.8	24.6–37
Miscellaneous Analytes (mg/L, except as noted)				
Alkalinity as $CaCO_3$	55.6	54	50.6	48–56.7
Chlorine, residual free	2.02	1.83	1.9	1.55–2.32
Cyanide, total	0.267	0.310	0.326	0.245–0.408
Hardness, calcium as $CaCO_3$	246	260	248	229–266
pH (units)	9.01	9.18	9.13	8.88–9.28
Residue, total filterable	668	477	474	287–826
Sodium	23.5	24.5	23.3	21.6–26.3
Sulfate	47.1	**43.4**	49	44.1–54.2
Total organic carbon	**2.44**	**2.16**	1.6	1.21–2.05
Turbidity (NTU)	**2.21**	2.71	2.6	2.37–3.31

B.2 EMS Quality Control Standards Results

During first quarter 1999, EPD/EMS conducted quality assessments of the laboratories. Each laboratory received a set of certified environmental quality control standards from Environmental Resource Associates (ERA) of Arvada, CO (lot numbers 439, 586, 3227, 3427, 8922, and 9987). Each laboratory's results were compared with the ERA-certified values and performance acceptance limits (PALs). The PALs are listed as guidelines for acceptable analytical results given the limitations of the EPA methods used to determine these parameters. The PALs closely approximate the 95% confidence interval. The laboratories' results and the certified values and limits are given in table B.5 for EMAX, table B.6 for GE, and B.7 for Recra.

All three laboratories analyzed total petroleum hydrocarbons by the infrared method.

Of 103 analyses reported by EMAX, 98 (or 95.1%), were within the PALs. Of 103 analyses reported by GE, 102 (or 99.0%), were within the PALs. Of 103 analyses reported by Recra, 90 (or 87.4%) were within the PALs.

Throughout section B.2:

- NR means that a result was not reported by the laboratory.
- **Bold** indicates that the reported values were outside acceptance limits.
- J in the Functional Guidelines (FG) column means that the analytical result was an estimated quantity.
- Results reported as below detection (<) do not provide sufficient information to determine whether or not the result was within performance acceptance limits.

Table B.5 Quality Control Standards for Selected Analyses for EMAX

Analyte	Certified Value	Performance Acceptance Limits	EMAX Result	FG Code
Acids (Lot 586) (µg/L)				
2,6-Dichlorophenol	132	72.9–153	NR	
2-Methylphenol	59.9	19.0–69.3	37.7	
4-Methylphenol	82.8	25.4–95.9	53.0	
Pentachlorophenol	129	40.2–162	96.4	
2,4,5-Trichlorophenol	60.5	23.8–69.9	43.2	
2,4,6-Trichlorophenol	55.7	24.0–63.8	38.5	

Table B.5 Quality Control Standards for Selected Analyses for EMAX (cont.)

Analyte	Certified Value	Performance Acceptance Limits	EMAX Result	FG Code
Base/Neutrals (Lot 586) (µg/L)				
Anthracene	86.3	40.7–101	73.4	
Benzo[*g,h,i*]perylene	17.3	7.16–24.3	14.0	
Bis(2-ethylhexyl) phthalate	76.9	31.0–98.1	70.1	
4-Bromophenyl-phenylether	185	91.4–221	128	

Table B.5 Quality Control Standards for Selected Analyses for EMAX (cont.)

Analyte	Certified Value	Performance Acceptance Limits	EMAX Result	FG Code
Chrysene	28.7	13.3–35.2	26.2	
Dibenz[*a*,*h*]anthracene	14.7	5.26–19.0	10.8	J
Dibenzofuran	118	56.1–131	79.3	
1,2-Dichlorobenzene	113	26.4–129	58.1	
Diethylphthlate	90.9	21.8–117	**11.7**	
Dimethylphthlate	138	59.4–160	**4.03**	J
2,4-Dinitrotoluene	104	43.5–120	74.4	
Naphthalene	89.9	31.9–102	49.6	
N-Nitroso-di-n-propylamine	63.1	26.7–77.6	30.1	
Phenanthrene	55.2	29.9–63.5	45.7	
Pyrene	99.6	46.6–121	86.5	
1,2,4-Trichlorobenzene	102	29.7–116	53.4	
Cations (Lot 439) (µg/L)				
Calcium	101,000	90,900–111,000	103,000	
Magnesium	74,900	66,700–83,100	72,100	
Potassium	90,300	82,200–98,400	**81,700**	
Sodium	94,900	84,500–106,000	87,700	
Cyanide and Phenol (Lot 9987) (µg/L)				
Cyanide, total	82.6	60.3–105	77.1	
Phenol	106	80.6–131	109	
Grease and Oil (Lot 9987) (mg/bottle)				
Grease and oil (gravimetric)	50.6	30.4–63.3	43.2	
Inorganics (Lot 3427) (µg/L, except as noted)				
Alkalinity (as $CaCO_3$)	151,000	141,000–170,000	166,000	
Chloride	56,800	50,500–64,100	58,800	
Fluoride	4,730	4,260–5,200	**3,930**	
Nitrate as nitrogen	3,260	2,930–3,590	3,160	
pH (pH units)	9.23	9.03–9.43	9.18	
Potassium	18,800	16,100–21,900	18,700	
Sodium	144,000	130,000–159,000	142,000	
Specific conductance (µS/cm)	676	566–769	685	
Sulfate	79,500	68,200–89,900	80,600	
Total dissolved solids	607,000	497,000–680,000	600,000	
Nutrients (Lot 9987) (µg/L)				
Ammonia as nitrogen	3,560	2,990–4,130	**2,910**	
Nitrate-nitrite as nitrogen	5,420	4,820–6,020	5,250	
Total phosphates (as P)	4,060	3,450–4,670	4,060	
PCBs (Lot 586) (µg/L)				
PCB 1254	5.71	3.42–7.17	4.50	

Table B.5 Quality Control Standards for Selected Analyses for EMAX (cont.)

Analyte	Certified Value	Performance Acceptance Limits	EMAX Result	FG Code
Pesticides (Lot 586) (µg/L)				
Aldrin	1.60	0.830–1.97	1.00	
beta-Benzene hexachloride	7.12	3.80–9.00	5.50	
delta-Benzene hexachloride	5.74	2.53–7.37	5.20	
gamma-Benzene hexachloride (Lindane)	1.04	0.585–1.35	0.64	
gamma-Chlordane	8.56	5.96–10.2	7.60	
4,4'-DDD	6.50	3.99–8.44	6.90	
4,4'-DDE	0.877	0.511–1.10	0.91	
4,4'-DDT	1.19	0.692–1.49	1.30	
Dieldrin	3.65	2.26–4.72	3.50	
Endrin	1.43	0.896–1.85	1.40	
Heptachlor	5.83	2.64–7.22	3.50	
Heptachlor epoxide	0.915	0.566–1.12	0.77	
Pesticides/Herbicides (Lot 3227) (µg/L)				
2-sec-Butyl-4,6-dinitrophenol	4.24	1.39–5.48	0.48	
2,4-Dichlorophenoxyacetic acid	5.92	2.96–8.88	3.50	
2,4,5-TP (Silvex)	4.90	2.45–7.35	3.72	
Total Petroleum Hydrocarbons (Lot 8922) (mg/bottle)				
Total petroleum hydrocarbons, infrared	54.6	34.0–70.8	59.9	
Toxaphene (Lot 3227) (µg/L)				
Toxaphene	3.02	1.66–4.38	3.60	
Trace Metals (Lot 9987) (µg/L)				
Aluminum	233	191–275	249	
Antimony	192	144–240	220	
Arsenic	117	87.8–138	118	
Barium	617	506–728	636	
Beryllium	105	86.1–124	106	
Boron	641	526–801	709	
Cadmium	175	144–207	162	
Chromium	242	198–285	249	
Cobalt	517	424–610	547	
Copper	275	226–325	265	
Iron	467	383–551	494	
Lead	433	355–511	430	
Manganese	558	458–658	572	
Mercury	6.67	5.00–8.34	5.92	
Molybdenum	142	116–168	155	
Nickel	342	280–404	338	
Selenium	139	104–164	139	

Table B.5 Quality Control Standards for Selected Analyses for EMAX (cont.)

Analyte	Certified Value	Performance Acceptance Limits	EMAX Result	FG Code
Silver	183	150–216	173	
Strontium	533	437–629	539	
Thallium	108	81.0–135	112	
Vanadium	458	376–540	451	
Zinc	117	95.9–138	109	
Turbidity (Lot 3427) (NTU)				
Turbidity	3.36	2.86–3.93	3.35	
Volatiles (Lot 586) (µg/L)				
Benzene	110	85.4–137	120	
Bromodichloromethane	61.3	47.1–76.3	72.0	
Bromoform	86.8	63.5–112	110	
Carbon tetrachloride	175	129–218	190	
Chlorobenzene	78.1	61.1–93.7	81.0	
Chloroform	96.1	73.7–117	100	
Dibromochloromethane	15.9	12.4–19.6	16.0	
1,2-Dichlorobenzene	62.6	47.5–76.9	66.0	
1,3-Dichlorobenzene	127	97.0–153	120	
1,4-Dichlorobenzene	57.6	43.3–70.2	53.0	
1,2-Dichloroethane	60.1	46.9–75.7	67.0	
Dichloromethane (methylene chloride)	60.8	43.0–79.2	62.0	
Ethylbenzene	49.3	36.9–57.6	54.0	
4-Methyl-2-pentanone (MIBK)	63.5	36.7–86.7	62.0	
1,1,2,2-Tetrachloroethane	81.0	59.0–102	80.0	
Tetrachloroethylene	64.3	47.4–77.6	60.0	
Toluene	84.4	65.1–102	88.0	
1,1,1-Trichloroethane	59.0	42.6–70.4	60.0	
1,1,2-Trichloroethane	36.4	27.7–45.7	37.0	
Trichloroethylene	37.6	27.9–45.5	39.0	
m/p-Xylene	41.2	26.6–51.8	42.0	

Table B.6 Quality Control Standards for Selected Analyses for GE

Analyte	Certified Value	Performance Acceptance Limits	GE Result	FG Code
Acids (Lot 586) (µg/L)				
2,6-Dichlorophenol	132	72.9–153	97.2	
2-Methylphenol	59.9	19.0–69.3	40.5	
4-Methylphenol	82.8	25.4–95.9	47.6	
Pentachlorophenol	129	40.2–162	110	
2,4,5-Trichlorophenol	60.5	23.8–69.9	39.9	

Analyte	Certified Value	Performance Acceptance Limits	GE Result	FG Code
2,4,6-Trichlorophenol	55.7	24.0–63.8	35.5	
Base/Neutrals (Lot 586) (µg/L)				
Anthracene	86.3	40.7–101	73.2	
Benzo[*g,h,i*]perylene	17.3	7.16–24.3	12.9	
Bis(2-ethylhexyl) phthalate	76.9	31.0–98.1	71.9	
4-Bromophenyl-phenylether	185	91.4–221	144	
Chrysene	28.7	13.3–35.2	25.1	
Dibenz[*a,h*]anthracene	14.7	5.26–19.0	10.4	
Dibenzofuran	118	56.1–131	91.4	
1,2-Dichlorobenzene	113	26.4–129	64.3	
Diethylphthlate	90.9	21.8–117	58.1	
Dimethylphthlate	138	59.4–160	**53.3**	
2,4-Dinitrotoluene	104	43.5–120	75.4	
Naphthalene	89.9	31.9–102	64.3	
N-Nitroso-di-n-propylamine	63.1	26.7–77.6	50.3	
Phenanthrene	55.2	29.9–63.5	44.8	
Pyrene	99.6	46.6–121	84.6	
1,2,4-Trichlorobenzene	102	29.7–116	58.7	
Cations (Lot 439) (µg/L)				
Calcium	101,000	90,900–111,000	104,000	
Magnesium	74,900	66,700–83,100	75,400	
Potassium	90,300	82,200–98,400	82,500	
Sodium	94,900	84,500–106,000	98,300	
Cyanide and Phenol (Lot 9987) (µg/L)				
Cyanide, total	82.6	60.3–105	82.6	
Phenol	106	80.6–131	89.7	
Grease and Oil (Lot 9987) (mg/bottle)				
Grease and oil (gravimetric)	50.6	30.4–63.3	41.4	
Inorganics (Lot 3427) (µg/L, except as noted)				
Alkalinity (as $CaCO_3$)	151,000	141,000–170,000	145,000	
Chloride	56,800	50,500–64,100	54,300	
Fluoride	4,730	4,260–5,200	4,530	

Table B.6 Quality Control Standards for Selected Analyses for GE (cont.)

Analyte	Certified Value	Performance Acceptance Limits	GE Result	FG Code
Nitrate as nitrogen	3,260	2,930–3,590	3,010	
pH (pH units)	9.23	9.03–9.43	9.07	
Potassium	18,800	16,100–21,900	19,100	
Sodium	144,000	130,000–159,000	151,000	

Table B.6 Quality Control Standards for Selected Analyses for GE (cont.)

Analyte	Certified Value	Performance Acceptance Limits	GE Result	FG Code
Specific conductance (µS/cm)	676	566–769	718	
Sulfate	79,500	68,200–89,900	75,700	
Total dissolved solids	607,000	497,000–680,000	580,000	
Nutrients (Lot 9987) (µg/L)				
Ammonia as nitrogen	3,560	2,990–4,130	3,350	
Nitrate-nitrite as nitrogen	5,420	4,820–6,020	5,450	
Total phosphates (as P)	4,060	3,450–4,670	3,630	
PCBs (Lot 586)				
PCB 1254	5.71	3.42–7.17	5.30	J
Pesticides (Lot 586) (µg/L)				
Aldrin	1.60	0.830–1.97	1.51	J
beta-Benzene hexachloride	7.12	3.80–9.00	6.69	J
delta-Benzene hexachloride	5.74	2.53–7.37	5.78	J
gamma-Benzene hexachloride (Lindane)	1.04	0.585–1.35	0.87	J
gamma-Chlordane	8.56	5.96–10.2	8.0	J
4,4'-DDD	6.50	3.99–8.44	5.52	J
4,4'-DDE	0.877	0.511–1.10	0.76	J
4,4'-DDT	1.19	0.692–1.49	1.15	J
Dieldrin	3.65	2.26–4.72	3.22	J
Endrin	1.43	0.896–1.85	1.36	J
Heptachlor	5.83	2.64–7.22	5.20	J
Heptachlor epoxide	0.915	0.566–1.12	0.79	J
Pesticides/Herbicides (Lot 3227) (µg/L)				
2-sec-Butyl-4,6-dinitrophenol	4.24	1.39–5.48	3.92	
2,4-Dichlorophenoxyacetic acid	5.92	2.96–8.88	5.66	
2,4,5-TP (Silvex)	4.90	2.45–7.35	4.33	
Total Petroleum Hydrocarbons (Lot 8922) (mg/bottle)				
Total petroleum hydrocarbons, infrared	54.6	34.0–70.8	49.5	
Toxaphene (Lot 3227) (µg/L)				
Toxaphene	3.02	1.66–4.38	NR	
Trace Metals (Lot 9987) (µg/L)				
Aluminum	233	191–275	253	
Antimony	192	144–240	194	
Arsenic	117	87.8–138	118	
Barium	617	506–728	604	
Beryllium	105	86.1–124	103	
Boron	641	526–801	706	
Cadmium	175	144–207	176	
Chromium	242	198–285	240	

Table B.6 Quality Control Standards for Selected Analyses for GE (cont.)

Analyte	Certified Value	Performance Acceptance Limits	GE Result	FG Code
Cobalt	517	424–610	528	
Copper	275	226–325	267	
Iron	467	383–551	461	
Lead	433	355–511	414	
Manganese	558	458–658	556	
Mercury	6.67	5.00–8.34	6.08	
Molybdenum	142	116–168	132	
Nickel	342	280–404	352	
Selenium	139	104–164	140	
Silver	183	150–216	175	
Strontium	533	437–629	521	
Thallium	108	81.0–135	110	
Vanadium	458	376–540	448	
Zinc	117	95.9–138	118	
Turbidity (Lot 3427) (NTU)				
Turbidity	3.36	2.86–3.93	3.22	
Volatiles (Lot 586) (µg/L)				
Benzene	110	85.4–137	104	
Bromodichloromethane	61.3	47.1–76.3	59.0	
Bromoform	86.8	63.5–112	93.2	
Carbon tetrachloride	175	129–218	188	
Chlorobenzene	78.1	61.1–93.7	79.2	
Chloroform	96.1	73.7–117	95.2	
Dibromochloromethane	15.9	12.4–19.6	16.3	
1,2-Dichlorobenzene	62.6	47.5–76.9	63.3	
1,3-Dichlorobenzene	127	97.0–153	134	
1,4-Dichlorobenzene	57.6	43.3–70.2	65.4	
1,2-Dichloroethane	60.1	46.9–75.7	61.9	
Dichloromethane (methylene chloride)	60.8	43.0–79.2	61.8	
Ethylbenzene	49.3	36.9–57.6	49.5	
4-Methyl-2-pentanone (MIBK)	63.5	36.7–86.7	60.0	
1,1,2,2-Tetrachloroethane	81.0	59.0–102	72.4	
Tetrachloroethylene	64.3	47.4–77.6	71.7	
Toluene	84.4	65.1–102	80.7	
1,1,1-Trichloroethane	59.0	42.6–70.4	62.5	
1,1,2-Trichloroethane	36.4	27.7–45.7	34.7	
Trichloroethylene	37.6	27.9–45.5	38.4	
m/p-Xylene	41.2	26.6–51.8	43.3	

Table B.7 Quality Control Standards for Selected Analyses for Recra

Analyte	Certified Value	Performance Acceptance Limits	Recra Result	FG Code
Acids (Lot 586) (µg/L)				
2,6-Dichlorophenol	132	72.9–153	106	
2-Methylphenol	59.9	19.0–69.3	42.7	
4-Methylphenol	82.8	25.4–95.9	59.8	
Pentachlorophenol	129	40.2–162	108	
2,4,5-Trichlorophenol	60.5	23.8–69.9	52.2	
2,4,6-Trichlorophenol	55.7	24.0–63.8	49.0	
Base/Neutrals (Lot 586) (µg/L)				
Anthracene	86.3	40.7–101	64.1	
Benzo[*g,h,i*]perylene	17.3	7.16–24.3	17.3	
Bis(2-ethylhexyl) phthalate	76.9	31.0–98.1	61.4	
4-Bromophenyl-phenylether	185	91.4–221	165	
Chrysene	28.7	13.3–35.2	24.4	
Dibenz[*a,h*]anthracene	14.7	5.26–19.0	16.0	
Dibenzofuran	118	56.1–131	106	
1,2-Dichlorobenzene	113	26.4–129	85.0	
Diethylphthlate	90.9	21.8–117	68.0	
Dimethylphthlate	138	59.4–160	123	
2,4-Dinitrotoluene	104	43.5–120	85.1	
Naphthalene	89.9	31.9–102	62.3	
N-Nitroso-di-n-propylamine	63.1	26.7–77.6	50.2	
Phenanthrene	55.2	29.9–63.5	48.4	
Pyrene	99.6	46.6–121	74.9	
1,2,4-Trichlorobenzene	102	29.7–116	68.8	
Cations (Lot 439) (µg/L)				
Calcium	101,000	90,900–111,000	102,000	
Magnesium	74,900	66,700–83,100	71,100	

Table B.7 Quality Control Standards for Selected Analyses for Recra (cont.)

Analyte	Certified Value	Performance Acceptance Limits	Recra Result	FG Code
Potassium	90,300	82,200–98,400	90,800	
Sodium	94,900	84,500–106,000	91,100	
Cyanide and Phenol (Lot 9987) (µg/L)				
Cyanide, total	82.6	60.3–105	83.1	
Phenol	106	80.6–131	102	
Grease and Oil (Lot 9987) (mg/bottle)				
Grease and oil (gravimetric)	50.6	30.4–63.3	36.1	J

Table B.7 Quality Control Standards for Selected Analyses for Recra (cont.)

Analyte	Certified Value	Performance Acceptance Limits	Recra Result	FG Code
Inorganics (Lot 3427) (µg/L, except as noted)				
Alkalinity (as $CaCO_3$)	151,000	141,000–170,000	151,000	
Chloride	56,800	50,500–64,100	63,000	
Fluoride	4,730	4,260–5,200	4,740	
Nitrate as nitrogen	3,260	2,930–3,590	3,230	
pH (pH units)	9.23	9.03–9.43	9.17	
Potassium	18,800	16,100–21,900	19,200	
Sodium	144,000	130,000–159,000	134,000	
Specific conductance (µS/cm)	676	566–769	**559**	
Sulfate	79,500	68,200–89,900	81,600	
Total dissolved solids	607,000	497,000–680,000	581,000	
Nutrients (Lot 9987) (µg/L)				
Ammonia as nitrogen	3,560	2,990–4,130	3,500	
Nitrate-nitrite as nitrogen	5,420	4,820–6,020	5,410	
Total phosphates (as P)	4,060	3,450–4,670	4,080	
PCBs (Lot 586) (µg/L)				
PCB 1254	5.71	3.42–7.17	5.28	
Pesticides (Lot 586) (µg/L)				
Aldrin	1.60	0.830–1.97	1.82	
beta-Benzene hexachloride	7.12	3.80–9.00	8.01	
delta-Benzene hexachloride	5.74	2.53–7.37	5.92	
gamma-Benzene hexachloride (Lindane)	1.04	0.585–1.35	1.03	
gamma-Chlordane	8.56	5.96–10.2	8.48	
4,4'-DDD	6.50	3.99–8.44	5.93	
4,4'-DDE	0.877	0.511–1.10	0.76	
4,4'-DDT	1.19	0.692–1.49	1.23	
Dieldrin	3.65	2.26–4.72	3.72	
Endrin	1.43	0.896–1.85	1.69	
Heptachlor	5.83	2.64–7.22	6.01	
Heptachlor epoxide	0.915	0.566–1.12	0.84	
Pesticides/Herbicides (Lot 3227) (µg/L)				
2-sec-Butyl-4,6-dinitrophenol	4.24	1.39–5.48	4.19	
2,4-Dichlorophenoxyacetic acid	5.92	2.96–8.88	6.24	
2,4,5-TP (Silvex)	4.90	2.45–7.35	4.56	
Total Petroleum Hydrocarbons (Lot 8922) (mg/bottle)				
Total petroleum hydrocarbons, infrared	54.6	34.0–70.8	<1,000	
Toxaphene (Lot 3227) (µg/L)				
Toxaphene	3.02	1.66–4.38	NR	

Table B.7 Quality Control Standards for Selected Analyses for Recra (cont.)

Analyte	Certified Value	Performance Acceptance Limits	Recra Result	FG Code
Trace Metals (Lot 9987) (µg/L)				
Aluminum	233	191–275	**308**	
Antimony	192	144–240	200	
Arsenic	117	87.8–138	118	
Barium	617	506–728	623	
Beryllium	105	86.1–124	101	
Boron	641	526–801	660	
Cadmium	175	144–207	176	
Chromium	242	198–285	241	
Cobalt	517	424–610	521	
Copper	275	226–325	269	
Iron	467	383–551	461	
Lead	433	355–511	441	
Manganese	558	458–658	576	
Mercury	6.67	5.00–8.34	6.58	
Molybdenum	142	116–168	144	
Nickel	342	280–404	350	
Selenium	139	104–164	148	
Silver	183	150–216	183	
Strontium	533	437–629	531	
Thallium	108	81.0–135	110	
Vanadium	458	376–540	454	
Zinc	117	95.9–138	119	
Turbidity (Lot 3427) (NTU)				
Turbidity	3.36	2.86–3.93	3.30	
Volatiles (Lot 586) (µg/L)				
Benzene	110	85.4–137	134	
Bromodichloromethane	61.3	47.1–76.3	75.6	
Bromoform	86.8	63.5–112	**123**	
Carbon tetrachloride	175	129–218	194	
Chlorobenzene	78.1	61.1–93.7	**99.2**	
Chloroform	96.1	73.7–117	116	
Dibromochloromethane	15.9	12.4–19.6	**20.7**	
1,2-Dichlorobenzene	62.6	47.5–76.9	69.8	
1,3-Dichlorobenzene	127	97.0–153	**167**	
1,4-Dichlorobenzene	57.6	43.3–70.2	**78.0**	
1,2-Dichloroethane	60.1	46.9–75.7	**77.3**	
Dichloromethane (methylene chloride)	60.8	43.0–79.2	64.8	
Ethylbenzene	49.3	36.9–57.6	**63.2**	
4-Methyl-2-pentanone (MIBK)	63.5	36.7–86.7	76.2	

Table B.7 Quality Control Standards for Selected Analyses for Recra (cont.)

Analyte	Certified Value	Performance Acceptance Limits	Recra Result	FG Code
1,1,2,2-Tetrachloroethane	81.0	59.0–102	**111**	
Tetrachloroethylene	64.3	47.4–77.6	74.5	
Toluene	84.4	65.1–102	**104**	
1,1,1-Trichloroethane	59.0	42.6–70.4	66.1	
1,1,2-Trichloroethane	36.4	27.7–45.7	**47.4**	
Trichloroethylene	37.6	27.9–45.5	42.7	
m/p-Xylene	41.2	26.6–51.8	**52.2**	

B.3 Mixed Analyte Performance Evaluation Program

The Department of Energy mixed analyte performance evaluation program provides proficiency samples containing metals, pesticides, and radionuclides. The results from the June 1996 MAPEP-96-S3 study were reported in December 1996. For GE, copper was not acceptable and nickel was reported at 23.4 mg/kg although it was not included in the original sample. Five of the eight pesticides had a negative bias and were not acceptable; 4,4´-DDE and methoxychlor were not reported. For Recra, all the metals were within the acceptance limits. Four of the eight pesticides were not acceptable, three were acceptable, and methoxychlor was not reported. For Environmental Physics, Inc. (EP), all eight radionuclides were acceptable, but plutonium-238 was close to the upper acceptance limit and given a warning flag. For Thermo NUtech (TNU), seven of eight radionuclides were within the acceptance limits; however the result for strontium-90 was not acceptable.

Methoxychlor was correctly identified by only approximately 50% of the laboratories and was reported at levels significantly below the reference value.

The results for GE and Recra are reported in table B.8 and for EP and TNU in table B.9.

The results for MAPEP-96-W4 were reported in April 1997. For QST, the results for 4-methylphenol and phenol were outside the acceptance limits. The results are reported in table B.10.

Throughout section B.3, NR means that a result was not reported by the laboratory. The following indicators appear in the tables:

- **Bold** indicates that the reported values were outside acceptance limits.
- ***Bold italic*** indicates that a warning was given to the laboratory.

Table B.8 Mixed Analyte Performance Evaluation Program Results for MAPEP-96-S3 for GE and Recra

Analyte	GE Result	Recra Result	Reference Value	Acceptance Limits
Metals (mg/kg)				
Aluminum	15300	15000	19100	13370–24830
Arsenic	39.1	40	35.6	24.92–46.28
Barium	260	256	282	197.4–366.6
Cadmium	7.34	6.41	7.93	5.55–10.31
Calcium	64700	63400	68500	47950–89050
Chromium	47.8	46.5	48.9	34.23–63.57
Copper	**26.0**	18.0	15.9	11.13–20.67
Iron	18300	17700	18300	12810–23790
Lead	51.8	50.3	49.4	34.58–64.22
Magnesium	8890	8970	9650	6755–12545
Manganese	277	277	286	200.2–371.8
Nickel	23.4	Not found	0.00	0.00–0.00
Potassium	3340	3470	4050	2835–5265
Selenium	7.49	8.14	6.90	4.83–8.97
Silver	36.4	36.6	32.5	22.75–42.25
Sodium	458	491	514	359.8–668.2
Vanadium	79.8	76.3	87.3	61.11–113.49
Zinc	66.0	67.5	69.5	48.65–90.35
Pesticides (µg/kg)				
Aldrin	**32.4**	**84**	137.5	96.25–178.75
alpha-Benzene hexachloride	**48.6**	**120**	179.6	125.72–233.48
delta-Benzene hexachloride	**18.4**	**52**	79.0	55.3–102.7
4,4´-DDE	NR	32	40.0	28.0–52.0
Dieldrin	**49.6**	71	97.5	68.25–126.75
Endosulfan II	37.3	31	42.9	30.03–55.77
Endrin aldehyde	**34.1**	**49**	89.7	62.79–116.61
Methoxychlor	NR	NR	42.1	29.47–54.73

Table B.9 Mixed Analyte Performance Evaluation Program Results for MAPEP-96-S3 for EP and TNU

Analyte	EP Result	TNU Result	Reference Value	Acceptance Limits
Radionuclides (Bq/kg)				
Americium-241	29.0	28.7	28.7	20.09–37.31
Cesium-137	1770	1359	1531	1071.7–1990.3
Cobalt-60	931	727	812	568.4–1055.6
Plutonium-238	***20.5***	17.3	15.9	11.13–20.67

Analyte	EP Result	TNU Result	Reference Value	Acceptance Limits
Plutonium-239/240	22.6	18.9	19.7	13.79–25.61
Strontium-90	540	**347**	536.0	375.2–696.8
Uranium-233/234	56.6	59.7	63.9	44.73–83.07
Uranium-238	52.9	59.7	64.0	44.80–83.20

Table B.10 Mixed Analyte Performance Evaluation Program Results for MAPEP-96-W4 for QST

Analyte	QST Result	Reference Value	Acceptance Limits
Metals (mg/L)			
Antimony	1.03	1.00	0.70–1.30
Arsenic	1.01	1.00	0.70–1.30
Barium	10.8	10.2	7.14–13.26
Beryllium	1.05	1.00	0.70–1.30
Cadmium	0.251	0.260	0.18–0.34
Chromium	1.01	1.00	0.70–1.30
Lead	0.732	0.720	0.50–0.94
Nickel	2.93	3.10	2.17–4.03
Selenium	0.271	0.260	0.18–0.34
Silver	0.512	0.510	0.36–0.66
Thallium	1.05	1.00	0.70–1.30
Vanadium	2.09	2.00	1.40–2.60
Zinc	2.88	3.10	2.17–4.03
Radionuclides (Bq/L)			
Americium-241	0.79	0.90	0.63–1.17
Cesium-137	212	201	140.7–261.3
Cobalt-57	217	222	155.4–288.6
Cobalt-60	269	267	186.9–347.1
Plutonium-238	1.12	1.219	0.85–1.59
Plutonium-239/240	1.35	1.495	1.05–1.95
Strontium-90	31.06	26.38	18.47–34.29
Uranium-233/234	0.40	0.402	0.28–0.52
Uranium-238	0.42	0.417	0.29–0.55

Table B.10 Mixed Analyte Performance Evaluation Program Results for MAPEP-96-W4 for QST (cont.)

Analyte	QST Result	Reference Value	Acceptance Limits
Zinc-65	425	403	282.1–523.9
Semivolatile Organics (µg/L)			
Anthracene	250	295.1	206.57–383.63
Benzo[*a*]anthracene	540	566.4	396.48–736.32
Benzo[*a*]pyrene	430	463.8	324.66–602.94

Table B.10 Mixed Analyte Performance Evaluation Program Results for MAPEP-96-W4 for QST (cont.)

Analyte	QST Result	Reference Value	Acceptance Limits
Butylbenzyl phthalate	540	489.6	342.72–636.48
2-Chlorophenol	930	797.4	558.18–1036.62
Di-n-butyl phthalate	510	496.6	347.62–645.58
1,3-Dichlorobenzene	460	400.5	280.35–520.65
Diethyl phthalate	510	458.8	321.16–596.44
2,4-Dimethylphenol	660	582.1	407.47–756.73
Di-n-octyl phthalate	460	477	333.9–620.1
Hexachlorobenzene	210	254.5	178.15–330.85
2-Methylphenol	21	17.6	12.32–22.88
3-Methylphenol	NR	768.5	537.95–999.05
4-Methylphenol	**1100**	768.5	537.95–999.05
Naphthalene	330	305.2	213.64–396.76
Phenanthrene	260	281.9	197.33–366.47
Phenol	**730**	509.6	356.72–662.48
Pyrene	450	514.8	360.36–669.24
2,4,5-Trichlorophenol	450	411.1	287.77–534.43

B.4 EPA Radiological Performance Evaluation Studies

EP and QR participated in the EPA radiological performance evaluation studies administered by the Characterization Research Division-Las Vegas. The studies included in this order are the following:

- Tritium in Water, August 9, 1996
- Blind-A, October 15, 1996
- Blind B, October 15, 1996
- Gamma in Water, November 8, 1996
- Strontium in Water, January 17, 1997
- Gross Alpha-Beta in Water, January 31, 1997
- Iodine in Water, February 7, 1997
- Uranium-Radium in Water, February 14, 1997

For tritium in water (8/9/96), the results were 9,613 pCi/L for EP and 10,707 pCi/L for QR. The EPA reference value was 10,879 pCi/L and the acceptance limits were 8,991–12,767 pCi/L.

In the following tables, all results are reported in pCi/L. **Bold** indicates that the reported values were out of range.

Table B.11 Blind-A Results for EP and QR (10/15/96)

Analyte	EP Result	QR Result	Reference Value	Acceptance Limits
Gross Alpha	65.27	48.87	59.1	33.4–84.8
Radium-226	9.40	9.60	9.9	7.3–12.5
Radium-228	4.67	4.57	5.1	2.8–7.4
Uranium (natural)	37.33	40.10	40.9	33.8–48.0

Table B.12 Blind-B Results for EP and QR (10/15/96)

Analyte	EP Result	QR Result	Reference Value	Acceptance Limits
Cesium-134	18.00	18.00	20.0	11.3–28.7
Cesium-137	31.33	30.67	30.0	21.3–38.7
Cobalt-60	15.33	15.33	15.0	6.3–23.7
Gross Beta	**43.43**	119.67	111.8	82.7–140.9
Strontium-89	11.67	16.67	10.0	1.3–18.7
Strontium-90	24.67	21.33	25.0	16.3–33.7

Table B.13 Gamma in Water Results for EP and QR (11/8/96)

Analyte	EP Result	QR Result	Reference Value	Acceptance Limits
Cobalt-60	45.67	43.33	44.0	35.3–52.7
Zinc-65	39.33	36.67	35.0	26.3–43.7
Cesium-134	10.67	9.33	11.0	2.3–19.7
Cesium-137	22.67	20.33	19.0	10.3–27.7
Barium-133	64.67	61.00	64.0	53.6–74.4

Table B.14 Strontium in Water Results for EP and QR (1/17/97)

Analyte	EP Result	QR Result	Reference Value	Acceptance Limits
Strontium-89	8.67	11.00	12.0	3.3–20.7
Strontium-90	26.33	24.33	25.0	16.3–33.7

Table B.15 Gross Alpha-Beta in Water Results for EP and QR (1/31/97)

Analyte	EP Result	QR Result	Reference Value	Acceptance Limits
Gross alpha	4.83	4.60	5.2	0.0–13.9
Gross beta	14.23	17.40	14.7	6.0–23.4

For iodine in water (2/7/97), both EP and QR reported results of 88.00 pCi/L. The EPA reference value was 86.0 pCi/L and the acceptance limits were 70.4–101.6 pCi/L.

Table B.16 Uranium-Radium in Water Results for EP and QR (2/14/97)

Analyte	EP Result	QR Result	Reference Value	Acceptance Limits
Radium-226	5.17	5.90	5.9	4.3–7.5
Radium-228	7.30	8.33	8.2	4.6–11.8
Uranium (natural)	32.07	27.8	27.0	21.8–32.2

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Appendix C: Formats of the Field and Laboratory QC Codes

The formats presented in this appendix have been established by WSRC-EPD/EMS to identify field and laboratory QC samples.

Table C.1 contains the codes for laboratory QC samples.

Table C.1 AN98 Laboratory QC Samples Codes

Code	Definition
(blank)	Data not remarked. The result is a routine analysis of a sample.
1	Laboratory duplicate
2A	Matrix spike
2B	Matrix spike duplicate
2C	Surrogate spike
2D	Laboratory control sample
2E	Laboratory control sample duplicate
2F	Radiochemical tracer
2G	Radiochemical carrier
3	Laboratory blank
4	Reanalysis of a sample at the request of EPD/EMS
CCV	Continuing calibration verification standard
CCB	Continuing calibration blank
ICS	Interference check sample
ICV	Initial calibration verification standard
ICB	Initial calibration blank
ICSA	Interference Check Standard A
ICSB	Interference Check Standard AB

Table C.2 contains the AN98 field QC codes.

Table C.2 AN98 Field QC Codes

Code	Description
A	Field duplicate
B	Trip blank
C	Field blank
D	Split sample
E	Rinsate blank
F	Matrix spike performance evaluation standard
G	Blank spike performance evaluation standard
R	Resampled

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Appendix D: Data Tables

D.1 Qualifiers

The following qualifiers may have been applied to the analytical results during data validation.

Table D.1 AN98 EPA Functional Guideline Codes

Qualifier	Description
(Blank)	Data not remarked. The analytical result is acceptable for use as reported.
J	The analyte was positively identified; the associated numerical value is an estimated concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification. Used for all TIC results.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. Assignment of *R* requires approval by the appropriate WSRC data validation coordinator.
U	Material analyzed for, but not detected. The analyte concentration is <ssEQL.
NJ	The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. The reported quantitation limit is approximate, and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Only EPA STORET qualifiers in table D.2 are to appear in the appropriate AN98 field.

Table D.2 AN98 EPA STORET Codes Used by EMS

Qualifier	Description
(Blank)	Data not remarked
A	The result is the mean of two or more results.
C	The result is calculated.
D	Field measurement
G	The result reported is the maximum of two or more results.
H	The result is from a field kit determination and may not be accurate.

Table D2 AN98 EPA STORET Codes Used by EMS (cont.)

Qualifier	Description
I	The result is less than the ssEQL, but equal to or greater than the MDL.
K	The actual concentration is known to be less than the reported result.
L	The actual concentration is known to be greater than the reported result.
M	Indicates male of the species

Table D2 AN98 EPA STORET Codes Used by EMS (cont.)

Qualifier	Description
O	Sample received by laboratory, but the analysis was lost or not performed.
Q	The sample was held beyond the normal holding time prior to analysis.
S	Laboratory test
U	Undetermined sex of the species
V	The analyte was detected in both the method blank and the sample.
Y	The result is from an unpreserved or incorrectly preserved sample; the data may not be accurate.

Table D.3 shows the AN98 EMS codes, which are defined by EMS/EGG and are used to aid the validators in qualifying the data.

Table D.3 AN98 EMS Codes

Code	Description
(Blank)	Data not remarked. The analytical result is acceptable for use as reported.
A	Compound identification criteria were not met.
B	Not currently used
C	LCS or BS criteria were not met.
D	ICP serial dilution criteria were not met.
E	Not currently used
F	Not currently used
G	Not currently used
H	Internal standard criteria were not met when the IS was used for quantitation.
I	Matrix spike recovery was not within the control limits.
K	A tentatively identified compound is a suspected aldol-condensation product.
L	Initial or continuing calibration criteria were not met.
M	Not currently used
N	Not currently used
O	Surrogate or tracer spike recovery is out of specification.
P	Graphite furnace atomic absorption QC a. Duplicate injection criteria were not met. b. Post-digestion spike recovery was not within control limits and the sample absorbance is > 50% of the post-digestion spike absorbance.
Q	Not currently used
R	Not currently used
S	The sample was analyzed by the method of standard additions.
T	Not currently used

Table D.3 AN98 EMS Codes (cont.)

Code	Description
U	Not currently used

Code	Description
V	Not currently used
W	Graphite furnace atomic absorption QC: the post-digestion spike recovery is not within control limits and the sample absorbance is < 50% of the post-digestion spike absorbance.
X	The laboratory duplicate RPD or MS/MSD RPD was not within control limits.
Y	Not currently used
Z	Not currently used
4	Matrix interference is present.
5	Matrix spike concentration was < 0.25× the sample concentration, and the percent recovery cannot be determined.
6	The analyte was detected in both the sample and associated field blank.
7	The analyte was detected in both the sample and associated rinsate.
8	The analyte was detected in both the sample and associated trip blank.
9	The field duplicate RPD was not within control limits.

D.2 Data Summaries

The remainder of this appendix contains data tables.

Table D.4 Number of Analytical Records by Method and Type

Analysis Method	Sample Records	Laboratory Duplicates	Laboratory Blanks	Matrix Spikes/ Duplicates	Calibration Blanks	Totals
Solids (Fauna and Method Blanks)						
EPA6010B	364	0	24	48	0	436
EPA7471A	26	0	3	6	0	35
EPA8260B	884	0	136	20	0	1,040
EPA905	26	2	2	2	0	32
EPIA-001B	52	4	4	4	0	64
EPIA-002B	26	2	2	2	0	32
EPIA-011B	78	6	6	2	0	92
EPIA-012B	52	4	4	2	0	62
EPIA-013B	650	50	50	0	0	750
Water (Trip Blanks)						
EPA8260B	102	0	68	10	0	180

Table D.5 Analytes Not Detected in Fish Samples

Analyte	Minimum ssMDL	Maximum ssMDL	Unit
Antimony-124	0.042	0.107	pCi/g
Antimony-125	0.075	0.179	pCi/g
Antimony	0.079	0.191	mg/kg
Barium-133	0.034	0.078	pCi/g
Bromodichloromethane	0.500	0.500	µg/kg
Bromoform	1.350	1.350	µg/kg
Bromomethane (Methyl bromide)	1.500	1.500	µg/kg
Carbon tetrachloride	2.500	2.500	µg/kg
Cesium-134	0.032	0.071	pCi/g
Chlorobenzene	1.500	1.500	µg/kg
Chloroethane	1.500	1.500	µg/kg
Chloroethene (Vinyl chloride)	2.000	2.000	µg/kg
Chloroform	0.500	0.500	µg/kg
Chloromethane (Methyl chloride)	1.000	1.000	µg/kg
Cobalt-57	0.021	0.041	pCi/g
Cobalt-58	0.040	0.106	pCi/g
Cobalt-60	0.035	0.088	pCi/g
Dibromochloromethane	1.050	1.050	µg/kg
1,1-Dichloroethane	0.500	0.500	µg/kg
1,2-Dichloroethane	1.150	1.150	µg/kg
1,1-Dichloroethylene	1.500	1.500	µg/kg
1,2-Dichloroethylene	1.250	1.250	µg/kg
1,2-Dichloropropane	1.150	1.150	µg/kg
cis-1,3-Dichloropropene	1.000	1.000	µg/kg
trans-1,3-Dichloropropene	1.500	1.500	µg/kg
Europium-152	0.082	0.191	pCi/g
Europium-154	0.090	0.235	pCi/g
Europium-155	0.074	0.159	pCi/g
Gross alpha	0.377	2.740	pCi/g
2-Hexanone	14.000	14.000	µg/kg
Manganese-54	0.030	0.087	pCi/g
Methyl isobutyl ketone	14.600	14.600	µg/kg
Neptunium-239	0.141	0.304	pCi/g
Plutonium-238	0.007	0.059	pCi/g
Plutonium-239/240	0.007	0.045	pCi/g
Promethium-144	0.031	0.078	pCi/g
Promethium-146	0.036	0.082	pCi/g
Ruthenium-106	0.277	0.751	pCi/g
Sodium-22	0.032	0.085	pCi/g

Table D.5 Analytes Not Detected in Fish Samples (cont.)

