WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

March 26, 2014

Scot Fitzgerald
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Scot Fitzgerald,

REVISED140006 - 848968 [Report ID: 140006]

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) MSC-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Program Plan

This letter contains the following information for sample delivery group WSCF140006

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale
For Lab Manager, Dan T. Smith
WSCF Analytical Lab
(509) 373-4804

Attachments 4
CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages

Including cover page

WSCF SAF Number Cross Reference

Group # WSCF140006
Data Deliverable Date 02/06/14

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F14-004	B2VPR8	140006001	SOIL	01/06/14	01/06/14

ATTACHMENT 2

NARRATIVE

Consisting of 5 pages
Including cover page

Attachment 2
Narrative Rev1
WSCF140006

Revision 1: This case narrative replaces the prior in its entirety. It is also addressing the P&D for missing bromodichloroemthane.

Introduction

A sample was received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The sample was analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), to Contract 39818, Revision 4, "WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, C, D, J and U) may be applicable to this report, as appropriate.

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **C** – Analyte was detected in the blank and was evaluated. Affected sample results in the batch were C flagged (applies to inorganic and wet chemical analyses).
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **B (organic analyses)** – Analyte was detected in the blank and was evaluated. Affected sample results in the batch were B flagged.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.
- **o** – LCS recovery outside established laboratory acceptance limits.

Attachment 2
Narrative Rev1
WSCF140006

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Barium – MS / MSD Relative Percent Difference (RPD) is outside established laboratory limits. The quality control report was flagged for RPD failure.
- Barium – Matrix Spike and Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- Aluminum – Exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
- All other applicable QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- The Internal Standards were inadvertently not spiked into the MS sample. Because of this, concentrations for the MS could not be calculated. Therefore, all the matrix spike recoveries except 1,2-dichloroethane did not meet established laboratory acceptance limits. Affected sample results in this batch were "T" flagged. In addition, the MS/MSD RPDs also failed. The quality control report was flagged for RPD failure.
- 1,2-Dichlorethane, carbon disulfide, 1,1,2-trichloroethane, and 1,1,2,2-tetrachloroethane MSD recoveries did not meet established laboratory acceptance limits. Affected sample results in this batch were "T" flagged.
- The Blank, MS, MSD and sample B2VPR8 (140006001) did not meet the acceptance limits for surrogate 1,2-Dichloroethane-d4. Sample results were not flagged. The quality control report was flagged for surrogate recovery failure.

Narrative

Attachment 2
Narrative Rev1
WSCF140006

- All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

Attachment 2
Narrative Rev1
WSCF140006

Problem and Discrepancy Report

WSCF

SDG WSCF140006

02/26/14

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1. The data package has the following issues:

a) Sample B2VPR8 is missing 8260_VOA_GCMS: Bromodichloromethane.

Resolution: *Provide appropriate correction*

Lab Response: **The compound has been added.**

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 28 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Scot Fitzgerald

Contract # MOA-FH-CHPRC-2008
Group # WSCF140006
Report Date March 26, 2014

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Heather Medley

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140006

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
226405	226406	1	BLANK	103983	BLANK		Anions by Ion Chromatography (Solid)
226405	226406	3	LCS	103984	LCS		Anions by Ion Chromatography (Solid)
226405	226406	4	MS	103985	B2VPR8(140006001MS)	140006001	Anions by Ion Chromatography (Solid)
226405	226406	5	MSD	103986	B2VPR8(140006001MSD	140006001	Anions by Ion Chromatography (Solid)
226405	226406	6	SAMPLE	140006001	B2VPR8		Anions by Ion Chromatography (Solid)
226902	226911	4	BLANK	104931	BLANK		ICP-2008 MS All possible metal
226902	226911	5	LCS	104932	LCS		ICP-2008 MS All possible metal
226902	226911	6	SAMPLE	140006001	B2VPR8		ICP-2008 MS All possible metal
226902	226911	7	MS	104933	B2VPR8(140006001MS)	140006001	ICP-2008 MS All possible metal
226902	226911	8	MSD	104934	B2VPR8(140006001MSD	140006001	ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
226411	226412	1	BLANK	104009	BLANK		SW-846 8260B Volatiles
226411	226412	2	LCS	104010	LCS		SW-846 8260B Volatiles
226411	226412	3	MS	104011	B2VPR8(140006001MS)	140006001	SW-846 8260B Volatiles
226411	226412	4	MSD	104012	B2VPR8(140006001MSD	140006001	SW-846 8260B Volatiles
226411	226412	5	SAMPLE	140006001	B2VPR8		SW-846 8260B Volatiles

