

MAY 12, 2014

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352



May 12, 2014

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF140655

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 WSCF140655

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

Very truly yours,

A handwritten signature in black ink, appearing to read "Joseph Hale", is written over a horizontal line.

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 # WSCF140655

Data Deliverable Date 05/12/14

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F14-003	B2W241	140655001	WATER	04/10/14	04/10/14
F14-003	B2W232	140655002	WATER	04/10/14	04/10/14
F14-003	B2W233	140655003	WATER	04/10/14	04/10/14

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were 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.

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.

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

- All applicable QC controls are within the established limits.

ICP-AES 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):

- 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. Technetium-99 is analyzed without prep therefore there is no Matrix Spike or Matrix Spike Duplicate with analysis. Analytical Note(s):

- All 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):

- All applicable QC controls are within the established limits.

Radiochemistry Comments

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

Tritium:

- All 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 3

ANALYTICAL RESULTS

Consisting of 29 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 # WSCF140655
Report Date May 12, 2014

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Marisol Avila

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.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7005. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140655

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
231738	232245	5	BLANK	108753	BLANK		ICP-6010 - All possible metals
231738	232245	7	LCS	108755	LCS		ICP-6010 - All possible metals
231738	232245	9	MS	108756	B2W848(140652011MS)	140652011	ICP-6010 - All possible metals
231738	232245	10	MSD	108757	B2W848(140652011MSD)	140652011	ICP-6010 - All possible metals
231738	232245	18	SAMPLE	140655003	B2W233		ICP-6010 - All possible metals
231745	231745	2	BLANK	108785	BLANK		Anions by Ion Chromatography (Water)
231745	231745	3	LCS	108786	LCS		Anions by Ion Chromatography (Water)
231745	231745	4	MS	108787	B2W8X8(140658002MS)	140658002	Anions by Ion Chromatography (Water)
231745	231745	5	MSD	108788	B2W8X8(140658002MSD)	140658002	Anions by Ion Chromatography (Water)
231745	231745	8	SAMPLE	140655003	B2W233		Anions by Ion Chromatography (Water)
231748	231748	1	BLANK	108799	BLANK		Hexavalent chromium Discrete Analyzer
231748	231748	3	LCS	108801	LCS		Hexavalent chromium Discrete Analyzer
231748	231748	4	DUP	108802	B2W7V7(140662002DUP)	140662002	Hexavalent chromium Discrete Analyzer
231748	231748	5	MS	108803	B2W7V7(140662002MS)	140662002	Hexavalent chromium Discrete Analyzer
231748	231748	7	SAMPLE	140655002	B2W232		Hexavalent chromium Discrete Analyzer
232868	233074	4	BLANK	109860	BLANK		ICP-2008 MS All possible metal
232868	233074	5	LCS	109861	LCS		ICP-2008 MS All possible metal
232868	233074	7	MS	109862	B2W6Y6(140649004MS)	140649004	ICP-2008 MS All possible metal
232868	233074	8	MSD	109863	B2W6Y6(140649004MSD)	140649004	ICP-2008 MS All possible metal
232868	233074	20	SAMPLE	140655003	B2W233		ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140655

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
231852	231853	1	BLANK	108882	BLANK		SW-846 8260B Volatiles
231852	231853	2	LCS	108883	LCS		SW-846 8260B Volatiles
231852	231853	3	MS	108884	B2V623(140657001MS)	140657001	SW-846 8260B Volatiles
231852	231853	4	MSD	108885	B2V623(140657001MSD)	140657001	SW-846 8260B Volatiles
231852	231853	19	SAMPLE	140655001	B2W241		SW-846 8260B Volatiles

Batch QC List

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF140655

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
231736	232345	1	BLANK	108745	BLANK		Tritium by LSC
231736	232345	2	LCS	108746	LCS		Tritium by LSC
231736	232345	3	SAMPLE	140655003	B2W233		Tritium by LSC
231736	232345	4	DUP	108747	B2W233(140655003DUP)	140655003	Tritium by LSC
231736	232345	5	MSPK	108748	B2W233(140655003MSP)		Tritium by LSC
231860	231877	1	BLANK	108910	BLANK		Technetium-99 by ICP MS
231860	231877	2	LCS	108911	LCS		Technetium-99 by ICP MS
231860	231877	20	SAMPLE	140655003	B2W233		Technetium-99 by ICP MS

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140655

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-265-403	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium
LA-505-411	Elemental Analysis by ICP Atomic Emission Spectroscopy (ICP AES)		
	EPA SW-846	6010C	Inductively Coupled Plasma-Atomic Emmission Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmission Spectrometry
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 # WSCF140655

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.