Analyte	Minimum ssMDL	Maximum ssMDL	Unit
Styrene	1.500	1.500	µg/kg
1,1,2,2-Tetrachloroethane	3.000	3.000	µg/kg
Tetrachloroethylene	2.000	2.000	µg/kg
Tin-113	0.037	0.101	pCi/g
1,1,1-Trichloroethane	0.500	0.500	µg/kg
1,1,2-Trichloroethane	1.200	1.200	µg/kg
Trichloroethylene	1.350	1.350	µg/kg
Uranium-235	0.006	0.045	pCi/g
Vinyl acetate	10.500	10.500	µg/kg
Yttrium-88	0.044	0.114	pCi/g
Zinc-65	0.081	0.201	pCi/g
Zirconium-95	0.068	0.188	pCi/g

Table D.6 Analytical Results Sorted by Sample

SURVEY ID: SRF-01-01 **Sample ID:** 117018

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.455	mg/kg	0.174	EPA6010B
Arsenic				0.279	mg/kg	0.207	EPA6010B
Barium				3.9	mg/kg	0.025	EPA6010B
Cadmium	J	I		0.0385	mg/kg	0.017	EPA6010B
Calcium				9610	mg/kg	3.172	EPA6010B
Chromium	J	I		0.174	mg/kg	0.0331	EPA6010B
Copper				0.702	mg/kg	0.06	EPA6010B
Lead	J	I		0.0844	mg/kg	0.072	EPA6010B
Magnesium				380	mg/kg	0.231	EPA6010B
Manganese				26.9	mg/kg	0.323	EPA6010B
Mercury				0.0508	mg/kg	0.00225	EPA7471A
Nickel	U			0.227	mg/kg	0.029	EPA6010B
Selenium				0.904	mg/kg	0.123	EPA6010B
Silver	J	I		0.121	mg/kg	0.0282	EPA6010B
Zinc				14.1	mg/kg	0.168	EPA6010B
Radionuclides							
Actinium-228	U			0.0883	pCi/g	0.261	EPIA-013B
Antimony-124	U			-0.0184	pCi/g	0.072	EPIA-013B
Antimony-125	U			-0.0158	pCi/g	0.142	EPIA-013B
Barium-133	U			-0.0241	pCi/g	0.059	EPIA-013B
Cerium-144	U			0.0737	pCi/g	0.275	EPIA-013B
Cesium-134	U			-0.0232	pCi/g	0.0487	EPIA-013B
Cesium-137	U			0.0207	pCi/g	0.0583	EPIA-013B
Cobalt-57	U			0.0125	pCi/g	0.0334	EPIA-013B
Cobalt-58	U			0.00701	pCi/g	0.0673	EPIA-013B
Cobalt-60	U			-0.00754	pCi/g	0.061	EPIA-013B
Europium-152	U			-0.0452	pCi/g	0.143	EPIA-013B
Europium-154	U			-0.014	pCi/g	0.152	EPIA-013B
Europium-155	U			-0.0109	pCi/g	0.126	EPIA-013B
Gross alpha	U			-0.0306	pCi/g	0.733	EPIA-001B
Lead-212	U			0.0379	pCi/g	0.0783	EPIA-013B
Manganese-54	U			-0.0118	pCi/g	0.0484	EPIA-013B
Neptunium-239	U			-0.00946	pCi/g	0.222	EPIA-013B
Nonvolatile beta				5.12	pCi/g	0.817	EPIA-001B
Plutonium-238	U			0.00334	pCi/g	0.01	EPIA-012B
Plutonium-239/240	U			-0.0048	pCi/g	0.0286	EPIA-012B
Potassium-40				3.97	pCi/g	0.611	EPIA-013B
Promethium-144	U			0.0151	pCi/g	0.0622	EPIA-013B
Promethium-146	U			-0.00415	pCi/g	0.0672	EPIA-013B
Ruthenium-106	U			-0.103	pCi/g	0.457	EPIA-013B
Sodium-22	U			-0.00507	pCi/g	0.0549	EPIA-013B
Strontium-89/90	U			0.428	pCi/g	0.631	EPA905
Tin-113	U			-0.0116	pCi/g	0.0698	EPIA-013B
Tritium	U			0	pCi/g	0.157	EPIA-002B

SURVEY ID: SRF-01-01 (cont.) **Sample ID:** 117018

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.00283	pCi/g	0.0205	EPIA-011B
Uranium-235	U			-0.000545	pCi/g	0.0221	EPIA-011B
Uranium-238	U			0.00685	pCi/g	0.0169	EPIA-011B
Yttrium-88	U			0.00144	pCi/g	0.0803	EPIA-013B
Zinc-65	U			-0.0125	pCi/g	0.139	EPIA-013B
Zirconium-95	U			0.0173	pCi/g	0.13	EPIA-013B
Volatile Organic Compounds							
Acetone	J	K	O	925	µg/kg	51.5	EPA8260B
Benzene	J	K	O	10.3	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	J	IK	O	20.8	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	209	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	K	O	8.23	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	J	K	O	11.3	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	K	O	25.8	µg/kg	5	EPA8260B

SURVEY ID: SRF-01-02 **Sample ID:** 117019

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	JU		4	0.205	mg/kg	0.182	EPA6010B
Arsenic				0.621	mg/kg	0.217	EPA6010B
Barium				3.93	mg/kg	0.026	EPA6010B
Cadmium	J	I		0.0376	mg/kg	0.018	EPA6010B
Calcium				11200	mg/kg	3.319	EPA6010B
Chromium	J	I		0.214	mg/kg	0.0347	EPA6010B
Copper				0.731	mg/kg	0.0629	EPA6010B
Lead	J	I		0.173	mg/kg	0.075	EPA6010B
Magnesium				357	mg/kg	0.242	EPA6010B
Manganese				66.6	mg/kg	0.338	EPA6010B
Mercury	J	I		0.0285	mg/kg	0.00196	EPA7471A
Nickel				0.276	mg/kg	0.03	EPA6010B
Selenium				1	mg/kg	0.129	EPA6010B
Silver	J	I		0.105	mg/kg	0.0295	EPA6010B
Zinc				15.2	mg/kg	0.176	EPA6010B
Radionuclides							
Actinium-228	U			0.0375	pCi/g	0.196	EPIA-013B
Antimony-124	U			-0.015	pCi/g	0.0586	EPIA-013B
Antimony-125	U			0.0365	pCi/g	0.117	EPIA-013B
Barium-133	U			0.00484	pCi/g	0.0481	EPIA-013B
Cerium-144	U			-0.0298	pCi/g	0.192	EPIA-013B
Cesium-134	U			0.00854	pCi/g	0.0435	EPIA-013B
Cesium-137	R		4	0.108	pCi/g	0.0794	EPIA-013B
Cobalt-57	U			-0.00188	pCi/g	0.0236	EPIA-013B
Cobalt-58	U			0.0285	pCi/g	0.0641	EPIA-013B
Cobalt-60	U			-0.00673	pCi/g	0.0484	EPIA-013B
Europium-152	U			0.0249	pCi/g	0.113	EPIA-013B
Europium-154	U			0.0534	pCi/g	0.18	EPIA-013B
Europium-155	U			0.0169	pCi/g	0.0891	EPIA-013B
Gross alpha	U			0.1	pCi/g	0.377	EPIA-001B
Lead-212	R		4	0.874	pCi/g	0.0751	EPIA-013B
Manganese-54	U			0.0133	pCi/g	0.0516	EPIA-013B
Neptunium-239	U			0.087	pCi/g	0.174	EPIA-013B
Nonvolatile beta				7.27	pCi/g	0.579	EPIA-001B
Plutonium-238	U			-0.00105	pCi/g	0.0231	EPIA-012B
Plutonium-239/240	U			0	pCi/g	0.0131	EPIA-012B
Potassium-40				3.51	pCi/g	0.487	EPIA-013B
Promethium-144	U			-0.00267	pCi/g	0.0449	EPIA-013B
Promethium-146	U			0.00302	pCi/g	0.058	EPIA-013B
Ruthenium-106	U			0.0746	pCi/g	0.383	EPIA-013B
Sodium-22	U			0.0191	pCi/g	0.0649	EPIA-013B
Strontium-89/90	U			0.168	pCi/g	0.826	EPA905
Tin-113	U			0.0347	pCi/g	0.06	EPIA-013B
Tritium	U			0.0751	pCi/g	0.171	EPIA-002B

SURVEY ID: SRF-01-02 (cont.) **Sample ID:** 117019

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.0232	pCi/g	0.0256	EPIA-011B
Uranium-235	U			0.00651	pCi/g	0.0195	EPIA-011B
Uranium-238	R		4	0.024	pCi/g	0.0229	EPIA-011B
Yttrium-88	U			-0.00316	pCi/g	0.0656	EPIA-013B
Zinc-65	U			-0.00192	pCi/g	0.116	EPIA-013B
Zirconium-95	U			0.0348	pCi/g	0.112	EPIA-013B
Volatile Organic Compounds							
Acetone	J	K	O	402	µg/kg	51.5	EPA8260B
Benzene	J	K	O	5.63	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	66.7	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	K	O	7.6	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	J	K	O	58.2	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	J	K	O	7.11	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	K	O	33.6	µg/kg	5	EPA8260B

SURVEY ID: SRF-01-03 **Sample ID:** 117020

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.455	mg/kg	0.174	EPA6010B
Arsenic				0.841	mg/kg	0.207	EPA6010B
Barium				3.18	mg/kg	0.025	EPA6010B
Cadmium	U			0.227	mg/kg	0.017	EPA6010B
Calcium				5010	mg/kg	3.172	EPA6010B
Chromium	J	I		0.104	mg/kg	0.0331	EPA6010B
Copper				1.28	mg/kg	0.06	EPA6010B
Lead	U			0.227	mg/kg	0.072	EPA6010B
Magnesium				336	mg/kg	0.231	EPA6010B
Manganese				20.1	mg/kg	0.323	EPA6010B
Mercury				0.0706	mg/kg	0.002	EPA7471A
Nickel	U			0.227	mg/kg	0.029	EPA6010B
Selenium				0.925	mg/kg	0.123	EPA6010B
Silver	U			0.227	mg/kg	0.0282	EPA6010B
Zinc				6.96	mg/kg	0.168	EPA6010B
Radionuclides							
Actinium-228	U			0.186	pCi/g	0.233	EPIA-013B
Antimony-124	U			-0.00905	pCi/g	0.0638	EPIA-013B
Antimony-125	U			-0.0509	pCi/g	0.114	EPIA-013B
Barium-133	U			-0.00135	pCi/g	0.0522	EPIA-013B
Cerium-144	U			-0.0966	pCi/g	0.243	EPIA-013B
Cesium-134	U			-0.000852	pCi/g	0.044	EPIA-013B
Cesium-137	R		4	0.114	pCi/g	0.0809	EPIA-013B
Cobalt-57	U			0.00995	pCi/g	0.033	EPIA-013B
Cobalt-58	U			0.0134	pCi/g	0.062	EPIA-013B
Cobalt-60	U			0.00821	pCi/g	0.0672	EPIA-013B
Europium-152	U			-0.00701	pCi/g	0.126	EPIA-013B
Europium-154	U			0.0512	pCi/g	0.149	EPIA-013B
Europium-155	U			0.0223	pCi/g	0.114	EPIA-013B
Gross alpha	U			-0.142	pCi/g	0.801	EPIA-001B
Lead-212	U			0.0704	pCi/g	0.0872	EPIA-013B
Manganese-54	U			-0.00517	pCi/g	0.0517	EPIA-013B
Neptunium-239	U			-0.0623	pCi/g	0.208	EPIA-013B
Nonvolatile beta				7.32	pCi/g	1.26	EPIA-001B
Plutonium-238	U			-0.00917	pCi/g	0.0406	EPIA-012B
Plutonium-239/240	U			-0.00217	pCi/g	0.0209	EPIA-012B
Potassium-40				4.41	pCi/g	0.459	EPIA-013B
Promethium-144	U			-0.0104	pCi/g	0.0443	EPIA-013B
Promethium-146	U			-0.0185	pCi/g	0.0575	EPIA-013B
Ruthenium-106	U			-0.0132	pCi/g	0.467	EPIA-013B
Sodium-22	U			0.0184	pCi/g	0.0538	EPIA-013B
Strontium-89/90	U			0.543	pCi/g	0.545	EPA905
Tin-113	U			0.0118	pCi/g	0.0694	EPIA-013B
Tritium	U			0.0205	pCi/g	0.132	EPIA-002B

SURVEY ID: SRF-01-03 (cont.) **Sample ID:** 117020

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.00685	pCi/g	0.023	EPIA-011B
Uranium-235	U			-0.00258	pCi/g	0.0203	EPIA-011B
Uranium-238	U			-0.00118	pCi/g	0.023	EPIA-011B
Yttrium-88	U			0.0122	pCi/g	0.0775	EPIA-013B
Zinc-65	U			-0.0219	pCi/g	0.114	EPIA-013B
Zirconium-95	U			-0.0247	pCi/g	0.112	EPIA-013B
Volatile Organic Compounds							
Acetone				161	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	I		19.1	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone				54.7	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	U			25	µg/kg	5	EPA8260B

SURVEY ID: SRF-01-04 **Sample ID:** 117021

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	JU		4	0.259	mg/kg	0.177	EPA6010B
Arsenic				0.355	mg/kg	0.211	EPA6010B
Barium				3.92	mg/kg	0.025	EPA6010B
Cadmium	JU		4	0.0252	mg/kg	0.018	EPA6010B
Calcium				17800	mg/kg	3.228	EPA6010B
Chromium				0.251	mg/kg	0.0338	EPA6010B
Copper				0.316	mg/kg	0.0611	EPA6010B
Lead	J	I		0.146	mg/kg	0.073	EPA6010B
Magnesium				475	mg/kg	0.235	EPA6010B
Manganese				37	mg/kg	0.329	EPA6010B
Mercury	J	I		0.0306	mg/kg	0.00222	EPA7471A
Nickel	U			0.231	mg/kg	0.03	EPA6010B
Selenium				0.938	mg/kg	0.125	EPA6010B
Silver	J	I		0.0501	mg/kg	0.0287	EPA6010B
Zinc				19.5	mg/kg	0.171	EPA6010B
Radionuclides							
Actinium-228	U			0.0867	pCi/g	0.174	EPIA-013B
Antimony-124	U			0.0173	pCi/g	0.0584	EPIA-013B
Antimony-125	U			0.0124	pCi/g	0.101	EPIA-013B
Barium-133	U			0.00889	pCi/g	0.0478	EPIA-013B
Cerium-144	U			0.0362	pCi/g	0.211	EPIA-013B
Cesium-134	U			-0.00304	pCi/g	0.0408	EPIA-013B
Cesium-137	U			-0.00711	pCi/g	0.0348	EPIA-013B
Cobalt-57	U			0.00987	pCi/g	0.0237	EPIA-013B
Cobalt-58	U			-0.00533	pCi/g	0.0518	EPIA-013B
Cobalt-60	U			0.0187	pCi/g	0.0547	EPIA-013B
Europium-152	U			0.0114	pCi/g	0.112	EPIA-013B
Europium-154	U			0.0174	pCi/g	0.132	EPIA-013B
Europium-155	U			0.0404	pCi/g	0.111	EPIA-013B
Gross alpha	U			0.122	pCi/g	0.428	EPIA-001B
Lead-212	U			0.014	pCi/g	0.11	EPIA-013B
Manganese-54	U			0.0061	pCi/g	0.0453	EPIA-013B
Neptunium-239	U			0.028	pCi/g	0.184	EPIA-013B
Nonvolatile beta				7.7	pCi/g	0.568	EPIA-001B
Plutonium-238	U			0	pCi/g	0.0113	EPIA-012B
Plutonium-239/240	U			-0.000901	pCi/g	0.0198	EPIA-012B
Potassium-40				3.39	pCi/g	0.456	EPIA-013B
Promethium-144	U			-0.00147	pCi/g	0.0413	EPIA-013B
Promethium-146	U			0.00492	pCi/g	0.0499	EPIA-013B
Ruthenium-106	U			-0.0714	pCi/g	0.364	EPIA-013B
Sodium-22	U			0.00639	pCi/g	0.0476	EPIA-013B
Strontium-89/90	U			0.532	pCi/g	0.765	EPA905
Tin-113	U			-0.0225	pCi/g	0.0512	EPIA-013B
Tritium	U			0.0632	pCi/g	0.144	EPIA-002B

SURVEY ID: SRF-01-04 (cont.) **Sample ID:** 117021

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Tritium	U			0.0155	pCi/g	0.142	EPIA-002B
Uranium-233/234	U			-0.00341	pCi/g	0.0268	EPIA-011B
Uranium-235	U			0.000996	pCi/g	0.0247	EPIA-011B
Uranium-238	R		4	0.0142	pCi/g	0.0106	EPIA-011B
Yttrium-88	U			-0.0146	pCi/g	0.0485	EPIA-013B
Zinc-65	U			0.0615	pCi/g	0.114	EPIA-013B
Zirconium-95	U			0.0114	pCi/g	0.105	EPIA-013B
Volatile Organic Compounds							
Acetone	J	K	O	593	µg/kg	51.5	EPA8260B
Benzene	J	IK	O	2.64	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	JU	L	IX	5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	39.6	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	IK	O	4.23	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	J	K	O	37.8	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	16	µg/kg	5	EPA8260B

SURVEY ID: SRF-01-05 **Sample ID:** 117022

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.459	mg/kg	0.175	EPA6010B
Arsenic				0.543	mg/kg	0.209	EPA6010B
Barium				3.33	mg/kg	0.024	EPA6010B
Cadmium	JU		4	0.0224	mg/kg	0.017	EPA6010B
Calcium				10400	mg/kg	3.2	EPA6010B
Chromium	J	I		0.166	mg/kg	0.0334	EPA6010B
Copper				0.413	mg/kg	0.0606	EPA6010B
Lead	J	I		0.119	mg/kg	0.072	EPA6010B
Magnesium				375	mg/kg	0.233	EPA6010B
Manganese	J	K	I	18.5	mg/kg	0.326	EPA6010B
Mercury	J	L	I	0.0992	mg/kg	0.00221	EPA7471A
Nickel	U			0.229	mg/kg	0.029	EPA6010B
Selenium				1.02	mg/kg	0.124	EPA6010B
Silver	U			0.229	mg/kg	0.0284	EPA6010B
Zinc				17.9	mg/kg	0.17	EPA6010B
Radionuclides							
Actinium-228	U			0.145	pCi/g	0.203	EPIA-013B
Actinium-228	U			0.179	pCi/g	0.201	EPIA-013B
Antimony-124	U			-0.000566	pCi/g	0.0663	EPIA-013B
Antimony-124	U			-0.00867	pCi/g	0.0604	EPIA-013B
Antimony-125	U			0.00376	pCi/g	0.114	EPIA-013B
Antimony-125	U			0.0298	pCi/g	0.0955	EPIA-013B
Barium-133	U			0.00386	pCi/g	0.0515	EPIA-013B
Barium-133	U			0.0286	pCi/g	0.0523	EPIA-013B
Cerium-144	U			-0.00121	pCi/g	0.225	EPIA-013B
Cerium-144	U			0.00574	pCi/g	0.209	EPIA-013B
Cesium-134	U			-0.00193	pCi/g	0.0419	EPIA-013B
Cesium-134	U			0.0152	pCi/g	0.0465	EPIA-013B
Cesium-137	U			0.00304	pCi/g	0.0437	EPIA-013B
Cesium-137	U			0.0119	pCi/g	0.0449	EPIA-013B
Cobalt-57	U			0.00534	pCi/g	0.0261	EPIA-013B
Cobalt-57	U			0.00733	pCi/g	0.0262	EPIA-013B
Cobalt-58	U			0.00134	pCi/g	0.0559	EPIA-013B
Cobalt-58	U			-0.0156	pCi/g	0.05	EPIA-013B
Cobalt-60	U			0.0128	pCi/g	0.0552	EPIA-013B
Cobalt-60	U			0.0145	pCi/g	0.0543	EPIA-013B
Europium-152	U			0.000658	pCi/g	0.114	EPIA-013B
Europium-152	U			-0.00988	pCi/g	0.108	EPIA-013B
Europium-154	U			-0.00085	pCi/g	0.149	EPIA-013B
Europium-154	U			0.0158	pCi/g	0.14	EPIA-013B
Europium-155	U			-0.0104	pCi/g	0.0947	EPIA-013B
Europium-155	U			0.0355	pCi/g	0.114	EPIA-013B
Gross alpha	U			0.502	pCi/g	1.58	EPIA-001B
Gross alpha	U			0.653	pCi/g	1.29	EPIA-001B

SURVEY ID: SRF-01-05 (cont.) **Sample ID:** 117022

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Lead-212	U			0.0725	pCi/g	0.0797	EPIA-013B
Lead-212	R		4	0.0923	pCi/g	0.0779	EPIA-013B
Manganese-54	U			-0.00379	pCi/g	0.0436	EPIA-013B
Manganese-54	U			0.0103	pCi/g	0.0434	EPIA-013B
Neptunium-239	U			-0.0297	pCi/g	0.183	EPIA-013B
Neptunium-239	U			-0.0625	pCi/g	0.168	EPIA-013B
Nonvolatile beta				8.14	pCi/g	2.57	EPIA-001B
Nonvolatile beta				8.22	pCi/g	2.48	EPIA-001B
Plutonium-238	U			0	pCi/g	0.0183	EPIA-012B
Plutonium-239/240	U			0.0168	pCi/g	0.0321	EPIA-012B
Potassium-40	R		4	2.88	pCi/g	1.37	EPIA-013B
Potassium-40				3.64	pCi/g	0.498	EPIA-013B
Promethium-144	U			-0.0155	pCi/g	0.0451	EPIA-013B
Promethium-144	U			0.0193	pCi/g	0.0495	EPIA-013B
Promethium-146	U			-0.00327	pCi/g	0.0528	EPIA-013B
Promethium-146	U			-0.0233	pCi/g	0.0475	EPIA-013B
Ruthenium-106	U			-0.0232	pCi/g	0.396	EPIA-013B
Ruthenium-106	U			0.138	pCi/g	0.415	EPIA-013B
Sodium-22	U			0.00542	pCi/g	0.0503	EPIA-013B
Sodium-22	U			-0.000404	pCi/g	0.0538	EPIA-013B
Strontium-89/90	U			0.733	pCi/g	1.15	EPA905
Tin-113	U			-0.0245	pCi/g	0.0483	EPIA-013B
Tin-113	U			-0.00129	pCi/g	0.0504	EPIA-013B
Tritium	U			-0.0433	pCi/g	0.214	EPIA-002B
Uranium-233/234	U			-0.00837	pCi/g	0.061	EPIA-011B
Uranium-235	U			-0.00575	pCi/g	0.0453	EPIA-011B
Uranium-238	U			-0.0043	pCi/g	0.0415	EPIA-011B
Yttrium-88	U			0.0119	pCi/g	0.0574	EPIA-013B
Yttrium-88	U			-0.00547	pCi/g	0.0586	EPIA-013B
Zinc-65	U			0.0308	pCi/g	0.111	EPIA-013B
Zinc-65	U			0.00905	pCi/g	0.0994	EPIA-013B
Zirconium-95	U			0.00184	pCi/g	0.0993	EPIA-013B
Zirconium-95	U			0.00348	pCi/g	0.101	EPIA-013B
Volatile Organic Compounds							
Acetone	J	K	O	2490	µg/kg	51.5	EPA8260B
Benzene	J	IK	O	3.44	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B

SURVEY ID: SRF-01-05 (cont.) **Sample ID:** 117022

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
Dichloromethane (Methylene chloride)	J	K	O	91.8	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	K	O	66.4	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	J	K	O	34.7	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	J	K	O	80.2	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	K	O	255	µg/kg	5	EPA8260B

SURVEY ID: SRF-02-01 **Sample ID:** 117023

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.467	mg/kg	0.178	EPA6010B
Arsenic				0.534	mg/kg	0.213	EPA6010B
Barium				6.5	mg/kg	0.025	EPA6010B
Cadmium	U			0.234	mg/kg	0.018	EPA6010B
Calcium				34500	mg/kg	6.519	EPA6010B
Chromium				0.682	mg/kg	0.0341	EPA6010B
Copper				0.826	mg/kg	0.0617	EPA6010B
Lead				0.299	mg/kg	0.074	EPA6010B
Magnesium				750	mg/kg	0.237	EPA6010B
Manganese				38	mg/kg	0.332	EPA6010B
Mercury				0.119	mg/kg	0.00207	EPA7471A
Nickel	U	V		0.373	mg/kg	0.03	EPA6010B
Selenium				0.859	mg/kg	0.126	EPA6010B
Silver	U			0.234	mg/kg	0.029	EPA6010B
Zinc				23.6	mg/kg	0.173	EPA6010B
Radionuclides							
Actinium-228	U			-0.0298	pCi/g	0.21	EPIA-013B
Antimony-124	U			0.0344	pCi/g	0.0824	EPIA-013B
Antimony-125	U			-0.0292	pCi/g	0.142	EPIA-013B
Barium-133	U			-0.00508	pCi/g	0.0604	EPIA-013B

SURVEY ID: SRF-02-01 (cont.) **Sample ID:** 117023

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Cerium-144	R		4	0.294	pCi/g	0.272	EPIA-013B
Cesium-134	U			0.0239	pCi/g	0.0559	EPIA-013B
Cesium-137	U			0.0335	pCi/g	0.0631	EPIA-013B
Cobalt-57	U			0.0141	pCi/g	0.0329	EPIA-013B
Cobalt-58	U			0.0295	pCi/g	0.0551	EPIA-013B
Cobalt-60	U			0.0318	pCi/g	0.0637	EPIA-013B
Europium-152	U			-0.0171	pCi/g	0.149	EPIA-013B
Europium-154	U			-0.0251	pCi/g	0.149	EPIA-013B
Europium-155	U			0.000223	pCi/g	0.122	EPIA-013B
Gross alpha	U			-0.19	pCi/g	1.5	EPIA-001B
Lead-212	U			0.0869	pCi/g	0.0955	EPIA-013B
Manganese-54	U			0.0257	pCi/g	0.0584	EPIA-013B
Neptunium-239	U			0.0165	pCi/g	0.234	EPIA-013B
Nonvolatile beta				7.76	pCi/g	1.7	EPIA-001B
Plutonium-238	U			0.00645	pCi/g	0.0264	EPIA-012B
Plutonium-239/240	U			-0.00204	pCi/g	0.0264	EPIA-012B
Potassium-40				4.23	pCi/g	0.726	EPIA-013B
Promethium-144	U			0.0247	pCi/g	0.0659	EPIA-013B
Promethium-146	U			-0.044	pCi/g	0.0655	EPIA-013B
Ruthenium-106	U			0.245	pCi/g	0.547	EPIA-013B
Sodium-22	U			-0.00917	pCi/g	0.0539	EPIA-013B
Strontium-89/90	U			0.037	pCi/g	0.752	EPA905
Tin-113	U			0.0263	pCi/g	0.0764	EPIA-013B
Tritium	U			-0.0229	pCi/g	0.0984	EPIA-002B
Uranium-233/234	U			0.0164	pCi/g	0.0277	EPIA-011B
Uranium-235	U			0.000961	pCi/g	0.0239	EPIA-011B
Uranium-238	U			0.000959	pCi/g	0.0238	EPIA-011B
Yttrium-88	U			0.0152	pCi/g	0.0764	EPIA-013B
Zinc-65	U			0.109	pCi/g	0.122	EPIA-013B
Zirconium-95	U			0.0612	pCi/g	0.138	EPIA-013B
Volatile Organic Compounds							
Acetone	J	K	O	180	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	62.6	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B

SURVEY ID: SRF-02-01 (cont.) **Sample ID:** 117023

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	IK	O	3.18	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	14.2	µg/kg	5	EPA8260B

SURVEY ID: SRF-02-02 **Sample ID:** 117024

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.481	mg/kg	0.184	EPA6010B
Arsenic				0.55	mg/kg	0.219	EPA6010B
Barium				3.84	mg/kg	0.026	EPA6010B
Cadmium	JU		4	0.0225	mg/kg	0.018	EPA6010B
Calcium				32400	mg/kg	6.707	EPA6010B
Chromium				0.43	mg/kg	0.035	EPA6010B
Copper	J	I		0.217	mg/kg	0.0635	EPA6010B
Lead				0.245	mg/kg	0.076	EPA6010B
Magnesium				677	mg/kg	0.244	EPA6010B
Manganese				8.99	mg/kg	0.342	EPA6010B
Mercury				0.0532	mg/kg	0.00212	EPA7471A
Nickel	U			0.24	mg/kg	0.031	EPA6010B
Selenium				1.07	mg/kg	0.13	EPA6010B
Silver	U			0.24	mg/kg	0.0298	EPA6010B
Zinc				18.6	mg/kg	0.178	EPA6010B
Radionuclides							
Actinium-228	U			0.085	pCi/g	0.18	EPIA-013B
Antimony-124	U			-0.0146	pCi/g	0.0545	EPIA-013B
Antimony-125	U			-0.0076	pCi/g	0.102	EPIA-013B
Barium-133	U			-0.0242	pCi/g	0.0383	EPIA-013B
Cerium-144	U			0.0858	pCi/g	0.189	EPIA-013B
Cesium-134	U			-0.00547	pCi/g	0.0373	EPIA-013B
Cesium-137	U			0.0144	pCi/g	0.05	EPIA-013B

SURVEY ID: SRF-02-02 (cont.) **Sample ID:** 117024

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Cobalt-57	U			-0.00706	pCi/g	0.0228	EPIA-013B
Cobalt-58	U			0.0119	pCi/g	0.0573	EPIA-013B
Cobalt-60	U			0.0421	pCi/g	0.0582	EPIA-013B
Europium-152	U			0.0431	pCi/g	0.111	EPIA-013B
Europium-154	U			0.019	pCi/g	0.139	EPIA-013B
Europium-155	U			-0.00745	pCi/g	0.0899	EPIA-013B
Gross alpha	U			-0.214	pCi/g	1.22	EPIA-001B
Lead-212	U			0.0586	pCi/g	0.0773	EPIA-013B
Manganese-54	U			-0.00243	pCi/g	0.0452	EPIA-013B
Neptunium-239	U			-0.0467	pCi/g	0.174	EPIA-013B
Nonvolatile beta				5.87	pCi/g	1.06	EPIA-001B
Plutonium-238	U			0.00398	pCi/g	0.028	EPIA-012B
Plutonium-239/240	U			-0.00116	pCi/g	0.0151	EPIA-012B
Potassium-40				2.54	pCi/g	0.459	EPIA-013B
Promethium-144	U			0.0223	pCi/g	0.0489	EPIA-013B
Promethium-146	U			0.00314	pCi/g	0.047	EPIA-013B
Ruthenium-106	U			0.0177	pCi/g	0.41	EPIA-013B
Sodium-22	U			0.00668	pCi/g	0.05	EPIA-013B
Strontium-89/90	J	I		0.49	pCi/g	0.48	EPA905
Tin-113	U			-0.00762	pCi/g	0.0537	EPIA-013B
Tritium	U			-0.0264	pCi/g	0.107	EPIA-002B
Uranium-233/234	U			0.00679	pCi/g	0.0144	EPIA-011B
Uranium-235	U			-0.000914	pCi/g	0.0178	EPIA-011B
Uranium-238	R		4	0.0119	pCi/g	0.0109	EPIA-011B
Yttrium-88	U			0.00638	pCi/g	0.0576	EPIA-013B
Zinc-65	U			-0.0305	pCi/g	0.104	EPIA-013B
Zirconium-95	U			0.0125	pCi/g	0.0955	EPIA-013B
Volatile Organic Compounds							
Acetone	J	IK	O	104	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	45.7	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	K	O	6.88	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B

SURVEY ID: SRF-02-02 (cont.) **Sample ID:** 117024

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	J	K	O	5.4	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	K	O	34.3	µg/kg	5	EPA8260B

SURVEY ID: SRF-02-03 **Sample ID:** 117025

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.5	mg/kg	0.191	EPA6010B
Arsenic				0.535	mg/kg	0.228	EPA6010B
Barium				2.96	mg/kg	0.027	EPA6010B
Cadmium	U			0.25	mg/kg	0.019	EPA6010B
Calcium				14200	mg/kg	3.486	EPA6010B
Chromium				0.509	mg/kg	0.0365	EPA6010B
Copper				1.48	mg/kg	0.066	EPA6010B
Lead				1.46	mg/kg	0.079	EPA6010B
Magnesium				537	mg/kg	0.254	EPA6010B
Manganese				7.11	mg/kg	0.355	EPA6010B
Mercury	J	L	I	0.618	mg/kg	0.00205	EPA7471A
Nickel	U	V		0.366	mg/kg	0.032	EPA6010B
Selenium				1.27	mg/kg	0.135	EPA6010B
Silver	J	I		0.0969	mg/kg	0.031	EPA6010B
Zinc				12.6	mg/kg	0.185	EPA6010B
Radionuclides							
Actinium-228	U			0.0133	pCi/g	0.27	EPIA-013B
Antimony-124	U			0.0434	pCi/g	0.105	EPIA-013B
Antimony-125	U			-0.106	pCi/g	0.16	EPIA-013B
Barium-133	U			0.0178	pCi/g	0.0759	EPIA-013B
Cerium-144	U			0.000742	pCi/g	0.326	EPIA-013B
Cesium-134	U			-0.00891	pCi/g	0.0637	EPIA-013B
Cesium-137				0.621	pCi/g	0.0656	EPIA-013B
Cobalt-57	U			0.0289	pCi/g	0.0411	EPIA-013B
Cobalt-58	U			-0.00466	pCi/g	0.0946	EPIA-013B
Cobalt-60	U			0.0198	pCi/g	0.0882	EPIA-013B

SURVEY ID: SRF-02-03 (cont.) **Sample ID:** 117025

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Europium-152	U			0.0139	pCi/g	0.191	EPIA-013B
Europium-154	U			0.0376	pCi/g	0.207	EPIA-013B
Europium-155	U			0.0159	pCi/g	0.146	EPIA-013B
Gross alpha	U			0.111	pCi/g	0.995	EPIA-001B
Lead-212	U			0.0564	pCi/g	0.11	EPIA-013B
Manganese-54	U			0.0811	pCi/g	0.0872	EPIA-013B
Neptunium-239	U			-0.0876	pCi/g	0.269	EPIA-013B
Nonvolatile beta				8.12	pCi/g	1.04	EPIA-001B
Plutonium-238	U			0.00402	pCi/g	0.0303	EPIA-012B
Plutonium-239/240	U			-0.00115	pCi/g	0.0149	EPIA-012B
Potassium-40				3.58	pCi/g	0.695	EPIA-013B
Promethium-144	U			0.015	pCi/g	0.075	EPIA-013B
Promethium-146	U			-0.00799	pCi/g	0.0788	EPIA-013B
Ruthenium-106	U			0.0415	pCi/g	0.699	EPIA-013B
Sodium-22	U			0.0136	pCi/g	0.0467	EPIA-013B
Strontium-89/90	U			0.427	pCi/g	0.505	EPA905
Tin-113	U			0.0399	pCi/g	0.097	EPIA-013B
Tritium	U			-0.0238	pCi/g	0.162	EPIA-002B
Uranium-233/234	U			0.00548	pCi/g	0.0203	EPIA-011B
Uranium-235	U			0.00205	pCi/g	0.0142	EPIA-011B
Uranium-238	U			0.0014	pCi/g	0.0167	EPIA-011B
Yttrium-88	U			-0.0388	pCi/g	0.0872	EPIA-013B
Zinc-65	U			0.0773	pCi/g	0.151	EPIA-013B
Zirconium-95	U			0.00407	pCi/g	0.164	EPIA-013B
Volatile Organic Compounds							
Acetone	J	K	O	173	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	35.8	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B

SURVEY ID: SRF-02-03 (cont.) **Sample ID:** 117025

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	13.1	µg/kg	5	EPA8260B

SURVEY ID: SRF-02-03-A **Sample ID:** 117026

Sample type: Field Duplicate Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.472	mg/kg	0.18	EPA6010B
Arsenic				0.666	mg/kg	0.215	EPA6010B
Barium				5.99	mg/kg	0.025	EPA6010B
Cadmium	JU		4	0.0574	mg/kg	0.018	EPA6010B
Calcium				29600	mg/kg	6.575	EPA6010B
Chromium				0.461	mg/kg	0.0344	EPA6010B
Copper				7.3	mg/kg	0.0623	EPA6010B
Lead	J	I		0.189	mg/kg	0.075	EPA6010B
Magnesium				1400	mg/kg	0.24	EPA6010B
Manganese				14.3	mg/kg	0.335	EPA6010B
Mercury				0.396	mg/kg	0.00197	EPA7471A
Nickel	U			0.236	mg/kg	0.03	EPA6010B
Selenium				2.85	mg/kg	0.127	EPA6010B
Silver				0.712	mg/kg	0.0292	EPA6010B
Zinc				21.5	mg/kg	0.175	EPA6010B
Radionuclides							
Actinium-228	U			0.283	pCi/g	0.296	EPIA-013B
Antimony-124	U			-0.0295	pCi/g	0.0869	EPIA-013B
Antimony-125	U			0.035	pCi/g	0.168	EPIA-013B
Barium-133	U			0.00484	pCi/g	0.0702	EPIA-013B
Cerium-144	U			0.121	pCi/g	0.309	EPIA-013B
Cesium-134	U			-0.0383	pCi/g	0.061	EPIA-013B
Cesium-137				0.751	pCi/g	0.0596	EPIA-013B
Cobalt-57	U			-0.00317	pCi/g	0.0378	EPIA-013B
Cobalt-58	U			-0.0398	pCi/g	0.0747	EPIA-013B
Cobalt-60	U			-0.0107	pCi/g	0.0717	EPIA-013B
Europium-152	U			0.0379	pCi/g	0.171	EPIA-013B
Europium-154	U			-0.0501	pCi/g	0.199	EPIA-013B
Europium-155	U			0.0157	pCi/g	0.141	EPIA-013B

SURVEY ID: SRF-02-03-A (cont.) **Sample ID:** 117026

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Gross alpha	U			0.162	pCi/g	1.07	EPIA-001B
Lead-212	U			0.0862	pCi/g	0.107	EPIA-013B
Manganese-54	U			0.0215	pCi/g	0.0693	EPIA-013B
Neptunium-239	U			0.114	pCi/g	0.277	EPIA-013B
Nonvolatile beta				6.29	pCi/g	1.03	EPIA-001B
Plutonium-238	U			-0.0137	pCi/g	0.0438	EPIA-012B
Plutonium-239/240	U			-0.00307	pCi/g	0.0242	EPIA-012B
Potassium-40				3.53	pCi/g	0.739	EPIA-013B
Promethium-144	U			-0.0191	pCi/g	0.0621	EPIA-013B
Promethium-146	U			-0.0416	pCi/g	0.0706	EPIA-013B
Ruthenium-106	U			0.0977	pCi/g	0.575	EPIA-013B
Sodium-22	U			-0.0179	pCi/g	0.0722	EPIA-013B
Strontium-89/90	U			0.391	pCi/g	0.603	EPA905
Tin-113	U			0.00248	pCi/g	0.0845	EPIA-013B
Tritium	U			-0.0247	pCi/g	0.13	EPIA-002B
Uranium-233/234	U			-0.00104	pCi/g	0.0265	EPIA-011B
Uranium-235	U			-0.00188	pCi/g	0.0181	EPIA-011B
Uranium-238	U			0.0078	pCi/g	0.0078	EPIA-011B
Yttrium-88	U			0.0237	pCi/g	0.0977	EPIA-013B
Zinc-65	U			-0.0228	pCi/g	0.138	EPIA-013B
Zirconium-95	U			0.0143	pCi/g	0.143	EPIA-013B
Volatile Organic Compounds							
Acetone	J	I		79.2	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)				36.1	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B

SURVEY ID: SRF-02-03-A (cont.) **Sample ID:** 117026

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	U			25	µg/kg	5	EPA8260B

SURVEY ID: SRF-03-01 **Sample ID:** 117027

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.495	mg/kg	0.189	EPA6010B
Arsenic				0.465	mg/kg	0.226	EPA6010B
Barium				1.74	mg/kg	0.027	EPA6010B
Cadmium	J	I		0.0308	mg/kg	0.019	EPA6010B
Calcium				9240	mg/kg	3.451	EPA6010B
Chromium	J	I		0.152	mg/kg	0.0361	EPA6010B
Copper				0.363	mg/kg	0.0653	EPA6010B
Lead	J	I		0.0998	mg/kg	0.078	EPA6010B
Magnesium				375	mg/kg	0.251	EPA6010B
Manganese				19.2	mg/kg	0.351	EPA6010B
Mercury				0.268	mg/kg	0.00205	EPA7471A
Nickel	U			0.248	mg/kg	0.032	EPA6010B
Selenium				0.905	mg/kg	0.134	EPA6010B
Silver	U			0.248	mg/kg	0.0307	EPA6010B
Zinc				12.4	mg/kg	0.184	EPA6010B
Radionuclides							
Actinium-228	U			0.126	pCi/g	0.249	EPIA-013B
Antimony-124	U			0.0153	pCi/g	0.0876	EPIA-013B
Antimony-125	U			0.0385	pCi/g	0.153	EPIA-013B
Barium-133	U			-0.0676	pCi/g	0.0591	EPIA-013B
Cerium-144	U			-0.0603	pCi/g	0.283	EPIA-013B
Cesium-134	U			-0.0117	pCi/g	0.0599	EPIA-013B
Cesium-137	U			0.032	pCi/g	0.0616	EPIA-013B
Cobalt-57	U			0.00686	pCi/g	0.0375	EPIA-013B
Cobalt-58	U			0.0495	pCi/g	0.0667	EPIA-013B
Cobalt-60	U			0.0444	pCi/g	0.0685	EPIA-013B
Europium-152	U			0.0307	pCi/g	0.172	EPIA-013B
Europium-154	U			-0.0319	pCi/g	0.186	EPIA-013B
Europium-155	U			-0.0712	pCi/g	0.134	EPIA-013B
Gross alpha	U			-0.0176	pCi/g	1.75	EPIA-001B
Lead-212	U			0.0128	pCi/g	0.107	EPIA-013B
Manganese-54	U			0.0347	pCi/g	0.0649	EPIA-013B