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Batch QC List

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF140006

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
226830	226830	1	LCS	104845	LCS		Dry Weight/Percent Moisture
226830	226830	2	SAMPLE	140006001	B2VPR8		Dry Weight/Percent Moisture
226830	226830	3	DUP	104846	B2VPR8(140006001DUP)	140006001	Dry Weight/Percent Moisture

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140006

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-505-412	Determination of Trace Elements in Waters & Wastes by ICP Mass Spectrometry		
	EPA-600/R-94-111	200.8	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma
	HEIS	200.8_METALS_ICPMS	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma, Mass Spec.
LA-533-410	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-455 Volatile Sample Analysis by SW-846 Method 8260B

EPA SW-846	8000B	Determinative Chromographic Separations
EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF140006

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-519-412 Total Residual Percent Solids Dried at 103 - 105 Degrees C

EPA-600/4-79-020	160.3	Total Residue
Standard Methods	2540B	Total Solids Dried at 103-105 C
HEIS	%SOLIDS	Dry Weight, Percent Solids

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140006

Sample # 140006001
SAF# F14-004
Sample ID B2VPR8

Matrix SOIL
Sampled 01/06/14
Received 01/06/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anion Prep (S)										**01/14/14**
Anions by Ion Chromatography (Solid)										
Fluoride	16984-48-8	LA-533-410	U	<1.3		mg/kg	1	1.3	25	01/14/14
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	01/14/14
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.1	01/14/14
Nitrate-N	NO3-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.1	01/14/14
Sulfate	14808-79-8	LA-533-410	U	<5.6		mg/kg	1	5.6	28	01/14/14
ICPMS Prep (S)										**01/28/14**
ICP-2008 MS All possible metal										
Aluminum	7429-90-5	LA-505-412		3110		mg/kg	1	10	100	01/28/14
Silver	7440-22-4	LA-505-412	U	<0.050		mg/kg	1	0.050	1.0	01/28/14
Antimony	7440-36-0	LA-505-412	U	<0.30		mg/kg	1	0.30	3.0	01/28/14
Barium	7440-39-3	LA-505-412	N	36.7		mg/kg	1	0.20	2.0	01/28/14
Beryllium	7440-41-7	LA-505-412	B	0.188		mg/kg	1	0.10	0.50	01/28/14
Cadmium	7440-43-9	LA-505-412	B	0.0695		mg/kg	1	0.050	1.0	01/28/14
Chromium	7440-47-3	LA-505-412	B	3.53		mg/kg	1	0.10	5.0	01/28/14
Cobalt	7440-48-4	LA-505-412		5.53		mg/kg	1	0.050	0.50	01/28/14
Copper	7440-50-8	LA-505-412		9.18		mg/kg	1	0.10	1.0	01/28/14
Lead	7439-92-1	LA-505-412		1.07		mg/kg	1	0.050	1.0	01/28/14

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.

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WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140006

Sample # 140006001
SAF# F14-004
Sample ID B2VPR8

Matrix SOIL
Sampled 01/06/14
Received 01/06/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Molybdenum	7439-98-7	LA-505-412		1.38		mg/kg	1	0.050	1.0	01/28/14
Arsenic	7440-38-2	LA-505-412	B	0.930		mg/kg	1	0.20	4.0	01/28/14
Selenium	7782-49-2	LA-505-412		3.25		mg/kg	1	0.25	3.0	01/28/14

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.

REVISED140006 -

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

Sample # 140006001
SAF# F14-004
Sample ID B2VPR8

Matrix SOIL
Sampled 01/06/14
Received 01/06/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (S)										**01/15/14**
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Trichloroethene	79-01-6	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Benzene	71-43-2	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Toluene	108-88-3	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Chlorobenzene	108-90-7	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
1,1-Dichloroethane	75-34-3	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Ethylbenzene	100-41-4	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Styrene	100-42-5	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
1,2-Dichloroethane	107-06-2	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14
Dibromochloromethane	124-48-1	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
E - Exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - GC/MS or N - Non GC/MS - MS/MSD recovery outside control limits
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.