Method Reference	Regulatory/Industry Method	Method Name	Method Description
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 Radiochemistry

Group # WSCF140655

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-218-413	Tritium By Ion Removal Using Eichrom Resin Columns (Prep)		
	N/A	PREP METHOD	
LA-508-421	Operation of the Tri-Carb Model 2500TR Liquid Scintillation Analyzer		
	HEIS	ALPHA_LSC	A/B Liquid Scintillation
	HEIS	BETA_LSC	A/B Liquid Scintillation
	HEIS	TC99_3MDSK_LSC	TC99 by Liquid Scintillation
	HEIS	TRITIUM_EIE_LSC	Tritium, by Eichrome ion exchange, LSC
LA-505-412	Technicium-99 by ICP-MS		
	HEIS	RADISOTOPES_ICPMS	Tc-99 by ICPMS

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 # WSCF140655

Sample # 140655002
 SAF# F14-003
 Sample ID B2W232

Matrix WATER
 Sampled 04/10/14
 Received 04/10/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/10/14
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0259		mg/L	1	0.0020	0.0050	04/10/14

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140655

Sample # 140655003
SAF# F14-003
Sample ID B2W233

Matrix WATER
Sampled 04/10/14
Received 04/10/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/10/14
Anions by Ion Chromatography (Water)										
Nitrate-N	NO3-N	LA-533-410	D	55.4		ug/mL	10	0.20	1.0	04/10/14
										04/23/14
ICPAES Prep (W)										
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411		524		ug/L	1	40	50	04/23/14
Magnesium	7439-95-4	LA-505-411		29300		ug/L	1	60	750	04/23/14
Calcium	7440-70-2	LA-505-411		77000		ug/L	1	50	1000	04/23/14
										05/08/14
ICPMS Prep (W)										
ICP-2008 MS All possible metal										
Aluminum	7429-90-5	LA-505-412	BD	73.1		ug/L	2	20	100	05/08/14
Manganese	7439-96-5	LA-505-412	D	26.6		ug/L	2	0.20	2.0	05/08/14
Nickel	7440-02-0	LA-505-412	D	2.80		ug/L	2	0.20	2.0	05/08/14
Barium	7440-39-3	LA-505-412	D	59.5		ug/L	2	0.40	4.0	05/08/14
Cadmium	7440-43-9	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/08/14
Chromium	7440-47-3	LA-505-412	D	34.1		ug/L	2	0.20	2.0	05/08/14
Cobalt	7440-48-4	LA-505-412	BD	0.248		ug/L	2	0.10	0.50	05/08/14
Copper	7440-50-8	LA-505-412	D	122		ug/L	2	0.20	2.0	05/08/14
Vanadium	7440-62-2	LA-505-412	D	18.9		ug/L	2	0.40	4.0	05/08/14

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140655

Sample # 140655003
 SAF# F14-003
 Sample ID B2W233

Matrix WATER
 Sampled 04/10/14
 Received 04/10/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Lead	7439-92-1	LA-505-412	D	5.50		ug/L	2	0.10	1.0	05/08/14
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	05/08/14
Strontium	7440-24-6	LA-505-412	D	378		ug/L	2	0.40	2.0	05/08/14
Uranium	7440-61-1	LA-505-412	D	1.06		ug/L	2	0.10	0.50	05/08/14
Arsenic	7440-38-2	LA-505-412	BD	1.33		ug/L	2	0.40	4.0	05/08/14

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
 Department Organic, Volatiles

Group # WSCF140655

Sample # 140655001
 SAF# F14-003
 Sample ID B2W241

Matrix WATER
 Sampled 04/10/14
 Received 04/10/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (W)										04/15/14
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Trichloroethene	79-01-6	LA-523-455	U	<0.5		ug/L	1	0.5	1	04/15/14
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	4	04/15/14
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	04/15/14

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
 Department Organic, Volatiles