SURVEY ID: SRF-03-01 (cont.) **Sample ID:** 117027

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Neptunium-239	U			0.0519	pCi/g	0.277	EPIA-013B
Nonvolatile beta				7.32	pCi/g	1.75	EPIA-001B
Plutonium-238	U			-0.00319	pCi/g	0.0594	EPIA-012B
Plutonium-239/240	U			0.00218	pCi/g	0.0261	EPIA-012B
Potassium-40				2.47	pCi/g	0.6	EPIA-013B
Promethium-144	U			0.03	pCi/g	0.0621	EPIA-013B
Promethium-146	U			0.0264	pCi/g	0.0695	EPIA-013B
Ruthenium-106	U			-0.0495	pCi/g	0.514	EPIA-013B
Sodium-22	U			-0.00353	pCi/g	0.0672	EPIA-013B
Strontium-89/90	U			0.675	pCi/g	0.868	EPA905
Tin-113	U			-0.0209	pCi/g	0.0729	EPIA-013B
Tritium	U			0	pCi/g	0.144	EPIA-002B
Tritium	U			-0.01	pCi/g	0.137	EPIA-002B
Uranium-233/234	U			0.000518	pCi/g	0.047	EPIA-011B
Uranium-235	U			0.0045	pCi/g	0.0327	EPIA-011B
Uranium-238	R		4	0.0248	pCi/g	0.0228	EPIA-011B
Yttrium-88	U			-0.00252	pCi/g	0.0679	EPIA-013B
Zinc-65	U			-0.0121	pCi/g	0.128	EPIA-013B
Zirconium-95	U			0.0463	pCi/g	0.136	EPIA-013B
Volatile Organic Compounds							
Acetone				347	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	I		17.8	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B

SURVEY ID: SRF-03-01 (cont.) **Sample ID:** 117027

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	I		5.89	µg/kg	5	EPA8260B

SURVEY ID: SRF-03-02 **Sample ID:** 117028

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.485	mg/kg	0.185	EPA6010B
Arsenic				0.546	mg/kg	0.221	EPA6010B
Barium				6.63	mg/kg	0.026	EPA6010B
Cadmium	J	I		0.022	mg/kg	0.018	EPA6010B
Calcium				4970	mg/kg	3.381	EPA6010B
Chromium				0.974	mg/kg	0.0354	EPA6010B
Copper				2.55	mg/kg	0.0641	EPA6010B
Lead				0.588	mg/kg	0.077	EPA6010B
Magnesium				278	mg/kg	0.246	EPA6010B
Manganese				76.2	mg/kg	0.344	EPA6010B
Mercury				0.0767	mg/kg	0.00223	EPA7471A
Nickel	U	V		0.517	mg/kg	0.031	EPA6010B
Selenium				0.883	mg/kg	0.131	EPA6010B
Silver	U			0.243	mg/kg	0.0301	EPA6010B
Zinc				16.3	mg/kg	0.18	EPA6010B
Radionuclides							
Actinium-228	U			0.185	pCi/g	0.202	EPIA-013B
Antimony-124	U			-0.0296	pCi/g	0.0597	EPIA-013B
Antimony-125	U			0.0238	pCi/g	0.105	EPIA-013B
Barium-133	U			0.0213	pCi/g	0.0522	EPIA-013B
Cerium-144	U			-0.00921	pCi/g	0.232	EPIA-013B
Cesium-134	U			-0.0552	pCi/g	0.0419	EPIA-013B
Cesium-137	U			0.009	pCi/g	0.0501	EPIA-013B
Cobalt-57	U			0.0121	pCi/g	0.0305	EPIA-013B
Cobalt-58	U			-0.0258	pCi/g	0.0533	EPIA-013B
Cobalt-60	U			-0.00223	pCi/g	0.0532	EPIA-013B
Europium-152	U			-0.0325	pCi/g	0.112	EPIA-013B
Europium-154	U			-0.0526	pCi/g	0.127	EPIA-013B
Europium-155	U			0.0502	pCi/g	0.11	EPIA-013B
Gross alpha	U			0.0683	pCi/g	1.69	EPIA-001B
Lead-212	R		4	0.0493	pCi/g	0.0825	EPIA-013B
Manganese-54	U			-0.000495	pCi/g	0.0498	EPIA-013B
Neptunium-239	U			0.0502	pCi/g	0.207	EPIA-013B
Nonvolatile beta				7.88	pCi/g	1.49	EPIA-001B

SURVEY ID: SRF-03-02 (cont.) **Sample ID:** 117028

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Plutonium-238	U			0	pCi/g	0.0136	EPIA-012B
Plutonium-238	U			0	pCi/g	0.0129	EPIA-012B
Plutonium-239/240	U			-0.00108	pCi/g	0.0238	EPIA-012B
Plutonium-239/240	U			-0.00103	pCi/g	0.0227	EPIA-012B
Potassium-40				3.89	pCi/g	0.423	EPIA-013B
Promethium-144	U			0.00514	pCi/g	0.0471	EPIA-013B
Promethium-146	U			-0.0187	pCi/g	0.05	EPIA-013B
Ruthenium-106	U			-0.0878	pCi/g	0.411	EPIA-013B
Sodium-22	U			-0.019	pCi/g	0.0458	EPIA-013B
Strontium-89/90	J	I		0.278	pCi/g	0.221	EPA905
Tin-113	U			-0.00207	pCi/g	0.0579	EPIA-013B
Tritium	U			0.0312	pCi/g	0.145	EPIA-002B
Uranium-233/234	U			0.0194	pCi/g	0.0314	EPIA-011B
Uranium-233/234	U			0.0145	pCi/g	0.0256	EPIA-011B
Uranium-235	U			0.00799	pCi/g	0.024	EPIA-011B
Uranium-235	U			-0.00198	pCi/g	0.0257	EPIA-011B
Uranium-238	U			0.0125	pCi/g	0.0239	EPIA-011B
Uranium-238	U			0.0114	pCi/g	0.0217	EPIA-011B
Yttrium-88	U			0.0177	pCi/g	0.0548	EPIA-013B
Zinc-65	U			0.0849	pCi/g	0.125	EPIA-013B
Zirconium-95	U			0.0159	pCi/g	0.109	EPIA-013B
Volatile Organic Compounds							
Acetone				127	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)				29.2	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene				6.1	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene				6.11	µg/kg	4.5	EPA8260B

SURVEY ID: SRF-03-02 (cont.) **Sample ID:** 117028

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes				25.1	µg/kg	5	EPA8260B

SURVEY ID: SRF-03-03 **Sample ID:** 117029

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.467	mg/kg	0.178	EPA6010B
Arsenic				0.713	mg/kg	0.213	EPA6010B
Barium				4.43	mg/kg	0.025	EPA6010B
Cadmium	JU		4	0.0273	mg/kg	0.018	EPA6010B
Calcium				20500	mg/kg	3.256	EPA6010B
Chromium				0.332	mg/kg	0.0341	EPA6010B
Copper				1.16	mg/kg	0.0617	EPA6010B
Lead	J	I		0.174	mg/kg	0.074	EPA6010B
Magnesium				825	mg/kg	0.237	EPA6010B
Manganese				9.96	mg/kg	0.332	EPA6010B
Mercury				0.261	mg/kg	0.0141	EPA7471A
Nickel	U			0.234	mg/kg	0.03	EPA6010B
Selenium				1.13	mg/kg	0.126	EPA6010B
Silver	J	I		0.067	mg/kg	0.029	EPA6010B
Zinc				23.8	mg/kg	0.173	EPA6010B
Radionuclides							
Actinium-228	U			0.0927	pCi/g	0.235	EPIA-013B
Antimony-124	U			-0.00361	pCi/g	0.0698	EPIA-013B
Antimony-125	U			0.0233	pCi/g	0.135	EPIA-013B
Barium-133	U			0.00717	pCi/g	0.0562	EPIA-013B
Cerium-144	U			0.056	pCi/g	0.254	EPIA-013B
Cesium-134	U			-0.0272	pCi/g	0.0463	EPIA-013B
Cesium-137	U			0.049	pCi/g	0.0619	EPIA-013B
Cobalt-57	U			0.000747	pCi/g	0.0308	EPIA-013B
Cobalt-58	U			0.0331	pCi/g	0.0736	EPIA-013B
Cobalt-60	U			0.0219	pCi/g	0.0666	EPIA-013B
Europium-152	U			0.0149	pCi/g	0.129	EPIA-013B
Europium-154	U			-0.014	pCi/g	0.157	EPIA-013B
Europium-155	U			0.0129	pCi/g	0.12	EPIA-013B
Gross alpha	U			-0.266	pCi/g	0.978	EPIA-001B
Lead-212	U			0.0493	pCi/g	0.0823	EPIA-013B
Manganese-54	U			0	pCi/g	0.0569	EPIA-013B

SURVEY ID: SRF-03-03 (cont.) **Sample ID:** 117029

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Neptunium-239	U			-0.117	pCi/g	0.196	EPIA-013B
Nonvolatile beta				6.13	pCi/g	1.18	EPIA-001B
Plutonium-238	U			-0.00305	pCi/g	0.024	EPIA-012B
Plutonium-239/240	U			-0.00153	pCi/g	0.0198	EPIA-012B
Potassium-40				2.97	pCi/g	0.556	EPIA-013B
Promethium-144	U			-0.00607	pCi/g	0.0529	EPIA-013B
Promethium-146	U			0.0157	pCi/g	0.0622	EPIA-013B
Ruthenium-106	U			0.127	pCi/g	0.521	EPIA-013B
Sodium-22	U			-0.00506	pCi/g	0.0567	EPIA-013B
Strontium-89/90	U			0.177	pCi/g	0.198	EPA905
Tin-113	U			0.0191	pCi/g	0.0637	EPIA-013B
Tritium	U			-0.0231	pCi/g	0.179	EPIA-002B
Uranium-233/234	U			0.000119	pCi/g	0.0224	EPIA-011B
Uranium-235	U			0.00322	pCi/g	0.0281	EPIA-011B
Uranium-238	U			0.00226	pCi/g	0.0157	EPIA-011B
Yttrium-88	U			-0.00236	pCi/g	0.0693	EPIA-013B
Zinc-65	U			-0.0198	pCi/g	0.106	EPIA-013B
Zirconium-95	U			-0.079	pCi/g	0.109	EPIA-013B
Volatile Organic Compounds							
Acetone	J	I		80	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)				112	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene				5.14	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B

SURVEY ID: SRF-03-03 (cont.) **Sample ID:** 117029

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	I		10.9	µg/kg	5	EPA8260B

SURVEY ID: SRF-03-04 **Sample ID:** 117030

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	JU		4	0.196	mg/kg	0.187	EPA6010B
Arsenic				0.638	mg/kg	0.223	EPA6010B
Barium				7.83	mg/kg	0.026	EPA6010B
Cadmium	U			0.245	mg/kg	0.019	EPA6010B
Calcium				23200	mg/kg	3.416	EPA6010B
Chromium				0.335	mg/kg	0.0357	EPA6010B
Copper				0.455	mg/kg	0.0647	EPA6010B
Lead	J	I		0.146	mg/kg	0.077	EPA6010B
Magnesium				533	mg/kg	0.249	EPA6010B
Manganese				62.6	mg/kg	0.348	EPA6010B
Mercury				0.0569	mg/kg	0.00225	EPA7471A
Nickel	U			0.245	mg/kg	0.031	EPA6010B
Selenium				1.05	mg/kg	0.132	EPA6010B
Silver	U			0.245	mg/kg	0.0304	EPA6010B
Zinc				36.2	mg/kg	0.181	EPA6010B
Radionuclides							
Actinium-228	R		4	0.17	pCi/g	0.141	EPIA-013B
Antimony-124	U			-0.0277	pCi/g	0.0419	EPIA-013B
Antimony-125	U			0.0121	pCi/g	0.0746	EPIA-013B
Barium-133	U			-0.00926	pCi/g	0.0344	EPIA-013B
Cerium-144	U			0.0405	pCi/g	0.162	EPIA-013B
Cesium-134	U			0.0194	pCi/g	0.0321	EPIA-013B
Cesium-137				0.0582	pCi/g	0.028	EPIA-013B
Cobalt-57	U			0.00322	pCi/g	0.0205	EPIA-013B
Cobalt-58	U			0.0134	pCi/g	0.04	EPIA-013B
Cobalt-60	U			0.00656	pCi/g	0.0352	EPIA-013B
Europium-152	U			0.0205	pCi/g	0.0822	EPIA-013B
Europium-154	U			-0.0228	pCi/g	0.0897	EPIA-013B
Europium-155	U			0.00112	pCi/g	0.0741	EPIA-013B
Gross alpha	U			0.17	pCi/g	2.74	EPIA-001B
Lead-212				0.0683	pCi/g	0.0443	EPIA-013B
Manganese-54	U			-0.00853	pCi/g	0.0303	EPIA-013B
Neptunium-239	U			0.00155	pCi/g	0.141	EPIA-013B
Nonvolatile beta				7.07	pCi/g	1.98	EPIA-001B
Plutonium-238	U			0	pCi/g	0.0157	EPIA-012B

SURVEY ID: SRF-03-04 (cont.) **Sample ID:** 117030

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Plutonium-239/240	U			-0.00753	pCi/g	0.0448	EPIA-012B
Potassium-40				3.84	pCi/g	0.309	EPIA-013B
Promethium-144	U			-0.00494	pCi/g	0.0308	EPIA-013B
Promethium-146	U			0.0111	pCi/g	0.0362	EPIA-013B
Ruthenium-106	U			-0.0324	pCi/g	0.277	EPIA-013B
Sodium-22	U			-0.00829	pCi/g	0.0324	EPIA-013B
Strontium-89/90				0.361	pCi/g	0.16	EPA905
Tin-113	U			-0.0143	pCi/g	0.0372	EPIA-013B
Tritium	U			0.151	pCi/g	0.175	EPIA-002B
Uranium-233/234	U			0.00156	pCi/g	0.0457	EPIA-011B
Uranium-235	U			0.000174	pCi/g	0.0328	EPIA-011B
Uranium-238	U			0.0109	pCi/g	0.0269	EPIA-011B
Yttrium-88	U			0.00828	pCi/g	0.0436	EPIA-013B
Zinc-65	U			0.0138	pCi/g	0.0811	EPIA-013B
Zirconium-95	U			0.00882	pCi/g	0.0676	EPIA-013B
Volatile Organic Compounds							
Acetone				164	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	U			25	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene				11.4	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene				9.57	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes				50	µg/kg	5	EPA8260B

SURVEY ID: SRF-04-01 **Sample ID:** 117031

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	JU		4	0.221	mg/kg	0.184	EPA6010B
Arsenic				0.528	mg/kg	0.219	EPA6010B
Barium				5.82	mg/kg	0.026	EPA6010B
Cadmium	J	I		0.059	mg/kg	0.018	EPA6010B
Calcium				20100	mg/kg	3.354	EPA6010B
Chromium				0.403	mg/kg	0.035	EPA6010B
Copper				0.746	mg/kg	0.0635	EPA6010B
Lead				0.264	mg/kg	0.076	EPA6010B
Magnesium				558	mg/kg	0.244	EPA6010B
Manganese				56.9	mg/kg	0.342	EPA6010B
Mercury				0.0655	mg/kg	0.00214	EPA7471A
Nickel	JU	IV		0.133	mg/kg	0.031	EPA6010B
Selenium				1.01	mg/kg	0.13	EPA6010B
Silver	U			0.24	mg/kg	0.0298	EPA6010B
Zinc				22.2	mg/kg	0.178	EPA6010B
Radionuclides							
Actinium-228	U			0.162	pCi/g	0.21	EPIA-013B
Antimony-124	U			-0.00379	pCi/g	0.0688	EPIA-013B
Antimony-125	U			0.00765	pCi/g	0.122	EPIA-013B
Barium-133	U			-0.0183	pCi/g	0.0525	EPIA-013B
Cerium-144	U			0.279	pCi/g	0.324	EPIA-013B
Cesium-134	U			0.00467	pCi/g	0.0498	EPIA-013B
Cesium-137				0.0791	pCi/g	0.0438	EPIA-013B
Cobalt-57	U			-0.0119	pCi/g	0.0357	EPIA-013B
Cobalt-58	U			0.0453	pCi/g	0.0754	EPIA-013B
Cobalt-60	U			-0.0147	pCi/g	0.0491	EPIA-013B
Europium-152	U			0.0204	pCi/g	0.128	EPIA-013B
Europium-154	U			-0.0187	pCi/g	0.141	EPIA-013B
Europium-155	U			0.0387	pCi/g	0.14	EPIA-013B
Gross alpha	U			0.0186	pCi/g	1.12	EPIA-001B
Lead-212	U			0.00678	pCi/g	0.0927	EPIA-013B
Manganese-54	U			-0.000791	pCi/g	0.0488	EPIA-013B
Neptunium-239	U			0.0669	pCi/g	0.253	EPIA-013B
Nonvolatile beta				9.76	pCi/g	1.06	EPIA-001B
Plutonium-238	U			-0.00057	pCi/g	0.0125	EPIA-012B
Plutonium-239/240	U			0	pCi/g	0.00712	EPIA-012B
Potassium-40				3.01	pCi/g	0.561	EPIA-013B
Promethium-144	U			0.0023	pCi/g	0.054	EPIA-013B
Promethium-146	U			0.00421	pCi/g	0.0553	EPIA-013B
Ruthenium-106	U			-0.27	pCi/g	0.433	EPIA-013B
Sodium-22	U			-0.0064	pCi/g	0.0511	EPIA-013B
Strontium-89/90				1.81	pCi/g	0.0918	EPA905
Tin-113	U			0.016	pCi/g	0.0645	EPIA-013B
Tritium				4.07	pCi/g	0.127	EPIA-002B

SURVEY ID: SRF-04-01 (cont.) **Sample ID:** 117031

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.0154	pCi/g	0.0222	EPIA-011B
Uranium-235	U			0.00399	pCi/g	0.012	EPIA-011B
Uranium-238	U			0.000723	pCi/g	0.0204	EPIA-011B
Yttrium-88	U			0.0136	pCi/g	0.0622	EPIA-013B
Zinc-65	U			-0.0117	pCi/g	0.115	EPIA-013B
Zirconium-95	U			0.0125	pCi/g	0.117	EPIA-013B
Volatile Organic Compounds							
Acetone	J	IK	O	122	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	J	IK	O	16.2	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	34.1	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	IK	O	4.49	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	J	K	O	5.69	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	K	O	25	µg/kg	5	EPA8260B

SURVEY ID: SRF-04-02 **Sample ID:** 117032

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.459	mg/kg	0.175	EPA6010B
Arsenic				0.544	mg/kg	0.209	EPA6010B
Barium				3.25	mg/kg	0.024	EPA6010B
Cadmium	JU		4	0.0199	mg/kg	0.017	EPA6010B
Calcium				20000	mg/kg	3.2	EPA6010B
Chromium				0.293	mg/kg	0.0334	EPA6010B
Copper				0.305	mg/kg	0.0606	EPA6010B
Lead	J	I		0.177	mg/kg	0.072	EPA6010B
Magnesium				524	mg/kg	0.233	EPA6010B
Manganese				31	mg/kg	0.326	EPA6010B
Mercury				0.151	mg/kg	0.002	EPA7471A
Nickel	JU	IV		0.145	mg/kg	0.029	EPA6010B
Selenium				1.15	mg/kg	0.124	EPA6010B
Silver	U			0.229	mg/kg	0.0284	EPA6010B
Zinc				16.9	mg/kg	0.17	EPA6010B
Radionuclides							
Actinium-228	U			0.0839	pCi/g	0.265	EPIA-013B
Antimony-124	U			-0.0292	pCi/g	0.0935	EPIA-013B
Antimony-125	U			0.0531	pCi/g	0.166	EPIA-013B
Barium-133	U			0.0114	pCi/g	0.0703	EPIA-013B
Cerium-144	U			-0.0704	pCi/g	0.282	EPIA-013B
Cesium-134	U			0.0251	pCi/g	0.0705	EPIA-013B
Cesium-137				0.0882	pCi/g	0.0617	EPIA-013B
Cobalt-57	U			-0.00906	pCi/g	0.0381	EPIA-013B
Cobalt-58	U			0.00544	pCi/g	0.0911	EPIA-013B
Cobalt-60	U			0.0218	pCi/g	0.0758	EPIA-013B
Europium-152	U			0.046	pCi/g	0.167	EPIA-013B
Europium-154	U			-0.0562	pCi/g	0.215	EPIA-013B
Europium-155	U			-0.0614	pCi/g	0.14	EPIA-013B
Gross alpha	U			-0.471	pCi/g	1.71	EPIA-001B
Lead-212	U			0.0877	pCi/g	0.106	EPIA-013B
Manganese-54	U			0.00577	pCi/g	0.0586	EPIA-013B
Neptunium-239	U			0.0289	pCi/g	0.264	EPIA-013B
Nonvolatile beta				6.65	pCi/g	1.75	EPIA-001B
Plutonium-238	U			0	pCi/g	0.014	EPIA-012B
Plutonium-239/240	U			-0.00112	pCi/g	0.0247	EPIA-012B
Potassium-40				2.25	pCi/g	0.646	EPIA-013B
Promethium-144	U			-0.00452	pCi/g	0.0713	EPIA-013B
Promethium-146	U			-0.0232	pCi/g	0.068	EPIA-013B
Ruthenium-106	U			0.261	pCi/g	0.633	EPIA-013B
Sodium-22	U			-0.0205	pCi/g	0.0777	EPIA-013B
Strontium-89/90				0.643	pCi/g	0.15	EPA905
Tin-113	U			0.0729	pCi/g	0.0979	EPIA-013B
Tritium				1.31	pCi/g	0.155	EPIA-002B

SURVEY ID: SRF-04-02 (cont.) **Sample ID:** 117032

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.00409	pCi/g	0.0297	EPIA-011B
Uranium-235	U			-0.00473	pCi/g	0.0319	EPIA-011B
Uranium-238	U			-0.00189	pCi/g	0.0244	EPIA-011B
Yttrium-88	U			-0.0251	pCi/g	0.0715	EPIA-013B
Zinc-65	U			-0.0767	pCi/g	0.158	EPIA-013B
Zirconium-95	U			0.0651	pCi/g	0.173	EPIA-013B
Volatile Organic Compounds							
Acetone				129	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)				25.5	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	I		4.09	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	J	I		17	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	I		20	µg/kg	5	EPA8260B

SURVEY ID: SRF-04-03 **Sample ID:** 117033

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.495	mg/kg	0.189	EPA6010B
Arsenic				0.586	mg/kg	0.226	EPA6010B
Barium				0.427	mg/kg	0.027	EPA6010B
Cadmium	U			0.248	mg/kg	0.019	EPA6010B
Calcium				2670	mg/kg	3.451	EPA6010B
Chromium	J	I		0.0858	mg/kg	0.0361	EPA6010B
Copper				0.26	mg/kg	0.0653	EPA6010B
Lead	U			0.248	mg/kg	0.078	EPA6010B
Magnesium				294	mg/kg	0.251	EPA6010B
Manganese				1.66	mg/kg	0.351	EPA6010B
Mercury				0.222	mg/kg	0.00213	EPA7471A
Nickel	JU	IV		0.15	mg/kg	0.032	EPA6010B
Selenium				0.764	mg/kg	0.134	EPA6010B
Silver	U			0.248	mg/kg	0.0307	EPA6010B
Zinc				5.98	mg/kg	0.184	EPA6010B
Radionuclides							
Actinium-228	U			0.0281	pCi/g	0.291	EPIA-013B
Antimony-124	U			-0.0103	pCi/g	0.0725	EPIA-013B
Antimony-125	U			0.0995	pCi/g	0.163	EPIA-013B
Barium-133	U			0.0484	pCi/g	0.0728	EPIA-013B
Cerium-144	U			0.0639	pCi/g	0.28	EPIA-013B
Cesium-134	U			0.0395	pCi/g	0.0604	EPIA-013B
Cesium-137	U			0.0535	pCi/g	0.0538	EPIA-013B
Cobalt-57	U			-0.0245	pCi/g	0.0338	EPIA-013B
Cobalt-58	U			-0.00279	pCi/g	0.0806	EPIA-013B
Cobalt-60	U			0.0048	pCi/g	0.0816	EPIA-013B
Europium-152	U			0.0512	pCi/g	0.162	EPIA-013B
Europium-154	U			0.0607	pCi/g	0.203	EPIA-013B
Europium-155	U			-0.00634	pCi/g	0.14	EPIA-013B
Gross alpha	U			0.611	pCi/g	0.885	EPIA-001B
Lead-212	U			0.089	pCi/g	0.103	EPIA-013B
Manganese-54	U			-0.0036	pCi/g	0.0714	EPIA-013B
Neptunium-239	U			0.0212	pCi/g	0.24	EPIA-013B
Nonvolatile beta				7.74	pCi/g	1.04	EPIA-001B
Plutonium-238	U			0	pCi/g	0.00802	EPIA-012B
Plutonium-239/240	U			-0.000641	pCi/g	0.0141	EPIA-012B
Potassium-40				4.01	pCi/g	0.778	EPIA-013B
Promethium-144	U			0.044	pCi/g	0.0744	EPIA-013B
Promethium-146	U			0.0343	pCi/g	0.0681	EPIA-013B
Ruthenium-106	U			-0.101	pCi/g	0.484	EPIA-013B
Sodium-22	U			0.0218	pCi/g	0.0732	EPIA-013B
Strontium-89/90				0.859	pCi/g	0.0874	EPA905
Tin-113	U			-0.0179	pCi/g	0.0713	EPIA-013B
Tritium	U			0.105	pCi/g	0.116	EPIA-002B

SURVEY ID: SRF-04-03 (cont.) **Sample ID:** 117033

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.00548	pCi/g	0.0167	EPIA-011B
Uranium-235	U			0.00183	pCi/g	0.0127	EPIA-011B
Uranium-238	U			0.00605	pCi/g	0.0149	EPIA-011B
Yttrium-88	U			0.0328	pCi/g	0.103	EPIA-013B
Zinc-65	U			-0.0511	pCi/g	0.138	EPIA-013B
Zirconium-95	U			-0.0114	pCi/g	0.139	EPIA-013B
Volatile Organic Compounds							
Acetone	J	IK	O	94.4	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	103	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	IK	O	2.73	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	8.61	µg/kg	5	EPA8260B

SURVEY ID: SRF-05-01 **Sample ID:** 117034

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.485	mg/kg	0.185	EPA6010B
Arsenic				0.41	mg/kg	0.221	EPA6010B
Barium				5.5	mg/kg	0.026	EPA6010B
Cadmium	J	I		0.139	mg/kg	0.018	EPA6010B
Calcium				8270	mg/kg	3.381	EPA6010B
Chromium	J	I		0.19	mg/kg	0.0354	EPA6010B
Copper				0.778	mg/kg	0.0641	EPA6010B
Lead	J	I		0.109	mg/kg	0.077	EPA6010B
Magnesium				381	mg/kg	0.246	EPA6010B
Manganese				34.4	mg/kg	0.344	EPA6010B
Mercury				0.165	mg/kg	0.00218	EPA7471A
Nickel	U	V		0.372	mg/kg	0.031	EPA6010B
Selenium				1.04	mg/kg	0.131	EPA6010B
Silver	U			0.243	mg/kg	0.0301	EPA6010B
Zinc				15.7	mg/kg	0.18	EPA6010B
Radionuclides							
Actinium-228	U			0.101	pCi/g	0.214	EPIA-013B
Antimony-124	U			0.00332	pCi/g	0.0612	EPIA-013B
Antimony-125	U			-0.0328	pCi/g	0.1	EPIA-013B
Barium-133	U			0.00224	pCi/g	0.0488	EPIA-013B
Cerium-144	U			-0.00918	pCi/g	0.205	EPIA-013B
Cesium-134	U			-0.0159	pCi/g	0.0412	EPIA-013B
Cesium-137				0.243	pCi/g	0.0454	EPIA-013B
Cobalt-57	U			0.000975	pCi/g	0.0254	EPIA-013B
Cobalt-58	U			-0.00482	pCi/g	0.06	EPIA-013B
Cobalt-60	U			0.0086	pCi/g	0.0529	EPIA-013B
Europium-152	U			-0.0127	pCi/g	0.111	EPIA-013B
Europium-154	U			-0.0189	pCi/g	0.15	EPIA-013B
Europium-155	U			0.058	pCi/g	0.102	EPIA-013B
Gross alpha	U			0.24	pCi/g	0.948	EPIA-001B
Lead-212	U			0.00228	pCi/g	0.0718	EPIA-013B
Manganese-54	U			-0.0143	pCi/g	0.0467	EPIA-013B
Neptunium-239	U			-0.00259	pCi/g	0.179	EPIA-013B
Nonvolatile beta				6.39	pCi/g	1.33	EPIA-001B
Plutonium-238	U			-0.000653	pCi/g	0.0144	EPIA-012B
Plutonium-239/240	U			0	pCi/g	0.00816	EPIA-012B
Potassium-40				3.16	pCi/g	0.372	EPIA-013B
Promethium-144	U			0.00753	pCi/g	0.0472	EPIA-013B
Promethium-146	U			-0.0345	pCi/g	0.0463	EPIA-013B
Ruthenium-106	U			0.0452	pCi/g	0.449	EPIA-013B
Sodium-22	U			-0.00672	pCi/g	0.0542	EPIA-013B
Strontium-89/90				0.403	pCi/g	0.107	EPA905
Tin-113	U			0.0147	pCi/g	0.0605	EPIA-013B
Tritium				3.32	pCi/g	0.127	EPIA-002B

SURVEY ID: SRF-05-01 (cont.) **Sample ID:** 117034

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.0156	pCi/g	0.0195	EPIA-011B
Uranium-235	U			-0.00187	pCi/g	0.018	EPIA-011B
Uranium-238	U			0.00775	pCi/g	0.00775	EPIA-011B
Yttrium-88	U			0.0016	pCi/g	0.0479	EPIA-013B
Zinc-65	U			-0.0392	pCi/g	0.108	EPIA-013B
Zirconium-95	U			-0.00215	pCi/g	0.109	EPIA-013B
Volatile Organic Compounds							
Acetone	J	IK	O	77.1	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	J	IK	O	16.6	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	32	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	5.99	µg/kg	5	EPA8260B

SURVEY ID: SRF-05-02 **Sample ID:** 117035

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.476	mg/kg	0.182	EPA6010B
Arsenic				0.496	mg/kg	0.217	EPA6010B
Barium				3.96	mg/kg	0.026	EPA6010B
Cadmium	U			0.238	mg/kg	0.018	EPA6010B
Calcium				28500	mg/kg	6.637	EPA6010B
Chromium				0.359	mg/kg	0.0347	EPA6010B
Copper				0.251	mg/kg	0.0629	EPA6010B
Lead				0.306	mg/kg	0.075	EPA6010B
Magnesium				617	mg/kg	0.242	EPA6010B
Manganese				10.1	mg/kg	0.338	EPA6010B
Mercury				0.134	mg/kg	0.00225	EPA7471A
Nickel	U			0.238	mg/kg	0.03	EPA6010B
Selenium				0.88	mg/kg	0.129	EPA6010B
Silver	U			0.238	mg/kg	0.0295	EPA6010B
Zinc				24	mg/kg	0.176	EPA6010B
Radionuclides							
Actinium-228	U			0.144	pCi/g	0.244	EPIA-013B
Antimony-124	U			0.0113	pCi/g	0.0711	EPIA-013B
Antimony-125	U			-0.00353	pCi/g	0.109	EPIA-013B
Barium-133	U			0.0256	pCi/g	0.0524	EPIA-013B
Cerium-144	U			0.0354	pCi/g	0.199	EPIA-013B
Cesium-134	U			-0.0413	pCi/g	0.042	EPIA-013B
Cesium-137				0.103	pCi/g	0.0474	EPIA-013B
Cobalt-57	U			0.0139	pCi/g	0.0252	EPIA-013B
Cobalt-58	U			0.0175	pCi/g	0.0727	EPIA-013B
Cobalt-60	U			0.0272	pCi/g	0.0615	EPIA-013B
Europium-152	U			-0.0167	pCi/g	0.112	EPIA-013B
Europium-154	U			0.0971	pCi/g	0.185	EPIA-013B
Europium-155	U			0.0187	pCi/g	0.0934	EPIA-013B
Gross alpha	U			0.224	pCi/g	1.29	EPIA-001B
Lead-212	R		4	0.0924	pCi/g	0.0767	EPIA-013B
Manganese-54	U			0.0105	pCi/g	0.0599	EPIA-013B
Neptunium-239	U			-0.0482	pCi/g	0.162	EPIA-013B
Nonvolatile beta				5.47	pCi/g	1.8	EPIA-001B
Plutonium-238	U			-0.000944	pCi/g	0.0382	EPIA-012B
Plutonium-239/240	U			-0.00113	pCi/g	0.0249	EPIA-012B
Potassium-40				3.28	pCi/g	0.44	EPIA-013B
Promethium-144	U			0.012	pCi/g	0.0552	EPIA-013B
Promethium-146	U			0.00102	pCi/g	0.0612	EPIA-013B
Ruthenium-106	U			0.209	pCi/g	0.506	EPIA-013B
Sodium-22	U			0.0351	pCi/g	0.0614	EPIA-013B
Strontium-89/90				0.559	pCi/g	0.14	EPA905
Strontium-89/90				0.553	pCi/g	0.148	EPA905
Tin-113	U			0.013	pCi/g	0.0605	EPIA-013B

SURVEY ID: SRF-05-02 (cont.) **Sample ID:** 117035

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Tritium				0.425	pCi/g	0.108	EPIA-002B
Uranium-233/234	U			0.0104	pCi/g	0.0408	EPIA-011B
Uranium-235	U			0.00417	pCi/g	0.0303	EPIA-011B
Uranium-238	U			0.0131	pCi/g	0.0277	EPIA-011B
Yttrium-88	U			0.0083	pCi/g	0.0739	EPIA-013B
Zinc-65	U			0.0243	pCi/g	0.138	EPIA-013B
Zirconium-95	U			-0.00859	pCi/g	0.127	EPIA-013B
Volatile Organic Compounds							
Acetone				223	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)				48.9	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	I		11.5	µg/kg	5	EPA8260B

SURVEY ID: SRF-05-03 **Sample ID:** 117036

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.467	mg/kg	0.178	EPA6010B
Arsenic				0.758	mg/kg	0.213	EPA6010B
Barium				1.46	mg/kg	0.025	EPA6010B
Cadmium	U			0.234	mg/kg	0.018	EPA6010B
Calcium				8790	mg/kg	3.256	EPA6010B
Chromium	J	I		0.148	mg/kg	0.0341	EPA6010B
Copper				0.519	mg/kg	0.0617	EPA6010B
Lead	U			0.234	mg/kg	0.074	EPA6010B
Magnesium				419	mg/kg	0.237	EPA6010B
Manganese				4.56	mg/kg	0.332	EPA6010B
Mercury				1.25	mg/kg	0.00214	EPA7471A
Nickel	U			0.234	mg/kg	0.03	EPA6010B
Selenium				1.08	mg/kg	0.126	EPA6010B
Silver	U			0.234	mg/kg	0.029	EPA6010B
Zinc				10.6	mg/kg	0.173	EPA6010B
Radionuclides							
Actinium-228	U			0.122	pCi/g	0.21	EPIA-013B
Antimony-124	U			0.021	pCi/g	0.0747	EPIA-013B
Antimony-125	U			0.0032	pCi/g	0.139	EPIA-013B
Barium-133	U			0.00258	pCi/g	0.0558	EPIA-013B
Cerium-144	U			-0.00206	pCi/g	0.223	EPIA-013B
Cesium-134	U			-0.0215	pCi/g	0.0446	EPIA-013B
Cesium-137				0.832	pCi/g	0.0504	EPIA-013B
Cobalt-57	U			-0.00767	pCi/g	0.026	EPIA-013B
Cobalt-58	U			0.0109	pCi/g	0.0723	EPIA-013B
Cobalt-60	U			0.0189	pCi/g	0.061	EPIA-013B
Europium-152	U			-0.0418	pCi/g	0.122	EPIA-013B
Europium-154	U			-0.016	pCi/g	0.135	EPIA-013B
Europium-155	U			0.0327	pCi/g	0.0986	EPIA-013B
Gross alpha	U			-0.0606	pCi/g	1.02	EPIA-001B
Lead-212	U			0.00465	pCi/g	0.0849	EPIA-013B
Manganese-54	U			0.00248	pCi/g	0.0543	EPIA-013B
Neptunium-239	U			0.042	pCi/g	0.189	EPIA-013B
Nonvolatile beta				5.95	pCi/g	1.06	EPIA-001B
Plutonium-238	U			-0.00123	pCi/g	0.0159	EPIA-012B
Plutonium-239/240	U			0.00451	pCi/g	0.0135	EPIA-012B
Potassium-40				3.56	pCi/g	0.406	EPIA-013B
Promethium-144	U			0.0193	pCi/g	0.056	EPIA-013B
Promethium-146	U			-0.0232	pCi/g	0.0603	EPIA-013B
Ruthenium-106	U			-0.0522	pCi/g	0.444	EPIA-013B
Sodium-22	U			-0.00555	pCi/g	0.0491	EPIA-013B
Strontium-89/90				0.315	pCi/g	0.119	EPA905
Tin-113	U			-0.00556	pCi/g	0.0637	EPIA-013B
Tritium				1.28	pCi/g	0.112	EPIA-002B

SURVEY ID: SRF-05-03 (cont.) **Sample ID:** 117036

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.000186	pCi/g	0.0219	EPIA-011B
Uranium-235	U			0.00177	pCi/g	0.0123	EPIA-011B
Uranium-238	U			0.00408	pCi/g	0.0122	EPIA-011B
Yttrium-88	U			0.00973	pCi/g	0.0779	EPIA-013B
Zinc-65	U			-0.0397	pCi/g	0.108	EPIA-013B
Zirconium-95	U			0.00296	pCi/g	0.119	EPIA-013B
Volatile Organic Compounds							
Acetone	J	IK	O	106	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	J	K	O	32.6	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	78.4	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	8.05	µg/kg	5	EPA8260B

SURVEY ID: SRF-06-01 **Sample ID:** 117037

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	JU		4	0.185	mg/kg	0.182	EPA6010B
Arsenic				0.604	mg/kg	0.217	EPA6010B
Barium				6.58	mg/kg	0.026	EPA6010B
Cadmium	JU		4	0.0473	mg/kg	0.018	EPA6010B
Calcium				51200	mg/kg	33.187	EPA6010B
Chromium				0.657	mg/kg	0.0347	EPA6010B
Copper				2.91	mg/kg	0.0629	EPA6010B
Lead	J	I		0.227	mg/kg	0.075	EPA6010B
Magnesium				1010	mg/kg	0.242	EPA6010B
Manganese				93.4	mg/kg	0.338	EPA6010B
Mercury				0.0959	mg/kg	0.00195	EPA7471A
Nickel	JU	IV		0.181	mg/kg	0.03	EPA6010B
Selenium				1.34	mg/kg	0.129	EPA6010B
Silver	U			0.238	mg/kg	0.0295	EPA6010B
Zinc				28	mg/kg	0.176	EPA6010B
Radionuclides							
Actinium-228	U			0.0734	pCi/g	0.261	EPIA-013B
Antimony-124	U			0.0109	pCi/g	0.0841	EPIA-013B
Antimony-125	U			0.0596	pCi/g	0.143	EPIA-013B
Barium-133	U			0.0181	pCi/g	0.0613	EPIA-013B
Cerium-144	U			-0.104	pCi/g	0.224	EPIA-013B
Cesium-134	U			0.0125	pCi/g	0.0588	EPIA-013B
Cesium-137	U			0.0418	pCi/g	0.069	EPIA-013B
Cobalt-57	U			0.00931	pCi/g	0.0286	EPIA-013B
Cobalt-58	U			0.0246	pCi/g	0.0898	EPIA-013B
Cobalt-60	U			0.00582	pCi/g	0.0686	EPIA-013B
Europium-152	U			-0.00621	pCi/g	0.137	EPIA-013B
Europium-154	U			-0.0336	pCi/g	0.171	EPIA-013B
Europium-155	U			0.0123	pCi/g	0.105	EPIA-013B
Gross alpha	U			-0.0717	pCi/g	0.861	EPIA-001B
Lead-212	U			0.0237	pCi/g	0.0919	EPIA-013B
Manganese-54	U			-0.00667	pCi/g	0.0644	EPIA-013B
Neptunium-239	U			0.0376	pCi/g	0.2	EPIA-013B
Nonvolatile beta				7.33	pCi/g	1.42	EPIA-001B
Plutonium-238	U			-0.00168	pCi/g	0.0218	EPIA-012B
Plutonium-239/240	U			-0.00168	pCi/g	0.0218	EPIA-012B
Potassium-40				2.95	pCi/g	0.58	EPIA-013B
Promethium-144	U			-0.00499	pCi/g	0.0576	EPIA-013B
Promethium-146	U			-0.0152	pCi/g	0.0653	EPIA-013B
Ruthenium-106	U			0.071	pCi/g	0.614	EPIA-013B
Sodium-22	U			-0.0122	pCi/g	0.0617	EPIA-013B
Strontium-89/90				0.546	pCi/g	0.17	EPA905
Tin-113	U			0.00509	pCi/g	0.0772	EPIA-013B
Tritium	J	I		0.151	pCi/g	0.12	EPIA-002B

SURVEY ID: SRF-06-01 (cont.) **Sample ID:** 117037

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	R		4	0.019	pCi/g	0.00949	EPIA-011B
Uranium-235	U			0	pCi/g	0.00952	EPIA-011B
Uranium-238	U			0.00949	pCi/g	0.00949	EPIA-011B
Yttrium-88	U			-0.00179	pCi/g	0.0683	EPIA-013B
Zinc-65	U			0.0543	pCi/g	0.157	EPIA-013B
Zirconium-95	U			0.0643	pCi/g	0.154	EPIA-013B
Volatile Organic Compounds							
Acetone	J	K	O	156	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	J	K	O	26.7	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	50	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	K	O	10.3	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	J	K	O	17.4	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	K	O	51.3	µg/kg	5	EPA8260B