REVISED140006 -

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

Sample # 140006001
SAF# F14-004
Sample ID B2VPR8

Matrix SOIL
Sampled 01/06/14
Received 01/06/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/kg	1	1	3	01/16/14
2-Hexanone	591-78-6	LA-523-455	U	<5		ug/kg	1	5	20	01/16/14
Acetone	67-64-1	LA-523-455	U	<5		ug/kg	1	5	20	01/16/14
Chloroform	67-66-3	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14
1,1,1-Trichloroethane	71-55-6	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Bromomethane	74-83-9	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14
Chloromethane	74-87-3	LA-523-455	U	<2		ug/kg	1	2	10	01/16/14
Chloroethane	75-00-3	LA-523-455	U	<2		ug/kg	1	2	10	01/16/14
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14
Carbon disulfide	75-15-0	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Bromoform	75-25-2	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Bromodichloromethane	75-27-4	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
1,2-Dichloropropane	78-87-5	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/kg	1	1	5	01/16/14
1,1,2-Trichloroethane	79-00-5	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	UT	<1		ug/kg	1	1	5	01/16/14

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
E - Exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - GC/MS or N - Non GC/MS - MS/MSD recovery outside control limits
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.

REVISED140006 -

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF140006

Sample # 140006001
SAF# F14-004
Sample ID B2VPR8

Matrix SOIL
Sampled 01/06/14
Received 01/06/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										01/24/14
Dry Weight/Percent Moisture										
Percent Solids	%SOLIDS	LA-519-412		97		%	1			01/24/14

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
Ignitability: <20C listed in the result field indicates sample ignited at room temperature. Maximum temperature tested for ignitability is at 100C

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140006

Analytical Batch 226406 (QC Batch: 226405) **Test** Anions by Ion Chromatography (Solid)
Associated Samples 140006001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #103983**							
Fluoride	16984-48-8		<0.025	ug/mL					U	01/14/14
Chloride	16887-00-6		<0.060	ug/mL					U	01/14/14
Nitrite-N	NO2-N		<0.020	ug/mL					U	01/14/14
Nitrate-N	NO3-N		<0.020	ug/mL					U	01/14/14
Sulfate	14808-79-8		<0.11	ug/mL					U	01/14/14
LCS			**QC Sample #103984**							
Fluoride	16984-48-8		0.950	ug/mL	95.9	90 - 110				01/14/14
Chloride	16887-00-6		1.80	ug/mL	90.6	90 - 110				01/14/14
Nitrite-N	NO2-N		1.00	ug/mL	102.4	90 - 110				01/14/14
Nitrate-N	NO3-N		0.874	ug/mL	98.7	90 - 110				01/14/14
Sulfate	14808-79-8		3.65	ug/mL	93.1	90 - 110				01/14/14
MS			**QC Sample #103985**							
			Original 140006001							
Fluoride	16984-48-8	<1.3	22.0	mg/kg	87.2	80 - 120			B	01/14/14
Chloride	16887-00-6	<3.1	51.2	mg/kg	101.7	80 - 120				01/14/14
Nitrite-N	NO2-N	<1.0	24.5	mg/kg	98.5	80 - 120				01/14/14
Nitrate-N	NO3-N	<1.0	22.4	mg/kg	99.5	80 - 120				01/14/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8	<5.6	95.4	mg/kg	95.7	80 - 120				01/14/14
MSD			**QC Sample #103986**							
			Original 140006001					**Paired**	**103985**	
Fluoride	16984-48-8	<1.3	22.3	mg/kg	88.4	80 - 120	1.40	30	B	01/14/14
Chloride	16887-00-6	<3.1	44.4	mg/kg	88.2	80 - 120	14.10	30		01/14/14
Nitrite-N	NO2-N	<1.0	24.6	mg/kg	98.7	80 - 120	0.40	30		01/14/14
Nitrate-N	NO3-N	<1.0	21.5	mg/kg	95.6	80 - 120	3.90	30		01/14/14
Sulfate	14808-79-8	<5.6	97.1	mg/kg	97.3	80 - 120	1.80	30		01/14/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