Group # WSCF140655

Sample # 140655001
 SAF# F14-003
 Sample ID B2W241

Matrix WATER
 Sampled 04/10/14
 Received 04/10/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455	J	1.6		ug/L	1	1	3	04/15/14
2-Hexanone	591-78-6	LA-523-455	U	<5		ug/L	1	5	20	04/15/14
Acetone	67-64-1	LA-523-455	U	<5		ug/L	1	5	20	04/15/14
Chloroform	67-66-3	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Chloromethane	74-87-3	LA-523-455	U	<2		ug/L	1	2	10	04/15/14
Chloroethane	75-00-3	LA-523-455	U	<2		ug/L	1	2	10	04/15/14
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Methylene chloride	75-09-2	LA-523-455		9.3		ug/L	1	1	5	04/15/14
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Bromodichloromethane	75-27-4	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	04/15/14
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	04/15/14

MDL = Minimum Detection Limit
 RQ = Result Qualifier
 TP Err = Total Propagated Error
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B - Analyte was detected in both the BLANK and SAMPLE
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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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF140655

Sample # 140655003
 SAF# F14-003
 Sample ID B2W233

Matrix WATER
 Sampled 04/10/14
 Received 04/10/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										04/16/14
Technetium-99 by ICP MS										
Technetium-99	14133-76-7	LA-505-412		0.010		ug/L	1	0.0010		04/16/14
Tritium by LSC EICHROM WA/LIQ PREP										04/15/14
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1000	300	pCi/L	1	300		04/23/14

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

B - The associated QC sample Blank has a result > or = the MDA
 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.

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140655

Analytical Batch 231745 (QC Batch: 231745) Test Anions by Ion Chromatography (Water)
 Associated Samples 140655003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #108785								
Nitrate-N	NO3-N		<0.020	ug/mL					U	04/10/14
LCS		QC Sample #108786								
Nitrate-N	NO3-N		0.892	ug/mL	100.7	90 - 110				04/10/14
MS		QC Sample #108787								
		Original 140658002								
Nitrate-N	NO3-N		0.937	ug/mL	104.8	80 - 120			D	04/10/14
MSD		QC Sample #108788								
		Original 140658002								
Nitrate-N	NO3-N		0.911	ug/mL	101.9	80 - 120	0.50	20	Paired D	108787 04/10/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140655

Analytical Batch 231748 (QC Batch: 231748) Test Hexavalent chromium Discrete Analyzer
 Associated Samples 140655002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	04/10/14
LCS										
Hexavalent chromium	18540-29-9		0.0531	mg/L	106.2	90 - 110				04/10/14
DUP										
Hexavalent chromium	18540-29-9		0.00320	mg/L			14.50	20	B	04/10/14
MS										
Hexavalent chromium	18540-29-9		0.0398	mg/L	99.5	85 - 115				04/10/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Organic, Volatiles

Group # WSCF140655

Analytical Batch 231853 (QC Batch: 231852) Test SW-846 8260B Volatiles
 Associated Samples 140655001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #108882								
1,1-Dichloroethene	75-35-4	<1		ug/L					U	04/15/14
Trichloroethene	79-01-6	<0.5		ug/L					U	04/15/14
Benzene	71-43-2	<1		ug/L					U	04/15/14
Toluene	108-88-3	<1		ug/L					U	04/15/14
Chlorobenzene	108-90-7	<1		ug/L					U	04/15/14
1,1-Dichloroethane	75-34-3	<1		ug/L					U	04/15/14
Ethylbenzene	100-41-4	<1		ug/L					U	04/15/14
Styrene	100-42-5	<1		ug/L					U	04/15/14
cis-1,3-Dichloropropene	10061-01-5	<1		ug/L					U	04/15/14
trans-1,3-Dichloropropene	10061-02-6	<1		ug/L					U	04/15/14
1,2-Dichloroethane	107-06-2	<1		ug/L					U	04/15/14
Methyl isobutyl ketone	108-10-1	<1		ug/L					U	04/15/14
Dibromochloromethane	124-48-1	<1		ug/L					U	04/15/14
Tetrachloroethene	127-18-4	<1		ug/L					U	04/15/14
Total Xylenes	1330-20-7	<1		ug/L					U	04/15/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Organic, Volatiles