SURVEY ID: SRF-06-02 **Sample ID:** 117038

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.463	mg/kg	0.177	EPA6010B
Arsenic				0.489	mg/kg	0.211	EPA6010B
Barium				3.82	mg/kg	0.025	EPA6010B
Cadmium	JU		4	0.0216	mg/kg	0.018	EPA6010B
Calcium				12800	mg/kg	3.228	EPA6010B
Chromium				0.354	mg/kg	0.0338	EPA6010B
Copper				1.19	mg/kg	0.0611	EPA6010B
Lead	J	I		0.161	mg/kg	0.073	EPA6010B
Magnesium				411	mg/kg	0.235	EPA6010B
Manganese				28.5	mg/kg	0.329	EPA6010B
Mercury				0.134	mg/kg	0.00219	EPA7471A
Nickel	U	V		0.796	mg/kg	0.03	EPA6010B
Selenium				0.941	mg/kg	0.125	EPA6010B
Silver	U			0.231	mg/kg	0.0287	EPA6010B
Zinc				17.9	mg/kg	0.171	EPA6010B
Radionuclides							
Actinium-228	U			0.16	pCi/g	0.189	EPIA-013B
Antimony-124	U			0.0124	pCi/g	0.0617	EPIA-013B
Antimony-125	U			0.0331	pCi/g	0.106	EPIA-013B
Barium-133	U			-0.019	pCi/g	0.0468	EPIA-013B
Cerium-144	U			0.00842	pCi/g	0.201	EPIA-013B
Cesium-134	U			0.0146	pCi/g	0.0433	EPIA-013B
Cesium-137				0.0693	pCi/g	0.0443	EPIA-013B
Cobalt-57	U			0.00479	pCi/g	0.027	EPIA-013B
Cobalt-58	U			-0.0297	pCi/g	0.0496	EPIA-013B
Cobalt-60	U			-0.0125	pCi/g	0.0463	EPIA-013B
Europium-152	U			0.0397	pCi/g	0.105	EPIA-013B
Europium-154	U			0.0818	pCi/g	0.155	EPIA-013B
Europium-155	U			-0.028	pCi/g	0.0867	EPIA-013B
Gross alpha	U			-0.521	pCi/g	1.42	EPIA-001B
Lead-212	U			0.0159	pCi/g	0.0658	EPIA-013B
Manganese-54	U			-0.00517	pCi/g	0.0365	EPIA-013B
Neptunium-239	U			0.0176	pCi/g	0.175	EPIA-013B
Nonvolatile beta				8.49	pCi/g	1.31	EPIA-001B
Plutonium-238	U			0	pCi/g	0.00987	EPIA-012B
Plutonium-239/240	U			-0.00158	pCi/g	0.0204	EPIA-012B
Potassium-40				2.94	pCi/g	0.389	EPIA-013B
Promethium-144	U			0.00184	pCi/g	0.0391	EPIA-013B
Promethium-146	U			-0.0244	pCi/g	0.0398	EPIA-013B
Ruthenium-106	U			-0.00601	pCi/g	0.349	EPIA-013B
Sodium-22	U			0.0294	pCi/g	0.056	EPIA-013B
Strontium-89/90				0.553	pCi/g	0.203	EPA905
Tin-113	U			-0.00714	pCi/g	0.0529	EPIA-013B
Tritium	J	I		0.262	pCi/g	0.146	EPIA-002B

SURVEY ID: SRF-06-02 (cont.) **Sample ID:** 117038

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			-0.000488	pCi/g	0.03	EPIA-011B
Uranium-235	U			-0.00796	pCi/g	0.0362	EPIA-011B
Uranium-238	U			-0.00281	pCi/g	0.0288	EPIA-011B
Yttrium-88	U			-0.00464	pCi/g	0.0551	EPIA-013B
Zinc-65	U			-0.0389	pCi/g	0.0855	EPIA-013B
Zirconium-95	U			0.0417	pCi/g	0.0947	EPIA-013B
Volatile Organic Compounds							
Acetone	J	I		117	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	I		19.8	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	U			25	µg/kg	5	EPA8260B

SURVEY ID: SRF-06-03 **Sample ID:** 117039

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	JU		4	0.186	mg/kg	0.182	EPA6010B
Arsenic				0.873	mg/kg	0.217	EPA6010B
Barium				2.02	mg/kg	0.026	EPA6010B
Cadmium	JU		4	0.0364	mg/kg	0.018	EPA6010B
Calcium				13300	mg/kg	3.319	EPA6010B
Chromium				0.303	mg/kg	0.0347	EPA6010B
Copper				0.444	mg/kg	0.0629	EPA6010B
Lead				0.443	mg/kg	0.075	EPA6010B
Magnesium				463	mg/kg	0.242	EPA6010B
Manganese				5.89	mg/kg	0.338	EPA6010B
Mercury				0.456	mg/kg	0.0021	EPA7471A
Nickel	JU	IV		0.233	mg/kg	0.03	EPA6010B
Selenium				0.962	mg/kg	0.129	EPA6010B
Silver	J	I		0.0421	mg/kg	0.0295	EPA6010B
Zinc				11.5	mg/kg	0.176	EPA6010B
Radionuclides							
Actinium-228	U			0.226	pCi/g	0.287	EPIA-013B
Antimony-124	U			0.00128	pCi/g	0.0913	EPIA-013B
Antimony-125	U			-0.0504	pCi/g	0.169	EPIA-013B
Barium-133	U			-0.0279	pCi/g	0.0755	EPIA-013B
Cerium-144	U			0.0102	pCi/g	0.293	EPIA-013B
Cesium-134	U			-0.0285	pCi/g	0.0549	EPIA-013B
Cesium-137				1.25	pCi/g	0.0637	EPIA-013B
Cobalt-57	U			-0.00711	pCi/g	0.037	EPIA-013B
Cobalt-58	U			-0.0105	pCi/g	0.069	EPIA-013B
Cobalt-60	U			0.0023	pCi/g	0.067	EPIA-013B
Europium-152	U			0.0213	pCi/g	0.165	EPIA-013B
Europium-154	U			0.00836	pCi/g	0.176	EPIA-013B
Europium-155	U			-0.0854	pCi/g	0.138	EPIA-013B
Gross alpha	U			0.0231	pCi/g	0.558	EPIA-001B
Lead-212	U			0.0565	pCi/g	0.0904	EPIA-013B
Manganese-54	U			0.0255	pCi/g	0.0711	EPIA-013B
Neptunium-239	U			0.046	pCi/g	0.257	EPIA-013B
Nonvolatile beta				6.71	pCi/g	0.857	EPIA-001B
Plutonium-238	U			0	pCi/g	0.00704	EPIA-012B
Plutonium-239/240	U			0	pCi/g	0.00703	EPIA-012B
Potassium-40				2.45	pCi/g	0.605	EPIA-013B
Promethium-144	U			0.0261	pCi/g	0.0582	EPIA-013B
Promethium-146	U			-0.0424	pCi/g	0.0751	EPIA-013B
Ruthenium-106	U			-0.371	pCi/g	0.492	EPIA-013B
Sodium-22	U			0.00276	pCi/g	0.0633	EPIA-013B
Strontium-89/90				0.31	pCi/g	0.114	EPA905
Tin-113	U			-0.00834	pCi/g	0.0903	EPIA-013B
Tritium	J	I		0.13	pCi/g	0.0974	EPIA-002B

SURVEY ID: SRF-06-03 (cont.) **Sample ID:** 117039

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.00849	pCi/g	0.0138	EPIA-011B
Uranium-235	U			0.00398	pCi/g	0.00597	EPIA-011B
Uranium-238	U			0.00198	pCi/g	0.00595	EPIA-011B
Yttrium-88	U			-0.0151	pCi/g	0.0678	EPIA-013B
Zinc-65	U			-0.0666	pCi/g	0.12	EPIA-013B
Zirconium-95	U			0.0122	pCi/g	0.136	EPIA-013B
Volatile Organic Compounds							
Acetone	U			125	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	54.5	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	5.67	µg/kg	5	EPA8260B

SURVEY ID: SRF-06-03-A **Sample ID:** 117040

Sample type: Field Duplicate Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	U			0.495	mg/kg	0.189	EPA6010B
Arsenic				0.647	mg/kg	0.226	EPA6010B
Barium				3.06	mg/kg	0.027	EPA6010B
Cadmium	JU		4	0.0248	mg/kg	0.019	EPA6010B
Calcium				13500	mg/kg	3.451	EPA6010B
Chromium				0.313	mg/kg	0.0361	EPA6010B
Copper				0.6	mg/kg	0.0653	EPA6010B
Lead				0.498	mg/kg	0.078	EPA6010B
Magnesium				550	mg/kg	0.251	EPA6010B
Manganese				6.7	mg/kg	0.351	EPA6010B
Mercury				0.474	mg/kg	0.00194	EPA7471A
Nickel	U	V		0.284	mg/kg	0.032	EPA6010B
Selenium				1.04	mg/kg	0.134	EPA6010B
Silver	U			0.248	mg/kg	0.0307	EPA6010B
Zinc				18	mg/kg	0.184	EPA6010B
Radionuclides							
Actinium-228	U			0.12	pCi/g	0.314	EPIA-013B
Antimony-124	U			0.00618	pCi/g	0.0979	EPIA-013B
Antimony-125	U			0.0159	pCi/g	0.16	EPIA-013B
Barium-133	U			0.00575	pCi/g	0.0767	EPIA-013B
Cerium-144	U			-0.249	pCi/g	0.278	EPIA-013B
Cesium-134	U			0.00424	pCi/g	0.0624	EPIA-013B
Cesium-137	R		4	0.0989	pCi/g	0.0901	EPIA-013B
Cobalt-57	U			0.00113	pCi/g	0.0409	EPIA-013B
Cobalt-58	U			0.00464	pCi/g	0.0788	EPIA-013B
Cobalt-60	U			-0.00818	pCi/g	0.0567	EPIA-013B
Europium-152	U			-0.0168	pCi/g	0.176	EPIA-013B
Europium-154	U			0.108	pCi/g	0.242	EPIA-013B
Europium-155	U			0.00113	pCi/g	0.145	EPIA-013B
Gross alpha	U			0.151	pCi/g	0.681	EPIA-001B
Lead-212	U			0.00505	pCi/g	0.103	EPIA-013B
Manganese-54	U			-0.00261	pCi/g	0.0653	EPIA-013B
Neptunium-239	U			0.0495	pCi/g	0.287	EPIA-013B
Nonvolatile beta				7.61	pCi/g	0.932	EPIA-001B
Plutonium-238	U			0	pCi/g	0.00727	EPIA-012B
Plutonium-239/240	U			-0.000581	pCi/g	0.0128	EPIA-012B
Potassium-40				2.94	pCi/g	0.69	EPIA-013B
Promethium-144	U			0.00669	pCi/g	0.0679	EPIA-013B
Promethium-146	U			-0.0265	pCi/g	0.0685	EPIA-013B
Ruthenium-106	U			-0.221	pCi/g	0.586	EPIA-013B
Sodium-22	U			0.0389	pCi/g	0.0875	EPIA-013B
Strontium-89/90	U			0.121	pCi/g	0.189	EPA905
Tin-113	U			0.0255	pCi/g	0.0865	EPIA-013B
Tritium	J	I		0.178	pCi/g	0.103	EPIA-002B

SURVEY ID: SRF-06-03-A (cont.) **Sample ID:** 117040

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.00294	pCi/g	0.016	EPIA-011B
Uranium-235	U			0.0023	pCi/g	0.00691	EPIA-011B
Uranium-238	U			0.00404	pCi/g	0.0121	EPIA-011B
Yttrium-88	U			-0.00322	pCi/g	0.0956	EPIA-013B
Zinc-65	U			0.00423	pCi/g	0.168	EPIA-013B
Zirconium-95	U			0.0199	pCi/g	0.147	EPIA-013B
Volatile Organic Compounds							
Acetone	U			125	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)				282	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene				6.42	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene				18.3	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes				32.4	µg/kg	5	EPA8260B

SURVEY ID: SRF-07-01 **Sample ID:** 117041

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	JU		4	0.233	mg/kg	0.184	EPA6010B
Arsenic				0.336	mg/kg	0.219	EPA6010B
Barium				1.8	mg/kg	0.026	EPA6010B
Cadmium	JU		4	0.0205	mg/kg	0.018	EPA6010B
Calcium				9960	mg/kg	3.354	EPA6010B
Chromium	J	I		0.184	mg/kg	0.035	EPA6010B
Copper				0.377	mg/kg	0.0635	EPA6010B
Lead	J	I		0.0933	mg/kg	0.076	EPA6010B
Magnesium				382	mg/kg	0.244	EPA6010B
Manganese				18.6	mg/kg	0.342	EPA6010B
Mercury				0.194	mg/kg	0.00209	EPA7471A
Nickel	J	I		0.115	mg/kg	0.031	EPA6010B
Selenium				0.874	mg/kg	0.13	EPA6010B
Silver	J	I		0.0896	mg/kg	0.0298	EPA6010B
Zinc				20.8	mg/kg	0.178	EPA6010B
Radionuclides							
Actinium-228	U			0.189	pCi/g	0.318	EPIA-013B
Antimony-124	U			-0.00437	pCi/g	0.0912	EPIA-013B
Antimony-125	U			0.0414	pCi/g	0.171	EPIA-013B
Barium-133	U			0.0439	pCi/g	0.0669	EPIA-013B
Cerium-144	U			-0.0536	pCi/g	0.244	EPIA-013B
Cesium-134	U			0.0293	pCi/g	0.065	EPIA-013B
Cesium-137	U			0.0363	pCi/g	0.0792	EPIA-013B
Cobalt-57	U			-0.00321	pCi/g	0.032	EPIA-013B
Cobalt-58	U			-0.0539	pCi/g	0.0682	EPIA-013B
Cobalt-60	U			-0.00956	pCi/g	0.077	EPIA-013B
Europium-152	U			0.0838	pCi/g	0.142	EPIA-013B
Europium-154	U			-0.0287	pCi/g	0.199	EPIA-013B
Europium-155	U			0.00657	pCi/g	0.119	EPIA-013B
Gross alpha	U			0.289	pCi/g	0.556	EPIA-001B
Lead-212	R		4	0.124	pCi/g	0.106	EPIA-013B
Manganese-54	U			0.0153	pCi/g	0.0702	EPIA-013B
Neptunium-239	U			-0.0755	pCi/g	0.213	EPIA-013B
Nonvolatile beta				7.32	pCi/g	0.897	EPIA-001B
Plutonium-238	U			-0.00284	pCi/g	0.0224	EPIA-012B
Plutonium-239/240	U			-0.00142	pCi/g	0.0184	EPIA-012B
Potassium-40				2.79	pCi/g	0.743	EPIA-013B
Promethium-144	U			0.00452	pCi/g	0.0707	EPIA-013B
Promethium-146	U			0.0175	pCi/g	0.0764	EPIA-013B
Ruthenium-106	U			-0.181	pCi/g	0.583	EPIA-013B
Sodium-22	U			-0.0104	pCi/g	0.0719	EPIA-013B
Strontium-89/90	U			0.288	pCi/g	0.537	EPA905
Tin-113	U			-0.0335	pCi/g	0.0777	EPIA-013B
Tritium	U			0.0187	pCi/g	0.17	EPIA-002B

SURVEY ID: SRF-07-01 (cont.) **Sample ID:** 117041

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.00216	pCi/g	0.0252	EPIA-011B
Uranium-235	U			0.00196	pCi/g	0.0136	EPIA-011B
Uranium-238	U			0.000821	pCi/g	0.0232	EPIA-011B
Yttrium-88	U			-0.0196	pCi/g	0.098	EPIA-013B
Zinc-65	U			-0.00653	pCi/g	0.168	EPIA-013B
Zirconium-95	U			0.054	pCi/g	0.184	EPIA-013B
Volatile Organic Compounds							
Acetone	J	K	O	423	µg/kg	51.5	EPA8260B
Benzene	J	IK	O	2.6	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	75.3	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	5.55	µg/kg	5	EPA8260B

SURVEY ID: SRF-07-02 **Sample ID:** 117042

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	JU		4	0.177	mg/kg	0.0788	EPA6010B
Arsenic				0.354	mg/kg	0.219	EPA6010B
Barium				2.69	mg/kg	0.026	EPA6010B
Cadmium	U			0.24	mg/kg	0.018	EPA6010B
Calcium				18100	mg/kg	3.354	EPA6010B
Chromium				0.305	mg/kg	0.035	EPA6010B
Copper				0.414	mg/kg	0.0635	EPA6010B
Lead	J	I		0.154	mg/kg	0.076	EPA6010B
Magnesium				437	mg/kg	0.244	EPA6010B
Manganese				10.1	mg/kg	0.342	EPA6010B
Mercury				0.204	mg/kg	0.0022	EPA7471A
Nickel	J	I		0.115	mg/kg	0.031	EPA6010B
Selenium				0.845	mg/kg	0.13	EPA6010B
Silver	J	I		0.082	mg/kg	0.0298	EPA6010B
Zinc				24.6	mg/kg	0.178	EPA6010B
Radionuclides							
Actinium-228	U			0.107	pCi/g	0.341	EPIA-013B
Antimony-124	U			0.0325	pCi/g	0.107	EPIA-013B
Antimony-125	U			-0.0796	pCi/g	0.152	EPIA-013B
Barium-133	U			-0.0363	pCi/g	0.0776	EPIA-013B
Cerium-144	U			-0.124	pCi/g	0.319	EPIA-013B
Cesium-134	U			-0.0101	pCi/g	0.0667	EPIA-013B
Cesium-137	U			0.0291	pCi/g	0.0804	EPIA-013B
Cobalt-57	U			0.0241	pCi/g	0.0406	EPIA-013B
Cobalt-58	U			0.00927	pCi/g	0.0992	EPIA-013B
Cobalt-60	U			0.00603	pCi/g	0.0763	EPIA-013B
Europium-152	U			0.00832	pCi/g	0.189	EPIA-013B
Europium-154	U			-0.0648	pCi/g	0.216	EPIA-013B
Europium-155	U			0.0292	pCi/g	0.159	EPIA-013B
Gross alpha	U			-0.539	pCi/g	1.34	EPIA-001B
Lead-212	U			0.0868	pCi/g	0.123	EPIA-013B
Manganese-54	U			-0.0262	pCi/g	0.0714	EPIA-013B
Neptunium-239	U			0.0014	pCi/g	0.304	EPIA-013B
Nonvolatile beta				6.33	pCi/g	1.33	EPIA-001B
Plutonium-238	U			0.00451	pCi/g	0.0135	EPIA-012B
Plutonium-239/240	U			-0.00108	pCi/g	0.0238	EPIA-012B
Potassium-40				2.8	pCi/g	0.881	EPIA-013B
Promethium-144	U			-0.00318	pCi/g	0.0755	EPIA-013B
Promethium-146	U			-0.031	pCi/g	0.0755	EPIA-013B
Ruthenium-106	U			0.36	pCi/g	0.751	EPIA-013B
Sodium-22	U			-0.0236	pCi/g	0.0782	EPIA-013B
Strontium-89/90	U			0.364	pCi/g	0.948	EPA905
Tin-113	U			0.0498	pCi/g	0.101	EPIA-013B
Tritium	J	I		0.229	pCi/g	0.19	EPIA-002B

SURVEY ID: SRF-07-02 (cont.) **Sample ID:** 117042

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Uranium-233/234	U			0.00153	pCi/g	0.0449	EPIA-011B
Uranium-235	U			0.000171	pCi/g	0.0322	EPIA-011B
Uranium-238	U			0.00221	pCi/g	0.0265	EPIA-011B
Yttrium-88	U			-0.00231	pCi/g	0.114	EPIA-013B
Zinc-65	U			0.0628	pCi/g	0.201	EPIA-013B
Zirconium-95	U			0.13	pCi/g	0.188	EPIA-013B
Volatile Organic Compounds							
Acetone	U			125	µg/kg	51.5	EPA8260B
Benzene	J	IK	O	4.84	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	61.4	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	J	IK	O	3.45	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	J	K	O	48.6	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	15.9	µg/kg	5	EPA8260B

SURVEY ID: SRF-07-03 **Sample ID:** 117043

Sample type: Normal Sample matrix: Fauna Percent solids: NA

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Metals (total recoverable)							
Antimony	JU		4	0.263	mg/kg	0.175	EPA6010B
Arsenic				0.426	mg/kg	0.209	EPA6010B
Barium				2.68	mg/kg	0.024	EPA6010B
Cadmium	U			0.229	mg/kg	0.017	EPA6010B
Calcium				14200	mg/kg	3.2	EPA6010B
Chromium				0.47	mg/kg	0.0334	EPA6010B
Copper				1.2	mg/kg	0.0606	EPA6010B
Lead				0.68	mg/kg	0.072	EPA6010B
Magnesium				490	mg/kg	0.233	EPA6010B
Manganese				6.96	mg/kg	0.326	EPA6010B
Mercury				0.543	mg/kg	0.00224	EPA7471A
Nickel	J	I		0.12	mg/kg	0.029	EPA6010B
Selenium				1.07	mg/kg	0.124	EPA6010B
Silver	J	IL	I	0.135	mg/kg	0.0284	EPA6010B
Zinc				15.1	mg/kg	0.17	EPA6010B
Radionuclides							
Actinium-228	R		4	0.275	pCi/g	0.242	EPIA-013B
Actinium-228	U			0.123	pCi/g	0.301	EPIA-013B
Antimony-124	U			-0.00378	pCi/g	0.072	EPIA-013B
Antimony-124	U			-0.0302	pCi/g	0.0993	EPIA-013B
Antimony-125	U			0.123	pCi/g	0.179	EPIA-013B
Antimony-125	U			-0.0129	pCi/g	0.108	EPIA-013B
Barium-133	U			0.00128	pCi/g	0.0592	EPIA-013B
Barium-133	U			0.0433	pCi/g	0.078	EPIA-013B
Cerium-144	U			-0.0296	pCi/g	0.2	EPIA-013B
Cerium-144	U			-0.0332	pCi/g	0.271	EPIA-013B
Cesium-134	U			0.0172	pCi/g	0.0715	EPIA-013B
Cesium-134	U			-0.00367	pCi/g	0.0523	EPIA-013B
Cesium-137				0.0651	pCi/g	0.0506	EPIA-013B
Cesium-137	U			0.09	pCi/g	0.0756	EPIA-013B
Cobalt-57	U			0.00223	pCi/g	0.0349	EPIA-013B
Cobalt-57	U			0.00576	pCi/g	0.0278	EPIA-013B
Cobalt-58	U			0.0162	pCi/g	0.106	EPIA-013B
Cobalt-58	U			-0.0147	pCi/g	0.0585	EPIA-013B
Cobalt-60	U			0.00368	pCi/g	0.0583	EPIA-013B
Cobalt-60	U			-0.0573	pCi/g	0.0787	EPIA-013B
Europium-152	U			-0.0133	pCi/g	0.127	EPIA-013B
Europium-152	U			0.0234	pCi/g	0.168	EPIA-013B
Europium-154	U			-0.0124	pCi/g	0.164	EPIA-013B
Europium-154	U			0.0135	pCi/g	0.235	EPIA-013B
Europium-155	U			0.0307	pCi/g	0.113	EPIA-013B
Europium-155	U			-0.0332	pCi/g	0.124	EPIA-013B
Gross alpha	U			0.0998	pCi/g	0.618	EPIA-001B
Gross alpha	U			0.0824	pCi/g	0.431	EPIA-001B

SURVEY ID: SRF-07-03 (cont.) **Sample ID:** 117043

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Radionuclides							
Lead-212	U			0.0271	pCi/g	0.0842	EPIA-013B
Lead-212	R		4	0.134	pCi/g	0.109	EPIA-013B
Manganese-54	U			-0.000359	pCi/g	0.0806	EPIA-013B
Manganese-54	U			0.0134	pCi/g	0.0586	EPIA-013B
Neptunium-239	U			0.105	pCi/g	0.211	EPIA-013B
Neptunium-239	U			-0.162	pCi/g	0.224	EPIA-013B
Nonvolatile beta				5.31	pCi/g	0.586	EPIA-001B
Nonvolatile beta				5.4	pCi/g	0.642	EPIA-001B
Plutonium-238	U			-0.000479	pCi/g	0.0105	EPIA-012B
Plutonium-238	U			0.00317	pCi/g	0.013	EPIA-012B
Plutonium-239/240	U			-0.000501	pCi/g	0.011	EPIA-012B
Plutonium-239/240	U			0.00199	pCi/g	0.00598	EPIA-012B
Potassium-40				2.86	pCi/g	0.561	EPIA-013B
Potassium-40				2.76	pCi/g	0.818	EPIA-013B
Promethium-144	U			0.0118	pCi/g	0.0779	EPIA-013B
Promethium-144	U			0.0127	pCi/g	0.0525	EPIA-013B
Promethium-146	U			0.0137	pCi/g	0.0605	EPIA-013B
Promethium-146	U			0.000611	pCi/g	0.0823	EPIA-013B
Ruthenium-106	U			0.252	pCi/g	0.497	EPIA-013B
Ruthenium-106	U			0.0762	pCi/g	0.702	EPIA-013B
Sodium-22	U			-0.00447	pCi/g	0.0592	EPIA-013B
Sodium-22	U			0.00507	pCi/g	0.0852	EPIA-013B
Strontium-89/90	U			0.365	pCi/g	0.433	EPA905
Strontium-89/90	U			0.336	pCi/g	0.466	EPA905
Tin-113	U			-0.0125	pCi/g	0.0884	EPIA-013B
Tin-113	U			0.0115	pCi/g	0.0639	EPIA-013B
Tritium	U			0	pCi/g	0.0844	EPIA-002B
Uranium-233/234	U			7.1E-05	pCi/g	0.0134	EPIA-011B
Uranium-233/234	U			0.00995	pCi/g	0.0131	EPIA-011B
Uranium-235	U			0.000142	pCi/g	0.0168	EPIA-011B
Uranium-235	U			0.00521	pCi/g	0.00997	EPIA-011B
Uranium-238	U			0.00135	pCi/g	0.00937	EPIA-011B
Uranium-238	U			0.00143	pCi/g	0.00994	EPIA-011B
Yttrium-88	U			-0.00343	pCi/g	0.0863	EPIA-013B
Yttrium-88	U			0.00984	pCi/g	0.0743	EPIA-013B
Zinc-65	U			-0.0264	pCi/g	0.123	EPIA-013B
Zinc-65	U			-0.00123	pCi/g	0.187	EPIA-013B
Zirconium-95	U			-0.0093	pCi/g	0.176	EPIA-013B
Zirconium-95	U			-0.0442	pCi/g	0.101	EPIA-013B
Volatile Organic Compounds							
Acetone	J	K	O	132	µg/kg	51.5	EPA8260B
Benzene	U			5	µg/kg	2.5	EPA8260B
Bromodichloromethane	U			5	µg/kg	0.5	EPA8260B
Bromoform	U			5	µg/kg	1.35	EPA8260B
Bromomethane (Methyl bromide)	U			5	µg/kg	1.5	EPA8260B
Carbon disulfide	U			25	µg/kg	1.5	EPA8260B
Carbon tetrachloride	U			5	µg/kg	2.5	EPA8260B
Chlorobenzene	U			5	µg/kg	1.5	EPA8260B
Chloroethane	U			5	µg/kg	1.5	EPA8260B
Chloroethene (Vinyl chloride)	U			5	µg/kg	2	EPA8260B
Chloroform	U			5	µg/kg	0.5	EPA8260B

SURVEY ID: SRF-07-03 (cont.) **Sample ID:** 117043

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
Chloromethane (Methyl chloride)	U			5	µg/kg	1	EPA8260B
Dibromochloromethane	U			5	µg/kg	1.05	EPA8260B
1,1-Dichloroethane	U			5	µg/kg	0.5	EPA8260B
1,2-Dichloroethane	U			5	µg/kg	1.15	EPA8260B
1,1-Dichloroethylene	U			5	µg/kg	1.5	EPA8260B
1,2-Dichloroethylene	U			50	µg/kg	1.25	EPA8260B
Dichloromethane (Methylene chloride)	J	K	O	103	µg/kg	7	EPA8260B
1,2-Dichloropropane	U			5	µg/kg	1.15	EPA8260B
cis-1,3-Dichloropropene	U			5	µg/kg	1	EPA8260B
trans-1,3-Dichloropropene	U			5	µg/kg	1.5	EPA8260B
Ethylbenzene	U			5	µg/kg	1.5	EPA8260B
2-Hexanone	U			25	µg/kg	14	EPA8260B
Methyl ethyl ketone	U			25	µg/kg	16	EPA8260B
Methyl isobutyl ketone	U			25	µg/kg	14.6	EPA8260B
Styrene	U			5	µg/kg	1.5	EPA8260B
1,1,2,2-Tetrachloroethane	U			5	µg/kg	3	EPA8260B
Tetrachloroethylene	U			5	µg/kg	2	EPA8260B
Toluene	U			5	µg/kg	4.5	EPA8260B
1,1,1-Trichloroethane	U			5	µg/kg	0.5	EPA8260B
1,1,2-Trichloroethane	U			5	µg/kg	1.2	EPA8260B
Trichloroethylene	U			5	µg/kg	1.35	EPA8260B
Vinyl acetate	U			75	µg/kg	10.5	EPA8260B
Xylenes	J	IK	O	5.87	µg/kg	5	EPA8260B

Table D.7 Results for Blanks Sorted by Sample

SURVEY ID: SRF-TB-01-B **Sample ID:** 117044

Sample type: Trip Blank Sample matrix: Water Percent solids: 0

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
Acetone	U			5	µg/L	3.7	EPA8260B
Benzene	U			1	µg/L	0.3	EPA8260B
Bromodichloromethane	U			1	µg/L	0.4	EPA8260B
Bromoform	U			1	µg/L	0.4	EPA8260B
Bromomethane (Methyl bromide)	U			1	µg/L	0.3	EPA8260B
Carbon disulfide	U			5	µg/L	1.8	EPA8260B
Carbon tetrachloride	U			1	µg/L	0.2	EPA8260B
Chlorobenzene	U			1	µg/L	0.3	EPA8260B
Chloroethane	U			1	µg/L	0.3	EPA8260B
Chloroethene (Vinyl chloride)	U			1	µg/L	0.4	EPA8260B
Chloroform	U			1	µg/L	0.7	EPA8260B
Chloromethane (Methyl chloride)	U			1	µg/L	0.2	EPA8260B
Dibromochloromethane	U			1	µg/L	0.3	EPA8260B
1,1-Dichloroethane	U			1	µg/L	0.4	EPA8260B
1,2-Dichloroethane	U			1	µg/L	0.2	EPA8260B
cis-1,2-Dichloroethylene	U			1	µg/L	0.7	EPA8260B
1,1-Dichloroethylene	U			1	µg/L	0.7	EPA8260B
trans-1,2-Dichloroethylene	U			1	µg/L	0.7	EPA8260B
Dichloromethane (Methylene chloride)	JU	IV		4.16	µg/L	1.2	EPA8260B
1,2-Dichloropropane	U			1	µg/L	0.2	EPA8260B
cis-1,3-Dichloropropene	U			1	µg/L	0.3	EPA8260B
trans-1,3-Dichloropropene	U			1	µg/L	0.3	EPA8260B
Ethylbenzene	U			1	µg/L	0.3	EPA8260B
2-Hexanone	U			5	µg/L	3.2	EPA8260B
Methyl ethyl ketone	U			10	µg/L	5.9	EPA8260B
Methyl isobutyl ketone	U			5	µg/L	1.6	EPA8260B
Styrene	U			1	µg/L	0.2	EPA8260B
1,1,2,2-Tetrachloroethane	U			1	µg/L	0.5	EPA8260B
Tetrachloroethylene	U			1	µg/L	0.7	EPA8260B
Toluene	U			1	µg/L	0.5	EPA8260B
1,1,1-Trichloroethane	U			1	µg/L	0.2	EPA8260B
1,1,2-Trichloroethane	U			1	µg/L	0.4	EPA8260B
Trichloroethylene	U			1	µg/L	0.6	EPA8260B
Xylenes	U			2	µg/L	1.1	EPA8260B

SURVEY ID: SRF-TB-02-B **Sample ID:** 117045

Sample type: Trip Blank Sample matrix: Water Percent solids: 0

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
Acetone	U			5	µg/L	3.7	EPA8260B
Benzene	U			1	µg/L	0.3	EPA8260B
Bromodichloromethane	U			1	µg/L	0.4	EPA8260B
Bromoform	U			1	µg/L	0.4	EPA8260B
Bromomethane (Methyl bromide)	U			1	µg/L	0.3	EPA8260B
Carbon disulfide	U			5	µg/L	1.8	EPA8260B
Carbon tetrachloride	U			1	µg/L	0.2	EPA8260B
Chlorobenzene	U			1	µg/L	0.3	EPA8260B
Chloroethane	U			1	µg/L	0.3	EPA8260B
Chloroethene (Vinyl chloride)	U			1	µg/L	0.4	EPA8260B
Chloroform	U			1	µg/L	0.7	EPA8260B
Chloromethane (Methyl chloride)	U			1	µg/L	0.2	EPA8260B
Dibromochloromethane	U			1	µg/L	0.3	EPA8260B
1,1-Dichloroethane	U			1	µg/L	0.4	EPA8260B
1,2-Dichloroethane	U			1	µg/L	0.2	EPA8260B
cis-1,2-Dichloroethylene	U			1	µg/L	0.7	EPA8260B
1,1-Dichloroethylene	U			1	µg/L	0.7	EPA8260B
trans-1,2-Dichloroethylene	U			1	µg/L	0.7	EPA8260B
Dichloromethane (Methylene chloride)	JU	IV		3.99	µg/L	1.2	EPA8260B
1,2-Dichloropropane	U			1	µg/L	0.2	EPA8260B
cis-1,3-Dichloropropene	U			1	µg/L	0.3	EPA8260B
trans-1,3-Dichloropropene	U			1	µg/L	0.3	EPA8260B
Ethylbenzene	U			1	µg/L	0.3	EPA8260B
2-Hexanone	U			5	µg/L	3.2	EPA8260B
Methyl ethyl ketone	U			10	µg/L	5.9	EPA8260B
Methyl isobutyl ketone	U			5	µg/L	1.6	EPA8260B
Styrene	U			1	µg/L	0.2	EPA8260B
1,1,2,2-Tetrachloroethane	U			1	µg/L	0.5	EPA8260B
Tetrachloroethylene	U			1	µg/L	0.7	EPA8260B
Toluene	U			1	µg/L	0.5	EPA8260B
1,1,1-Trichloroethane	U			1	µg/L	0.2	EPA8260B
1,1,2-Trichloroethane	U			1	µg/L	0.4	EPA8260B
Trichloroethylene	U			1	µg/L	0.6	EPA8260B
Xylenes	U			2	µg/L	1.1	EPA8260B

SURVEY ID: SRF-TB-03-B **Sample ID:** 117046

Sample type: Trip Blank Sample matrix: Water Percent solids: 0

Constituent	FG	SC	E	Result	Unit	ssMDL	Method
Volatile Organic Compounds							
Acetone	U			5	µg/L	3.7	EPA8260B
Benzene	U			1	µg/L	0.3	EPA8260B
Bromodichloromethane	U			1	µg/L	0.4	EPA8260B
Bromoform	U			1	µg/L	0.4	EPA8260B
Bromomethane (Methyl bromide)	U			1	µg/L	0.3	EPA8260B
Carbon disulfide	U			5	µg/L	1.8	EPA8260B
Carbon tetrachloride	U			1	µg/L	0.2	EPA8260B
Chlorobenzene	U			1	µg/L	0.3	EPA8260B
Chloroethane	U			1	µg/L	0.3	EPA8260B
Chloroethene (Vinyl chloride)	U			1	µg/L	0.4	EPA8260B
Chloroform	U			1	µg/L	0.7	EPA8260B
Chloromethane (Methyl chloride)	U			1	µg/L	0.2	EPA8260B
Dibromochloromethane	U			1	µg/L	0.3	EPA8260B
1,1-Dichloroethane	U			1	µg/L	0.4	EPA8260B
1,2-Dichloroethane	U			1	µg/L	0.2	EPA8260B
cis-1,2-Dichloroethylene	U			1	µg/L	0.7	EPA8260B
1,1-Dichloroethylene	U			1	µg/L	0.7	EPA8260B
trans-1,2-Dichloroethylene	U			1	µg/L	0.7	EPA8260B
Dichloromethane (Methylene chloride)	JU	IV		3.39	µg/L	1.2	EPA8260B
1,2-Dichloropropane	U			1	µg/L	0.2	EPA8260B
cis-1,3-Dichloropropene	U			1	µg/L	0.3	EPA8260B
trans-1,3-Dichloropropene	U			1	µg/L	0.3	EPA8260B
Ethylbenzene	U			1	µg/L	0.3	EPA8260B
2-Hexanone	U			5	µg/L	3.2	EPA8260B
Methyl ethyl ketone	U			10	µg/L	5.9	EPA8260B
Methyl isobutyl ketone	U			5	µg/L	1.6	EPA8260B
Styrene	U			1	µg/L	0.2	EPA8260B
1,1,2,2-Tetrachloroethane	U			1	µg/L	0.5	EPA8260B
Tetrachloroethylene	U			1	µg/L	0.7	EPA8260B
Toluene	U			1	µg/L	0.5	EPA8260B
1,1,1-Trichloroethane	U			1	µg/L	0.2	EPA8260B
1,1,2-Trichloroethane	U			1	µg/L	0.4	EPA8260B
Trichloroethylene	U			1	µg/L	0.6	EPA8260B
Xylenes	U			2	µg/L	1.1	EPA8260B

Table D.8 Analytical Results Sorted by Analyte

ANALYTE: Acetone
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	925	µg/kg	51.5	EPA8260B	K	O
SRF-01-02	117019	J	402	µg/kg	51.5	EPA8260B	K	O
SRF-01-03	117020		161	µg/kg	51.5	EPA8260B		
SRF-01-04	117021	J	593	µg/kg	51.5	EPA8260B	K	O
SRF-01-05	117022	J	2490	µg/kg	51.5	EPA8260B	K	O
SRF-02-01	117023	J	180	µg/kg	51.5	EPA8260B	K	O
SRF-02-02	117024	J	104	µg/kg	51.5	EPA8260B	IK	O
SRF-02-03	117025	J	173	µg/kg	51.5	EPA8260B	K	O
SRF-02-03-A	117026	J	79.2	µg/kg	51.5	EPA8260B	I	
SRF-03-01	117027		347	µg/kg	51.5	EPA8260B		
SRF-03-02	117028		127	µg/kg	51.5	EPA8260B		
SRF-03-03	117029	J	80	µg/kg	51.5	EPA8260B	I	
SRF-03-04	117030		164	µg/kg	51.5	EPA8260B		
SRF-04-01	117031	J	122	µg/kg	51.5	EPA8260B	IK	O
SRF-04-02	117032		129	µg/kg	51.5	EPA8260B		
SRF-04-03	117033	J	94.4	µg/kg	51.5	EPA8260B	IK	O
SRF-05-01	117034	J	77.1	µg/kg	51.5	EPA8260B	IK	O
SRF-05-02	117035		223	µg/kg	51.5	EPA8260B		
SRF-05-03	117036	J	106	µg/kg	51.5	EPA8260B	IK	O
SRF-06-01	117037	J	156	µg/kg	51.5	EPA8260B	K	O
SRF-06-02	117038	J	117	µg/kg	51.5	EPA8260B	I	
SRF-06-03	117039	U	125	µg/kg	51.5	EPA8260B		
SRF-06-03-A	117040	U	125	µg/kg	51.5	EPA8260B		
SRF-07-01	117041	J	423	µg/kg	51.5	EPA8260B	K	O
SRF-07-02	117042	U	125	µg/kg	51.5	EPA8260B		
SRF-07-03	117043	J	132	µg/kg	51.5	EPA8260B	K	O

ANALYTE: Actinium-228
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.0883	pCi/g	0.261	EPIA-013B		
SRF-01-02	117019	U	0.0375	pCi/g	0.196	EPIA-013B		
SRF-01-03	117020	U	0.186	pCi/g	0.233	EPIA-013B		
SRF-01-04	117021	U	0.0867	pCi/g	0.174	EPIA-013B		
SRF-01-05	117022	U	0.145	pCi/g	0.203	EPIA-013B		
SRF-01-05	117022	U	0.179	pCi/g	0.201	EPIA-013B		
SRF-02-01	117023	U	-0.0298	pCi/g	0.21	EPIA-013B		
SRF-02-02	117024	U	0.085	pCi/g	0.18	EPIA-013B		
SRF-02-03	117025	U	0.0133	pCi/g	0.27	EPIA-013B		
SRF-02-03-A	117026	U	0.283	pCi/g	0.296	EPIA-013B		
SRF-03-01	117027	U	0.126	pCi/g	0.249	EPIA-013B		
SRF-03-02	117028	U	0.185	pCi/g	0.202	EPIA-013B		
SRF-03-03	117029	U	0.0927	pCi/g	0.235	EPIA-013B		
SRF-03-04	117030	R	0.17	pCi/g	0.141	EPIA-013B		4
SRF-04-01	117031	U	0.162	pCi/g	0.21	EPIA-013B		
SRF-04-02	117032	U	0.0839	pCi/g	0.265	EPIA-013B		
SRF-04-03	117033	U	0.0281	pCi/g	0.291	EPIA-013B		
SRF-05-01	117034	U	0.101	pCi/g	0.214	EPIA-013B		
SRF-05-02	117035	U	0.144	pCi/g	0.244	EPIA-013B		
SRF-05-03	117036	U	0.122	pCi/g	0.21	EPIA-013B		

ANALYTE: Actinium-228 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-06-01	117037	U	0.0734	pCi/g	0.261	EPIA-013B		
SRF-06-02	117038	U	0.16	pCi/g	0.189	EPIA-013B		
SRF-06-03	117039	U	0.226	pCi/g	0.287	EPIA-013B		
SRF-06-03-A	117040	U	0.12	pCi/g	0.314	EPIA-013B		
SRF-07-01	117041	U	0.189	pCi/g	0.318	EPIA-013B		
SRF-07-02	117042	U	0.107	pCi/g	0.341	EPIA-013B		
SRF-07-03	117043	R	0.275	pCi/g	0.242	EPIA-013B		4
SRF-07-03	117043	U	0.123	pCi/g	0.301	EPIA-013B		

ANALYTE: Antimony-124
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0184	pCi/g	0.072	EPIA-013B		
SRF-01-02	117019	U	-0.015	pCi/g	0.0586	EPIA-013B		
SRF-01-03	117020	U	-0.00905	pCi/g	0.0638	EPIA-013B		
SRF-01-04	117021	U	0.0173	pCi/g	0.0584	EPIA-013B		
SRF-01-05	117022	U	-0.00867	pCi/g	0.0604	EPIA-013B		
SRF-01-05	117022	U	-0.000566	pCi/g	0.0663	EPIA-013B		
SRF-02-01	117023	U	0.0344	pCi/g	0.0824	EPIA-013B		
SRF-02-02	117024	U	-0.0146	pCi/g	0.0545	EPIA-013B		
SRF-02-03	117025	U	0.0434	pCi/g	0.105	EPIA-013B		
SRF-02-03-A	117026	U	-0.0295	pCi/g	0.0869	EPIA-013B		
SRF-03-01	117027	U	0.0153	pCi/g	0.0876	EPIA-013B		
SRF-03-02	117028	U	-0.0296	pCi/g	0.0597	EPIA-013B		
SRF-03-03	117029	U	-0.00361	pCi/g	0.0698	EPIA-013B		
SRF-03-04	117030	U	-0.0277	pCi/g	0.0419	EPIA-013B		
SRF-04-01	117031	U	-0.00379	pCi/g	0.0688	EPIA-013B		
SRF-04-02	117032	U	-0.0292	pCi/g	0.0935	EPIA-013B		
SRF-04-03	117033	U	-0.0103	pCi/g	0.0725	EPIA-013B		
SRF-05-01	117034	U	0.00332	pCi/g	0.0612	EPIA-013B		
SRF-05-02	117035	U	0.0113	pCi/g	0.0711	EPIA-013B		
SRF-05-03	117036	U	0.021	pCi/g	0.0747	EPIA-013B		
SRF-06-01	117037	U	0.0109	pCi/g	0.0841	EPIA-013B		
SRF-06-02	117038	U	0.0124	pCi/g	0.0617	EPIA-013B		
SRF-06-03	117039	U	0.00128	pCi/g	0.0913	EPIA-013B		
SRF-06-03-A	117040	U	0.00618	pCi/g	0.0979	EPIA-013B		
SRF-07-01	117041	U	-0.00437	pCi/g	0.0912	EPIA-013B		
SRF-07-02	117042	U	0.0325	pCi/g	0.107	EPIA-013B		
SRF-07-03	117043	U	-0.00378	pCi/g	0.072	EPIA-013B		
SRF-07-03	117043	U	-0.0302	pCi/g	0.0993	EPIA-013B		