Analytical Batch 226412 (QC Batch: 226411)
Associated Samples 140006001

Test SW-846 8260B Volatiles

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #104009**						
1,1-Dichloroethene	75-35-4		<1	ug/kg				U	01/16/14
Trichloroethene	79-01-6		<1	ug/kg				U	01/16/14
Benzene	71-43-2		<1	ug/kg				U	01/16/14
Toluene	108-88-3		<1	ug/kg				U	01/16/14
Chlorobenzene	108-90-7		<1	ug/kg				U	01/16/14
1,1-Dichloroethane	75-34-3		<1	ug/kg				U	01/16/14
Ethylbenzene	100-41-4		<1	ug/kg				U	01/16/14
Styrene	100-42-5		<1	ug/kg				U	01/16/14
cis-1,3-Dichloropropene	10061-01-5		<1	ug/kg				U	01/16/14
trans-1,3-Dichloropropene	10061-02-6		<1	ug/kg				U	01/16/14
1,2-Dichloroethane	107-06-2		<1	ug/kg				U	01/16/14
Methyl isobutyl ketone	108-10-1		<1	ug/kg				U	01/16/14
Dibromochloromethane	124-48-1		<1	ug/kg				U	01/16/14
Tetrachloroethene	127-18-4		<1	ug/kg				U	01/16/14
Total Xylenes	1330-20-7		<1	ug/kg				U	01/16/14