Group # WSCF140655

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Total 1,2-Dichloroethene	540-59-0		<1	ug/L					U	04/15/14
Carbon tetrachloride	56-23-5		<1	ug/L					U	04/15/14
2-Hexanone	591-78-6		<5	ug/L					U	04/15/14
Acetone	67-64-1		<5	ug/L					U	04/15/14
Chloroform	67-66-3		<1	ug/L					U	04/15/14
1,1,1-Trichloroethane	71-55-6		<1	ug/L					U	04/15/14
Bromomethane	74-83-9		<1	ug/L					U	04/15/14
Chloromethane	74-87-3		<2	ug/L					U	04/15/14
Chloroethane	75-00-3		<2	ug/L					U	04/15/14
Vinyl chloride	75-01-4		<1	ug/L					U	04/15/14
Methylene chloride	75-09-2		<1	ug/L					U	04/15/14
Carbon disulfide	75-15-0		<1	ug/L					U	04/15/14
Bromoform	75-25-2		<1	ug/L					U	04/15/14
Bromodichloromethane	75-27-4		<1	ug/L					U	04/15/14
1,2-Dichloropropane	78-87-5		<1	ug/L					U	04/15/14
Methyl ethyl ketone	78-93-3		<1	ug/L					U	04/15/14
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	04/15/14
1,1,1,2-Tetrachloroethane	79-34-5		<1	ug/L					U	04/15/14
LCS										
			QC Sample #108883							
1,1-Dichloroethene	75-35-4		20	ug/L	81.7	75 - 125				04/15/14
Trichloroethene	79-01-6		23	ug/L	93.4	75 - 125				04/15/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Organic, Volatiles

Group # WSCF140655

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene	108-88-3		23	ug/L	93.1	75 - 125				04/15/14
Chlorobenzene	108-90-7		24	ug/L	94.1	75 - 125				04/15/14
1,1-Dichloroethane	75-34-3		21	ug/L	85.6	75 - 125				04/15/14
Ethylbenzene	100-41-4		25	ug/L	98.9	75 - 125				04/15/14
Styrene	100-42-5		24	ug/L	96.5	75 - 125				04/15/14
trans-1,3-Dichloropropene	10061-02-6		24	ug/L	94.4	75 - 125				04/15/14
1,2-Dichloroethane	107-06-2		23	ug/L	93	75 - 125				04/15/14
1,1,1-Trichloroethane	71-55-6		22	ug/L	87.1	75 - 125				04/15/14
Dibromochloromethane	124-48-1		23	ug/L	93.1	75 - 125				04/15/14
Carbon disulfide	75-15-0		21	ug/L	85.4	75 - 125				04/15/14
Bromoform	75-25-2		20	ug/L	82	75 - 125				04/15/14
Bromodichloromethane	75-27-4		25	ug/L	100.4	75 - 125				04/15/14
1,2-Dichloropropane	78-87-5		24	ug/L	97.4	75 - 125				04/15/14
1,1,2-Trichloroethane	79-00-5		24	ug/L	96.8	75 - 125				04/15/14
1,1,2,2-Tetrachloroethane	79-34-5		26	ug/L	103.4	75 - 125				04/15/14
MSD										
			QC Sample #108885							
			Original	140657001				Paired	108884	
1,1-Dichloroethene	75-35-4		21	ug/L	84.4	75 - 125	1.20	20		04/15/14
Trichloroethene	79-01-6		24	ug/L	96.6	75 - 125	1.50	20		04/15/14
Benzene	71-43-2		25	ug/L	98.5	75 - 125	1.30	20		04/15/14
Toluene	108-88-3		24	ug/L	96.3	75 - 125	3.40	20		04/15/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Organic, Volatiles