ANALYTE: Antimony-125
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0158	pCi/g	0.142	EPIA-013B		
SRF-01-02	117019	U	0.0365	pCi/g	0.117	EPIA-013B		
SRF-01-03	117020	U	-0.0509	pCi/g	0.114	EPIA-013B		
SRF-01-04	117021	U	0.0124	pCi/g	0.101	EPIA-013B		
SRF-01-05	117022	U	0.0298	pCi/g	0.0955	EPIA-013B		
SRF-01-05	117022	U	0.00376	pCi/g	0.114	EPIA-013B		
SRF-02-01	117023	U	-0.0292	pCi/g	0.142	EPIA-013B		

ANALYTE: Antimony-125 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-02-02	117024	U	-0.0076	pCi/g	0.102	EPIA-013B		
SRF-02-03	117025	U	-0.106	pCi/g	0.16	EPIA-013B		
SRF-02-03-A	117026	U	0.035	pCi/g	0.168	EPIA-013B		
SRF-03-01	117027	U	0.0385	pCi/g	0.153	EPIA-013B		
SRF-03-02	117028	U	0.0238	pCi/g	0.105	EPIA-013B		
SRF-03-03	117029	U	0.0233	pCi/g	0.135	EPIA-013B		
SRF-03-04	117030	U	0.0121	pCi/g	0.0746	EPIA-013B		
SRF-04-01	117031	U	0.00765	pCi/g	0.122	EPIA-013B		
SRF-04-02	117032	U	0.0531	pCi/g	0.166	EPIA-013B		
SRF-04-03	117033	U	0.0995	pCi/g	0.163	EPIA-013B		
SRF-05-01	117034	U	-0.0328	pCi/g	0.1	EPIA-013B		
SRF-05-02	117035	U	-0.00353	pCi/g	0.109	EPIA-013B		
SRF-05-03	117036	U	0.0032	pCi/g	0.139	EPIA-013B		
SRF-06-01	117037	U	0.0596	pCi/g	0.143	EPIA-013B		
SRF-06-02	117038	U	0.0331	pCi/g	0.106	EPIA-013B		
SRF-06-03	117039	U	-0.0504	pCi/g	0.169	EPIA-013B		
SRF-06-03-A	117040	U	0.0159	pCi/g	0.16	EPIA-013B		
SRF-07-01	117041	U	0.0414	pCi/g	0.171	EPIA-013B		
SRF-07-02	117042	U	-0.0796	pCi/g	0.152	EPIA-013B		
SRF-07-03	117043	U	-0.0129	pCi/g	0.108	EPIA-013B		
SRF-07-03	117043	U	0.123	pCi/g	0.179	EPIA-013B		

ANALYTE: Antimony
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.455	mg/kg	0.174	EPA6010B		
SRF-01-02	117019	JU	0.205	mg/kg	0.182	EPA6010B		4
SRF-01-03	117020	U	0.455	mg/kg	0.174	EPA6010B		
SRF-01-04	117021	JU	0.259	mg/kg	0.177	EPA6010B		4
SRF-01-05	117022	U	0.459	mg/kg	0.175	EPA6010B		
SRF-02-01	117023	U	0.467	mg/kg	0.178	EPA6010B		
SRF-02-02	117024	U	0.481	mg/kg	0.184	EPA6010B		
SRF-02-03	117025	U	0.5	mg/kg	0.191	EPA6010B		
SRF-02-03-A	117026	U	0.472	mg/kg	0.18	EPA6010B		
SRF-03-01	117027	U	0.495	mg/kg	0.189	EPA6010B		
SRF-03-02	117028	U	0.485	mg/kg	0.185	EPA6010B		
SRF-03-03	117029	U	0.467	mg/kg	0.178	EPA6010B		
SRF-03-04	117030	JU	0.196	mg/kg	0.187	EPA6010B		4
SRF-04-01	117031	JU	0.221	mg/kg	0.184	EPA6010B		4
SRF-04-02	117032	U	0.459	mg/kg	0.175	EPA6010B		
SRF-04-03	117033	U	0.495	mg/kg	0.189	EPA6010B		
SRF-05-01	117034	U	0.485	mg/kg	0.185	EPA6010B		
SRF-05-02	117035	U	0.476	mg/kg	0.182	EPA6010B		
SRF-05-03	117036	U	0.467	mg/kg	0.178	EPA6010B		
SRF-06-01	117037	JU	0.185	mg/kg	0.182	EPA6010B		4
SRF-06-02	117038	U	0.463	mg/kg	0.177	EPA6010B		
SRF-06-03	117039	JU	0.186	mg/kg	0.182	EPA6010B		4
SRF-06-03-A	117040	U	0.495	mg/kg	0.189	EPA6010B		
SRF-07-01	117041	JU	0.233	mg/kg	0.184	EPA6010B		4
SRF-07-02	117042	JU	0.177	mg/kg	0.0788	EPA6010B		4
SRF-07-03	117043	JU	0.263	mg/kg	0.175	EPA6010B		4

ANALYTE: Arsenic
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		0.279	mg/kg	0.207	EPA6010B		
SRF-01-02	117019		0.621	mg/kg	0.217	EPA6010B		
SRF-01-03	117020		0.841	mg/kg	0.207	EPA6010B		
SRF-01-04	117021		0.355	mg/kg	0.211	EPA6010B		
SRF-01-05	117022		0.543	mg/kg	0.209	EPA6010B		
SRF-02-01	117023		0.534	mg/kg	0.213	EPA6010B		
SRF-02-02	117024		0.55	mg/kg	0.219	EPA6010B		
SRF-02-03	117025		0.535	mg/kg	0.228	EPA6010B		
SRF-02-03-A	117026		0.666	mg/kg	0.215	EPA6010B		
SRF-03-01	117027		0.465	mg/kg	0.226	EPA6010B		
SRF-03-02	117028		0.546	mg/kg	0.221	EPA6010B		
SRF-03-03	117029		0.713	mg/kg	0.213	EPA6010B		
SRF-03-04	117030		0.638	mg/kg	0.223	EPA6010B		
SRF-04-01	117031		0.528	mg/kg	0.219	EPA6010B		
SRF-04-02	117032		0.544	mg/kg	0.209	EPA6010B		
SRF-04-03	117033		0.586	mg/kg	0.226	EPA6010B		
SRF-05-01	117034		0.41	mg/kg	0.221	EPA6010B		
SRF-05-02	117035		0.496	mg/kg	0.217	EPA6010B		
SRF-05-03	117036		0.758	mg/kg	0.213	EPA6010B		
SRF-06-01	117037		0.604	mg/kg	0.217	EPA6010B		
SRF-06-02	117038		0.489	mg/kg	0.211	EPA6010B		
SRF-06-03	117039		0.873	mg/kg	0.217	EPA6010B		
SRF-06-03-A	117040		0.647	mg/kg	0.226	EPA6010B		
SRF-07-01	117041		0.336	mg/kg	0.219	EPA6010B		
SRF-07-02	117042		0.354	mg/kg	0.219	EPA6010B		
SRF-07-03	117043		0.426	mg/kg	0.209	EPA6010B		

ANALYTE: Barium-133
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0241	pCi/g	0.059	EPIA-013B		
SRF-01-02	117019	U	0.00484	pCi/g	0.0481	EPIA-013B		
SRF-01-03	117020	U	-0.00135	pCi/g	0.0522	EPIA-013B		
SRF-01-04	117021	U	0.00889	pCi/g	0.0478	EPIA-013B		
SRF-01-05	117022	U	0.0286	pCi/g	0.0523	EPIA-013B		
SRF-01-05	117022	U	0.00386	pCi/g	0.0515	EPIA-013B		
SRF-02-01	117023	U	-0.00508	pCi/g	0.0604	EPIA-013B		
SRF-02-02	117024	U	-0.0242	pCi/g	0.0383	EPIA-013B		
SRF-02-03	117025	U	0.0178	pCi/g	0.0759	EPIA-013B		
SRF-02-03-A	117026	U	0.00484	pCi/g	0.0702	EPIA-013B		
SRF-03-01	117027	U	-0.0676	pCi/g	0.0591	EPIA-013B		
SRF-03-02	117028	U	0.0213	pCi/g	0.0522	EPIA-013B		
SRF-03-03	117029	U	0.00717	pCi/g	0.0562	EPIA-013B		
SRF-03-04	117030	U	-0.00926	pCi/g	0.0344	EPIA-013B		
SRF-04-01	117031	U	-0.0183	pCi/g	0.0525	EPIA-013B		
SRF-04-02	117032	U	0.0114	pCi/g	0.0703	EPIA-013B		
SRF-04-03	117033	U	0.0484	pCi/g	0.0728	EPIA-013B		
SRF-05-01	117034	U	0.00224	pCi/g	0.0488	EPIA-013B		
SRF-05-02	117035	U	0.0256	pCi/g	0.0524	EPIA-013B		
SRF-05-03	117036	U	0.00258	pCi/g	0.0558	EPIA-013B		
SRF-06-01	117037	U	0.0181	pCi/g	0.0613	EPIA-013B		
SRF-06-02	117038	U	-0.019	pCi/g	0.0468	EPIA-013B		
SRF-06-03	117039	U	-0.0279	pCi/g	0.0755	EPIA-013B		

ANALYTE: Barium-133 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-06-03-A	117040	U	0.00575	pCi/g	0.0767	EPIA-013B		
SRF-07-01	117041	U	0.0439	pCi/g	0.0669	EPIA-013B		
SRF-07-02	117042	U	-0.0363	pCi/g	0.0776	EPIA-013B		
SRF-07-03	117043	U	0.0433	pCi/g	0.078	EPIA-013B		
SRF-07-03	117043	U	0.00128	pCi/g	0.0592	EPIA-013B		

ANALYTE: Barium
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		3.9	mg/kg	0.025	EPA6010B		
SRF-01-02	117019		3.93	mg/kg	0.026	EPA6010B		
SRF-01-03	117020		3.18	mg/kg	0.025	EPA6010B		
SRF-01-04	117021		3.92	mg/kg	0.025	EPA6010B		
SRF-01-05	117022		3.33	mg/kg	0.024	EPA6010B		
SRF-02-01	117023		6.5	mg/kg	0.025	EPA6010B		
SRF-02-02	117024		3.84	mg/kg	0.026	EPA6010B		
SRF-02-03	117025		2.96	mg/kg	0.027	EPA6010B		
SRF-02-03-A	117026		5.99	mg/kg	0.025	EPA6010B		
SRF-03-01	117027		1.74	mg/kg	0.027	EPA6010B		
SRF-03-02	117028		6.63	mg/kg	0.026	EPA6010B		
SRF-03-03	117029		4.43	mg/kg	0.025	EPA6010B		
SRF-03-04	117030		7.83	mg/kg	0.026	EPA6010B		
SRF-04-01	117031		5.82	mg/kg	0.026	EPA6010B		
SRF-04-02	117032		3.25	mg/kg	0.024	EPA6010B		
SRF-04-03	117033		0.427	mg/kg	0.027	EPA6010B		
SRF-05-01	117034		5.5	mg/kg	0.026	EPA6010B		
SRF-05-02	117035		3.96	mg/kg	0.026	EPA6010B		
SRF-05-03	117036		1.46	mg/kg	0.025	EPA6010B		
SRF-06-01	117037		6.58	mg/kg	0.026	EPA6010B		
SRF-06-02	117038		3.82	mg/kg	0.025	EPA6010B		
SRF-06-03	117039		2.02	mg/kg	0.026	EPA6010B		
SRF-06-03-A	117040		3.06	mg/kg	0.027	EPA6010B		
SRF-07-01	117041		1.8	mg/kg	0.026	EPA6010B		
SRF-07-02	117042		2.69	mg/kg	0.026	EPA6010B		
SRF-07-03	117043		2.68	mg/kg	0.024	EPA6010B		

ANALYTE: Benzene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	10.3	µg/kg	2.5	EPA8260B	K	O
SRF-01-02	117019	J	5.63	µg/kg	2.5	EPA8260B	K	O
SRF-01-03	117020	U	5	µg/kg	2.5	EPA8260B		
SRF-01-04	117021	J	2.64	µg/kg	2.5	EPA8260B	IK	O
SRF-01-05	117022	J	3.44	µg/kg	2.5	EPA8260B	IK	O
SRF-02-01	117023	U	5	µg/kg	2.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	2.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	2.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	2.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	2.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	2.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	2.5	EPA8260B		

ANALYTE: Benzene (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-03-04	117030	U	5	µg/kg	2.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	2.5	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	2.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	2.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	2.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	2.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	2.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	2.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	2.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	2.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	2.5	EPA8260B		
SRF-07-01	117041	J	2.6	µg/kg	2.5	EPA8260B	IK	O
SRF-07-02	117042	J	4.84	µg/kg	2.5	EPA8260B	IK	O
SRF-07-03	117043	U	5	µg/kg	2.5	EPA8260B		

ANALYTE: Bromodichloromethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	0.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	0.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	0.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	0.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	0.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	0.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	0.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	0.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	0.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	0.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	0.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	0.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	0.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	0.5	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	0.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	0.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	0.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	0.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	0.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	0.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	0.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	0.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	0.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	0.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	0.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	0.5	EPA8260B		

ANALYTE: Bromoform
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.35	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.35	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.35	EPA8260B		

ANALYTE: Bromoform (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-04	117021	U	5	µg/kg	1.35	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.35	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.35	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.35	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.35	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.35	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.35	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.35	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.35	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.35	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.35	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1.35	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.35	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.35	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.35	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.35	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.35	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.35	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.35	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.35	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.35	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.35	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.35	EPA8260B		

ANALYTE: Bromomethane (Methyl bromide)
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.5	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: Cadmium
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	0.0385	mg/kg	0.017	EPA6010B	I	
SRF-01-02	117019	J	0.0376	mg/kg	0.018	EPA6010B	I	
SRF-01-03	117020	U	0.227	mg/kg	0.017	EPA6010B		
SRF-01-04	117021	JU	0.0252	mg/kg	0.018	EPA6010B		4
SRF-01-05	117022	JU	0.0224	mg/kg	0.017	EPA6010B		4
SRF-02-01	117023	U	0.234	mg/kg	0.018	EPA6010B		
SRF-02-02	117024	JU	0.0225	mg/kg	0.018	EPA6010B		4
SRF-02-03	117025	U	0.25	mg/kg	0.019	EPA6010B		
SRF-02-03-A	117026	JU	0.0574	mg/kg	0.018	EPA6010B		4
SRF-03-01	117027	J	0.0308	mg/kg	0.019	EPA6010B	I	
SRF-03-02	117028	J	0.022	mg/kg	0.018	EPA6010B	I	
SRF-03-03	117029	JU	0.0273	mg/kg	0.018	EPA6010B		4
SRF-03-04	117030	U	0.245	mg/kg	0.019	EPA6010B		
SRF-04-01	117031	J	0.059	mg/kg	0.018	EPA6010B	I	
SRF-04-02	117032	JU	0.0199	mg/kg	0.017	EPA6010B		4
SRF-04-03	117033	U	0.248	mg/kg	0.019	EPA6010B		
SRF-05-01	117034	J	0.139	mg/kg	0.018	EPA6010B	I	
SRF-05-02	117035	U	0.238	mg/kg	0.018	EPA6010B		
SRF-05-03	117036	U	0.234	mg/kg	0.018	EPA6010B		
SRF-06-01	117037	JU	0.0473	mg/kg	0.018	EPA6010B		4
SRF-06-02	117038	JU	0.0216	mg/kg	0.018	EPA6010B		4
SRF-06-03	117039	JU	0.0364	mg/kg	0.018	EPA6010B		4
SRF-06-03-A	117040	JU	0.0248	mg/kg	0.019	EPA6010B		4
SRF-07-01	117041	JU	0.0205	mg/kg	0.018	EPA6010B		4
SRF-07-02	117042	U	0.24	mg/kg	0.018	EPA6010B		
SRF-07-03	117043	U	0.229	mg/kg	0.017	EPA6010B		

ANALYTE: Calcium
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		9610	mg/kg	3.172	EPA6010B		
SRF-01-02	117019		11200	mg/kg	3.319	EPA6010B		
SRF-01-03	117020		5010	mg/kg	3.172	EPA6010B		
SRF-01-04	117021		17800	mg/kg	3.228	EPA6010B		
SRF-01-05	117022		10400	mg/kg	3.2	EPA6010B		
SRF-02-01	117023		34500	mg/kg	6.519	EPA6010B		
SRF-02-02	117024		32400	mg/kg	6.707	EPA6010B		
SRF-02-03	117025		14200	mg/kg	3.486	EPA6010B		
SRF-02-03-A	117026		29600	mg/kg	6.575	EPA6010B		
SRF-03-01	117027		9240	mg/kg	3.451	EPA6010B		
SRF-03-02	117028		4970	mg/kg	3.381	EPA6010B		
SRF-03-03	117029		20500	mg/kg	3.256	EPA6010B		
SRF-03-04	117030		23200	mg/kg	3.416	EPA6010B		
SRF-04-01	117031		20100	mg/kg	3.354	EPA6010B		
SRF-04-02	117032		20000	mg/kg	3.2	EPA6010B		
SRF-04-03	117033		2670	mg/kg	3.451	EPA6010B		
SRF-05-01	117034		8270	mg/kg	3.381	EPA6010B		
SRF-05-02	117035		28500	mg/kg	6.637	EPA6010B		
SRF-05-03	117036		8790	mg/kg	3.256	EPA6010B		
SRF-06-01	117037		51200	mg/kg	33.187	EPA6010B		
SRF-06-02	117038		12800	mg/kg	3.228	EPA6010B		
SRF-06-03	117039		13300	mg/kg	3.319	EPA6010B		
SRF-06-03-A	117040		13500	mg/kg	3.451	EPA6010B		

ANALYTE: Calcium (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-07-01	117041		9960	mg/kg	3.354	EPA6010B		
SRF-07-02	117042		18100	mg/kg	3.354	EPA6010B		
SRF-07-03	117043		14200	mg/kg	3.2	EPA6010B		

ANALYTE: Carbon disulfide
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	20.8	µg/kg	1.5	EPA8260B	IK	O
SRF-01-02	117019	U	25	µg/kg	1.5	EPA8260B		
SRF-01-03	117020	U	25	µg/kg	1.5	EPA8260B		
SRF-01-04	117021	U	25	µg/kg	1.5	EPA8260B		
SRF-01-05	117022	U	25	µg/kg	1.5	EPA8260B		
SRF-02-01	117023	U	25	µg/kg	1.5	EPA8260B		
SRF-02-02	117024	U	25	µg/kg	1.5	EPA8260B		
SRF-02-03	117025	U	25	µg/kg	1.5	EPA8260B		
SRF-02-03-A	117026	U	25	µg/kg	1.5	EPA8260B		
SRF-03-01	117027	U	25	µg/kg	1.5	EPA8260B		
SRF-03-02	117028	U	25	µg/kg	1.5	EPA8260B		
SRF-03-03	117029	U	25	µg/kg	1.5	EPA8260B		
SRF-03-04	117030	U	25	µg/kg	1.5	EPA8260B		
SRF-04-01	117031	J	16.2	µg/kg	1.5	EPA8260B	IK	O
SRF-04-02	117032	U	25	µg/kg	1.5	EPA8260B		
SRF-04-03	117033	U	25	µg/kg	1.5	EPA8260B		
SRF-05-01	117034	J	16.6	µg/kg	1.5	EPA8260B	IK	O
SRF-05-02	117035	U	25	µg/kg	1.5	EPA8260B		
SRF-05-03	117036	J	32.6	µg/kg	1.5	EPA8260B	K	O
SRF-06-01	117037	J	26.7	µg/kg	1.5	EPA8260B	K	O
SRF-06-02	117038	U	25	µg/kg	1.5	EPA8260B		
SRF-06-03	117039	U	25	µg/kg	1.5	EPA8260B		
SRF-06-03-A	117040	U	25	µg/kg	1.5	EPA8260B		
SRF-07-01	117041	U	25	µg/kg	1.5	EPA8260B		
SRF-07-02	117042	U	25	µg/kg	1.5	EPA8260B		
SRF-07-03	117043	U	25	µg/kg	1.5	EPA8260B		

ANALYTE: Carbon tetrachloride
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	2.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	2.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	2.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	2.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	2.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	2.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	2.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	2.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	2.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	2.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	2.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	2.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	2.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	2.5	EPA8260B		

ANALYTE: Carbon tetrachloride (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-04-02	117032	U	5	µg/kg	2.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	2.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	2.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	2.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	2.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	2.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	2.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	2.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	2.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	2.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	2.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	2.5	EPA8260B		

ANALYTE: Cerium-144
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.0737	pCi/g	0.275	EPIA-013B		
SRF-01-02	117019	U	-0.0298	pCi/g	0.192	EPIA-013B		
SRF-01-03	117020	U	-0.0966	pCi/g	0.243	EPIA-013B		
SRF-01-04	117021	U	0.0362	pCi/g	0.211	EPIA-013B		
SRF-01-05	117022	U	-0.00121	pCi/g	0.225	EPIA-013B		
SRF-01-05	117022	U	0.00574	pCi/g	0.209	EPIA-013B		
SRF-02-01	117023	R	0.294	pCi/g	0.272	EPIA-013B		4
SRF-02-02	117024	U	0.0858	pCi/g	0.189	EPIA-013B		
SRF-02-03	117025	U	0.000742	pCi/g	0.326	EPIA-013B		
SRF-02-03-A	117026	U	0.121	pCi/g	0.309	EPIA-013B		
SRF-03-01	117027	U	-0.0603	pCi/g	0.283	EPIA-013B		
SRF-03-02	117028	U	-0.00921	pCi/g	0.232	EPIA-013B		
SRF-03-03	117029	U	0.056	pCi/g	0.254	EPIA-013B		
SRF-03-04	117030	U	0.0405	pCi/g	0.162	EPIA-013B		
SRF-04-01	117031	U	0.279	pCi/g	0.324	EPIA-013B		
SRF-04-02	117032	U	-0.0704	pCi/g	0.282	EPIA-013B		
SRF-04-03	117033	U	0.0639	pCi/g	0.28	EPIA-013B		
SRF-05-01	117034	U	-0.00918	pCi/g	0.205	EPIA-013B		
SRF-05-02	117035	U	0.0354	pCi/g	0.199	EPIA-013B		
SRF-05-03	117036	U	-0.00206	pCi/g	0.223	EPIA-013B		
SRF-06-01	117037	U	-0.104	pCi/g	0.224	EPIA-013B		
SRF-06-02	117038	U	0.00842	pCi/g	0.201	EPIA-013B		
SRF-06-03	117039	U	0.0102	pCi/g	0.293	EPIA-013B		
SRF-06-03-A	117040	U	-0.249	pCi/g	0.278	EPIA-013B		
SRF-07-01	117041	U	-0.0536	pCi/g	0.244	EPIA-013B		
SRF-07-02	117042	U	-0.124	pCi/g	0.319	EPIA-013B		
SRF-07-03	117043	U	-0.0332	pCi/g	0.271	EPIA-013B		
SRF-07-03	117043	U	-0.0296	pCi/g	0.2	EPIA-013B		

ANALYTE: Cesium-134
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0232	pCi/g	0.0487	EPIA-013B		
SRF-01-02	117019	U	0.00854	pCi/g	0.0435	EPIA-013B		
SRF-01-03	117020	U	-0.000852	pCi/g	0.044	EPIA-013B		

ANALYTE: Cesium-134 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-04	117021	U	-0.00304	pCi/g	0.0408	EPIA-013B		
SRF-01-05	117022	U	0.0152	pCi/g	0.0465	EPIA-013B		
SRF-01-05	117022	U	-0.00193	pCi/g	0.0419	EPIA-013B		
SRF-02-01	117023	U	0.0239	pCi/g	0.0559	EPIA-013B		
SRF-02-02	117024	U	-0.00547	pCi/g	0.0373	EPIA-013B		
SRF-02-03	117025	U	-0.00891	pCi/g	0.0637	EPIA-013B		
SRF-02-03-A	117026	U	-0.0383	pCi/g	0.061	EPIA-013B		
SRF-03-01	117027	U	-0.0117	pCi/g	0.0599	EPIA-013B		
SRF-03-02	117028	U	-0.0552	pCi/g	0.0419	EPIA-013B		
SRF-03-03	117029	U	-0.0272	pCi/g	0.0463	EPIA-013B		
SRF-03-04	117030	U	0.0194	pCi/g	0.0321	EPIA-013B		
SRF-04-01	117031	U	0.00467	pCi/g	0.0498	EPIA-013B		
SRF-04-02	117032	U	0.0251	pCi/g	0.0705	EPIA-013B		
SRF-04-03	117033	U	0.0395	pCi/g	0.0604	EPIA-013B		
SRF-05-01	117034	U	-0.0159	pCi/g	0.0412	EPIA-013B		
SRF-05-02	117035	U	-0.0413	pCi/g	0.042	EPIA-013B		
SRF-05-03	117036	U	-0.0215	pCi/g	0.0446	EPIA-013B		
SRF-06-01	117037	U	0.0125	pCi/g	0.0588	EPIA-013B		
SRF-06-02	117038	U	0.0146	pCi/g	0.0433	EPIA-013B		
SRF-06-03	117039	U	-0.0285	pCi/g	0.0549	EPIA-013B		
SRF-06-03-A	117040	U	0.00424	pCi/g	0.0624	EPIA-013B		
SRF-07-01	117041	U	0.0293	pCi/g	0.065	EPIA-013B		
SRF-07-02	117042	U	-0.0101	pCi/g	0.0667	EPIA-013B		
SRF-07-03	117043	U	-0.00367	pCi/g	0.0523	EPIA-013B		
SRF-07-03	117043	U	0.0172	pCi/g	0.0715	EPIA-013B		

ANALYTE: Cesium-137
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.0207	pCi/g	0.0583	EPIA-013B		
SRF-01-02	117019	R	0.108	pCi/g	0.0794	EPIA-013B		4
SRF-01-03	117020	R	0.114	pCi/g	0.0809	EPIA-013B		4
SRF-01-04	117021	U	-0.00711	pCi/g	0.0348	EPIA-013B		
SRF-01-05	117022	U	0.0119	pCi/g	0.0449	EPIA-013B		
SRF-01-05	117022	U	0.00304	pCi/g	0.0437	EPIA-013B		
SRF-02-01	117023	U	0.0335	pCi/g	0.0631	EPIA-013B		
SRF-02-02	117024	U	0.0144	pCi/g	0.05	EPIA-013B		
SRF-02-03	117025		0.621	pCi/g	0.0656	EPIA-013B		
SRF-02-03-A	117026		0.751	pCi/g	0.0596	EPIA-013B		
SRF-03-01	117027	U	0.032	pCi/g	0.0616	EPIA-013B		
SRF-03-02	117028	U	0.009	pCi/g	0.0501	EPIA-013B		
SRF-03-03	117029	U	0.049	pCi/g	0.0619	EPIA-013B		
SRF-03-04	117030		0.0582	pCi/g	0.028	EPIA-013B		
SRF-04-01	117031		0.0791	pCi/g	0.0438	EPIA-013B		
SRF-04-02	117032		0.0882	pCi/g	0.0617	EPIA-013B		
SRF-04-03	117033	U	0.0535	pCi/g	0.0538	EPIA-013B		
SRF-05-01	117034		0.243	pCi/g	0.0454	EPIA-013B		
SRF-05-02	117035		0.103	pCi/g	0.0474	EPIA-013B		
SRF-05-03	117036		0.832	pCi/g	0.0504	EPIA-013B		
SRF-06-01	117037	U	0.0418	pCi/g	0.069	EPIA-013B		
SRF-06-02	117038		0.0693	pCi/g	0.0443	EPIA-013B		
SRF-06-03	117039		1.25	pCi/g	0.0637	EPIA-013B		
SRF-06-03-A	117040	R	0.0989	pCi/g	0.0901	EPIA-013B		4
SRF-07-01	117041	U	0.0363	pCi/g	0.0792	EPIA-013B		

ANALYTE: Cesium-137 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-07-02	117042	U	0.0291	pCi/g	0.0804	EPIA-013B		
SRF-07-03	117043		0.0651	pCi/g	0.0506	EPIA-013B		
SRF-07-03	117043	U	0.09	pCi/g	0.0756	EPIA-013B		

ANALYTE: Chlorobenzene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.5	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: Chloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: Chloroethane (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-04-02	117032	U	5	µg/kg	1.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: Chloroethene (Vinyl chloride)
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	2	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	2	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	2	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	2	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	2	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	2	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	2	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	2	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	2	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	2	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	2	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	2	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	2	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	2	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	2	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	2	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	2	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	2	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	2	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	2	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	2	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	2	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	2	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	2	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	2	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	2	EPA8260B		

ANALYTE: Chloroform
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	0.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	0.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	0.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	0.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	0.5	EPA8260B		

ANALYTE: Chloroform (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-02-01	117023	U	5	µg/kg	0.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	0.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	0.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	0.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	0.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	0.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	0.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	0.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	0.5	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	0.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	0.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	0.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	0.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	0.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	0.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	0.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	0.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	0.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	0.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	0.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	0.5	EPA8260B		

ANALYTE: Chloromethane (Methyl chloride)
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1	EPA8260B		

ANALYTE: Chromium
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	0.174	mg/kg	0.0331	EPA6010B	I	
SRF-01-02	117019	J	0.214	mg/kg	0.0347	EPA6010B	I	
SRF-01-03	117020	J	0.104	mg/kg	0.0331	EPA6010B	I	
SRF-01-04	117021		0.251	mg/kg	0.0338	EPA6010B		
SRF-01-05	117022	J	0.166	mg/kg	0.0334	EPA6010B	I	
SRF-02-01	117023		0.682	mg/kg	0.0341	EPA6010B		
SRF-02-02	117024		0.43	mg/kg	0.035	EPA6010B		
SRF-02-03	117025		0.509	mg/kg	0.0365	EPA6010B		
SRF-02-03-A	117026		0.461	mg/kg	0.0344	EPA6010B		
SRF-03-01	117027	J	0.152	mg/kg	0.0361	EPA6010B	I	
SRF-03-02	117028		0.974	mg/kg	0.0354	EPA6010B		
SRF-03-03	117029		0.332	mg/kg	0.0341	EPA6010B		
SRF-03-04	117030		0.335	mg/kg	0.0357	EPA6010B		
SRF-04-01	117031		0.403	mg/kg	0.035	EPA6010B		
SRF-04-02	117032		0.293	mg/kg	0.0334	EPA6010B		
SRF-04-03	117033	J	0.0858	mg/kg	0.0361	EPA6010B	I	
SRF-05-01	117034	J	0.19	mg/kg	0.0354	EPA6010B	I	
SRF-05-02	117035		0.359	mg/kg	0.0347	EPA6010B		
SRF-05-03	117036	J	0.148	mg/kg	0.0341	EPA6010B	I	
SRF-06-01	117037		0.657	mg/kg	0.0347	EPA6010B		
SRF-06-02	117038		0.354	mg/kg	0.0338	EPA6010B		
SRF-06-03	117039		0.303	mg/kg	0.0347	EPA6010B		
SRF-06-03-A	117040		0.313	mg/kg	0.0361	EPA6010B		
SRF-07-01	117041	J	0.184	mg/kg	0.035	EPA6010B	I	
SRF-07-02	117042		0.305	mg/kg	0.035	EPA6010B		
SRF-07-03	117043		0.47	mg/kg	0.0334	EPA6010B		

ANALYTE: Cobalt-57
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.0125	pCi/g	0.0334	EPIA-013B		
SRF-01-02	117019	U	-0.00188	pCi/g	0.0236	EPIA-013B		
SRF-01-03	117020	U	0.00995	pCi/g	0.033	EPIA-013B		
SRF-01-04	117021	U	0.00987	pCi/g	0.0237	EPIA-013B		
SRF-01-05	117022	U	0.00534	pCi/g	0.0261	EPIA-013B		
SRF-01-05	117022	U	0.00733	pCi/g	0.0262	EPIA-013B		
SRF-02-01	117023	U	0.0141	pCi/g	0.0329	EPIA-013B		
SRF-02-02	117024	U	-0.00706	pCi/g	0.0228	EPIA-013B		
SRF-02-03	117025	U	0.0289	pCi/g	0.0411	EPIA-013B		
SRF-02-03-A	117026	U	-0.00317	pCi/g	0.0378	EPIA-013B		
SRF-03-01	117027	U	0.00686	pCi/g	0.0375	EPIA-013B		
SRF-03-02	117028	U	0.0121	pCi/g	0.0305	EPIA-013B		
SRF-03-03	117029	U	0.000747	pCi/g	0.0308	EPIA-013B		
SRF-03-04	117030	U	0.00322	pCi/g	0.0205	EPIA-013B		
SRF-04-01	117031	U	-0.0119	pCi/g	0.0357	EPIA-013B		
SRF-04-02	117032	U	-0.00906	pCi/g	0.0381	EPIA-013B		
SRF-04-03	117033	U	-0.0245	pCi/g	0.0338	EPIA-013B		
SRF-05-01	117034	U	0.000975	pCi/g	0.0254	EPIA-013B		
SRF-05-02	117035	U	0.0139	pCi/g	0.0252	EPIA-013B		
SRF-05-03	117036	U	-0.00767	pCi/g	0.026	EPIA-013B		
SRF-06-01	117037	U	0.00931	pCi/g	0.0286	EPIA-013B		
SRF-06-02	117038	U	0.00479	pCi/g	0.027	EPIA-013B		
SRF-06-03	117039	U	-0.00711	pCi/g	0.037	EPIA-013B		

ANALYTE: Cobalt-57 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-06-03-A	117040	U	0.00113	pCi/g	0.0409	EPIA-013B		
SRF-07-01	117041	U	-0.00321	pCi/g	0.032	EPIA-013B		
SRF-07-02	117042	U	0.0241	pCi/g	0.0406	EPIA-013B		
SRF-07-03	117043	U	0.00576	pCi/g	0.0278	EPIA-013B		
SRF-07-03	117043	U	0.00223	pCi/g	0.0349	EPIA-013B		

ANALYTE: Cobalt-58
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.00701	pCi/g	0.0673	EPIA-013B		
SRF-01-02	117019	U	0.0285	pCi/g	0.0641	EPIA-013B		
SRF-01-03	117020	U	0.0134	pCi/g	0.062	EPIA-013B		
SRF-01-04	117021	U	-0.00533	pCi/g	0.0518	EPIA-013B		
SRF-01-05	117022	U	0.00134	pCi/g	0.0559	EPIA-013B		
SRF-01-05	117022	U	-0.0156	pCi/g	0.05	EPIA-013B		
SRF-02-01	117023	U	0.0295	pCi/g	0.0551	EPIA-013B		
SRF-02-02	117024	U	0.0119	pCi/g	0.0573	EPIA-013B		
SRF-02-03	117025	U	-0.00466	pCi/g	0.0946	EPIA-013B		
SRF-02-03-A	117026	U	-0.0398	pCi/g	0.0747	EPIA-013B		
SRF-03-01	117027	U	0.0495	pCi/g	0.0667	EPIA-013B		
SRF-03-02	117028	U	-0.0258	pCi/g	0.0533	EPIA-013B		
SRF-03-03	117029	U	0.0331	pCi/g	0.0736	EPIA-013B		
SRF-03-04	117030	U	0.0134	pCi/g	0.04	EPIA-013B		
SRF-04-01	117031	U	0.0453	pCi/g	0.0754	EPIA-013B		
SRF-04-02	117032	U	0.00544	pCi/g	0.0911	EPIA-013B		
SRF-04-03	117033	U	-0.00279	pCi/g	0.0806	EPIA-013B		
SRF-05-01	117034	U	-0.00482	pCi/g	0.06	EPIA-013B		
SRF-05-02	117035	U	0.0175	pCi/g	0.0727	EPIA-013B		
SRF-05-03	117036	U	0.0109	pCi/g	0.0723	EPIA-013B		
SRF-06-01	117037	U	0.0246	pCi/g	0.0898	EPIA-013B		
SRF-06-02	117038	U	-0.0297	pCi/g	0.0496	EPIA-013B		
SRF-06-03	117039	U	-0.0105	pCi/g	0.069	EPIA-013B		
SRF-06-03-A	117040	U	0.00464	pCi/g	0.0788	EPIA-013B		
SRF-07-01	117041	U	-0.0539	pCi/g	0.0682	EPIA-013B		
SRF-07-02	117042	U	0.00927	pCi/g	0.0992	EPIA-013B		
SRF-07-03	117043	U	0.0162	pCi/g	0.106	EPIA-013B		
SRF-07-03	117043	U	-0.0147	pCi/g	0.0585	EPIA-013B		

ANALYTE: Cobalt-60
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.00754	pCi/g	0.061	EPIA-013B		
SRF-01-02	117019	U	-0.00673	pCi/g	0.0484	EPIA-013B		
SRF-01-03	117020	U	0.00821	pCi/g	0.0672	EPIA-013B		
SRF-01-04	117021	U	0.0187	pCi/g	0.0547	EPIA-013B		
SRF-01-05	117022	U	0.0145	pCi/g	0.0543	EPIA-013B		
SRF-01-05	117022	U	0.0128	pCi/g	0.0552	EPIA-013B		
SRF-02-01	117023	U	0.0318	pCi/g	0.0637	EPIA-013B		
SRF-02-02	117024	U	0.0421	pCi/g	0.0582	EPIA-013B		
SRF-02-03	117025	U	0.0198	pCi/g	0.0882	EPIA-013B		
SRF-02-03-A	117026	U	-0.0107	pCi/g	0.0717	EPIA-013B		

ANALYTE: Cobalt-60 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-03-01	117027	U	0.0444	pCi/g	0.0685	EPIA-013B		
SRF-03-02	117028	U	-0.00223	pCi/g	0.0532	EPIA-013B		
SRF-03-03	117029	U	0.0219	pCi/g	0.0666	EPIA-013B		
SRF-03-04	117030	U	0.00656	pCi/g	0.0352	EPIA-013B		
SRF-04-01	117031	U	-0.0147	pCi/g	0.0491	EPIA-013B		
SRF-04-02	117032	U	0.0218	pCi/g	0.0758	EPIA-013B		
SRF-04-03	117033	U	0.0048	pCi/g	0.0816	EPIA-013B		
SRF-05-01	117034	U	0.0086	pCi/g	0.0529	EPIA-013B		
SRF-05-02	117035	U	0.0272	pCi/g	0.0615	EPIA-013B		
SRF-05-03	117036	U	0.0189	pCi/g	0.061	EPIA-013B		
SRF-06-01	117037	U	0.00582	pCi/g	0.0686	EPIA-013B		
SRF-06-02	117038	U	-0.0125	pCi/g	0.0463	EPIA-013B		
SRF-06-03	117039	U	0.0023	pCi/g	0.067	EPIA-013B		
SRF-06-03-A	117040	U	-0.00818	pCi/g	0.0567	EPIA-013B		
SRF-07-01	117041	U	-0.00956	pCi/g	0.077	EPIA-013B		
SRF-07-02	117042	U	0.00603	pCi/g	0.0763	EPIA-013B		
SRF-07-03	117043	U	0.00368	pCi/g	0.0583	EPIA-013B		
SRF-07-03	117043	U	-0.0573	pCi/g	0.0787	EPIA-013B		

ANALYTE: Copper
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		0.702	mg/kg	0.06	EPA6010B		
SRF-01-02	117019		0.731	mg/kg	0.0629	EPA6010B		
SRF-01-03	117020		1.28	mg/kg	0.06	EPA6010B		
SRF-01-04	117021		0.316	mg/kg	0.0611	EPA6010B		
SRF-01-05	117022		0.413	mg/kg	0.0606	EPA6010B		
SRF-02-01	117023		0.826	mg/kg	0.0617	EPA6010B		
SRF-02-02	117024	J	0.217	mg/kg	0.0635	EPA6010B	I	
SRF-02-03	117025		1.48	mg/kg	0.066	EPA6010B		
SRF-02-03-A	117026		7.3	mg/kg	0.0623	EPA6010B		
SRF-03-01	117027		0.363	mg/kg	0.0653	EPA6010B		
SRF-03-02	117028		2.55	mg/kg	0.0641	EPA6010B		
SRF-03-03	117029		1.16	mg/kg	0.0617	EPA6010B		
SRF-03-04	117030		0.455	mg/kg	0.0647	EPA6010B		
SRF-04-01	117031		0.746	mg/kg	0.0635	EPA6010B		
SRF-04-02	117032		0.305	mg/kg	0.0606	EPA6010B		
SRF-04-03	117033		0.26	mg/kg	0.0653	EPA6010B		
SRF-05-01	117034		0.778	mg/kg	0.0641	EPA6010B		
SRF-05-02	117035		0.251	mg/kg	0.0629	EPA6010B		
SRF-05-03	117036		0.519	mg/kg	0.0617	EPA6010B		
SRF-06-01	117037		2.91	mg/kg	0.0629	EPA6010B		
SRF-06-02	117038		1.19	mg/kg	0.0611	EPA6010B		
SRF-06-03	117039		0.444	mg/kg	0.0629	EPA6010B		
SRF-06-03-A	117040		0.6	mg/kg	0.0653	EPA6010B		
SRF-07-01	117041		0.377	mg/kg	0.0635	EPA6010B		
SRF-07-02	117042		0.414	mg/kg	0.0635	EPA6010B		
SRF-07-03	117043		1.2	mg/kg	0.0606	EPA6010B		

ANALYTE: Dibromochloromethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.05	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.05	EPA8260B		