* - QC result out of range

n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Total 1,2-Dichloroethene	540-59-0		<1	ug/kg					U	01/16/14
Carbon tetrachloride	56-23-5		<1	ug/kg					U	01/16/14
2-Hexanone	591-78-6		<5	ug/kg					U	01/16/14
Acetone	67-64-1		<5	ug/kg					U	01/16/14
Chloroform	67-66-3		<1	ug/kg					U	01/16/14
1,1,1-Trichloroethane	71-55-6		<1	ug/kg					U	01/16/14
Bromomethane	74-83-9		<1	ug/kg					U	01/16/14
Chloromethane	74-87-3		<2	ug/kg					U	01/16/14
Chloroethane	75-00-3		<2	ug/kg					U	01/16/14
Vinyl chloride	75-01-4		<1	ug/kg					U	01/16/14
Methylene chloride	75-09-2		<1	ug/kg					U	01/16/14
Carbon disulfide	75-15-0		<1	ug/kg					U	01/16/14
Bromoform	75-25-2		<1	ug/kg					U	01/16/14
Bromodichloromethane	75-27-4		<1	ug/kg					U	01/16/14
1,2-Dichloropropane	78-87-5		<1	ug/kg					U	01/16/14
Methyl ethyl ketone	78-93-3		<1	ug/kg					U	01/16/14
1,1,2-Trichloroethane	79-00-5		<1	ug/kg					U	01/16/14
1,1,2,2-Tetrachloroethane	79-34-5		<1	ug/kg					U	01/16/14
LCS			**QC Sample #104010**							
1,1-Dichloroethene	75-35-4		25	ug/kg	100.7	75 - 125				01/16/14
Trichloroethene	79-01-6		25	ug/kg	98.7	75 - 125				01/16/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Benzene	71-43-2		24	ug/kg	96.6	75 - 125				01/16/14
Toluene	108-88-3		24	ug/kg	95.4	75 - 125				01/16/14
Chlorobenzene	108-90-7		24	ug/kg	96.1	75 - 125				01/16/14
1,1-Dichloroethane	75-34-3		27	ug/kg	106.1	75 - 125				01/16/14
Ethylbenzene	100-41-4		24	ug/kg	97.2	75 - 125				01/16/14
Styrene	100-42-5		25	ug/kg	101.9	75 - 125				01/16/14
trans-1,3-Dichloropropene	10061-02-6		25	ug/kg	98.3	75 - 125				01/16/14
1,2-Dichloroethane	107-06-2		26	ug/kg	104.6	75 - 125				01/16/14
1,1,1-Trichloroethane	71-55-6		27	ug/kg	109.7	75 - 125				01/16/14
Dibromochloromethane	124-48-1		27	ug/kg	109.2	75 - 125				01/16/14
Carbon disulfide	75-15-0		24	ug/kg	94.2	75 - 125				01/16/14
Bromoform	75-25-2		27	ug/kg	106.9	75 - 125				01/16/14
Bromodichloromethane	75-27-4		28	ug/kg	113.5	75 - 125				01/16/14
1,2-Dichloropropane	78-87-5		23	ug/kg	93.5	75 - 125				01/16/14
1,1,2-Trichloroethane	79-00-5		25	ug/kg	101.9	75 - 125				01/16/14
1,1,2,2-Tetrachloroethane	79-34-5		24	ug/kg	97	75 - 125				01/16/14
MS			**QC Sample #104011**							
			Original 140006001							
1,1-Dichloroethene	75-35-4	<1	0	ug/kg	0	70 - 130			UT	01/16/14
Trichloroethene	79-01-6	<1	0	ug/kg	0	70 - 130			UT	01/16/14
Benzene	71-43-2	<1	0	ug/kg	0	70 - 130			UT	01/16/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Toluene	108-88-3	<1	0	ug/kg	0	70 - 130				UT	01/16/14
Chlorobenzene	108-90-7	<1	0	ug/kg	0	70 - 130				UT	01/16/14
1,1-Dichloroethane	75-34-3	<1	0	ug/kg	0	70 - 130				UT	01/16/14
Ethylbenzene	100-41-4	<1	0	ug/kg	0	70 - 130				UT	01/16/14
Styrene	100-42-5	<1	0	ug/kg	0	70 - 130				UT	01/16/14
trans-1,3-Dichloropropene	10061-02-6	<1	0	ug/kg	0	70 - 130				UT	01/16/14
1,2-Dichloroethane	107-06-2	<1	28	ug/kg	112.5	70 - 130					01/16/14
1,1,1-Trichloroethane	71-55-6	<1	0	ug/kg	0	70 - 130				UT	01/16/14
Dibromochloromethane	124-48-1	<1	0	ug/kg	0	70 - 130				UT	01/16/14
Carbon disulfide	75-15-0	<1	0	ug/kg	0	70 - 130				UT	01/16/14
Bromoform	75-25-2	<1	0	ug/kg	0	70 - 130				UT	01/16/14
Bromodichloromethane	75-27-4	<1	0	ug/kg	0	70 - 130				UT	01/16/14
1,2-Dichloropropane	78-87-5	<1	0	ug/kg	0	70 - 130				UT	01/16/14
1,1,2-Trichloroethane	79-00-5	<1	0	ug/kg	0	70 - 130				UT	01/16/14
1,1,2,2-Tetrachloroethane	79-34-5	<1	0	ug/kg	0	70 - 130				UT	01/16/14
MSD			**QC Sample #104012**								
			Original 140006001						**Paired**	**104011**	
1,1-Dichloroethene	75-35-4	<1	24	ug/kg	96.7	70 - 130	200.00	30	*		01/16/14
Trichloroethene	79-01-6	<1	26	ug/kg	105.4	70 - 130	200.00	30	*		01/16/14
Benzene	71-43-2	<1	24	ug/kg	96.7	70 - 130	200.00	30	*		01/16/14
Toluene	108-88-3	<1	22	ug/kg	88.9	70 - 130	200.00	30	*		01/16/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Chlorobenzene	108-90-7	<1	24	ug/kg	94.8	70 - 130	200.00	30	*		01/16/14
1,1-Dichloroethane	75-34-3	<1	27	ug/kg	108.4	70 - 130	200.00	30	*		01/16/14
Ethylbenzene	100-41-4	<1	22	ug/kg	88.1	70 - 130	200.00	30	*		01/16/14
Styrene	100-42-5	<1	25	ug/kg	99.4	70 - 130	200.00	30	*		01/16/14
trans-1,3-Dichloropropene	10061-02-6	<1	22	ug/kg	86.7	70 - 130	200.00	30	*		01/16/14
1,2-Dichloroethane	107-06-2	<1	36	ug/kg	145.9	70 - 130	25.90	30		T	01/16/14
1,1,1-Trichloroethane	71-55-6	<1	27	ug/kg	109.9	70 - 130	200.00	30	*		01/16/14
Dibromochloromethane	124-48-1	<1	24	ug/kg	94.8	70 - 130	200.00	30	*		01/16/14
Carbon disulfide	75-15-0	<1	12	ug/kg	49.8	70 - 130	200.00	30	*	T	01/16/14
Bromoform	75-25-2	<1	25	ug/kg	98.6	70 - 130	200.00	30	*		01/16/14
Bromodichloromethane	75-27-4	<1	24	ug/kg	97.4	70 - 130	200.00	30	*		01/16/14
1,2-Dichloropropane	78-87-5	<1	26	ug/kg	105.6	70 - 130	200.00	30	*		01/16/14
1,1,2-Trichloroethane	79-00-5	<1	35	ug/kg	138.5	70 - 130	200.00	30	*	T	01/16/14
1,1,2,2-Tetrachloroethane	79-34-5	<1	39	ug/kg	154.6	70 - 130	200.00	30	*	T	01/16/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF140006