Group #

WSCF140655

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Chlorobenzene	108-90-7		24	ug/L	95.4	75 - 125	1.40	20		04/15/14
1,1-Dichloroethane	75-34-3		21	ug/L	83.4	75 - 125	2.60	20		04/15/14
Ethylbenzene	100-41-4		25	ug/L	98.2	75 - 125	0.70	20		04/15/14
Styrene	100-42-5		24	ug/L	95.1	75 - 125	1.40	20		04/15/14
trans-1,3-Dichloropropene	10061-02-6		25	ug/L	100.3	75 - 125	6.10	20		04/15/14
1,2-Dichloroethane	107-06-2		24	ug/L	96.7	75 - 125	3.90	20		04/15/14
1,1,1-Trichloroethane	71-55-6		25	ug/L	98.7	75 - 125	12.50	20		04/15/14
Dibromochloromethane	124-48-1		25	ug/L	98.3	75 - 125	5.40	20		04/15/14
Carbon disulfide	75-15-0		24	ug/L	96.9	75 - 125	12.50	20		04/15/14
Bromoform	75-25-2		23	ug/L	90.1	75 - 125	9.40	20		04/15/14
Bromodichloromethane	75-27-4		26	ug/L	102.5	75 - 125	2.00	20		04/15/14
1,2-Dichloropropane	78-87-5		25	ug/L	100.5	75 - 125	3.20	20		04/15/14
1,1,2-Trichloroethane	79-00-5		26	ug/L	103.6	75 - 125	6.80	20		04/15/14
1,1,2,2-Tetrachloroethane	79-34-5		28	ug/L	113.4	75 - 125	9.20	20		04/15/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF140655

Analytical Batch 231877 (QC Batch: 231860)
 Associated Samples 140655003

Test Technetium-99 by ICP MS

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #108910								
Technetium-99	14133-76-7		<0.0010	ug/L					U	04/16/14
LCS		QC Sample #108911								
Technetium-99	14133-76-7		0.052	ug/L	97	85 - 115				04/16/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140655

Analytical Batch 232245 (QC Batch: 231738)
 Associated Samples 140655003

Test ICP-6010 - All possible metals

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #108753								
Iron	7439-89-6	<40		ug/L					U	04/23/14
Magnesium	7439-95-4	<60		ug/L					U	04/23/14
Calcium	7440-70-2	<50		ug/L					U	04/23/14
LCS		QC Sample #108755								
Iron	7439-89-6	1010		ug/L	100.7	80 - 120				04/23/14
Magnesium	7439-95-4	9940		ug/L	99.4	80 - 120				04/23/14
Calcium	7440-70-2	19900		ug/L	99.6	80 - 120				04/23/14
MS		QC Sample #108756								
		Original 140652011								
Iron	7439-89-6	1040		ug/L	103.6	75 - 125				04/23/14
Magnesium	7439-95-4	9460		ug/L	94.6	75 - 125				04/23/14
Calcium	7440-70-2	17900		ug/L	89.6	75 - 125				04/23/14
MSD		QC Sample #108757								
		Original 140652011								
		Paired 108756								
Iron	7439-89-6	1060		ug/L	105.6	75 - 125	1.90	20		04/23/14
Magnesium	7439-95-4	9160		ug/L	91.6	75 - 125	1.60	20		04/23/14
Calcium	7440-70-2	16800		ug/L	84.1	75 - 125	2.00	20		04/23/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF140655

Analytical Batch 232345 (QC Batch: 231736) Test Tritium by LSC
 Associated Samples 140655003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
Tritium	10028-17-8		-80	pCi/L					U	04/23/14
LCS										
Tritium	10028-17-8		3600	pCi/L	92	80 - 120				04/23/14
DUP										
Tritium	10028-17-8	1000	900	pCi/L			13.00	20		04/23/14
MSPK										
Tritium	10028-17-8		21000	pCi/L	100	75 - 125				04/23/14

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

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140655

Analytical Batch 233074 (QC Batch: 232868) Test ICP-2008 MS All possible metal
 Associated Samples 140655003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #109860								
Aluminum	7429-90-5	<10		ug/L					U	05/08/14
Manganese	7439-96-5	<0.10		ug/L					U	05/08/14
Nickel	7440-02-0	<0.10		ug/L					U	05/08/14
Barium	7440-39-3	<0.20		ug/L					U	05/08/14
Cadmium	7440-43-9	<0.050		ug/L					U	05/08/14
Chromium	7440-47-3	<0.10		ug/L					U	05/08/14
Cobalt	7440-48-4	<0.050		ug/L					U	05/08/14
Copper	7440-50-8	<0.10		ug/L					U	05/08/14
Vanadium	7440-62-2	<0.20		ug/L					U	05/08/14
Lead	7439-92-1	<0.050		ug/L					U	05/08/14
Mercury	7439-97-6	<0.050		ug/L					U	05/08/14
Strontium	7440-24-6	<0.20		ug/L					U	05/08/14
Uranium	7440-61-1	<0.050		ug/L					U	05/08/14
Arsenic	7440-38-2	<0.20		ug/L					U	05/08/14
LCS		QC Sample #109861								
Aluminum	7429-90-5	368		ug/L	92	85 - 115				05/08/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140655