SRF-01-03	117020	U	5	µg/kg	1.05	EPA8260B
SRF-01-04	117021	U	5	µg/kg	1.05	EPA8260B
SRF-01-05	117022	U	5	µg/kg	1.05	EPA8260B
SRF-02-01	117023	U	5	µg/kg	1.05	EPA8260B
SRF-02-02	117024	U	5	µg/kg	1.05	EPA8260B
SRF-02-03	117025	U	5	µg/kg	1.05	EPA8260B
SRF-02-03-A	117026	U	5	µg/kg	1.05	EPA8260B
SRF-03-01	117027	U	5	µg/kg	1.05	EPA8260B
SRF-03-02	117028	U	5	µg/kg	1.05	EPA8260B
SRF-03-03	117029	U	5	µg/kg	1.05	EPA8260B
SRF-03-04	117030	U	5	µg/kg	1.05	EPA8260B
SRF-04-01	117031	U	5	µg/kg	1.05	EPA8260B
SRF-04-02	117032	U	5	µg/kg	1.05	EPA8260B
SRF-04-03	117033	U	5	µg/kg	1.05	EPA8260B
SRF-05-01	117034	U	5	µg/kg	1.05	EPA8260B
SRF-05-02	117035	U	5	µg/kg	1.05	EPA8260B
SRF-05-03	117036	U	5	µg/kg	1.05	EPA8260B
SRF-06-01	117037	U	5	µg/kg	1.05	EPA8260B
SRF-06-02	117038	U	5	µg/kg	1.05	EPA8260B
SRF-06-03	117039	U	5	µg/kg	1.05	EPA8260B
SRF-06-03-A	117040	U	5	µg/kg	1.05	EPA8260B
SRF-07-01	117041	U	5	µg/kg	1.05	EPA8260B
SRF-07-02	117042	U	5	µg/kg	1.05	EPA8260B
SRF-07-03	117043	U	5	µg/kg	1.05	EPA8260B

ANALYTE: 1,1-Dichloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	0.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	0.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	0.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	0.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	0.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	0.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	0.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	0.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	0.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	0.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	0.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	0.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	0.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	0.5	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	0.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	0.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	0.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	0.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	0.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	0.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	0.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	0.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	0.5	EPA8260B		

ANALYTE: 1,1-Dichloroethane (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-07-01	117041	U	5	µg/kg	0.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	0.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	0.5	EPA8260B		

ANALYTE: 1,2-Dichloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.15	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.15	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.15	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1.15	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.15	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.15	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.15	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.15	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.15	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.15	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.15	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.15	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.15	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.15	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1.15	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.15	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.15	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.15	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.15	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.15	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.15	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.15	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.15	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.15	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.15	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.15	EPA8260B		

ANALYTE: 1,1-Dichloroethylene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.5	EPA8260B		
SRF-01-04	117021	JU	5	µg/kg	1.5	EPA8260B	L	IX
SRF-01-05	117022	U	5	µg/kg	1.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: 1,1-Dichloroethylene (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-04-02	117032	U	5	µg/kg	1.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.5	EPA8260B		

SRF-06-03	117039	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: 1,2-Dichloroethylene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	50	µg/kg	1.25	EPA8260B		
SRF-01-02	117019	U	50	µg/kg	1.25	EPA8260B		
SRF-01-03	117020	U	50	µg/kg	1.25	EPA8260B		
SRF-01-04	117021	U	50	µg/kg	1.25	EPA8260B		
SRF-01-05	117022	U	50	µg/kg	1.25	EPA8260B		
SRF-02-01	117023	U	50	µg/kg	1.25	EPA8260B		
SRF-02-02	117024	U	50	µg/kg	1.25	EPA8260B		
SRF-02-03	117025	U	50	µg/kg	1.25	EPA8260B		
SRF-02-03-A	117026	U	50	µg/kg	1.25	EPA8260B		
SRF-03-01	117027	U	50	µg/kg	1.25	EPA8260B		
SRF-03-02	117028	U	50	µg/kg	1.25	EPA8260B		
SRF-03-03	117029	U	50	µg/kg	1.25	EPA8260B		
SRF-03-04	117030	U	50	µg/kg	1.25	EPA8260B		
SRF-04-01	117031	U	50	µg/kg	1.25	EPA8260B		
SRF-04-02	117032	U	50	µg/kg	1.25	EPA8260B		
SRF-04-03	117033	U	50	µg/kg	1.25	EPA8260B		
SRF-05-01	117034	U	50	µg/kg	1.25	EPA8260B		
SRF-05-02	117035	U	50	µg/kg	1.25	EPA8260B		
SRF-05-03	117036	U	50	µg/kg	1.25	EPA8260B		
SRF-06-01	117037	U	50	µg/kg	1.25	EPA8260B		
SRF-06-02	117038	U	50	µg/kg	1.25	EPA8260B		
SRF-06-03	117039	U	50	µg/kg	1.25	EPA8260B		
SRF-06-03-A	117040	U	50	µg/kg	1.25	EPA8260B		
SRF-07-01	117041	U	50	µg/kg	1.25	EPA8260B		
SRF-07-02	117042	U	50	µg/kg	1.25	EPA8260B		
SRF-07-03	117043	U	50	µg/kg	1.25	EPA8260B		

ANALYTE: Dichloromethane (Methylene chloride)
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	209	µg/kg	7	EPA8260B	K	O
SRF-01-02	117019	J	66.7	µg/kg	7	EPA8260B	K	O
SRF-01-03	117020	J	19.1	µg/kg	7	EPA8260B	I	
SRF-01-04	117021	J	39.6	µg/kg	7	EPA8260B	K	O
SRF-01-05	117022	J	91.8	µg/kg	7	EPA8260B	K	O

ANALYTE: Dichloromethane (Methylene chloride) (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-02-01	117023	J	62.6	µg/kg	7	EPA8260B	K	O
SRF-02-02	117024	J	45.7	µg/kg	7	EPA8260B	K	O
SRF-02-03	117025	J	35.8	µg/kg	7	EPA8260B	K	O
SRF-02-03-A	117026		36.1	µg/kg	7	EPA8260B		
SRF-03-01	117027	J	17.8	µg/kg	7	EPA8260B	I	
SRF-03-02	117028		29.2	µg/kg	7	EPA8260B		
SRF-03-03	117029		112	µg/kg	7	EPA8260B		
SRF-03-04	117030	U	25	µg/kg	7	EPA8260B		
SRF-04-01	117031	J	34.1	µg/kg	7	EPA8260B	K	O

SRF-04-02	117032		25.5	µg/kg	7	EPA8260B		
SRF-04-03	117033	J	103	µg/kg	7	EPA8260B	K	O
SRF-05-01	117034	J	32	µg/kg	7	EPA8260B	K	O
SRF-05-02	117035		48.9	µg/kg	7	EPA8260B		
SRF-05-03	117036	J	78.4	µg/kg	7	EPA8260B	K	O
SRF-06-01	117037	J	50	µg/kg	7	EPA8260B	K	O
SRF-06-02	117038	J	19.8	µg/kg	7	EPA8260B	I	
SRF-06-03	117039	J	54.5	µg/kg	7	EPA8260B	K	O
SRF-06-03-A	117040		282	µg/kg	7	EPA8260B		
SRF-07-01	117041	J	75.3	µg/kg	7	EPA8260B	K	O
SRF-07-02	117042	J	61.4	µg/kg	7	EPA8260B	K	O
SRF-07-03	117043	J	103	µg/kg	7	EPA8260B	K	O

ANALYTE: 1,2-Dichloropropane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.15	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.15	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.15	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1.15	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.15	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.15	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.15	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.15	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.15	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.15	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.15	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.15	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.15	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.15	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1.15	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.15	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.15	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.15	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.15	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.15	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.15	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.15	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.15	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.15	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.15	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.15	EPA8260B		

ANALYTE: cis-1,3-Dichloropropene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1	EPA8260B		

SRF-03-04	117030	U	5	µg/kg	1	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1	EPA8260B		

ANALYTE: trans-1,3-Dichloropropene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.5	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: trans-1,3-Dichloropropene (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-07-01	117041	U	5	µg/kg	1.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: Ethylbenzene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	8.23	µg/kg	1.5	EPA8260B	K	O
SRF-01-02	117019	J	7.6	µg/kg	1.5	EPA8260B	K	O
SRF-01-03	117020	U	5	µg/kg	1.5	EPA8260B		
SRF-01-04	117021	J	4.23	µg/kg	1.5	EPA8260B	IK	O
SRF-01-05	117022	J	66.4	µg/kg	1.5	EPA8260B	K	O

SRF-02-01	117023	J	3.18	µg/kg	1.5	EPA8260B	IK	O
SRF-02-02	117024	J	6.88	µg/kg	1.5	EPA8260B	K	O
SRF-02-03	117025	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.5	EPA8260B		
SRF-03-02	117028		6.1	µg/kg	1.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.5	EPA8260B		
SRF-03-04	117030		11.4	µg/kg	1.5	EPA8260B		
SRF-04-01	117031	J	4.49	µg/kg	1.5	EPA8260B	IK	O
SRF-04-02	117032	J	4.09	µg/kg	1.5	EPA8260B	I	
SRF-04-03	117033	J	2.73	µg/kg	1.5	EPA8260B	IK	O
SRF-05-01	117034	U	5	µg/kg	1.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.5	EPA8260B		
SRF-06-01	117037	J	10.3	µg/kg	1.5	EPA8260B	K	O
SRF-06-02	117038	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03-A	117040		6.42	µg/kg	1.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.5	EPA8260B		
SRF-07-02	117042	J	3.45	µg/kg	1.5	EPA8260B	IK	O
SRF-07-03	117043	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: Europium-152
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0452	pCi/g	0.143	EPIA-013B		
SRF-01-02	117019	U	0.0249	pCi/g	0.113	EPIA-013B		
SRF-01-03	117020	U	-0.00701	pCi/g	0.126	EPIA-013B		
SRF-01-04	117021	U	0.0114	pCi/g	0.112	EPIA-013B		
SRF-01-05	117022	U	-0.00988	pCi/g	0.108	EPIA-013B		
SRF-01-05	117022	U	0.000658	pCi/g	0.114	EPIA-013B		
SRF-02-01	117023	U	-0.0171	pCi/g	0.149	EPIA-013B		
SRF-02-02	117024	U	0.0431	pCi/g	0.111	EPIA-013B		
SRF-02-03	117025	U	0.0139	pCi/g	0.191	EPIA-013B		
SRF-02-03-A	117026	U	0.0379	pCi/g	0.171	EPIA-013B		
SRF-03-01	117027	U	0.0307	pCi/g	0.172	EPIA-013B		
SRF-03-02	117028	U	-0.0325	pCi/g	0.112	EPIA-013B		
SRF-03-03	117029	U	0.0149	pCi/g	0.129	EPIA-013B		
SRF-03-04	117030	U	0.0205	pCi/g	0.0822	EPIA-013B		

ANALYTE: Europium-152 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-04-01	117031	U	0.0204	pCi/g	0.128	EPIA-013B		
SRF-04-02	117032	U	0.046	pCi/g	0.167	EPIA-013B		
SRF-04-03	117033	U	0.0512	pCi/g	0.162	EPIA-013B		
SRF-05-01	117034	U	-0.0127	pCi/g	0.111	EPIA-013B		
SRF-05-02	117035	U	-0.0167	pCi/g	0.112	EPIA-013B		
SRF-05-03	117036	U	-0.0418	pCi/g	0.122	EPIA-013B		
SRF-06-01	117037	U	-0.00621	pCi/g	0.137	EPIA-013B		
SRF-06-02	117038	U	0.0397	pCi/g	0.105	EPIA-013B		
SRF-06-03	117039	U	0.0213	pCi/g	0.165	EPIA-013B		
SRF-06-03-A	117040	U	-0.0168	pCi/g	0.176	EPIA-013B		
SRF-07-01	117041	U	0.0838	pCi/g	0.142	EPIA-013B		
SRF-07-02	117042	U	0.00832	pCi/g	0.189	EPIA-013B		
SRF-07-03	117043	U	-0.0133	pCi/g	0.127	EPIA-013B		
SRF-07-03	117043	U	0.0234	pCi/g	0.168	EPIA-013B		

ANALYTE: Europium-154
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.014	pCi/g	0.152	EPIA-013B		
SRF-01-02	117019	U	0.0534	pCi/g	0.18	EPIA-013B		
SRF-01-03	117020	U	0.0512	pCi/g	0.149	EPIA-013B		
SRF-01-04	117021	U	0.0174	pCi/g	0.132	EPIA-013B		
SRF-01-05	117022	U	-0.00085	pCi/g	0.149	EPIA-013B		
SRF-01-05	117022	U	0.0158	pCi/g	0.14	EPIA-013B		
SRF-02-01	117023	U	-0.0251	pCi/g	0.149	EPIA-013B		
SRF-02-02	117024	U	0.019	pCi/g	0.139	EPIA-013B		
SRF-02-03	117025	U	0.0376	pCi/g	0.207	EPIA-013B		
SRF-02-03-A	117026	U	-0.0501	pCi/g	0.199	EPIA-013B		
SRF-03-01	117027	U	-0.0319	pCi/g	0.186	EPIA-013B		
SRF-03-02	117028	U	-0.0526	pCi/g	0.127	EPIA-013B		
SRF-03-03	117029	U	-0.014	pCi/g	0.157	EPIA-013B		
SRF-03-04	117030	U	-0.0228	pCi/g	0.0897	EPIA-013B		
SRF-04-01	117031	U	-0.0187	pCi/g	0.141	EPIA-013B		
SRF-04-02	117032	U	-0.0562	pCi/g	0.215	EPIA-013B		
SRF-04-03	117033	U	0.0607	pCi/g	0.203	EPIA-013B		
SRF-05-01	117034	U	-0.0189	pCi/g	0.15	EPIA-013B		
SRF-05-02	117035	U	0.0971	pCi/g	0.185	EPIA-013B		
SRF-05-03	117036	U	-0.016	pCi/g	0.135	EPIA-013B		
SRF-06-01	117037	U	-0.0336	pCi/g	0.171	EPIA-013B		
SRF-06-02	117038	U	0.0818	pCi/g	0.155	EPIA-013B		
SRF-06-03	117039	U	0.00836	pCi/g	0.176	EPIA-013B		
SRF-06-03-A	117040	U	0.108	pCi/g	0.242	EPIA-013B		
SRF-07-01	117041	U	-0.0287	pCi/g	0.199	EPIA-013B		
SRF-07-02	117042	U	-0.0648	pCi/g	0.216	EPIA-013B		
SRF-07-03	117043	U	0.0135	pCi/g	0.235	EPIA-013B		
SRF-07-03	117043	U	-0.0124	pCi/g	0.164	EPIA-013B		

ANALYTE: Europium-155
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0109	pCi/g	0.126	EPIA-013B		
SRF-01-02	117019	U	0.0169	pCi/g	0.0891	EPIA-013B		
SRF-01-03	117020	U	0.0223	pCi/g	0.114	EPIA-013B		
SRF-01-04	117021	U	0.0404	pCi/g	0.111	EPIA-013B		
SRF-01-05	117022	U	-0.0104	pCi/g	0.0947	EPIA-013B		
SRF-01-05	117022	U	0.0355	pCi/g	0.114	EPIA-013B		
SRF-02-01	117023	U	0.000223	pCi/g	0.122	EPIA-013B		
SRF-02-02	117024	U	-0.00745	pCi/g	0.0899	EPIA-013B		
SRF-02-03	117025	U	0.0159	pCi/g	0.146	EPIA-013B		
SRF-02-03-A	117026	U	0.0157	pCi/g	0.141	EPIA-013B		
SRF-03-01	117027	U	-0.0712	pCi/g	0.134	EPIA-013B		
SRF-03-02	117028	U	0.0502	pCi/g	0.11	EPIA-013B		
SRF-03-03	117029	U	0.0129	pCi/g	0.12	EPIA-013B		
SRF-03-04	117030	U	0.00112	pCi/g	0.0741	EPIA-013B		
SRF-04-01	117031	U	0.0387	pCi/g	0.14	EPIA-013B		
SRF-04-02	117032	U	-0.0614	pCi/g	0.14	EPIA-013B		
SRF-04-03	117033	U	-0.00634	pCi/g	0.14	EPIA-013B		
SRF-05-01	117034	U	0.058	pCi/g	0.102	EPIA-013B		
SRF-05-02	117035	U	0.0187	pCi/g	0.0934	EPIA-013B		
SRF-05-03	117036	U	0.0327	pCi/g	0.0986	EPIA-013B		
SRF-06-01	117037	U	0.0123	pCi/g	0.105	EPIA-013B		
SRF-06-02	117038	U	-0.028	pCi/g	0.0867	EPIA-013B		
SRF-06-03	117039	U	-0.0854	pCi/g	0.138	EPIA-013B		
SRF-06-03-A	117040	U	0.00113	pCi/g	0.145	EPIA-013B		

SRF-07-01	117041	U	0.00657	pCi/g	0.119	EPIA-013B		
SRF-07-02	117042	U	0.0292	pCi/g	0.159	EPIA-013B		
SRF-07-03	117043	U	-0.0332	pCi/g	0.124	EPIA-013B		
SRF-07-03	117043	U	0.0307	pCi/g	0.113	EPIA-013B		

ANALYTE: Gross alpha
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0306	pCi/g	0.733	EPIA-001B		
SRF-01-02	117019	U	0.1	pCi/g	0.377	EPIA-001B		
SRF-01-03	117020	U	-0.142	pCi/g	0.801	EPIA-001B		
SRF-01-04	117021	U	0.122	pCi/g	0.428	EPIA-001B		
SRF-01-05	117022	U	0.502	pCi/g	1.58	EPIA-001B		
SRF-01-05	117022	U	0.653	pCi/g	1.29	EPIA-001B		
SRF-02-01	117023	U	-0.19	pCi/g	1.5	EPIA-001B		
SRF-02-02	117024	U	-0.214	pCi/g	1.22	EPIA-001B		
SRF-02-03	117025	U	0.111	pCi/g	0.995	EPIA-001B		
SRF-02-03-A	117026	U	0.162	pCi/g	1.07	EPIA-001B		
SRF-03-01	117027	U	-0.0176	pCi/g	1.75	EPIA-001B		
SRF-03-02	117028	U	0.0683	pCi/g	1.69	EPIA-001B		
SRF-03-03	117029	U	-0.266	pCi/g	0.978	EPIA-001B		
SRF-03-04	117030	U	0.17	pCi/g	2.74	EPIA-001B		
SRF-04-01	117031	U	0.0186	pCi/g	1.12	EPIA-001B		
SRF-04-02	117032	U	-0.471	pCi/g	1.71	EPIA-001B		
SRF-04-03	117033	U	0.611	pCi/g	0.885	EPIA-001B		
SRF-05-01	117034	U	0.24	pCi/g	0.948	EPIA-001B		
SRF-05-02	117035	U	0.224	pCi/g	1.29	EPIA-001B		
SRF-05-03	117036	U	-0.0606	pCi/g	1.02	EPIA-001B		
SRF-06-01	117037	U	-0.0717	pCi/g	0.861	EPIA-001B		

ANALYTE: Gross alpha (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-06-02	117038	U	-0.521	pCi/g	1.42	EPIA-001B		
SRF-06-03	117039	U	0.0231	pCi/g	0.558	EPIA-001B		
SRF-06-03-A	117040	U	0.151	pCi/g	0.681	EPIA-001B		
SRF-07-01	117041	U	0.289	pCi/g	0.556	EPIA-001B		
SRF-07-02	117042	U	-0.539	pCi/g	1.34	EPIA-001B		
SRF-07-03	117043	U	0.0824	pCi/g	0.431	EPIA-001B		
SRF-07-03	117043	U	0.0998	pCi/g	0.618	EPIA-001B		

ANALYTE: 2-Hexanone
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	25	µg/kg	14	EPA8260B		
SRF-01-02	117019	U	25	µg/kg	14	EPA8260B		
SRF-01-03	117020	U	25	µg/kg	14	EPA8260B		
SRF-01-04	117021	U	25	µg/kg	14	EPA8260B		
SRF-01-05	117022	U	25	µg/kg	14	EPA8260B		
SRF-02-01	117023	U	25	µg/kg	14	EPA8260B		
SRF-02-02	117024	U	25	µg/kg	14	EPA8260B		
SRF-02-03	117025	U	25	µg/kg	14	EPA8260B		
SRF-02-03-A	117026	U	25	µg/kg	14	EPA8260B		
SRF-03-01	117027	U	25	µg/kg	14	EPA8260B		
SRF-03-02	117028	U	25	µg/kg	14	EPA8260B		
SRF-03-03	117029	U	25	µg/kg	14	EPA8260B		
SRF-03-04	117030	U	25	µg/kg	14	EPA8260B		

SRF-04-01	117031	U	25	µg/kg	14	EPA8260B		
SRF-04-02	117032	U	25	µg/kg	14	EPA8260B		
SRF-04-03	117033	U	25	µg/kg	14	EPA8260B		
SRF-05-01	117034	U	25	µg/kg	14	EPA8260B		
SRF-05-02	117035	U	25	µg/kg	14	EPA8260B		
SRF-05-03	117036	U	25	µg/kg	14	EPA8260B		
SRF-06-01	117037	U	25	µg/kg	14	EPA8260B		
SRF-06-02	117038	U	25	µg/kg	14	EPA8260B		
SRF-06-03	117039	U	25	µg/kg	14	EPA8260B		
SRF-06-03-A	117040	U	25	µg/kg	14	EPA8260B		
SRF-07-01	117041	U	25	µg/kg	14	EPA8260B		
SRF-07-02	117042	U	25	µg/kg	14	EPA8260B		
SRF-07-03	117043	U	25	µg/kg	14	EPA8260B		

ANALYTE: Lead-212
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.0379	pCi/g	0.0783	EPIA-013B		
SRF-01-02	117019	R	0.874	pCi/g	0.0751	EPIA-013B		4
SRF-01-03	117020	U	0.0704	pCi/g	0.0872	EPIA-013B		
SRF-01-04	117021	U	0.014	pCi/g	0.11	EPIA-013B		
SRF-01-05	117022	U	0.0725	pCi/g	0.0797	EPIA-013B		
SRF-01-05	117022	R	0.0923	pCi/g	0.0779	EPIA-013B		4
SRF-02-01	117023	U	0.0869	pCi/g	0.0955	EPIA-013B		
SRF-02-02	117024	U	0.0586	pCi/g	0.0773	EPIA-013B		
SRF-02-03	117025	U	0.0564	pCi/g	0.11	EPIA-013B		
SRF-02-03-A	117026	U	0.0862	pCi/g	0.107	EPIA-013B		

ANALYTE: Lead-212 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-03-01	117027	U	0.0128	pCi/g	0.107	EPIA-013B		
SRF-03-02	117028	R	0.0493	pCi/g	0.0825	EPIA-013B		4
SRF-03-03	117029	U	0.0493	pCi/g	0.0823	EPIA-013B		
SRF-03-04	117030		0.0683	pCi/g	0.0443	EPIA-013B		
SRF-04-01	117031	U	0.00678	pCi/g	0.0927	EPIA-013B		
SRF-04-02	117032	U	0.0877	pCi/g	0.106	EPIA-013B		
SRF-04-03	117033	U	0.089	pCi/g	0.103	EPIA-013B		
SRF-05-01	117034	U	0.00228	pCi/g	0.0718	EPIA-013B		
SRF-05-02	117035	R	0.0924	pCi/g	0.0767	EPIA-013B		4
SRF-05-03	117036	U	0.00465	pCi/g	0.0849	EPIA-013B		
SRF-06-01	117037	U	0.0237	pCi/g	0.0919	EPIA-013B		
SRF-06-02	117038	U	0.0159	pCi/g	0.0658	EPIA-013B		
SRF-06-03	117039	U	0.0565	pCi/g	0.0904	EPIA-013B		
SRF-06-03-A	117040	U	0.00505	pCi/g	0.103	EPIA-013B		
SRF-07-01	117041	R	0.124	pCi/g	0.106	EPIA-013B		4
SRF-07-02	117042	U	0.0868	pCi/g	0.123	EPIA-013B		
SRF-07-03	117043	R	0.134	pCi/g	0.109	EPIA-013B		4
SRF-07-03	117043	U	0.0271	pCi/g	0.0842	EPIA-013B		

ANALYTE: Lead
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	0.0844	mg/kg	0.072	EPA6010B	I	
SRF-01-02	117019	J	0.173	mg/kg	0.075	EPA6010B	I	
SRF-01-03	117020	U	0.227	mg/kg	0.072	EPA6010B		
SRF-01-04	117021	J	0.146	mg/kg	0.073	EPA6010B	I	

SRF-01-05	117022	J	0.119	mg/kg	0.072	EPA6010B	I	
SRF-02-01	117023		0.299	mg/kg	0.074	EPA6010B		
SRF-02-02	117024		0.245	mg/kg	0.076	EPA6010B		
SRF-02-03	117025		1.46	mg/kg	0.079	EPA6010B		
SRF-02-03-A	117026	J	0.189	mg/kg	0.075	EPA6010B	I	
SRF-03-01	117027	J	0.0998	mg/kg	0.078	EPA6010B	I	
SRF-03-02	117028		0.588	mg/kg	0.077	EPA6010B		
SRF-03-03	117029	J	0.174	mg/kg	0.074	EPA6010B	I	
SRF-03-04	117030	J	0.146	mg/kg	0.077	EPA6010B	I	
SRF-04-01	117031		0.264	mg/kg	0.076	EPA6010B		
SRF-04-02	117032	J	0.177	mg/kg	0.072	EPA6010B	I	
SRF-04-03	117033	U	0.248	mg/kg	0.078	EPA6010B		
SRF-05-01	117034	J	0.109	mg/kg	0.077	EPA6010B	I	
SRF-05-02	117035		0.306	mg/kg	0.075	EPA6010B		
SRF-05-03	117036	U	0.234	mg/kg	0.074	EPA6010B		
SRF-06-01	117037	J	0.227	mg/kg	0.075	EPA6010B	I	
SRF-06-02	117038	J	0.161	mg/kg	0.073	EPA6010B	I	
SRF-06-03	117039		0.443	mg/kg	0.075	EPA6010B		
SRF-06-03-A	117040		0.498	mg/kg	0.078	EPA6010B		
SRF-07-01	117041	J	0.0933	mg/kg	0.076	EPA6010B	I	
SRF-07-02	117042	J	0.154	mg/kg	0.076	EPA6010B	I	
SRF-07-03	117043		0.68	mg/kg	0.072	EPA6010B		

ANALYTE: Magnesium
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		380	mg/kg	0.231	EPA6010B		
SRF-01-02	117019		357	mg/kg	0.242	EPA6010B		
SRF-01-03	117020		336	mg/kg	0.231	EPA6010B		
SRF-01-04	117021		475	mg/kg	0.235	EPA6010B		
SRF-01-05	117022		375	mg/kg	0.233	EPA6010B		
SRF-02-01	117023		750	mg/kg	0.237	EPA6010B		
SRF-02-02	117024		677	mg/kg	0.244	EPA6010B		
SRF-02-03	117025		537	mg/kg	0.254	EPA6010B		
SRF-02-03-A	117026		1400	mg/kg	0.24	EPA6010B		
SRF-03-01	117027		375	mg/kg	0.251	EPA6010B		
SRF-03-02	117028		278	mg/kg	0.246	EPA6010B		
SRF-03-03	117029		825	mg/kg	0.237	EPA6010B		
SRF-03-04	117030		533	mg/kg	0.249	EPA6010B		
SRF-04-01	117031		558	mg/kg	0.244	EPA6010B		
SRF-04-02	117032		524	mg/kg	0.233	EPA6010B		
SRF-04-03	117033		294	mg/kg	0.251	EPA6010B		
SRF-05-01	117034		381	mg/kg	0.246	EPA6010B		
SRF-05-02	117035		617	mg/kg	0.242	EPA6010B		
SRF-05-03	117036		419	mg/kg	0.237	EPA6010B		
SRF-06-01	117037		1010	mg/kg	0.242	EPA6010B		
SRF-06-02	117038		411	mg/kg	0.235	EPA6010B		
SRF-06-03	117039		463	mg/kg	0.242	EPA6010B		
SRF-06-03-A	117040		550	mg/kg	0.251	EPA6010B		
SRF-07-01	117041		382	mg/kg	0.244	EPA6010B		
SRF-07-02	117042		437	mg/kg	0.244	EPA6010B		
SRF-07-03	117043		490	mg/kg	0.233	EPA6010B		

ANALYTE: Manganese-54
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0118	pCi/g	0.0484	EPIA-013B		
SRF-01-02	117019	U	0.0133	pCi/g	0.0516	EPIA-013B		

SRF-01-03	117020	U	-0.00517	pCi/g	0.0517	EPIA-013B		
SRF-01-04	117021	U	0.0061	pCi/g	0.0453	EPIA-013B		
SRF-01-05	117022	U	-0.00379	pCi/g	0.0436	EPIA-013B		
SRF-01-05	117022	U	0.0103	pCi/g	0.0434	EPIA-013B		
SRF-02-01	117023	U	0.0257	pCi/g	0.0584	EPIA-013B		
SRF-02-02	117024	U	-0.00243	pCi/g	0.0452	EPIA-013B		
SRF-02-03	117025	U	0.0811	pCi/g	0.0872	EPIA-013B		
SRF-02-03-A	117026	U	0.0215	pCi/g	0.0693	EPIA-013B		
SRF-03-01	117027	U	0.0347	pCi/g	0.0649	EPIA-013B		
SRF-03-02	117028	U	-0.000495	pCi/g	0.0498	EPIA-013B		
SRF-03-03	117029	U	0	pCi/g	0.0569	EPIA-013B		
SRF-03-04	117030	U	-0.00853	pCi/g	0.0303	EPIA-013B		
SRF-04-01	117031	U	-0.000791	pCi/g	0.0488	EPIA-013B		
SRF-04-02	117032	U	0.00577	pCi/g	0.0586	EPIA-013B		
SRF-04-03	117033	U	-0.0036	pCi/g	0.0714	EPIA-013B		
SRF-05-01	117034	U	-0.0143	pCi/g	0.0467	EPIA-013B		
SRF-05-02	117035	U	0.0105	pCi/g	0.0599	EPIA-013B		
SRF-05-03	117036	U	0.00248	pCi/g	0.0543	EPIA-013B		
SRF-06-01	117037	U	-0.00667	pCi/g	0.0644	EPIA-013B		
SRF-06-02	117038	U	-0.00517	pCi/g	0.0365	EPIA-013B		
SRF-06-03	117039	U	0.0255	pCi/g	0.0711	EPIA-013B		

ANALYTE: Manganese-54 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-06-03-A	117040	U	-0.00261	pCi/g	0.0653	EPIA-013B		
SRF-07-01	117041	U	0.0153	pCi/g	0.0702	EPIA-013B		
SRF-07-02	117042	U	-0.0262	pCi/g	0.0714	EPIA-013B		
SRF-07-03	117043	U	-0.000359	pCi/g	0.0806	EPIA-013B		
SRF-07-03	117043	U	0.0134	pCi/g	0.0586	EPIA-013B		

ANALYTE: Manganese
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		26.9	mg/kg	0.323	EPA6010B		
SRF-01-02	117019		66.6	mg/kg	0.338	EPA6010B		
SRF-01-03	117020		20.1	mg/kg	0.323	EPA6010B		
SRF-01-04	117021		37	mg/kg	0.329	EPA6010B		
SRF-01-05	117022	J	18.5	mg/kg	0.326	EPA6010B	K	I
SRF-02-01	117023		38	mg/kg	0.332	EPA6010B		
SRF-02-02	117024		8.99	mg/kg	0.342	EPA6010B		
SRF-02-03	117025		7.11	mg/kg	0.355	EPA6010B		
SRF-02-03-A	117026		14.3	mg/kg	0.335	EPA6010B		
SRF-03-01	117027		19.2	mg/kg	0.351	EPA6010B		
SRF-03-02	117028		76.2	mg/kg	0.344	EPA6010B		
SRF-03-03	117029		9.96	mg/kg	0.332	EPA6010B		
SRF-03-04	117030		62.6	mg/kg	0.348	EPA6010B		
SRF-04-01	117031		56.9	mg/kg	0.342	EPA6010B		
SRF-04-02	117032		31	mg/kg	0.326	EPA6010B		
SRF-04-03	117033		1.66	mg/kg	0.351	EPA6010B		
SRF-05-01	117034		34.4	mg/kg	0.344	EPA6010B		
SRF-05-02	117035		10.1	mg/kg	0.338	EPA6010B		
SRF-05-03	117036		4.56	mg/kg	0.332	EPA6010B		
SRF-06-01	117037		93.4	mg/kg	0.338	EPA6010B		
SRF-06-02	117038		28.5	mg/kg	0.329	EPA6010B		
SRF-06-03	117039		5.89	mg/kg	0.338	EPA6010B		
SRF-06-03-A	117040		6.7	mg/kg	0.351	EPA6010B		
SRF-07-01	117041		18.6	mg/kg	0.342	EPA6010B		
SRF-07-02	117042		10.1	mg/kg	0.342	EPA6010B		
SRF-07-03	117043		6.96	mg/kg	0.326	EPA6010B		

ANALYTE: Mercury
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		0.0508	mg/kg	0.00225	EPA7471A		
SRF-01-02	117019	J	0.0285	mg/kg	0.00196	EPA7471A	I	
SRF-01-03	117020		0.0706	mg/kg	0.002	EPA7471A		
SRF-01-04	117021	J	0.0306	mg/kg	0.00222	EPA7471A	I	
SRF-01-05	117022	J	0.0992	mg/kg	0.00221	EPA7471A	L	I
SRF-02-01	117023		0.119	mg/kg	0.00207	EPA7471A		
SRF-02-02	117024		0.0532	mg/kg	0.00212	EPA7471A		
SRF-02-03	117025	J	0.618	mg/kg	0.00205	EPA7471A	L	I
SRF-02-03-A	117026		0.396	mg/kg	0.00197	EPA7471A		
SRF-03-01	117027		0.268	mg/kg	0.00205	EPA7471A		
SRF-03-02	117028		0.0767	mg/kg	0.00223	EPA7471A		
SRF-03-03	117029		0.261	mg/kg	0.0141	EPA7471A		

ANALYTE: Mercury (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-03-04	117030		0.0569	mg/kg	0.00225	EPA7471A		
SRF-04-01	117031		0.0655	mg/kg	0.00214	EPA7471A		
SRF-04-02	117032		0.151	mg/kg	0.002	EPA7471A		
SRF-04-03	117033		0.222	mg/kg	0.00213	EPA7471A		
SRF-05-01	117034		0.165	mg/kg	0.00218	EPA7471A		
SRF-05-02	117035		0.134	mg/kg	0.00225	EPA7471A		
SRF-05-03	117036		1.25	mg/kg	0.00214	EPA7471A		
SRF-06-01	117037		0.0959	mg/kg	0.00195	EPA7471A		
SRF-06-02	117038		0.134	mg/kg	0.00219	EPA7471A		
SRF-06-03	117039		0.456	mg/kg	0.0021	EPA7471A		
SRF-06-03-A	117040		0.474	mg/kg	0.00194	EPA7471A		
SRF-07-01	117041		0.194	mg/kg	0.00209	EPA7471A		
SRF-07-02	117042		0.204	mg/kg	0.0022	EPA7471A		
SRF-07-03	117043		0.543	mg/kg	0.00224	EPA7471A		

ANALYTE: Methyl ethyl ketone
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	25	µg/kg	16	EPA8260B		
SRF-01-02	117019	J	58.2	µg/kg	16	EPA8260B	K	O
SRF-01-03	117020		54.7	µg/kg	16	EPA8260B		
SRF-01-04	117021	J	37.8	µg/kg	16	EPA8260B	K	O
SRF-01-05	117022	J	34.7	µg/kg	16	EPA8260B	K	O
SRF-02-01	117023	U	25	µg/kg	16	EPA8260B		
SRF-02-02	117024	U	25	µg/kg	16	EPA8260B		
SRF-02-03	117025	U	25	µg/kg	16	EPA8260B		
SRF-02-03-A	117026	U	25	µg/kg	16	EPA8260B		
SRF-03-01	117027	U	25	µg/kg	16	EPA8260B		
SRF-03-02	117028	U	25	µg/kg	16	EPA8260B		
SRF-03-03	117029	U	25	µg/kg	16	EPA8260B		
SRF-03-04	117030	U	25	µg/kg	16	EPA8260B		
SRF-04-01	117031	U	25	µg/kg	16	EPA8260B		
SRF-04-02	117032	J	17	µg/kg	16	EPA8260B	I	
SRF-04-03	117033	U	25	µg/kg	16	EPA8260B		
SRF-05-01	117034	U	25	µg/kg	16	EPA8260B		
SRF-05-02	117035	U	25	µg/kg	16	EPA8260B		
SRF-05-03	117036	U	25	µg/kg	16	EPA8260B		

SRF-06-01	117037	U	25	µg/kg	16	EPA8260B		
SRF-06-02	117038	U	25	µg/kg	16	EPA8260B		
SRF-06-03	117039	U	25	µg/kg	16	EPA8260B		
SRF-06-03-A	117040	U	25	µg/kg	16	EPA8260B		
SRF-07-01	117041	U	25	µg/kg	16	EPA8260B		
SRF-07-02	117042	J	48.6	µg/kg	16	EPA8260B	K	O
SRF-07-03	117043	U	25	µg/kg	16	EPA8260B		

ANALYTE: Methyl isobutyl ketone
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	25	µg/kg	14.6	EPA8260B		
SRF-01-02	117019	U	25	µg/kg	14.6	EPA8260B		
SRF-01-03	117020	U	25	µg/kg	14.6	EPA8260B		

ANALYTE: Methyl isobutyl ketone (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-04	117021	U	25	µg/kg	14.6	EPA8260B		
SRF-01-05	117022	U	25	µg/kg	14.6	EPA8260B		
SRF-02-01	117023	U	25	µg/kg	14.6	EPA8260B		
SRF-02-02	117024	U	25	µg/kg	14.6	EPA8260B		
SRF-02-03	117025	U	25	µg/kg	14.6	EPA8260B		
SRF-02-03-A	117026	U	25	µg/kg	14.6	EPA8260B		
SRF-03-01	117027	U	25	µg/kg	14.6	EPA8260B		
SRF-03-02	117028	U	25	µg/kg	14.6	EPA8260B		
SRF-03-03	117029	U	25	µg/kg	14.6	EPA8260B		
SRF-03-04	117030	U	25	µg/kg	14.6	EPA8260B		
SRF-04-01	117031	U	25	µg/kg	14.6	EPA8260B		
SRF-04-02	117032	U	25	µg/kg	14.6	EPA8260B		
SRF-04-03	117033	U	25	µg/kg	14.6	EPA8260B		
SRF-05-01	117034	U	25	µg/kg	14.6	EPA8260B		
SRF-05-02	117035	U	25	µg/kg	14.6	EPA8260B		
SRF-05-03	117036	U	25	µg/kg	14.6	EPA8260B		
SRF-06-01	117037	U	25	µg/kg	14.6	EPA8260B		
SRF-06-02	117038	U	25	µg/kg	14.6	EPA8260B		
SRF-06-03	117039	U	25	µg/kg	14.6	EPA8260B		
SRF-06-03-A	117040	U	25	µg/kg	14.6	EPA8260B		
SRF-07-01	117041	U	25	µg/kg	14.6	EPA8260B		
SRF-07-02	117042	U	25	µg/kg	14.6	EPA8260B		
SRF-07-03	117043	U	25	µg/kg	14.6	EPA8260B		

ANALYTE: Neptunium-239
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.00946	pCi/g	0.222	EPIA-013B		
SRF-01-02	117019	U	0.087	pCi/g	0.174	EPIA-013B		
SRF-01-03	117020	U	-0.0623	pCi/g	0.208	EPIA-013B		
SRF-01-04	117021	U	0.028	pCi/g	0.184	EPIA-013B		
SRF-01-05	117022	U	-0.0297	pCi/g	0.183	EPIA-013B		
SRF-01-05	117022	U	-0.0625	pCi/g	0.168	EPIA-013B		
SRF-02-01	117023	U	0.0165	pCi/g	0.234	EPIA-013B		
SRF-02-02	117024	U	-0.0467	pCi/g	0.174	EPIA-013B		
SRF-02-03	117025	U	-0.0876	pCi/g	0.269	EPIA-013B		
SRF-02-03-A	117026	U	0.114	pCi/g	0.277	EPIA-013B		
SRF-03-01	117027	U	0.0519	pCi/g	0.277	EPIA-013B		
SRF-03-02	117028	U	0.0502	pCi/g	0.207	EPIA-013B		

SRF-03-03	117029	U	-0.117	pCi/g	0.196	EPIA-013B		
SRF-03-04	117030	U	0.00155	pCi/g	0.141	EPIA-013B		
SRF-04-01	117031	U	0.0669	pCi/g	0.253	EPIA-013B		
SRF-04-02	117032	U	0.0289	pCi/g	0.264	EPIA-013B		
SRF-04-03	117033	U	0.0212	pCi/g	0.24	EPIA-013B		
SRF-05-01	117034	U	-0.00259	pCi/g	0.179	EPIA-013B		
SRF-05-02	117035	U	-0.0482	pCi/g	0.162	EPIA-013B		
SRF-05-03	117036	U	0.042	pCi/g	0.189	EPIA-013B		
SRF-06-01	117037	U	0.0376	pCi/g	0.2	EPIA-013B		
SRF-06-02	117038	U	0.0176	pCi/g	0.175	EPIA-013B		
SRF-06-03	117039	U	0.046	pCi/g	0.257	EPIA-013B		
SRF-06-03-A	117040	U	0.0495	pCi/g	0.287	EPIA-013B		
SRF-07-01	117041	U	-0.0755	pCi/g	0.213	EPIA-013B		

ANALYTE: Neptunium-239 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-07-02	117042	U	0.0014	pCi/g	0.304	EPIA-013B		
SRF-07-03	117043	U	-0.162	pCi/g	0.224	EPIA-013B		
SRF-07-03	117043	U	0.105	pCi/g	0.211	EPIA-013B		

ANALYTE: Nickel
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.227	mg/kg	0.029	EPA6010B		
SRF-01-02	117019		0.276	mg/kg	0.03	EPA6010B		
SRF-01-03	117020	U	0.227	mg/kg	0.029	EPA6010B		
SRF-01-04	117021	U	0.231	mg/kg	0.03	EPA6010B		
SRF-01-05	117022	U	0.229	mg/kg	0.029	EPA6010B		
SRF-02-01	117023	U	0.373	mg/kg	0.03	EPA6010B	V	
SRF-02-02	117024	U	0.24	mg/kg	0.031	EPA6010B		
SRF-02-03	117025	U	0.366	mg/kg	0.032	EPA6010B	V	
SRF-02-03-A	117026	U	0.236	mg/kg	0.03	EPA6010B		
SRF-03-01	117027	U	0.248	mg/kg	0.032	EPA6010B		
SRF-03-02	117028	U	0.517	mg/kg	0.031	EPA6010B	V	
SRF-03-03	117029	U	0.234	mg/kg	0.03	EPA6010B		
SRF-03-04	117030	U	0.245	mg/kg	0.031	EPA6010B		
SRF-04-01	117031	JU	0.133	mg/kg	0.031	EPA6010B	IV	
SRF-04-02	117032	JU	0.145	mg/kg	0.029	EPA6010B	IV	
SRF-04-03	117033	JU	0.15	mg/kg	0.032	EPA6010B	IV	
SRF-05-01	117034	U	0.372	mg/kg	0.031	EPA6010B	V	
SRF-05-02	117035	U	0.238	mg/kg	0.03	EPA6010B		
SRF-05-03	117036	U	0.234	mg/kg	0.03	EPA6010B		
SRF-06-01	117037	JU	0.181	mg/kg	0.03	EPA6010B	IV	
SRF-06-02	117038	U	0.796	mg/kg	0.03	EPA6010B	V	
SRF-06-03	117039	JU	0.233	mg/kg	0.03	EPA6010B	IV	
SRF-06-03-A	117040	U	0.284	mg/kg	0.032	EPA6010B	V	
SRF-07-01	117041	J	0.115	mg/kg	0.031	EPA6010B	I	
SRF-07-02	117042	J	0.115	mg/kg	0.031	EPA6010B	I	
SRF-07-03	117043	J	0.12	mg/kg	0.029	EPA6010B	I	