Analytical Batch 226830 (QC Batch: 226830) **Test** Dry Weight/Percent Moisture
Associated Samples 140006001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #104845**							
Percent Solids	%SOLIDS		95.4	%	99.7	80 - 120				01/24/14
DUP			**QC Sample #104846**							
			Original 140006001							
Percent Solids	%SOLIDS	97	97	%			0.00	5		01/24/14

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140006

Analytical Batch 226911 (QC Batch: 226902)
Associated Samples 140006001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #104931**							
Aluminum	7429-90-5		<10	ug/L					U	01/28/14
Silver	7440-22-4		<0.050	ug/L					U	01/28/14
Antimony	7440-36-0		<0.30	ug/L					U	01/28/14
Barium	7440-39-3		<0.20	ug/L					U	01/28/14
Beryllium	7440-41-7		<0.10	ug/L					U	01/28/14
Cadmium	7440-43-9		<0.050	ug/L					U	01/28/14
Chromium	7440-47-3		<0.10	ug/L					U	01/28/14
Cobalt	7440-48-4		<0.050	ug/L					U	01/28/14
Copper	7440-50-8		<0.10	ug/L					U	01/28/14
Lead	7439-92-1		<0.050	ug/L					U	01/28/14
Molybdenum	7439-98-7		<0.050	ug/L					U	01/28/14
Arsenic	7440-38-2		<0.20	ug/L					U	01/28/14
Selenium	7782-49-2		<1.0	ug/L					U	01/28/14
LCS			**QC Sample #104932**							
Aluminum	7429-90-5		8200	mg/kg	91.3	49 - 124				01/28/14
Silver	7440-22-4		37.4	mg/kg	108.7	83 - 127				01/28/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Antimony	7440-36-0		147	mg/kg	120.8	62 - 205				01/28/14
Barium	7440-39-3		177	mg/kg	104.7	78 - 118				01/28/14
Beryllium	7440-41-7		67.8	mg/kg	108.6	77 - 120				01/28/14
Cadmium	7440-43-9		72.7	mg/kg	117.6	76 - 129				01/28/14
Chromium	7440-47-3		73.1	mg/kg	102.6	68 - 119				01/28/14
Cobalt	7440-48-4		117	mg/kg	113.8	77 - 122				01/28/14
Copper	7440-50-8		85.9	mg/kg	105.8	67 - 120				01/28/14
Lead	7439-92-1		99.7	mg/kg	107.9	79 - 124				01/28/14
Molybdenum	7439-98-7		52.7	mg/kg	123.8	80 - 125				01/28/14
Arsenic	7440-38-2		104	mg/kg	112.6	79 - 125				01/28/14
Selenium	7782-49-2		106	mg/kg	118.1	82 - 133				01/28/14
MS			**QC Sample #104933**							
			Original 140006001							
Aluminum	7429-90-5	3110	2290	mg/kg	470.4	70 - 130			X	01/28/14
Silver	7440-22-4	<0.050	50.3	mg/kg	103.4	70 - 130				01/28/14
Antimony	7440-36-0	<0.30	44.3	mg/kg	91.2	70 - 130				01/28/14
Barium	7440-39-3	36.7	88.5	mg/kg	182	70 - 130			N	01/28/14
Beryllium	7440-41-7	0.188	49.7	mg/kg	102.2	70 - 130				01/28/14
Cadmium	7440-43-9	0.0695	49.9	mg/kg	102.7	70 - 130				01/28/14
Chromium	7440-47-3	3.53	48.3	mg/kg	99.3	70 - 130				01/28/14
Cobalt	7440-48-4	5.53	53.5	mg/kg	110	70 - 130				01/28/14
Copper	7440-50-8	9.18	50.9	mg/kg	104.7	70 - 130				01/28/14
Lead	7439-92-1	1.07	48.8	mg/kg	100.5	70 - 130				01/28/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Molybdenum	7439-98-7	1.38	50.3	mg/kg	103.5	70 - 130					01/28/14
Arsenic	7440-38-2	0.930	50.7	mg/kg	104.2	70 - 130					01/28/14
Selenium	7782-49-2	3.25	50.2	mg/kg	103.4	70 - 130					01/28/14
MSD			**QC Sample #104934**								
			Original 140006001						**Paired**	**104933**	
Aluminum	7429-90-5	3110	750	mg/kg	154.1	70 - 130	34.00	30	*	X	01/28/14
Silver	7440-22-4	<0.050	47.5	mg/kg	97.6	70 - 130	5.70	30			01/28/14
Antimony	7440-36-0	<0.30	43.9	mg/kg	90.2	70 - 130	0.90	30			01/28/14
Barium	7440-39-3	36.7	34.0	mg/kg	69.8	70 - 130	56.30	30	*	NX	01/28/14
Beryllium	7440-41-7	0.188	46.0	mg/kg	94.5	70 - 130	7.70	30			01/28/14
Cadmium	7440-43-9	0.0695	46.6	mg/kg	95.7	70 - 130	6.90	30			01/28/14
Chromium	7440-47-3	3.53	55.6	mg/kg	114.2	70 - 130	13.30	30			01/28/14
Cobalt	7440-48-4	5.53	46.1	mg/kg	94.6	70 - 130	13.50	30			01/28/14
Copper	7440-50-8	9.18	49.7	mg/kg	102.1	70 - 130	2.00	30			01/28/14
Lead	7439-92-1	1.07	45.2	mg/kg	92.9	70 - 130	7.50	30			01/28/14
Molybdenum	7439-98-7	1.38	52.7	mg/kg	108.2	70 - 130	4.50	30			01/28/14
Arsenic	7440-38-2	0.930	47.0	mg/kg	96.6	70 - 130	7.30	30			01/28/14
Selenium	7782-49-2	3.25	46.1	mg/kg	94.8	70 - 130	8.00	30			01/28/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