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Vanadium	7440-62-2		37.8	ug/L	94.5	70 - 130				05/08/14
Lead	7439-92-1		35.5	ug/L	88.8	70 - 130				05/08/14
Mercury	7439-97-6		1.69	ug/L	84.3	70 - 130				05/08/14
Strontium	7440-24-6		377	ug/L	94.2	70 - 130				05/08/14
Uranium	7440-61-1		39.1	ug/L	97.6	70 - 130				05/08/14
Arsenic	7440-38-2		37.2	ug/L	92.9	70 - 130				05/08/14
MSD			QC Sample #109863							
			Original	140649004				Paired	109862	
Aluminum	7429-90-5		347	ug/L	86.7	70 - 130	1.90	20		05/08/14
Manganese	7439-96-5		34.8	ug/L	87.1	70 - 130	2.50	20		05/08/14
Nickel	7440-02-0		34.1	ug/L	85.3	70 - 130	3.20	20		05/08/14
Barium	7440-39-3		35.0	ug/L	87.5	70 - 130	5.10	20		05/08/14
Cadmium	7440-43-9		34.3	ug/L	85.8	70 - 130	5.40	20		05/08/14
Chromium	7440-47-3		35.7	ug/L	89.2	70 - 130	2.70	20		05/08/14
Cobalt	7440-48-4		35.0	ug/L	87.5	70 - 130	2.00	20		05/08/14
Copper	7440-50-8		34.4	ug/L	86	70 - 130	3.40	20		05/08/14
Vanadium	7440-62-2		36.2	ug/L	90.5	70 - 130	3.70	20		05/08/14
Lead	7439-92-1		34.0	ug/L	84.9	70 - 130	4.50	20		05/08/14
Mercury	7439-97-6		1.58	ug/L	79.2	70 - 130	6.20	20		05/08/14
Strontium	7440-24-6		356	ug/L	88.9	70 - 130	4.30	20		05/08/14
Uranium	7440-61-1		37.7	ug/L	94.2	70 - 130	3.40	20		05/08/14
Arsenic	7440-38-2		35.1	ug/L	87.7	70 - 130	5.60	20		05/08/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Organic, Volatiles

Group # WSCF140655

Analytical Batch 231853 (QC Batch: 231852) Test SW-846 8260B Volatiles
 Associated Samples 140655001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #108882								
1,2-Dichloroethane-d4	17060-07-0				96.9	75 - 125				04/15/14
Toluene-d8	2037-26-5				105.9	75 - 125				04/15/14
4-Bromofluorobenzene	460-00-4				101.4	75 - 125				04/15/14
LCS		QC Sample #108883								
1,2-Dichloroethane-d4	17060-07-0				101.7	75 - 125				04/15/14
Toluene-d8	2037-26-5				104.8	75 - 125				04/15/14
4-Bromofluorobenzene	460-00-4				107.3	75 - 125				04/15/14
MS		QC Sample #108884								
		Original 140657001								
1,2-Dichloroethane-d4	17060-07-0				100.8	75 - 125				04/15/14
Toluene-d8	2037-26-5				104	75 - 125				04/15/14
4-Bromofluorobenzene	460-00-4				106.4	75 - 125				04/15/14
MSD		QC Sample #108885								
		Original 140657001								
1,2-Dichloroethane-d4	17060-07-0				102.6	75 - 125	n/a		Paired 108884	04/15/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Organic, Volatiles

Group # WSCF140655

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				105.5	75 - 125	n/a			04/15/14
4-Bromofluorobenzene	460-00-4				104.8	75 - 125	n/a			04/15/14
SAMPLE			Sample #140655001							
1,2-Dichloroethane-d4	17060-07-0				103.8	75 - 125				04/15/14
Toluene-d8	2037-26-5				106.6	75 - 125				04/15/14
4-Bromofluorobenzene	460-00-4				112.5	75 - 125				04/15/14
* - QC result out of range				n/a - Not Applicable						

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 6 pages
Including cover page

Sample Receipt

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
CA CN: 403857
Work Order #: 140655
Customer Work ID: F14-003-028
Due Date: 05/12/2014 (7H)