ANALYTE: Nonvolatile beta
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		5.12	pCi/g	0.817	EPIA-001B		
SRF-01-02	117019		7.27	pCi/g	0.579	EPIA-001B		
SRF-01-03	117020		7.32	pCi/g	1.26	EPIA-001B		

SRF-01-04	117021		7.7	pCi/g	0.568	EPIA-001B		
SRF-01-05	117022		8.22	pCi/g	2.48	EPIA-001B		
SRF-01-05	117022		8.14	pCi/g	2.57	EPIA-001B		
SRF-02-01	117023		7.76	pCi/g	1.7	EPIA-001B		
SRF-02-02	117024		5.87	pCi/g	1.06	EPIA-001B		
SRF-02-03	117025		8.12	pCi/g	1.04	EPIA-001B		
SRF-02-03-A	117026		6.29	pCi/g	1.03	EPIA-001B		
SRF-03-01	117027		7.32	pCi/g	1.75	EPIA-001B		
SRF-03-02	117028		7.88	pCi/g	1.49	EPIA-001B		
SRF-03-03	117029		6.13	pCi/g	1.18	EPIA-001B		
SRF-03-04	117030		7.07	pCi/g	1.98	EPIA-001B		

ANALYTE: Nonvolatile beta (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-04-01	117031		9.76	pCi/g	1.06	EPIA-001B		
SRF-04-02	117032		6.65	pCi/g	1.75	EPIA-001B		
SRF-04-03	117033		7.74	pCi/g	1.04	EPIA-001B		
SRF-05-01	117034		6.39	pCi/g	1.33	EPIA-001B		
SRF-05-02	117035		5.47	pCi/g	1.8	EPIA-001B		
SRF-05-03	117036		5.95	pCi/g	1.06	EPIA-001B		
SRF-06-01	117037		7.33	pCi/g	1.42	EPIA-001B		
SRF-06-02	117038		8.49	pCi/g	1.31	EPIA-001B		
SRF-06-03	117039		6.71	pCi/g	0.857	EPIA-001B		
SRF-06-03-A	117040		7.61	pCi/g	0.932	EPIA-001B		
SRF-07-01	117041		7.32	pCi/g	0.897	EPIA-001B		
SRF-07-02	117042		6.33	pCi/g	1.33	EPIA-001B		
SRF-07-03	117043		5.4	pCi/g	0.642	EPIA-001B		
SRF-07-03	117043		5.31	pCi/g	0.586	EPIA-001B		

ANALYTE: Plutonium-238
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.00334	pCi/g	0.01	EPIA-012B		
SRF-01-02	117019	U	-0.00105	pCi/g	0.0231	EPIA-012B		
SRF-01-03	117020	U	-0.00917	pCi/g	0.0406	EPIA-012B		
SRF-01-04	117021	U	0	pCi/g	0.0113	EPIA-012B		
SRF-01-05	117022	U	0	pCi/g	0.0183	EPIA-012B		
SRF-02-01	117023	U	0.00645	pCi/g	0.0264	EPIA-012B		
SRF-02-02	117024	U	0.00398	pCi/g	0.028	EPIA-012B		
SRF-02-03	117025	U	0.00402	pCi/g	0.0303	EPIA-012B		
SRF-02-03-A	117026	U	-0.0137	pCi/g	0.0438	EPIA-012B		
SRF-03-01	117027	U	-0.00319	pCi/g	0.0594	EPIA-012B		
SRF-03-02	117028	U	0	pCi/g	0.0129	EPIA-012B		
SRF-03-02	117028	U	0	pCi/g	0.0136	EPIA-012B		
SRF-03-03	117029	U	-0.00305	pCi/g	0.024	EPIA-012B		
SRF-03-04	117030	U	0	pCi/g	0.0157	EPIA-012B		
SRF-04-01	117031	U	-0.00057	pCi/g	0.0125	EPIA-012B		
SRF-04-02	117032	U	0	pCi/g	0.014	EPIA-012B		
SRF-04-03	117033	U	0	pCi/g	0.00802	EPIA-012B		
SRF-05-01	117034	U	-0.000653	pCi/g	0.0144	EPIA-012B		
SRF-05-02	117035	U	-0.000944	pCi/g	0.0382	EPIA-012B		
SRF-05-03	117036	U	-0.00123	pCi/g	0.0159	EPIA-012B		
SRF-06-01	117037	U	-0.00168	pCi/g	0.0218	EPIA-012B		
SRF-06-02	117038	U	0	pCi/g	0.00987	EPIA-012B		
SRF-06-03	117039	U	0	pCi/g	0.00704	EPIA-012B		
SRF-06-03-A	117040	U	0	pCi/g	0.00727	EPIA-012B		
SRF-07-01	117041	U	-0.00284	pCi/g	0.0224	EPIA-012B		
SRF-07-02	117042	U	0.00451	pCi/g	0.0135	EPIA-012B		
SRF-07-03	117043	U	-0.000479	pCi/g	0.0105	EPIA-012B		

SRF-07-03	117043	U	0.00317	pCi/g	0.013	EPIA-012B		

ANALYTE: Plutonium-239/240
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0048	pCi/g	0.0286	EPIA-012B		
SRF-01-02	117019	U	0	pCi/g	0.0131	EPIA-012B		
SRF-01-03	117020	U	-0.00217	pCi/g	0.0209	EPIA-012B		
SRF-01-04	117021	U	-0.000901	pCi/g	0.0198	EPIA-012B		
SRF-01-05	117022	U	0.0168	pCi/g	0.0321	EPIA-012B		
SRF-02-01	117023	U	-0.00204	pCi/g	0.0264	EPIA-012B		
SRF-02-02	117024	U	-0.00116	pCi/g	0.0151	EPIA-012B		
SRF-02-03	117025	U	-0.00115	pCi/g	0.0149	EPIA-012B		
SRF-02-03-A	117026	U	-0.00307	pCi/g	0.0242	EPIA-012B		
SRF-03-01	117027	U	0.00218	pCi/g	0.0261	EPIA-012B		
SRF-03-02	117028	U	-0.00103	pCi/g	0.0227	EPIA-012B		
SRF-03-02	117028	U	-0.00108	pCi/g	0.0238	EPIA-012B		
SRF-03-03	117029	U	-0.00153	pCi/g	0.0198	EPIA-012B		
SRF-03-04	117030	U	-0.00753	pCi/g	0.0448	EPIA-012B		
SRF-04-01	117031	U	0	pCi/g	0.00712	EPIA-012B		
SRF-04-02	117032	U	-0.00112	pCi/g	0.0247	EPIA-012B		
SRF-04-03	117033	U	-0.000641	pCi/g	0.0141	EPIA-012B		
SRF-05-01	117034	U	0	pCi/g	0.00816	EPIA-012B		
SRF-05-02	117035	U	-0.00113	pCi/g	0.0249	EPIA-012B		
SRF-05-03	117036	U	0.00451	pCi/g	0.0135	EPIA-012B		
SRF-06-01	117037	U	-0.00168	pCi/g	0.0218	EPIA-012B		
SRF-06-02	117038	U	-0.00158	pCi/g	0.0204	EPIA-012B		
SRF-06-03	117039	U	0	pCi/g	0.00703	EPIA-012B		
SRF-06-03-A	117040	U	-0.000581	pCi/g	0.0128	EPIA-012B		
SRF-07-01	117041	U	-0.00142	pCi/g	0.0184	EPIA-012B		
SRF-07-02	117042	U	-0.00108	pCi/g	0.0238	EPIA-012B		
SRF-07-03	117043	U	0.00199	pCi/g	0.00598	EPIA-012B		
SRF-07-03	117043	U	-0.000501	pCi/g	0.011	EPIA-012B		

ANALYTE: Potassium-40
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		3.97	pCi/g	0.611	EPIA-013B		
SRF-01-02	117019		3.51	pCi/g	0.487	EPIA-013B		
SRF-01-03	117020		4.41	pCi/g	0.459	EPIA-013B		
SRF-01-04	117021		3.39	pCi/g	0.456	EPIA-013B		
SRF-01-05	117022		3.64	pCi/g	0.498	EPIA-013B		
SRF-01-05	117022	R	2.88	pCi/g	1.37	EPIA-013B		4
SRF-02-01	117023		4.23	pCi/g	0.726	EPIA-013B		
SRF-02-02	117024		2.54	pCi/g	0.459	EPIA-013B		
SRF-02-03	117025		3.58	pCi/g	0.695	EPIA-013B		
SRF-02-03-A	117026		3.53	pCi/g	0.739	EPIA-013B		
SRF-03-01	117027		2.47	pCi/g	0.6	EPIA-013B		
SRF-03-02	117028		3.89	pCi/g	0.423	EPIA-013B		
SRF-03-03	117029		2.97	pCi/g	0.556	EPIA-013B		
SRF-03-04	117030		3.84	pCi/g	0.309	EPIA-013B		
SRF-04-01	117031		3.01	pCi/g	0.561	EPIA-013B		
SRF-04-02	117032		2.25	pCi/g	0.646	EPIA-013B		
SRF-04-03	117033		4.01	pCi/g	0.778	EPIA-013B		
SRF-05-01	117034		3.16	pCi/g	0.372	EPIA-013B		
SRF-05-02	117035		3.28	pCi/g	0.44	EPIA-013B		
SRF-05-03	117036		3.56	pCi/g	0.406	EPIA-013B		
SRF-06-01	117037		2.95	pCi/g	0.58	EPIA-013B		

ANALYTE: Potassium-40 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-06-02	117038		2.94	pCi/g	0.389	EPIA-013B		
SRF-06-03	117039		2.45	pCi/g	0.605	EPIA-013B		
SRF-06-03-A	117040		2.94	pCi/g	0.69	EPIA-013B		
SRF-07-01	117041		2.79	pCi/g	0.743	EPIA-013B		
SRF-07-02	117042		2.8	pCi/g	0.881	EPIA-013B		
SRF-07-03	117043		2.76	pCi/g	0.818	EPIA-013B		
SRF-07-03	117043		2.86	pCi/g	0.561	EPIA-013B		

ANALYTE: Promethium-144
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.0151	pCi/g	0.0622	EPIA-013B		
SRF-01-02	117019	U	-0.00267	pCi/g	0.0449	EPIA-013B		
SRF-01-03	117020	U	-0.0104	pCi/g	0.0443	EPIA-013B		
SRF-01-04	117021	U	-0.00147	pCi/g	0.0413	EPIA-013B		
SRF-01-05	117022	U	-0.0155	pCi/g	0.0451	EPIA-013B		
SRF-01-05	117022	U	0.0193	pCi/g	0.0495	EPIA-013B		
SRF-02-01	117023	U	0.0247	pCi/g	0.0659	EPIA-013B		
SRF-02-02	117024	U	0.0223	pCi/g	0.0489	EPIA-013B		
SRF-02-03	117025	U	0.015	pCi/g	0.075	EPIA-013B		
SRF-02-03-A	117026	U	-0.0191	pCi/g	0.0621	EPIA-013B		
SRF-03-01	117027	U	0.03	pCi/g	0.0621	EPIA-013B		
SRF-03-02	117028	U	0.00514	pCi/g	0.0471	EPIA-013B		
SRF-03-03	117029	U	-0.00607	pCi/g	0.0529	EPIA-013B		
SRF-03-04	117030	U	-0.00494	pCi/g	0.0308	EPIA-013B		
SRF-04-01	117031	U	0.0023	pCi/g	0.054	EPIA-013B		
SRF-04-02	117032	U	-0.00452	pCi/g	0.0713	EPIA-013B		
SRF-04-03	117033	U	0.044	pCi/g	0.0744	EPIA-013B		
SRF-05-01	117034	U	0.00753	pCi/g	0.0472	EPIA-013B		
SRF-05-02	117035	U	0.012	pCi/g	0.0552	EPIA-013B		
SRF-05-03	117036	U	0.0193	pCi/g	0.056	EPIA-013B		
SRF-06-01	117037	U	-0.00499	pCi/g	0.0576	EPIA-013B		
SRF-06-02	117038	U	0.00184	pCi/g	0.0391	EPIA-013B		
SRF-06-03	117039	U	0.0261	pCi/g	0.0582	EPIA-013B		
SRF-06-03-A	117040	U	0.00669	pCi/g	0.0679	EPIA-013B		
SRF-07-01	117041	U	0.00452	pCi/g	0.0707	EPIA-013B		
SRF-07-02	117042	U	-0.00318	pCi/g	0.0755	EPIA-013B		
SRF-07-03	117043	U	0.0118	pCi/g	0.0779	EPIA-013B		
SRF-07-03	117043	U	0.0127	pCi/g	0.0525	EPIA-013B		

ANALYTE: Promethium-146
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.00415	pCi/g	0.0672	EPIA-013B		
SRF-01-02	117019	U	0.00302	pCi/g	0.058	EPIA-013B		
SRF-01-03	117020	U	-0.0185	pCi/g	0.0575	EPIA-013B		
SRF-01-04	117021	U	0.00492	pCi/g	0.0499	EPIA-013B		
SRF-01-05	117022	U	-0.00327	pCi/g	0.0528	EPIA-013B		
SRF-01-05	117022	U	-0.0233	pCi/g	0.0475	EPIA-013B		
SRF-02-01	117023	U	-0.044	pCi/g	0.0655	EPIA-013B		
SRF-02-02	117024	U	0.00314	pCi/g	0.047	EPIA-013B		

ANALYTE: Promethium-146 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-02-03	117025	U	-0.00799	pCi/g	0.0788	EPIA-013B		
SRF-02-03-A	117026	U	-0.0416	pCi/g	0.0706	EPIA-013B		
SRF-03-01	117027	U	0.0264	pCi/g	0.0695	EPIA-013B		
SRF-03-02	117028	U	-0.0187	pCi/g	0.05	EPIA-013B		
SRF-03-03	117029	U	0.0157	pCi/g	0.0622	EPIA-013B		
SRF-03-04	117030	U	0.0111	pCi/g	0.0362	EPIA-013B		
SRF-04-01	117031	U	0.00421	pCi/g	0.0553	EPIA-013B		
SRF-04-02	117032	U	-0.0232	pCi/g	0.068	EPIA-013B		
SRF-04-03	117033	U	0.0343	pCi/g	0.0681	EPIA-013B		
SRF-05-01	117034	U	-0.0345	pCi/g	0.0463	EPIA-013B		
SRF-05-02	117035	U	0.00102	pCi/g	0.0612	EPIA-013B		
SRF-05-03	117036	U	-0.0232	pCi/g	0.0603	EPIA-013B		
SRF-06-01	117037	U	-0.0152	pCi/g	0.0653	EPIA-013B		
SRF-06-02	117038	U	-0.0244	pCi/g	0.0398	EPIA-013B		
SRF-06-03	117039	U	-0.0424	pCi/g	0.0751	EPIA-013B		
SRF-06-03-A	117040	U	-0.0265	pCi/g	0.0685	EPIA-013B		
SRF-07-01	117041	U	0.0175	pCi/g	0.0764	EPIA-013B		
SRF-07-02	117042	U	-0.031	pCi/g	0.0755	EPIA-013B		
SRF-07-03	117043	U	0.0137	pCi/g	0.0605	EPIA-013B		
SRF-07-03	117043	U	0.000611	pCi/g	0.0823	EPIA-013B		

ANALYTE: Ruthenium-106
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.103	pCi/g	0.457	EPIA-013B		
SRF-01-02	117019	U	0.0746	pCi/g	0.383	EPIA-013B		
SRF-01-03	117020	U	-0.0132	pCi/g	0.467	EPIA-013B		
SRF-01-04	117021	U	-0.0714	pCi/g	0.364	EPIA-013B		
SRF-01-05	117022	U	-0.0232	pCi/g	0.396	EPIA-013B		
SRF-01-05	117022	U	0.138	pCi/g	0.415	EPIA-013B		
SRF-02-01	117023	U	0.245	pCi/g	0.547	EPIA-013B		
SRF-02-02	117024	U	0.0177	pCi/g	0.41	EPIA-013B		
SRF-02-03	117025	U	0.0415	pCi/g	0.699	EPIA-013B		
SRF-02-03-A	117026	U	0.0977	pCi/g	0.575	EPIA-013B		
SRF-03-01	117027	U	-0.0495	pCi/g	0.514	EPIA-013B		
SRF-03-02	117028	U	-0.0878	pCi/g	0.411	EPIA-013B		
SRF-03-03	117029	U	0.127	pCi/g	0.521	EPIA-013B		
SRF-03-04	117030	U	-0.0324	pCi/g	0.277	EPIA-013B		
SRF-04-01	117031	U	-0.27	pCi/g	0.433	EPIA-013B		
SRF-04-02	117032	U	0.261	pCi/g	0.633	EPIA-013B		
SRF-04-03	117033	U	-0.101	pCi/g	0.484	EPIA-013B		
SRF-05-01	117034	U	0.0452	pCi/g	0.449	EPIA-013B		
SRF-05-02	117035	U	0.209	pCi/g	0.506	EPIA-013B		
SRF-05-03	117036	U	-0.0522	pCi/g	0.444	EPIA-013B		
SRF-06-01	117037	U	0.071	pCi/g	0.614	EPIA-013B		
SRF-06-02	117038	U	-0.00601	pCi/g	0.349	EPIA-013B		
SRF-06-03	117039	U	-0.371	pCi/g	0.492	EPIA-013B		
SRF-06-03-A	117040	U	-0.221	pCi/g	0.586	EPIA-013B		
SRF-07-01	117041	U	-0.181	pCi/g	0.583	EPIA-013B		
SRF-07-02	117042	U	0.36	pCi/g	0.751	EPIA-013B		
SRF-07-03	117043	U	0.252	pCi/g	0.497	EPIA-013B		
SRF-07-03	117043	U	0.0762	pCi/g	0.702	EPIA-013B		

ANALYTE: Selenium
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		0.904	mg/kg	0.123	EPA6010B		
SRF-01-02	117019		1	mg/kg	0.129	EPA6010B		
SRF-01-03	117020		0.925	mg/kg	0.123	EPA6010B		
SRF-01-04	117021		0.938	mg/kg	0.125	EPA6010B		
SRF-01-05	117022		1.02	mg/kg	0.124	EPA6010B		
SRF-02-01	117023		0.859	mg/kg	0.126	EPA6010B		
SRF-02-02	117024		1.07	mg/kg	0.13	EPA6010B		
SRF-02-03	117025		1.27	mg/kg	0.135	EPA6010B		
SRF-02-03-A	117026		2.85	mg/kg	0.127	EPA6010B		
SRF-03-01	117027		0.905	mg/kg	0.134	EPA6010B		
SRF-03-02	117028		0.883	mg/kg	0.131	EPA6010B		
SRF-03-03	117029		1.13	mg/kg	0.126	EPA6010B		
SRF-03-04	117030		1.05	mg/kg	0.132	EPA6010B		
SRF-04-01	117031		1.01	mg/kg	0.13	EPA6010B		
SRF-04-02	117032		1.15	mg/kg	0.124	EPA6010B		
SRF-04-03	117033		0.764	mg/kg	0.134	EPA6010B		
SRF-05-01	117034		1.04	mg/kg	0.131	EPA6010B		
SRF-05-02	117035		0.88	mg/kg	0.129	EPA6010B		
SRF-05-03	117036		1.08	mg/kg	0.126	EPA6010B		
SRF-06-01	117037		1.34	mg/kg	0.129	EPA6010B		
SRF-06-02	117038		0.941	mg/kg	0.125	EPA6010B		
SRF-06-03	117039		0.962	mg/kg	0.129	EPA6010B		
SRF-06-03-A	117040		1.04	mg/kg	0.134	EPA6010B		
SRF-07-01	117041		0.874	mg/kg	0.13	EPA6010B		
SRF-07-02	117042		0.845	mg/kg	0.13	EPA6010B		
SRF-07-03	117043		1.07	mg/kg	0.124	EPA6010B		

ANALYTE: Silver
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	0.121	mg/kg	0.0282	EPA6010B	I	
SRF-01-02	117019	J	0.105	mg/kg	0.0295	EPA6010B	I	
SRF-01-03	117020	U	0.227	mg/kg	0.0282	EPA6010B		
SRF-01-04	117021	J	0.0501	mg/kg	0.0287	EPA6010B	I	
SRF-01-05	117022	U	0.229	mg/kg	0.0284	EPA6010B		
SRF-02-01	117023	U	0.234	mg/kg	0.029	EPA6010B		
SRF-02-02	117024	U	0.24	mg/kg	0.0298	EPA6010B		
SRF-02-03	117025	J	0.0969	mg/kg	0.031	EPA6010B	I	
SRF-02-03-A	117026		0.712	mg/kg	0.0292	EPA6010B		
SRF-03-01	117027	U	0.248	mg/kg	0.0307	EPA6010B		
SRF-03-02	117028	U	0.243	mg/kg	0.0301	EPA6010B		
SRF-03-03	117029	J	0.067	mg/kg	0.029	EPA6010B	I	
SRF-03-04	117030	U	0.245	mg/kg	0.0304	EPA6010B		
SRF-04-01	117031	U	0.24	mg/kg	0.0298	EPA6010B		
SRF-04-02	117032	U	0.229	mg/kg	0.0284	EPA6010B		
SRF-04-03	117033	U	0.248	mg/kg	0.0307	EPA6010B		
SRF-05-01	117034	U	0.243	mg/kg	0.0301	EPA6010B		
SRF-05-02	117035	U	0.238	mg/kg	0.0295	EPA6010B		
SRF-05-03	117036	U	0.234	mg/kg	0.029	EPA6010B		
SRF-06-01	117037	U	0.238	mg/kg	0.0295	EPA6010B		
SRF-06-02	117038	U	0.231	mg/kg	0.0287	EPA6010B		
SRF-06-03	117039	J	0.0421	mg/kg	0.0295	EPA6010B	I	
SRF-06-03-A	117040	U	0.248	mg/kg	0.0307	EPA6010B		

ANALYTE: Silver (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-07-01	117041	J	0.0896	mg/kg	0.0298	EPA6010B	I	
SRF-07-02	117042	J	0.082	mg/kg	0.0298	EPA6010B	I	
SRF-07-03	117043	J	0.135	mg/kg	0.0284	EPA6010B	IL	I

ANALYTE: Sodium-22
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.00507	pCi/g	0.0549	EPIA-013B		
SRF-01-02	117019	U	0.0191	pCi/g	0.0649	EPIA-013B		
SRF-01-03	117020	U	0.0184	pCi/g	0.0538	EPIA-013B		
SRF-01-04	117021	U	0.00639	pCi/g	0.0476	EPIA-013B		
SRF-01-05	117022	U	0.00542	pCi/g	0.0503	EPIA-013B		
SRF-01-05	117022	U	-0.000404	pCi/g	0.0538	EPIA-013B		
SRF-02-01	117023	U	-0.00917	pCi/g	0.0539	EPIA-013B		
SRF-02-02	117024	U	0.00668	pCi/g	0.05	EPIA-013B		
SRF-02-03	117025	U	0.0136	pCi/g	0.0467	EPIA-013B		
SRF-02-03-A	117026	U	-0.0179	pCi/g	0.0722	EPIA-013B		
SRF-03-01	117027	U	-0.00353	pCi/g	0.0672	EPIA-013B		
SRF-03-02	117028	U	-0.019	pCi/g	0.0458	EPIA-013B		
SRF-03-03	117029	U	-0.00506	pCi/g	0.0567	EPIA-013B		
SRF-03-04	117030	U	-0.00829	pCi/g	0.0324	EPIA-013B		
SRF-04-01	117031	U	-0.0064	pCi/g	0.0511	EPIA-013B		
SRF-04-02	117032	U	-0.0205	pCi/g	0.0777	EPIA-013B		
SRF-04-03	117033	U	0.0218	pCi/g	0.0732	EPIA-013B		
SRF-05-01	117034	U	-0.00672	pCi/g	0.0542	EPIA-013B		
SRF-05-02	117035	U	0.0351	pCi/g	0.0614	EPIA-013B		
SRF-05-03	117036	U	-0.00555	pCi/g	0.0491	EPIA-013B		
SRF-06-01	117037	U	-0.0122	pCi/g	0.0617	EPIA-013B		
SRF-06-02	117038	U	0.0294	pCi/g	0.056	EPIA-013B		
SRF-06-03	117039	U	0.00276	pCi/g	0.0633	EPIA-013B		
SRF-06-03-A	117040	U	0.0389	pCi/g	0.0875	EPIA-013B		
SRF-07-01	117041	U	-0.0104	pCi/g	0.0719	EPIA-013B		
SRF-07-02	117042	U	-0.0236	pCi/g	0.0782	EPIA-013B		
SRF-07-03	117043	U	-0.00447	pCi/g	0.0592	EPIA-013B		
SRF-07-03	117043	U	0.00507	pCi/g	0.0852	EPIA-013B		

ANALYTE: Strontium-89/90
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.428	pCi/g	0.631	EPA905		
SRF-01-02	117019	U	0.168	pCi/g	0.826	EPA905		
SRF-01-03	117020	U	0.543	pCi/g	0.545	EPA905		
SRF-01-04	117021	U	0.532	pCi/g	0.765	EPA905		
SRF-01-05	117022	U	0.733	pCi/g	1.15	EPA905		
SRF-02-01	117023	U	0.037	pCi/g	0.752	EPA905		
SRF-02-02	117024	J	0.49	pCi/g	0.48	EPA905	I	
SRF-02-03	117025	U	0.427	pCi/g	0.505	EPA905		
SRF-02-03-A	117026	U	0.391	pCi/g	0.603	EPA905		
SRF-03-01	117027	U	0.675	pCi/g	0.868	EPA905		
SRF-03-02	117028	J	0.278	pCi/g	0.221	EPA905	I	
SRF-03-03	117029	U	0.177	pCi/g	0.198	EPA905		

ANALYTE: Strontium-89/90 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-03-04	117030		0.361	pCi/g	0.16	EPA905		
SRF-04-01	117031		1.81	pCi/g	0.0918	EPA905		
SRF-04-02	117032		0.643	pCi/g	0.15	EPA905		
SRF-04-03	117033		0.859	pCi/g	0.0874	EPA905		
SRF-05-01	117034		0.403	pCi/g	0.107	EPA905		
SRF-05-02	117035		0.553	pCi/g	0.148	EPA905		
SRF-05-02	117035		0.559	pCi/g	0.14	EPA905		
SRF-05-03	117036		0.315	pCi/g	0.119	EPA905		
SRF-06-01	117037		0.546	pCi/g	0.17	EPA905		
SRF-06-02	117038		0.553	pCi/g	0.203	EPA905		
SRF-06-03	117039		0.31	pCi/g	0.114	EPA905		
SRF-06-03-A	117040	U	0.121	pCi/g	0.189	EPA905		
SRF-07-01	117041	U	0.288	pCi/g	0.537	EPA905		
SRF-07-02	117042	U	0.364	pCi/g	0.948	EPA905		
SRF-07-03	117043	U	0.365	pCi/g	0.433	EPA905		
SRF-07-03	117043	U	0.336	pCi/g	0.466	EPA905		

ANALYTE: Styrene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.5	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.5	EPA8260B		

ANALYTE: 1,1,2,2-Tetrachloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	3	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	3	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	3	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	3	EPA8260B		

SRF-01-05	117022	U	5	µg/kg	3	EPA8260B
SRF-02-01	117023	U	5	µg/kg	3	EPA8260B
SRF-02-02	117024	U	5	µg/kg	3	EPA8260B
SRF-02-03	117025	U	5	µg/kg	3	EPA8260B
SRF-02-03-A	117026	U	5	µg/kg	3	EPA8260B
SRF-03-01	117027	U	5	µg/kg	3	EPA8260B
SRF-03-02	117028	U	5	µg/kg	3	EPA8260B
SRF-03-03	117029	U	5	µg/kg	3	EPA8260B
SRF-03-04	117030	U	5	µg/kg	3	EPA8260B
SRF-04-01	117031	U	5	µg/kg	3	EPA8260B
SRF-04-02	117032	U	5	µg/kg	3	EPA8260B
SRF-04-03	117033	U	5	µg/kg	3	EPA8260B
SRF-05-01	117034	U	5	µg/kg	3	EPA8260B
SRF-05-02	117035	U	5	µg/kg	3	EPA8260B
SRF-05-03	117036	U	5	µg/kg	3	EPA8260B
SRF-06-01	117037	U	5	µg/kg	3	EPA8260B
SRF-06-02	117038	U	5	µg/kg	3	EPA8260B
SRF-06-03	117039	U	5	µg/kg	3	EPA8260B
SRF-06-03-A	117040	U	5	µg/kg	3	EPA8260B
SRF-07-01	117041	U	5	µg/kg	3	EPA8260B
SRF-07-02	117042	U	5	µg/kg	3	EPA8260B
SRF-07-03	117043	U	5	µg/kg	3	EPA8260B

ANALYTE: Tetrachloroethylene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	2	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	2	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	2	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	2	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	2	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	2	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	2	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	2	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	2	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	2	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	2	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	2	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	2	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	2	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	2	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	2	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	2	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	2	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	2	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	2	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	2	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	2	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	2	EPA8260B		

ANALYTE: Tetrachloroethylene (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-07-01	117041	U	5	µg/kg	2	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	2	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	2	EPA8260B		

ANALYTE: Tin-113
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0116	pCi/g	0.0698	EPIA-013B		
SRF-01-02	117019	U	0.0347	pCi/g	0.06	EPIA-013B		
SRF-01-03	117020	U	0.0118	pCi/g	0.0694	EPIA-013B		
SRF-01-04	117021	U	-0.0225	pCi/g	0.0512	EPIA-013B		
SRF-01-05	117022	U	-0.00129	pCi/g	0.0504	EPIA-013B		
SRF-01-05	117022	U	-0.0245	pCi/g	0.0483	EPIA-013B		
SRF-02-01	117023	U	0.0263	pCi/g	0.0764	EPIA-013B		
SRF-02-02	117024	U	-0.00762	pCi/g	0.0537	EPIA-013B		
SRF-02-03	117025	U	0.0399	pCi/g	0.097	EPIA-013B		
SRF-02-03-A	117026	U	0.00248	pCi/g	0.0845	EPIA-013B		
SRF-03-01	117027	U	-0.0209	pCi/g	0.0729	EPIA-013B		
SRF-03-02	117028	U	-0.00207	pCi/g	0.0579	EPIA-013B		
SRF-03-03	117029	U	0.0191	pCi/g	0.0637	EPIA-013B		
SRF-03-04	117030	U	-0.0143	pCi/g	0.0372	EPIA-013B		
SRF-04-01	117031	U	0.016	pCi/g	0.0645	EPIA-013B		
SRF-04-02	117032	U	0.0729	pCi/g	0.0979	EPIA-013B		
SRF-04-03	117033	U	-0.0179	pCi/g	0.0713	EPIA-013B		
SRF-05-01	117034	U	0.0147	pCi/g	0.0605	EPIA-013B		
SRF-05-02	117035	U	0.013	pCi/g	0.0605	EPIA-013B		
SRF-05-03	117036	U	-0.00556	pCi/g	0.0637	EPIA-013B		
SRF-06-01	117037	U	0.00509	pCi/g	0.0772	EPIA-013B		
SRF-06-02	117038	U	-0.00714	pCi/g	0.0529	EPIA-013B		
SRF-06-03	117039	U	-0.00834	pCi/g	0.0903	EPIA-013B		
SRF-06-03-A	117040	U	0.0255	pCi/g	0.0865	EPIA-013B		
SRF-07-01	117041	U	-0.0335	pCi/g	0.0777	EPIA-013B		
SRF-07-02	117042	U	0.0498	pCi/g	0.101	EPIA-013B		
SRF-07-03	117043	U	0.0115	pCi/g	0.0639	EPIA-013B		
SRF-07-03	117043	U	-0.0125	pCi/g	0.0884	EPIA-013B		

ANALYTE: Toluene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	11.3	µg/kg	4.5	EPA8260B	K	O
SRF-01-02	117019	J	7.11	µg/kg	4.5	EPA8260B	K	O
SRF-01-03	117020	U	5	µg/kg	4.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	4.5	EPA8260B		
SRF-01-05	117022	J	80.2	µg/kg	4.5	EPA8260B	K	O
SRF-02-01	117023	U	5	µg/kg	4.5	EPA8260B		
SRF-02-02	117024	J	5.4	µg/kg	4.5	EPA8260B	K	O
SRF-02-03	117025	U	5	µg/kg	4.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	4.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	4.5	EPA8260B		
SRF-03-02	117028		6.11	µg/kg	4.5	EPA8260B		
SRF-03-03	117029		5.14	µg/kg	4.5	EPA8260B		

ANALYTE: Toluene (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-03-04	117030		9.57	µg/kg	4.5	EPA8260B		
SRF-04-01	117031	J	5.69	µg/kg	4.5	EPA8260B	K	O
SRF-04-02	117032	U	5	µg/kg	4.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	4.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	4.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	4.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	4.5	EPA8260B		

SRF-06-01	117037	J	17.4	µg/kg	4.5	EPA8260B	K	O
SRF-06-02	117038	U	5	µg/kg	4.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	4.5	EPA8260B		
SRF-06-03-A	117040		18.3	µg/kg	4.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	4.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	4.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	4.5	EPA8260B		

ANALYTE: 1,1,1-Trichloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	0.5	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	0.5	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	0.5	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	0.5	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	0.5	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	0.5	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	0.5	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	0.5	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	0.5	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	0.5	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	0.5	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	0.5	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	0.5	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	0.5	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	0.5	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	0.5	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	0.5	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	0.5	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	0.5	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	0.5	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	0.5	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	0.5	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	0.5	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	0.5	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	0.5	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	0.5	EPA8260B		

ANALYTE: 1,1,2-Trichloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.2	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.2	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.2	EPA8260B		

ANALYTE: 1,1,2-Trichloroethane (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-04	117021	U	5	µg/kg	1.2	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.2	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.2	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.2	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.2	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.2	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.2	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.2	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.2	EPA8260B		

SRF-03-04	117030	U	5	µg/kg	1.2	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.2	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1.2	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.2	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.2	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.2	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.2	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.2	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.2	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.2	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.2	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.2	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.2	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.2	EPA8260B		

ANALYTE: Trichloroethylene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	5	µg/kg	1.35	EPA8260B		
SRF-01-02	117019	U	5	µg/kg	1.35	EPA8260B		
SRF-01-03	117020	U	5	µg/kg	1.35	EPA8260B		
SRF-01-04	117021	U	5	µg/kg	1.35	EPA8260B		
SRF-01-05	117022	U	5	µg/kg	1.35	EPA8260B		
SRF-02-01	117023	U	5	µg/kg	1.35	EPA8260B		
SRF-02-02	117024	U	5	µg/kg	1.35	EPA8260B		
SRF-02-03	117025	U	5	µg/kg	1.35	EPA8260B		
SRF-02-03-A	117026	U	5	µg/kg	1.35	EPA8260B		
SRF-03-01	117027	U	5	µg/kg	1.35	EPA8260B		
SRF-03-02	117028	U	5	µg/kg	1.35	EPA8260B		
SRF-03-03	117029	U	5	µg/kg	1.35	EPA8260B		
SRF-03-04	117030	U	5	µg/kg	1.35	EPA8260B		
SRF-04-01	117031	U	5	µg/kg	1.35	EPA8260B		
SRF-04-02	117032	U	5	µg/kg	1.35	EPA8260B		
SRF-04-03	117033	U	5	µg/kg	1.35	EPA8260B		
SRF-05-01	117034	U	5	µg/kg	1.35	EPA8260B		
SRF-05-02	117035	U	5	µg/kg	1.35	EPA8260B		
SRF-05-03	117036	U	5	µg/kg	1.35	EPA8260B		
SRF-06-01	117037	U	5	µg/kg	1.35	EPA8260B		
SRF-06-02	117038	U	5	µg/kg	1.35	EPA8260B		
SRF-06-03	117039	U	5	µg/kg	1.35	EPA8260B		
SRF-06-03-A	117040	U	5	µg/kg	1.35	EPA8260B		
SRF-07-01	117041	U	5	µg/kg	1.35	EPA8260B		
SRF-07-02	117042	U	5	µg/kg	1.35	EPA8260B		
SRF-07-03	117043	U	5	µg/kg	1.35	EPA8260B		

ANALYTE: Tritium
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0	pCi/g	0.157	EPIA-002B		
SRF-01-02	117019	U	0.0751	pCi/g	0.171	EPIA-002B		
SRF-01-03	117020	U	0.0205	pCi/g	0.132	EPIA-002B		
SRF-01-04	117021	U	0.0632	pCi/g	0.144	EPIA-002B		
SRF-01-04	117021	U	0.0155	pCi/g	0.142	EPIA-002B		
SRF-01-05	117022	U	-0.0433	pCi/g	0.214	EPIA-002B		
SRF-02-01	117023	U	-0.0229	pCi/g	0.0984	EPIA-002B		
SRF-02-02	117024	U	-0.0264	pCi/g	0.107	EPIA-002B		
SRF-02-03	117025	U	-0.0238	pCi/g	0.162	EPIA-002B		
SRF-02-03-A	117026	U	-0.0247	pCi/g	0.13	EPIA-002B		

SRF-03-01	117027	U	0	pCi/g	0.144	EPIA-002B		
SRF-03-01	117027	U	-0.01	pCi/g	0.137	EPIA-002B		
SRF-03-02	117028	U	0.0312	pCi/g	0.145	EPIA-002B		
SRF-03-03	117029	U	-0.0231	pCi/g	0.179	EPIA-002B		
SRF-03-04	117030	U	0.151	pCi/g	0.175	EPIA-002B		
SRF-04-01	117031		4.07	pCi/g	0.127	EPIA-002B		
SRF-04-02	117032		1.31	pCi/g	0.155	EPIA-002B		
SRF-04-03	117033	U	0.105	pCi/g	0.116	EPIA-002B		
SRF-05-01	117034		3.32	pCi/g	0.127	EPIA-002B		
SRF-05-02	117035		0.425	pCi/g	0.108	EPIA-002B		
SRF-05-03	117036		1.28	pCi/g	0.112	EPIA-002B		
SRF-06-01	117037	J	0.151	pCi/g	0.12	EPIA-002B	I	
SRF-06-02	117038	J	0.262	pCi/g	0.146	EPIA-002B	I	
SRF-06-03	117039	J	0.13	pCi/g	0.0974	EPIA-002B	I	
SRF-06-03-A	117040	J	0.178	pCi/g	0.103	EPIA-002B	I	
SRF-07-01	117041	U	0.0187	pCi/g	0.17	EPIA-002B		
SRF-07-02	117042	J	0.229	pCi/g	0.19	EPIA-002B	I	
SRF-07-03	117043	U	0	pCi/g	0.0844	EPIA-002B		

ANALYTE: Uranium-233/234
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.00283	pCi/g	0.0205	EPIA-011B		
SRF-01-02	117019	U	0.0232	pCi/g	0.0256	EPIA-011B		
SRF-01-03	117020	U	0.00685	pCi/g	0.023	EPIA-011B		
SRF-01-04	117021	U	-0.00341	pCi/g	0.0268	EPIA-011B		
SRF-01-05	117022	U	-0.00837	pCi/g	0.061	EPIA-011B		
SRF-02-01	117023	U	0.0164	pCi/g	0.0277	EPIA-011B		
SRF-02-02	117024	U	0.00679	pCi/g	0.0144	EPIA-011B		
SRF-02-03	117025	U	0.00548	pCi/g	0.0203	EPIA-011B		
SRF-02-03-A	117026	U	-0.00104	pCi/g	0.0265	EPIA-011B		
SRF-03-01	117027	U	0.000518	pCi/g	0.047	EPIA-011B		
SRF-03-02	117028	U	0.0145	pCi/g	0.0256	EPIA-011B		
SRF-03-02	117028	U	0.0194	pCi/g	0.0314	EPIA-011B		
SRF-03-03	117029	U	0.000119	pCi/g	0.0224	EPIA-011B		
SRF-03-04	117030	U	0.00156	pCi/g	0.0457	EPIA-011B		
SRF-04-01	117031	U	0.0154	pCi/g	0.0222	EPIA-011B		
SRF-04-02	117032	U	0.00409	pCi/g	0.0297	EPIA-011B		
SRF-04-03	117033	U	0.00548	pCi/g	0.0167	EPIA-011B		
SRF-05-01	117034	U	0.0156	pCi/g	0.0195	EPIA-011B		
SRF-05-02	117035	U	0.0104	pCi/g	0.0408	EPIA-011B		
SRF-05-03	117036	U	0.000186	pCi/g	0.0219	EPIA-011B		
SRF-06-01	117037	R	0.019	pCi/g	0.00949	EPIA-011B		4

ANALYTE: Uranium-233/234 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-06-02	117038	U	-0.000488	pCi/g	0.03	EPIA-011B		
SRF-06-03	117039	U	0.00849	pCi/g	0.0138	EPIA-011B		
SRF-06-03-A	117040	U	0.00294	pCi/g	0.016	EPIA-011B		
SRF-07-01	117041	U	0.00216	pCi/g	0.0252	EPIA-011B		
SRF-07-02	117042	U	0.00153	pCi/g	0.0449	EPIA-011B		
SRF-07-03	117043	U	7.1E-05	pCi/g	0.0134	EPIA-011B		
SRF-07-03	117043	U	0.00995	pCi/g	0.0131	EPIA-011B		