Analytical Batch 226412 (QC Batch: 226411) **Test** SW-846 8260B Volatiles
Associated Samples 140006001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #104009**							
1,2-Dichloroethane-d4	17060-07-0				140.7	77 - 137			X	01/16/14
Toluene-d8	2037-26-5				99.5	78 - 122				01/16/14
4-Bromofluorobenzene	460-00-4				101.9	66 - 125				01/16/14
LCS			**QC Sample #104010**							
1,2-Dichloroethane-d4	17060-07-0				133	77 - 137				01/16/14
Toluene-d8	2037-26-5				100.8	78 - 122				01/16/14
4-Bromofluorobenzene	460-00-4				102.9	66 - 125				01/16/14
MS			**QC Sample #104011**							
			Original 140006001							
1,2-Dichloroethane-d4	17060-07-0				282.2	77 - 137			X	01/16/14
Toluene-d8	2037-26-5				82.4	78 - 122				01/16/14
4-Bromofluorobenzene	460-00-4				111	66 - 125				01/16/14
MSD			**QC Sample #104012**							
			Original 140006001					**Paired 104011**		
1,2-Dichloroethane-d4	17060-07-0				176.8	77 - 137	n/a	*	X	01/16/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				96.8	78 - 122	n/a			01/16/14
4-Bromofluorobenzene	460-00-4				113	66 - 125	n/a			01/16/14
SAMPLE			**Sample #140006001**							
1,2-Dichloroethane-d4	17060-07-0				140.2	77 - 137			X	01/16/14
Toluene-d8	2037-26-5				103	78 - 122				01/16/14
4-Bromofluorobenzene	460-00-4				110	66 - 125				01/16/14

* - QC result out of range n/a - Not Applicable

REVISED140006 -

Analytical Comment Report

Attention: Scot Fitzgerald **Group #** WSCF140006

140006001 **B2VPR8**

Department Organic, Volatiles

Analyte 1,2-Dichloroethane-d4 - SW-846 8260B Volatiles
[1] Surrogate recovery outside of established laboratory control limits.

Quality Control Comments

Department Inorganic

104933 B2VPR8(140006001MS)

Analyte Aluminum - ICP-2008 MS All possible metal
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

104934 B2VPR8(140006001MSD)

Analyte Aluminum - ICP-2008 MS All possible metal
[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

Analyte Barium - ICP-2008 MS All possible metal
[1] Matrix Spike RPD outside established laboratory limits No flags assigned.

Analytical Comment Report

Attention: Scot Fitzgerald

Group # WSCF140006

Quality Control Comments

Department Organic, Volatiles

104009 BLANK for HBN 226411 [VOAP/229

Analyte 1,2-Dichloroethane-d4 - SW-846 8260B Volatiles

[1] Surrogate recovery outside of established laboratory control limits.