The following samples were received from you on 4/10/2014 9:20:00 AM. 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
140655001	B2W241	WATER	4/10/2014 08:42	4/10/2014 09:20
Procedure		Compound List		
SW-846 8260B Volatiles		8260 GCMS Common + CH01		
Sample #	Sample ID	Matrix	Collected	Received
140655002	B2W232	WATER	4/10/2014 08:42	4/10/2014 09:20
Procedure		Compound List		
Hexavalent chromium Discrete Analyzer		Cr6		
Sample #	Sample ID	Matrix	Collected	Received
140655003	B2W233	WATER	4/10/2014 08:42	4/10/2014 09:20
Procedure		Compound List		
Anions by Ion Chromatography (Water)		NO3		
ICP-2008 MS All possible metal		Al, Mn, Ni, Ba, Cd, Cr, Co, Cu, V, Pb, Hg, Sr, U, As		
ICP-6010 - All possible metals		Fe, Mg, Ca		
Technetium-99 by ICP MS		Tc-99		
Tritium by LSC		H3		

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-003-028	PAGE 1 OF 1
COLLECTOR <i>Ea / ten</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION CR167, FBR-1	PROJECT DESIGNATION F20114 200-7P-1 Remedial Action Wells Sampling and Analysis - Water	FIELD LOGBOOK NO. HNF-4807-26-73	SAF NO. F14-003	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT PRIORITY ORIGINAL
ICE CHEST NO. <i>N/A</i>	ACTUAL SAMPLE DEPTH 411	COA 3079385-10	BILL OF LADING/AIR BILL NO. N/A		
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A			

MATRIX+ A-Air DL-Drum Liquids U=Urnium Solids L=Liquid O=Oil S=Soil T=Truss W=Vegetation W-Water M=Metal X-Other	POSSIBLE SAMPLE HAZARDS/ REMARKS CONTAINS RADIOACTIVE MATERIAL AT CONCENTRATIONS that may or may not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION HOLDING TIME	F-Cl or F-250 to 14 days
		NO. OF CONTAINER(S) VOLUME	3 90ML
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	8000, VOL, GYM S-COMMON, 8000, VOL, GYM S UN 117	
SAMPLE NO. 82W241	WATER	SAMPLE DATE 4-10-14	SAMPLE TIME 0842
	<i>140655</i>		<i>✓</i>

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TITLE
<i>Ea / ten</i> RELINQUISHED BY/REMOVED FROM	<i>4-10-14 0720</i>	<i>KERRISSY</i> RECEIVED BY/STORED IN	<i>4-10-14 0720</i>	
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	
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		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME	

SPECIAL INSTRUCTIONS
 ** The CACN for all analytical work at WSCF Laboratory is 403857. **
 The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GRI applies to this SAF. ** VOA analysis will be conducted with a 24 hour turnaround time on preliminary data. The VOA samples will be placed on a separate COC. ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. ** The laboratory is to report all TTCs for Method 8260. TRVL 14 055

TRVL-14-055

PRINTED ON 2/4/2014

A-6002-618 (REV 2)

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		PAGE 1 OF 1	
COLLECTOR <i>ELI HORN</i>	COMPANY CONTACT TDD/K, D 370-6427	PROJECT COORDINATOR TDD/K, D	PRICE CODE ZH	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8067, I-004	PROJECT DESIGNATION F2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO. F14-003	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL	
ICE CHEST NO. <i>N/A</i>	FIELD LOGBOOK NO. <i>HNF-41807-26-72</i>	ACTUAL SAMPLE DEPTH <i>411 FT</i>	COA 302938ES10	BILL OF LADING/AIR BILL NO. N/A	
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A			

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS
A-Air D-L-Drum L-Liquid OS-Solids L-Liquid O-Cr S-Soil SE-Sediment T-Tissue V-Vegetation W-Water M-Metal X-Other	Contains Radioactive Material & concentrations that may or may not be regulated for transport per 49 CFR/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	COOL-1C	24 Hours	9G	1	300ml		TYP. LAB. COMMON
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2W232	2	4-10-14	0812					