ANALYTE: Uranium-235
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.000545	pCi/g	0.0221	EPIA-011B		
SRF-01-02	117019	U	0.00651	pCi/g	0.0195	EPIA-011B		
SRF-01-03	117020	U	-0.00258	pCi/g	0.0203	EPIA-011B		
SRF-01-04	117021	U	0.000996	pCi/g	0.0247	EPIA-011B		
SRF-01-05	117022	U	-0.00575	pCi/g	0.0453	EPIA-011B		
SRF-02-01	117023	U	0.000961	pCi/g	0.0239	EPIA-011B		
SRF-02-02	117024	U	-0.000914	pCi/g	0.0178	EPIA-011B		
SRF-02-03	117025	U	0.00205	pCi/g	0.0142	EPIA-011B		
SRF-02-03-A	117026	U	-0.00188	pCi/g	0.0181	EPIA-011B		
SRF-03-01	117027	U	0.0045	pCi/g	0.0327	EPIA-011B		
SRF-03-02	117028	U	0.00799	pCi/g	0.024	EPIA-011B		
SRF-03-02	117028	U	-0.00198	pCi/g	0.0257	EPIA-011B		
SRF-03-03	117029	U	0.00322	pCi/g	0.0281	EPIA-011B		
SRF-03-04	117030	U	0.000174	pCi/g	0.0328	EPIA-011B		
SRF-04-01	117031	U	0.00399	pCi/g	0.012	EPIA-011B		
SRF-04-02	117032	U	-0.00473	pCi/g	0.0319	EPIA-011B		
SRF-04-03	117033	U	0.00183	pCi/g	0.0127	EPIA-011B		
SRF-05-01	117034	U	-0.00187	pCi/g	0.018	EPIA-011B		
SRF-05-02	117035	U	0.00417	pCi/g	0.0303	EPIA-011B		
SRF-05-03	117036	U	0.00177	pCi/g	0.0123	EPIA-011B		
SRF-06-01	117037	U	0	pCi/g	0.00952	EPIA-011B		
SRF-06-02	117038	U	-0.00796	pCi/g	0.0362	EPIA-011B		
SRF-06-03	117039	U	0.00398	pCi/g	0.00597	EPIA-011B		
SRF-06-03-A	117040	U	0.0023	pCi/g	0.00691	EPIA-011B		
SRF-07-01	117041	U	0.00196	pCi/g	0.0136	EPIA-011B		
SRF-07-02	117042	U	0.000171	pCi/g	0.0322	EPIA-011B		
SRF-07-03	117043	U	0.000142	pCi/g	0.0168	EPIA-011B		
SRF-07-03	117043	U	0.00521	pCi/g	0.00997	EPIA-011B		

ANALYTE: Uranium-238
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.00685	pCi/g	0.0169	EPIA-011B		
SRF-01-02	117019	R	0.024	pCi/g	0.0229	EPIA-011B		4
SRF-01-03	117020	U	-0.00118	pCi/g	0.023	EPIA-011B		
SRF-01-04	117021	R	0.0142	pCi/g	0.0106	EPIA-011B		4
SRF-01-05	117022	U	-0.0043	pCi/g	0.0415	EPIA-011B		
SRF-02-01	117023	U	0.000959	pCi/g	0.0238	EPIA-011B		
SRF-02-02	117024	R	0.0119	pCi/g	0.0109	EPIA-011B		4
SRF-02-03	117025	U	0.0014	pCi/g	0.0167	EPIA-011B		

ANALYTE: Uranium-238 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-02-03-A	117026	U	0.0078	pCi/g	0.0078	EPIA-011B		
SRF-03-01	117027	R	0.0248	pCi/g	0.0228	EPIA-011B		4
SRF-03-02	117028	U	0.0125	pCi/g	0.0239	EPIA-011B		
SRF-03-02	117028	U	0.0114	pCi/g	0.0217	EPIA-011B		
SRF-03-03	117029	U	0.00226	pCi/g	0.0157	EPIA-011B		
SRF-03-04	117030	U	0.0109	pCi/g	0.0269	EPIA-011B		
SRF-04-01	117031	U	0.000723	pCi/g	0.0204	EPIA-011B		
SRF-04-02	117032	U	-0.00189	pCi/g	0.0244	EPIA-011B		
SRF-04-03	117033	U	0.00605	pCi/g	0.0149	EPIA-011B		
SRF-05-01	117034	U	0.00775	pCi/g	0.00775	EPIA-011B		
SRF-05-02	117035	U	0.0131	pCi/g	0.0277	EPIA-011B		

SRF-05-03	117036	U	0.00408	pCi/g	0.0122	EPIA-011B		
SRF-06-01	117037	U	0.00949	pCi/g	0.00949	EPIA-011B		
SRF-06-02	117038	U	-0.00281	pCi/g	0.0288	EPIA-011B		
SRF-06-03	117039	U	0.00198	pCi/g	0.00595	EPIA-011B		
SRF-06-03-A	117040	U	0.00404	pCi/g	0.0121	EPIA-011B		
SRF-07-01	117041	U	0.000821	pCi/g	0.0232	EPIA-011B		
SRF-07-02	117042	U	0.00221	pCi/g	0.0265	EPIA-011B		
SRF-07-03	117043	U	0.00135	pCi/g	0.00937	EPIA-011B		
SRF-07-03	117043	U	0.00143	pCi/g	0.00994	EPIA-011B		

ANALYTE: Vinyl acetate
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	75	µg/kg	10.5	EPA8260B		
SRF-01-02	117019	U	75	µg/kg	10.5	EPA8260B		
SRF-01-03	117020	U	75	µg/kg	10.5	EPA8260B		
SRF-01-04	117021	U	75	µg/kg	10.5	EPA8260B		
SRF-01-05	117022	U	75	µg/kg	10.5	EPA8260B		
SRF-02-01	117023	U	75	µg/kg	10.5	EPA8260B		
SRF-02-02	117024	U	75	µg/kg	10.5	EPA8260B		
SRF-02-03	117025	U	75	µg/kg	10.5	EPA8260B		
SRF-02-03-A	117026	U	75	µg/kg	10.5	EPA8260B		
SRF-03-01	117027	U	75	µg/kg	10.5	EPA8260B		
SRF-03-02	117028	U	75	µg/kg	10.5	EPA8260B		
SRF-03-03	117029	U	75	µg/kg	10.5	EPA8260B		
SRF-03-04	117030	U	75	µg/kg	10.5	EPA8260B		
SRF-04-01	117031	U	75	µg/kg	10.5	EPA8260B		
SRF-04-02	117032	U	75	µg/kg	10.5	EPA8260B		
SRF-04-03	117033	U	75	µg/kg	10.5	EPA8260B		
SRF-05-01	117034	U	75	µg/kg	10.5	EPA8260B		
SRF-05-02	117035	U	75	µg/kg	10.5	EPA8260B		
SRF-05-03	117036	U	75	µg/kg	10.5	EPA8260B		
SRF-06-01	117037	U	75	µg/kg	10.5	EPA8260B		
SRF-06-02	117038	U	75	µg/kg	10.5	EPA8260B		
SRF-06-03	117039	U	75	µg/kg	10.5	EPA8260B		
SRF-06-03-A	117040	U	75	µg/kg	10.5	EPA8260B		
SRF-07-01	117041	U	75	µg/kg	10.5	EPA8260B		
SRF-07-02	117042	U	75	µg/kg	10.5	EPA8260B		
SRF-07-03	117043	U	75	µg/kg	10.5	EPA8260B		

ANALYTE: Xylenes
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	J	25.8	µg/kg	5	EPA8260B	K	O
SRF-01-02	117019	J	33.6	µg/kg	5	EPA8260B	K	O
SRF-01-03	117020	U	25	µg/kg	5	EPA8260B		
SRF-01-04	117021	J	16	µg/kg	5	EPA8260B	IK	O
SRF-01-05	117022	J	255	µg/kg	5	EPA8260B	K	O
SRF-02-01	117023	J	14.2	µg/kg	5	EPA8260B	IK	O
SRF-02-02	117024	J	34.3	µg/kg	5	EPA8260B	K	O
SRF-02-03	117025	J	13.1	µg/kg	5	EPA8260B	IK	O
SRF-02-03-A	117026	U	25	µg/kg	5	EPA8260B		
SRF-03-01	117027	J	5.89	µg/kg	5	EPA8260B	I	
SRF-03-02	117028		25.1	µg/kg	5	EPA8260B		
SRF-03-03	117029	J	10.9	µg/kg	5	EPA8260B	I	
SRF-03-04	117030		50	µg/kg	5	EPA8260B		
SRF-04-01	117031	J	25	µg/kg	5	EPA8260B	K	O
SRF-04-02	117032	J	20	µg/kg	5	EPA8260B	I	

SRF-04-03	117033	J	8.61	µg/kg	5	EPA8260B	IK	O
SRF-05-01	117034	J	5.99	µg/kg	5	EPA8260B	IK	O
SRF-05-02	117035	J	11.5	µg/kg	5	EPA8260B	I	
SRF-05-03	117036	J	8.05	µg/kg	5	EPA8260B	IK	O
SRF-06-01	117037	J	51.3	µg/kg	5	EPA8260B	K	O
SRF-06-02	117038	U	25	µg/kg	5	EPA8260B		
SRF-06-03	117039	J	5.67	µg/kg	5	EPA8260B	IK	O
SRF-06-03-A	117040		32.4	µg/kg	5	EPA8260B		
SRF-07-01	117041	J	5.55	µg/kg	5	EPA8260B	IK	O
SRF-07-02	117042	J	15.9	µg/kg	5	EPA8260B	IK	O
SRF-07-03	117043	J	5.87	µg/kg	5	EPA8260B	IK	O

ANALYTE: Yttrium-88
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.00144	pCi/g	0.0803	EPIA-013B		
SRF-01-02	117019	U	-0.00316	pCi/g	0.0656	EPIA-013B		
SRF-01-03	117020	U	0.0122	pCi/g	0.0775	EPIA-013B		
SRF-01-04	117021	U	-0.0146	pCi/g	0.0485	EPIA-013B		
SRF-01-05	117022	U	0.0119	pCi/g	0.0574	EPIA-013B		
SRF-01-05	117022	U	-0.00547	pCi/g	0.0586	EPIA-013B		
SRF-02-01	117023	U	0.0152	pCi/g	0.0764	EPIA-013B		
SRF-02-02	117024	U	0.00638	pCi/g	0.0576	EPIA-013B		
SRF-02-03	117025	U	-0.0388	pCi/g	0.0872	EPIA-013B		
SRF-02-03-A	117026	U	0.0237	pCi/g	0.0977	EPIA-013B		
SRF-03-01	117027	U	-0.00252	pCi/g	0.0679	EPIA-013B		
SRF-03-02	117028	U	0.0177	pCi/g	0.0548	EPIA-013B		
SRF-03-03	117029	U	-0.00236	pCi/g	0.0693	EPIA-013B		
SRF-03-04	117030	U	0.00828	pCi/g	0.0436	EPIA-013B		
SRF-04-01	117031	U	0.0136	pCi/g	0.0622	EPIA-013B		
SRF-04-02	117032	U	-0.0251	pCi/g	0.0715	EPIA-013B		
SRF-04-03	117033	U	0.0328	pCi/g	0.103	EPIA-013B		
SRF-05-01	117034	U	0.0016	pCi/g	0.0479	EPIA-013B		
SRF-05-02	117035	U	0.0083	pCi/g	0.0739	EPIA-013B		
SRF-05-03	117036	U	0.00973	pCi/g	0.0779	EPIA-013B		
SRF-06-01	117037	U	-0.00179	pCi/g	0.0683	EPIA-013B		
SRF-06-02	117038	U	-0.00464	pCi/g	0.0551	EPIA-013B		
SRF-06-03	117039	U	-0.0151	pCi/g	0.0678	EPIA-013B		

ANALYTE: Yttrium-88 (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-06-03-A	117040	U	-0.00322	pCi/g	0.0956	EPIA-013B		
SRF-07-01	117041	U	-0.0196	pCi/g	0.098	EPIA-013B		
SRF-07-02	117042	U	-0.00231	pCi/g	0.114	EPIA-013B		
SRF-07-03	117043	U	-0.00343	pCi/g	0.0863	EPIA-013B		
SRF-07-03	117043	U	0.00984	pCi/g	0.0743	EPIA-013B		

ANALYTE: Zinc-65
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	-0.0125	pCi/g	0.139	EPIA-013B		
SRF-01-02	117019	U	-0.00192	pCi/g	0.116	EPIA-013B		
SRF-01-03	117020	U	-0.0219	pCi/g	0.114	EPIA-013B		
SRF-01-04	117021	U	0.0615	pCi/g	0.114	EPIA-013B		
SRF-01-05	117022	U	0.0308	pCi/g	0.111	EPIA-013B		
SRF-01-05	117022	U	0.00905	pCi/g	0.0994	EPIA-013B		

SRF-02-01	117023	U	0.109	pCi/g	0.122	EPIA-013B
SRF-02-02	117024	U	-0.0305	pCi/g	0.104	EPIA-013B
SRF-02-03	117025	U	0.0773	pCi/g	0.151	EPIA-013B
SRF-02-03-A	117026	U	-0.0228	pCi/g	0.138	EPIA-013B
SRF-03-01	117027	U	-0.0121	pCi/g	0.128	EPIA-013B
SRF-03-02	117028	U	0.0849	pCi/g	0.125	EPIA-013B
SRF-03-03	117029	U	-0.0198	pCi/g	0.106	EPIA-013B
SRF-03-04	117030	U	0.0138	pCi/g	0.0811	EPIA-013B
SRF-04-01	117031	U	-0.0117	pCi/g	0.115	EPIA-013B
SRF-04-02	117032	U	-0.0767	pCi/g	0.158	EPIA-013B
SRF-04-03	117033	U	-0.0511	pCi/g	0.138	EPIA-013B
SRF-05-01	117034	U	-0.0392	pCi/g	0.108	EPIA-013B
SRF-05-02	117035	U	0.0243	pCi/g	0.138	EPIA-013B
SRF-05-03	117036	U	-0.0397	pCi/g	0.108	EPIA-013B
SRF-06-01	117037	U	0.0543	pCi/g	0.157	EPIA-013B
SRF-06-02	117038	U	-0.0389	pCi/g	0.0855	EPIA-013B
SRF-06-03	117039	U	-0.0666	pCi/g	0.12	EPIA-013B
SRF-06-03-A	117040	U	0.00423	pCi/g	0.168	EPIA-013B
SRF-07-01	117041	U	-0.00653	pCi/g	0.168	EPIA-013B
SRF-07-02	117042	U	0.0628	pCi/g	0.201	EPIA-013B
SRF-07-03	117043	U	-0.00123	pCi/g	0.187	EPIA-013B
SRF-07-03	117043	U	-0.0264	pCi/g	0.123	EPIA-013B

ANALYTE: Zinc
Analytical Group: *Metals (total recoverable)*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018		14.1	mg/kg	0.168	EPA6010B		
SRF-01-02	117019		15.2	mg/kg	0.176	EPA6010B		
SRF-01-03	117020		6.96	mg/kg	0.168	EPA6010B		
SRF-01-04	117021		19.5	mg/kg	0.171	EPA6010B		
SRF-01-05	117022		17.9	mg/kg	0.17	EPA6010B		
SRF-02-01	117023		23.6	mg/kg	0.173	EPA6010B		
SRF-02-02	117024		18.6	mg/kg	0.178	EPA6010B		
SRF-02-03	117025		12.6	mg/kg	0.185	EPA6010B		
SRF-02-03-A	117026		21.5	mg/kg	0.175	EPA6010B		
SRF-03-01	117027		12.4	mg/kg	0.184	EPA6010B		

ANALYTE: Zinc (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-03-02	117028		16.3	mg/kg	0.18	EPA6010B		
SRF-03-03	117029		23.8	mg/kg	0.173	EPA6010B		
SRF-03-04	117030		36.2	mg/kg	0.181	EPA6010B		
SRF-04-01	117031		22.2	mg/kg	0.178	EPA6010B		
SRF-04-02	117032		16.9	mg/kg	0.17	EPA6010B		
SRF-04-03	117033		5.98	mg/kg	0.184	EPA6010B		
SRF-05-01	117034		15.7	mg/kg	0.18	EPA6010B		
SRF-05-02	117035		24	mg/kg	0.176	EPA6010B		
SRF-05-03	117036		10.6	mg/kg	0.173	EPA6010B		
SRF-06-01	117037		28	mg/kg	0.176	EPA6010B		
SRF-06-02	117038		17.9	mg/kg	0.171	EPA6010B		
SRF-06-03	117039		11.5	mg/kg	0.176	EPA6010B		
SRF-06-03-A	117040		18	mg/kg	0.184	EPA6010B		
SRF-07-01	117041		20.8	mg/kg	0.178	EPA6010B		
SRF-07-02	117042		24.6	mg/kg	0.178	EPA6010B		
SRF-07-03	117043		15.1	mg/kg	0.17	EPA6010B		

ANALYTE: Zirconium-95
Analytical Group: *Radionuclides*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-01-01	117018	U	0.0173	pCi/g	0.13	EPIA-013B		
SRF-01-02	117019	U	0.0348	pCi/g	0.112	EPIA-013B		
SRF-01-03	117020	U	-0.0247	pCi/g	0.112	EPIA-013B		
SRF-01-04	117021	U	0.0114	pCi/g	0.105	EPIA-013B		
SRF-01-05	117022	U	0.00348	pCi/g	0.101	EPIA-013B		
SRF-01-05	117022	U	0.00184	pCi/g	0.0993	EPIA-013B		
SRF-02-01	117023	U	0.0612	pCi/g	0.138	EPIA-013B		
SRF-02-02	117024	U	0.0125	pCi/g	0.0955	EPIA-013B		
SRF-02-03	117025	U	0.00407	pCi/g	0.164	EPIA-013B		
SRF-02-03-A	117026	U	0.0143	pCi/g	0.143	EPIA-013B		
SRF-03-01	117027	U	0.0463	pCi/g	0.136	EPIA-013B		
SRF-03-02	117028	U	0.0159	pCi/g	0.109	EPIA-013B		
SRF-03-03	117029	U	-0.079	pCi/g	0.109	EPIA-013B		
SRF-03-04	117030	U	0.00882	pCi/g	0.0676	EPIA-013B		
SRF-04-01	117031	U	0.0125	pCi/g	0.117	EPIA-013B		
SRF-04-02	117032	U	0.0651	pCi/g	0.173	EPIA-013B		
SRF-04-03	117033	U	-0.0114	pCi/g	0.139	EPIA-013B		
SRF-05-01	117034	U	-0.00215	pCi/g	0.109	EPIA-013B		
SRF-05-02	117035	U	-0.00859	pCi/g	0.127	EPIA-013B		
SRF-05-03	117036	U	0.00296	pCi/g	0.119	EPIA-013B		
SRF-06-01	117037	U	0.0643	pCi/g	0.154	EPIA-013B		
SRF-06-02	117038	U	0.0417	pCi/g	0.0947	EPIA-013B		
SRF-06-03	117039	U	0.0122	pCi/g	0.136	EPIA-013B		
SRF-06-03-A	117040	U	0.0199	pCi/g	0.147	EPIA-013B		
SRF-07-01	117041	U	0.054	pCi/g	0.184	EPIA-013B		
SRF-07-02	117042	U	0.13	pCi/g	0.188	EPIA-013B		
SRF-07-03	117043	U	-0.0442	pCi/g	0.101	EPIA-013B		
SRF-07-03	117043	U	-0.0093	pCi/g	0.176	EPIA-013B		

Table D.9 Results for Blanks Sorted by Analyte

ANALYTE: Acetone
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	5	µg/L	3.7	EPA8260B		
SRF-TB-02-B	117045	U	5	µg/L	3.7	EPA8260B		
SRF-TB-03-B	117046	U	5	µg/L	3.7	EPA8260B		

ANALYTE: Benzene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.3	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.3	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.3	EPA8260B		

ANALYTE: Bromodichloromethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.4	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.4	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.4	EPA8260B		

ANALYTE: Bromoform
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.4	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.4	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.4	EPA8260B		

ANALYTE: Bromomethane (Methyl bromide)
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.3	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.3	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.3	EPA8260B		

ANALYTE: Carbon disulfide
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	5	µg/L	1.8	EPA8260B		
SRF-TB-02-B	117045	U	5	µg/L	1.8	EPA8260B		

ANALYTE: Carbon disulfide (cont.)

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-03-B	117046	U	5	µg/L	1.8	EPA8260B		

ANALYTE: Carbon tetrachloride
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.2	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.2	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.2	EPA8260B		

ANALYTE: Chlorobenzene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.3	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.3	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.3	EPA8260B		

ANALYTE: Chloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.3	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.3	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.3	EPA8260B		

ANALYTE: Chloroethene (Vinyl chloride)
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.4	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.4	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.4	EPA8260B		

ANALYTE: Chloroform
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.7	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.7	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.7	EPA8260B		

ANALYTE: Chloromethane (Methyl chloride)
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.2	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.2	EPA8260B		

SRF-TB-03-B	117046	U	1	µg/L	0.2	EPA8260B		

ANALYTE: Dibromochloromethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.3	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.3	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.3	EPA8260B		

ANALYTE: 1,1-Dichloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.4	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.4	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.4	EPA8260B		

ANALYTE: 1,2-Dichloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.2	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.2	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.2	EPA8260B		

ANALYTE: cis-1,2-Dichloroethylene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.7	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.7	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.7	EPA8260B		

ANALYTE: 1,1-Dichloroethylene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.7	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.7	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.7	EPA8260B		

ANALYTE: trans-1,2-Dichloroethylene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.7	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.7	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.7	EPA8260B		

ANALYTE: Dichloromethane (Methylene chloride)
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	JU	4.16	µg/L	1.2	EPA8260B	IV	
SRF-TB-02-B	117045	JU	3.99	µg/L	1.2	EPA8260B	IV	
SRF-TB-03-B	117046	JU	3.39	µg/L	1.2	EPA8260B	IV	

ANALYTE: 1,2-Dichloropropane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.2	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.2	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.2	EPA8260B		

ANALYTE: cis-1,3-Dichloropropene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.3	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.3	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.3	EPA8260B		

ANALYTE: trans-1,3-Dichloropropene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.3	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.3	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.3	EPA8260B		

ANALYTE: Ethylbenzene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.3	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.3	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.3	EPA8260B		

ANALYTE: 2-Hexanone
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	5	µg/L	3.2	EPA8260B		
SRF-TB-02-B	117045	U	5	µg/L	3.2	EPA8260B		
SRF-TB-03-B	117046	U	5	µg/L	3.2	EPA8260B		

ANALYTE: Methyl ethyl ketone
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	10	µg/L	5.9	EPA8260B		
SRF-TB-02-B	117045	U	10	µg/L	5.9	EPA8260B		
SRF-TB-03-B	117046	U	10	µg/L	5.9	EPA8260B		

ANALYTE: Methyl isobutyl ketone
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	5	µg/L	1.6	EPA8260B		
SRF-TB-02-B	117045	U	5	µg/L	1.6	EPA8260B		
SRF-TB-03-B	117046	U	5	µg/L	1.6	EPA8260B		

ANALYTE: Styrene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.2	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.2	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.2	EPA8260B		

ANALYTE: 1,1,2,2-Tetrachloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.5	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.5	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.5	EPA8260B		

ANALYTE: Tetrachloroethylene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.7	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.7	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.7	EPA8260B		

ANALYTE: Toluene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.5	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.5	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.5	EPA8260B		

ANALYTE: 1,1,1-Trichloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.2	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.2	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.2	EPA8260B		

ANALYTE: 1,1,2-Trichloroethane
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.4	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.4	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.4	EPA8260B		

ANALYTE: Trichloroethylene
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	1	µg/L	0.6	EPA8260B		
SRF-TB-02-B	117045	U	1	µg/L	0.6	EPA8260B		
SRF-TB-03-B	117046	U	1	µg/L	0.6	EPA8260B		

ANALYTE: Xylenes
Analytical Group: *Volatile Organic Compounds*

Survey ID	Sample ID	FG	Result	Unit	ssMDL	Method	SC	E
SRF-TB-01-B	117044	U	2	µg/L	1.1	EPA8260B		
SRF-TB-02-B	117045	U	2	µg/L	1.1	EPA8260B		
SRF-TB-03-B	117046	U	2	µg/L	1.1	EPA8260B		

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Appendix E: Data Management/Administrative Files

This section discusses the generation, processing, and storage of paper and computer records produced during the completion of this project. The processing of the materials follows methodology prescribed by EGG EPD/EMS.

EGG establishes administrative files for each project that are maintained as permanent SRS records. The following materials are placed in the administrative files:

- Bound sample-collection logbooks
- Original copies of the chain-of-custody forms
- Case narratives from the laboratories
- Data-validation logbooks
- Data-entry cover sheets for data files created by EGG
- Copies of all correspondence between data validation personnel and the laboratories

EGG generates computer data files from paper records using double-entry methods to ensure a low transcription error rate. Computer data files for analytical data also are received from the laboratories. Changes to the data are recorded in the data-validation logbook, approved by the project technical manager, and confirmed through a computer program by comparing the modified and original data files. EGG stores the final computer data files, original source files, and computer listings of all changes made to the original files in the administrative files.

Access to the administrative files remains with the manager of EGG. Paper materials eventually will be transferred to permanent box storage; however, EGG plans to make the final data files available to SRS computer users indefinitely. Please contact the manager of EGG to obtain access to this data.

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Appendix F: Glossary

Acceptance limits: The range of acceptable analytical results established by a laboratory for spike recovery, duplicate precision, and contamination levels.

Accuracy: The closeness of agreement between an observed value and an accepted reference value.

Activity: The rate of decay of a radioactive source at a given time.

Advisory range: The limits of acceptable analytical results established by the provider of certified quality control standards.

Aliquot: A measured portion of a sample taken for analysis.

Analysis: The separation and determination of the component parts or a specific property or element contained within a sample. The determination of the concentration or activity of an analyte contained within a sample.

Analysis date/time: The date and military time (24-hour clock) of the start of analysis on a prepared sample.

Analyte: The specific compound, element, isotope, or radionuclide of interest that an analyst seeks to determine.

Analytical batch: A group of samples of the same matrix analyzed together using the same method and containing the required number of method blanks, matrix spike samples, laboratory control samples, and duplicate samples.

Analytical narrative: A portion of the data package that includes laboratory, contract, and sample identification. The analytical narrative also contains descriptive documentation of any problems encountered in processing the samples, along with corrective action taken and problems resolved.

Analytical sample: Any solution or medium introduced into an instrument on which an analysis is performed, excluding instrument calibration standards, calibration verification standards, and calibration blanks.

Appendix IX analytes: The list of analytes specified in Appendix IX of the *Code of Federal Regulations, Title 40, Part 264* that is required by the Resource Conservation and Recovery Act.

Aquifer: A geologic formation, group of formations, or part of a formation capable of yielding groundwater to wells or springs.

Associated sample: Any sample that is related to another sample or quality control sample. Some examples are the parent sample of a matrix spike, a sample in a preparation batch, a split sample, a duplicate sample, and a sample related to a blank.

Batch: A group of samples prepared at the same time, in the same location, using the same method.

Becquerel: One Becquerel is a rate of one disintegration per second and is equal to 2.7×10^{-11} Curie.

Blank: An artificial sample designed to monitor the introduction of artifacts into the measurement process. For aqueous samples, deionized water is used as the blank matrix. A universal matrix does not exist for solid samples; therefore, no matrix blank is routinely used. There are several types of blanks that monitor a variety of processes.

- A *Field Blank for Soils* consists of DI water or dry quartz sand placed in a stainless steel bowl and exposed to the atmosphere while the associated sample is being taken. The field blank is shipped to the laboratory with the samples. The field blank measures contamination introduced during sample collection.
- A *Field Blank for Groundwater* is a sample container filled with DI water and capped in the WSRC well building. It is taken to the field during sampling, but is not opened. It is shipped to the laboratory with the samples to be analyzed.
- A *Rinsate* or *Equipment Blank* is deionized water poured over or through sample collection devices that tests for cleanliness of sampling equipment.
- A *Trip Blank* is shipped to the laboratory in the same cooler with the sample containers for volatile organic analytes. It provides a test for contamination from sample preservation and transport as well as sample storage, preparation, and analysis.
- A *Method Blank* is prepared in the laboratory and analyzed exactly as the samples it accompanies. It is a test for contamination in laboratory sample preparation and analyses.

These blanks are handled by the laboratory as actual samples; however, they are not to be used for matrix spike or duplicate samples.

Blank spike (BS): See **Laboratory Control Sample**

Calibration: The establishment of an instrument response curve or mathematical correlation based on the measured response of known concentrations of an analyte or group of analytes.

Calibration blank: A volume of deionized water in the same matrix as the calibration standards, an empty planchet, or the instrument geometry that is analyzed to establish the instrument accuracy at the low end of the calibration curve.

Calibration verification: The periodic analysis of one or more standards independent of the calibration standards to verify the accuracy and stability of the initial instrument calibration.

Cation exchange capacity: The sum of exchangeable cations a soil can absorb expressed in milli-equivalents per 100 grams of soil. The cation exchange capacity is determined by sampling to the depth of solid waste placement and analyzing by the summation method for distinctly acid soils or the sodium acetate method for neutral, calcareous, or saline soils.

Certified value: The known concentration of an analyte in a reference sample as affirmed by the preparer.

Chain-of-custody (COC) form: A document designed to trace the custody of a sample(s) from the point of origin to final disposition, with the intent of legally proving that custody remained intact and that tampering or substitutions were precluded.

Codes: Qualification codes, or modifiers, are used to convey additional information about an analytical result in data format AN98.

- *Functional Guideline (FG) Codes* describe the analytical result.

- *STORET Codes* describe issues arising during the analytical process.
- *EMS Codes* contain additional information to aid the data validators in qualifyng the data.

See *Appendix D* for additional information and the specific qualifier codes used.

Coefficient of variation (CV): The standard deviation as a percent of the arithmetic mean.

Comparability: The degree of confidence with which one set of data can be compared to a related set of data.

Completeness: A measure of the amount of valid data obtained from a measurement system relative to the amount that was expected to be obtained under current, normal conditions.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):A federal law passed in 1980 and periodically modified by the Superfund Amendments and Reauthorization Acts passed by the U.S. Congress. The acts created a special tax that goes into a trust fund, commonly known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under the program, the EPA has the following options:

- pay for the site cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work
- take legal action to force parties responsible for site contamination to clean up the site or repay the federal government for the cost of the cleanup

Concentration: The relative fraction of one substance in another, normally expressed in weight percent, in volume percent, as a weight per volume ratio, or as a weight per weight ratio.

Confidence limits: The limits within which, at some specified level of probability, the true value of a result lies.

Confined aquifer: An aquifer bounded above and below by impermeable beds or by beds of distinctly lower permeability than the aquifer itself. Also, an aquifer containing confined groundwater.

Congener: Any one particular member of a class of chemical substances. A specific congener is denoted by a unique chemical structure e.g., 2,3,7,8-tetrachlorodibenzofuran.

Contaminant: A chemical or biological substance that is harmful if it is incorporated into, onto, or ingested by organisms, consumers of organisms, or users of the environment.

Continuing calibration blank (CCB): A blank analyzed periodically during an analytical run to detect carryover contamination.

Continuing calibration verification (CCV): The periodic analysis of one or more standards during an analytical run to verify that the initial calibration continues to be valid.

Contract-required quantitation limit (CRQL): The lowest required concentration of an analyte the laboratory may report for a specific contract. The contract-required quantitation limit is usually greater than the method detection limit.

Control limits: A range within which specified measurement results must fall to be compliant. Control limits may be mandatory, requiring corrective action if exceeded, or advisory, requiring that noncompliant data be flagged.

Correlation coefficient (r): A numeric value (r) that indicates the degree of dependence between two variables (concentration vs. response). The more dependent they are, the closer the value is to one. The correlation coefficient is determined on the basis of the least squares function.

Custody: Immediate charge, control, or possession exercised by a competent authority on a sample.

Data quality objectives: The objectives for precision, accuracy, representativeness, completeness, comparability, and detection levels that are required to support the intended use of the data.

Definitive data: Data for which the accuracy of the concentration level and the identity of the analyte of interest are assessed. Definitive data are determined for samples considered essential in the decision-making process.

Deionized (DI) water: Water from which all charged species or ionizable organic and inorganic salts are removed by means of ion exchange.

Detection: The act of measuring the quantity of a property, compound, or element contained in a sample.

Dilution factor: The mathematical factor by which a sample is diluted to bring the concentration of an analyte in the sample within the analytical range of the instrument (e.g., 1 mL of sample + 9 mL of solvent = 1:10 dilution, or a dilution factor of 10).

Dry weight: The weight of a sample based on percent solids or the weight after drying in an oven for a specified time period at a specified temperature.

Electronic data deliverable (EDD): The summary of analytical results on machine- readable media received from a laboratory.

EMS Code: See **Codes**.

Environmental sample record: Any groundwater, soil, surface water, vegetation, trip blank, or field blank sample record. Laboratory duplicate records are not considered environmental sample records.

Estimated quantitation limit (EQL): The minimum concentration of a substance that can be reliably measured and reported within specified limits of precision and accuracy during routine laboratory operating conditions.

FG Code: See **Codes**.

Field blank: See **Blank**.

Field duplicate: A second sample taken at the same time as the primary sample and sent to the laboratory for analysis as an unknown. The field duplicate is used to determine the precision of the entire sampling and analytical process.

Field sample: The material received at the laboratory to be analyzed that is contained in single or multiple containers and identified by a unique WSRC sample identification number.

Frequency: The specified intervals between samples in which quality control samples or standards must be analyzed during an analytical run.

Functional Guideline Code (FG Code): See **Codes.**

Groundwater: Water in a saturated zone or stratum beneath the surface of land.

Half-life: The time required for one-half of the initial number of radioactive nuclei of a specific isotopic species to undergo radioactive decay.

Holding time: The maximum amount of time allowed for samples to be held from sample collection to laboratory analysis.

Independent standard: A laboratory-prepared standard solution that is composed of analytes from a different source than those used in the standards for the initial calibration.

Initial calibration: The analysis of standards containing varying concentration levels of the analytes of interest in order to establish the ratio of concentration vs. response across the working range of the analytical technique. The initial calibration is used to define the linearity and dynamic range of response of the detector to the target analytes.

Initial calibration blank (ICB): A blank analyzed immediately after the initial calibration verification but before the analytical run to detect carryover contamination.

Initial calibration verification (ICV): The analysis of one or more standards immediately after the initial calibration but before the analytical run to verify that the initial calibration was valid.

Instrument detection limit (IDL): The minimum concentration of an analyte that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. It is determined from analysis of a deionized water blank containing the analyte.

Interference check sample (ICS): Two solutions, one consisting of interferents only (ICSA) and one consisting of interferents mixed with the analytes (ICSAB), that are analyzed consecutively to verify the interelement and background correction factors for inductively coupled plasma metal analyses.

Interferents: Substances that affect the analysis for the element of interest.

Interlaboratory comparison: The comparison of results from split samples analyzed by two laboratories.

Internal standard: A chemically inert compound not expected to occur in an environ-mental sample that is added to a sample prior to analysis; it is used as an instrument response check.

Intralaboratory comparison: The comparison of duplicate results from a single sample analyzed by a laboratory.

Isomer: One of two or more chemical substances having the same elementary percentage composition and molecular weight but differing in structure and properties.

Isotope: One of a number of specific atoms with identical atomic numbers but with discrete atomic weights, or similarly specific atoms whose nuclei have the same number of protons but different numbers of neutrons.

Laboratory control sample (LCS): A control sample of known composition. Aqueous and solid laboratory control samples are analyzed using the same sample preparation, reagents, and analytical methods employed for the samples received.

Laboratory data records review (LDRR): The investigation of technical data validation issues that are not adequately addressed by the computer checking of EDDs, the review of the analytical narratives, and the review of the COC forms. The review is conducted at the laboratory using the laboratory's instrument logs, raw analytical data, and other pertinent documentation.

Laboratory duplicate: A second aliquot of a homogenized sample that is analyzed as an individual sample, using the same procedure. This duplicate is used to determine the precision of the method.

Laboratory ID: The identifier assigned by the laboratory for its internal use during the analytical process.

Linear range, linear dynamic range: The concentration range over which the calibration curve remains linear.

Lowest practical quantitation limit (LPQL): The lowest concentration of an analyte that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Matrix: The predominant material of which the sample to be analyzed is composed. For the purpose of this document, a sample matrix is either water or soil/sediment.

Matrix interference: The influence of the sample matrix or sample components upon the ability to quantitatively measure compounds in environmental samples.

Matrix spike/matrix spike duplicate: A first and second aliquot of a matrix fortified (spiked) with a known quantity of analyte(s) and subjected to the entire analytical procedure in order to determine the appropriateness of the method for the matrix by measuring accuracy (recovery) and precision (relative percent difference).

Maximum contaminant level (MCL): The maximum permissible level of a contaminant in a specified medium.

Mean relative difference (MRD): The average of the absolute difference of the results from two laboratories for the i^{th} sample that is expressed as a percentage of the mean of both laboratories.

Method blank: See **Blank.**

Method detection limit (MDL): The minimum concentration of an analyte that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. It is determined from analysis of a sample in a given matrix containing the analyte.

Minimum detectable activity (MDA): The smallest quantity of a radionuclide that can be detected in a sample with a 95% confidence level.

Nuclide: General term applied to all isotopes of all elements including stable and radio-active forms. Nuclides are not considered isotopes; rather, a given nuclide is characterized by the number of neutrons and protons contained in the atomic nuclei of that species.

Null hypothesis: A statement that can be tested statistically to determine if there is a significant difference between duplicate/split results.

Parts per billion (ppb)/Parts per million (ppm): Units commonly used to express low concentrations of contaminants. For example, 5 micrograms of benzene in 1 kilogram of soil is 5 ppb; 3 milligrams of nitrate in 1 liter of water is 3 ppm.

Percent moisture: An approximation of the amount of water in a soil/sediment sample determined by drying an aliquot of sample at a specified temperature until constant weight is achieved.

Percent recovery: A measure of recovery that is calculated as the measured value relative to the true value, expressed as a percent.

Percent solids: The proportion of solid in a soil/sediment sample determined by the percent moisture procedure.

Performance evaluation sample: A sample of known composition that may be provided by the EPA or WSRC for laboratory analysis that is used to evaluate laboratory performance.

PicoCurie (pCi): The unit of radiation equivalent to 3.7×10^{2} disintegrations per second.

Precision: The agreement or repeatability of a set of replicate results among themselves, usually expressed in terms of the deviation of a set of results from the arithmetic mean. Precision may be qualified in terms of possible sources of variability, replicability, repeatability, and reproducibility.

Preparation log: An official record of the sample preparation.

Preservative: A chemical compound added to a sample or a physical process (such as cooling) to prevent or slow decomposition or degradation of a target analyte. Physical and chemical preservation may be used in tandem to prevent sample deterioration.

Primary laboratory: The laboratory having a contract with WSRC to perform a specific set of analyses for field-generated samples, duplicates, and blanks. A primary laboratory may subcontract this work to other laboratories.

Qualitative analysis: An analysis to determine the presence or absence of a target analyte.

Quality assurance plan: The documented data quality objectives and the actions to be performed to meet those objectives.

Quality control (QC): The performance of actions that provide a way to control and measure the characteristics of measurement equipment and processes to meet the established data quality objectives.

Quantitative analysis: An analysis to measure or determine the amount of a target compound or analyte within the limits of defined precision and accuracy requirements.

Radionuclide: Any radioactive isotope of an element.

Range: The difference between the maximum and minimum values within a set of values.

RCRA Facility Investigation/Remedial Investigation (RFI/RI) program: The EPA-regulated investigation of a solid-waste management site, including CERCLA and hazardous-substance regulations, with regard to its potential impact on the environment.

Recovery: A determination of accuracy of the analytical procedure made by comparing measured values for a reference or fortified (spiked) sample against the known true reference or spike values.

Reference detection limit (RDL): The detection limit chosen to allow comparison of multiple analyses with different detection limits. For this report, the individual detection limits of at least 90% of the analyses are less than the reference detection limit.

Relative percent difference (RPD): A measure of precision that is calculated as the absolute value of the difference between two results, relative to their arithmetic mean, expressed as a percent.

Reporting limit: The value reported in the result field when an analyte is not detected.

Reproducibility: The precision of measurements of the same sample at different laboratories using the same protocols.

Resolution: The degree to which two signal peaks are separated. Resolution is calculated by dividing the height of the valley between the peaks by the height of the peak being resolved, multiplied by 100.

Resource Conservation and Recovery Act (RCRA): A 1976 federal law that established a regulatory system to define and track hazardous wastes from the time of generation to disposal. The law requires safe and secure procedures to be used in treating, transporting, storing, and disposing of hazardous substances.

Rinsate blank: See **Blank**.

Run: A continuous analytical sequence consisting of prepared samples and all associated quality control measurements.

Sample: A portion of material to be analyzed that is contained in single or multiple containers and identified by a unique sample number.

Sample ID: A unique identification number designated by WSRC for each sample. The WSRC sample ID appears on the sample chain of custody that documents information on that sample.

Sample matrix: All of the chemical components and physical characteristics of a sample other than the parameter of interest.

Sample-specific estimated quantitation limit (ssEQL): The estimated quantitation limit multiplied by factors of concentration, dilution, aliquot size, and percent solids.

Sediment: The unconsolidated inorganic and organic material that is suspended in and being transported by surface water or that has settled out and has deposited into beds.

Self-absorption: The internal absorption of radiation by material in which radioactive atoms are located.

Sensitivity: The ability of a measurement system to detect and accurately quantitate a parameter at a critical level within a specific sample matrix. The critical level may be a regulatory maximum contaminant level (MCL), MDA, or risk-based exposure level.

Significance of probability: The probability of observing a statistical value as significant as, or even more significant than, the value actually observed.

Soil: All unconsolidated materials normally found on or near the surface of the earth including, but not limited to, silts, clays, sands, gravel, and small rocks.

Solvent: Liquid that is capable of dissolving another substance.

Split sample: A second aliquot of a sample, generated in the field, that is sent to a secondary laboratory for analysis; a split sample serves as a quality control check.

Standard deviation: The measurement of dispersion about a mean value of a series of observations expressed in the same units as the mean value.

STORET Code: See **Codes**.

Surface water: All water that is open to the atmosphere and subject to surface runoff.

Surrogate: A chemically inert organic compound similar in composition and test performance to an analyte of interest added to samples prior to analysis as a quality control check.

Surrogate recovery: A quality control measurement to monitor unusual matrix effects, gross sample processing errors, etc. It is evaluated for acceptance by determining whether the measured concentration falls within the statistical acceptance limits established by the laboratory.

Target analyte list (TAL): The list of inorganic analytes required by CERCLA.

Target compound list (TCL): The list of organic analytes required by CERCLA.

Technical holding time: The storage time allowed between sample collection and sample analysis when designated preservation and storage techniques are employed. This is determined by the elapsed time in days from the date and time of collection to the date and time of sample preparation and analysis.

- Technical holding time = (sample analysis date and time – sample collection date and time).

Tentatively identified compound (TIC): Chromatographic peak in volatile and semivolatile fraction analysis that is not a target analyte, surrogate, or internal standard.

Time: When required to record time on any deliverable item, time is expressed as military time, i.e., on a 24-hour clock.

Toxicity characteristic leaching procedure (TCLP): An analytical extraction procedure used to determine the mobility of both inorganic and organic analytes present in solid, liquid, and multiphasic wastes.

Tracer: A quantity of a unique radioisotope of the same element added to a sample, chemically prepared, or separated and counted. The quantity of tracer measured is compared to the quantity of target radioactive element measured, and the target quantity is calculated on the basis of unity with the tracer concentration.

Trip blank: See **Blank**.

Wet weight: The weight of a sample aliquot including moisture (undried).