104011 B2VPR8(140006001MS)

Analyte 1,2-Dichloroethane-d4 - SW-846 8260B Volatiles

[1] Surrogate recovery outside of established laboratory control limits.

104012 B2VPR8(140006001MSD)

Analyte 1,2-Dichloroethane-d4 - SW-846 8260B Volatiles

[1] Surrogate recovery outside of established laboratory control limits.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 5 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 650 S3-30, Richland WA 99352
Phone: (509) 373-7005/FAX: (509) 372-0456

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Scot Fitzgerald

Customer Code:	CHPRC
CACN:	401586
Work Order #:	140006
Customer Work ID:	F14-004-001
Due Date:	02/06/2014

The following samples were received from you on 1/6/2014 12:15:00 PM. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact WSCF Client Services. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
140006001	B2VPR8	SOIL	1/6/2014 11:40	1/6/2014 12:15

Procedure	Compound List
Anions by Ion Chromatography (Solid)	F,Cl,NO2,NO3,SO4
Dry Weight/Percent Moisture	% Moisture,% Solid
ICP-2008 MS All possible metal	Al,Ag,Sb,Ba,Be,Cd,Cr,Co,Cu,Pb,Mo,As,Se
SW-846 8260B Volatiles	Not a standard service list. There are too many compounds to list individually.

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F14-004-001	PAGE 1 OF 2
COLLECTOR Karen Crow	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE C06	DATA TURNAROUND 31 Days / 31 Days
SAMPLING LOCATION C8200, I-001	PROJECT DESIGNATION Characterization of Drilling Wastes from FY14 M24 Wells		SAF NO. F14-004	AIR QUALITY ☐	
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-567-25/5-2	ACTUAL SAMPLE DEPTH 147 ft	COA 300058ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS					
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		PRESERVATION	Frozen/Cool <-7C and >-20C	None	Cool~4C
			HOLDING TIME	14 Days	6 Months	28 Days/48 Hours
			TYPE OF CONTAINER	aGs	G/P	G/P
			NO. OF CONTAINER(S)	5	1	1
			VOLUME	40mL	250mL	60mL
	SPECIAL HANDLING AND/OR STORAGE 140006		SAMPLE ANALYSIS	5035/8260_VOA - LOW LEVEL COMMON;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	300.0_ANIONS_IC: COMMON;
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2VPR8	SOIL	1-6-14	1140	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM Ed Karen Crow 1-6-14	DATE/TIME 12:15	RECEIVED BY/STORED IN W RISBY	DATE/TIME 1-6-14 12:15	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL 13- 029 14 Sep 12/23/13
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 12/23/2013 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F14-004-001

PAGE 2 OF 2

COLLECTOR: Ryan Mauss

COMPANY CONTACT: TODAK, D

TELEPHONE NO.: 376-6427

PROJECT COORDINATOR: TODAK, D

PRICE CODE: C06

AIR QUALITY: ☐

DATA TURNAROUND: 31 Days / 31 Days

SAMPLING LOCATION: C8200, I-001

PROJECT DESIGNATION: Characterization of Drilling Wastes from FY14 M24 Wells

SAF NO.: F14-004

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-567-25/52

ACTUAL SAMPLE DEPTH: 147 FT

COA: J0U0B8510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401586.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.☐☐☐** All VOA samples will be collected using EPA Method 5035A and will include 5 bottles for low level analysis.☐** The laboratory is to use one of the low level VOA bottles for moisture content determination.☐** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be included as part of the sample ID reported in the final data packages. TRVL-14-029

(1) 200.8_METALS_ICPMS: COMMON; 200.8_METALS_ICPMS: COMMON (Add-on) {Arsenic};

TRVL-14-029

12/13/13

PRINTED ON 12/23/2013

A-6003-6.8 (REV 2)

Sample Receipt

Chain of Custody

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: M24 wells C8200 I-001

Sampler Initials and Date:

Sample Number [1]	Sample Suffix	Initial Weight [2] (grams)	Total Weight [3] (grams)	Soil Weight [4] (grams)
B2VPR8	K	29.8	35.1	5.3
B2VPR8	L	29.8	36.3	6.5
B2VPR8	M	29.4	34.6	5.2
B2VPR8	N	29.5	37.6	8.1
B2VPR8	P	29.6	34.8	5.2

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)