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>ELI HORN</i>	DATE/TIME <i>4-10-14 0920</i>	RECEIVED BY/STORED IN <i>RECEIVED BY</i>	DATE/TIME <i>4-10-14 0920</i>	** The CACN for all analytical work at WSCF laboratory is 403857.** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. ** VOA analysis will be conducted with a 24 hour turnaround time on preliminary data. The VOA samples will be placed on a separate COC. ** CVI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. ** The laboratory is to report all TTCs for Method 8260. TRVL-14-055	
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		
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 2/6/2014			

A-5003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company COLLECTOR: <i>Fu Hoon</i> SAMPLING LOCATION: CR167, 1-004 ICE CHEST NO.: N/A SHIPPED TO: Waste Sampling & Characterization		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST COMPANY CONTACT: TODAY, D PROJECT DESIGNATION: PZ20-4 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water FIELD LOGBOOK NO.: HNF-N-807-26-72 OFFSITE PROPERTY NO.: N/A		TELEPHONE NO.: 370-9427 PROJECT COORDINATOR: TODAY, D SAF NO.: F14-003 ACTUAL SAMPLE DEPTH: 411 BILL OF LADING/AIR BILL NO.: N/A		F14-003-020 PRICE CODE: 7H AIR QUALITY: <input type="checkbox"/> METHOD OF SHIPMENT: GOVERNMENT VEHICLE DATA TURNDOWN: 30 Days / 30 Days ORIGINAL	
MATRIX+ A=Air DL=Drum Liquids US=Drum Spills L=Liquid O=Oil S=Soil SE=Soilment T=Issue W=Water W=Water W=Water X=Other		POSSIBLE SAMPLE HAZARDS/REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations BUT ARE NOT RELEASABLE PER DOE Order 458.1		PRESERVATION HNO3 to pH <2 HOLDING TIME: 28 Days TYPE OF CONTAINER: C NO. OF CONTAINERS(S): 1 VOLUME: 500ML		COW-4C 48 Hours D 1 500ML	
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		HNO3 to pH <2 (ULTREX) None 6 Months 1 250ML		NONE 1 250ML	
SAMPLE NO. B2W233 MATRIX* WATER	SAMPLE DATE: 4-10-14 SAMPLE TIME: 0842	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

CHAIN OF POSSESSION REINQUISHED BY/REMOVED FROM: <i>Fu Hoon</i> DATE/TIME: 4-10-14 0920 SIGN/PRINT NAMES: <i>[Signature]</i> RECEIVED BY/STORIED IN: <i>[Signature]</i> DATE/TIME: 4-10-14 0920		SPECIAL INSTRUCTIONS SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
REINQUISHED BY/REMOVED FROM DATE/TIME	RECEIVED BY/STORIED IN DATE/TIME	TITLE: TR-14-055	
REINQUISHED BY/REMOVED FROM DATE/TIME	RECEIVED BY/STORIED IN DATE/TIME	DATE/TIME	
REINQUISHED BY/REMOVED FROM DATE/TIME	RECEIVED BY/STORIED IN DATE/TIME	DATE/TIME	
REINQUISHED BY/REMOVED FROM DATE/TIME	RECEIVED BY/STORIED IN DATE/TIME	DATE/TIME	
LABORATORY SECTION RECEIVED BY	DISPOSAL METHOD	TITLED BY	
FINAL SAMPLE DISPOSITION	DATE/TIME	DATE/TIME	

PRINTED ON 2/4/2014

A-6603-618 (REV 2)

Sample Receipt

Chain of Custody

CHUMHILL Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F14-003-020	PAGE 2 OF 2
COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	7H
	TODAK, D	376-6437	TODAK, D	AIR QUALITY	<input type="checkbox"/>
SAMPLING LOCATION	PROJECT DESIGNATION	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH	METHOD OF SHIPMENT	ORIGINAL
C8167, 1-004	F72014 200-ZF-1 Remedial Action Wells Sampling and Analysis - Water	HNF-N-807-2-72	411	GOVERNMENT VEHICLE	
ICE CHEST NO.	OFFSITE PROPERTY NO.	SAF NO.	COA		
N/A	N/A	F14-073	392938ES10		
SHIPPED TO	Waste Sampling & Characterization	BILL OF LADING/AIR BILL NO.			
		N/A			

SPECIAL INSTRUCTIONS
 ** The CACN for all analytical work at WSCF laboratory is 403857. ** The 200 Area SR&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. **
 VOA analysis will be conducted with a 24 hour turnaround time on preliminary data. The VOA samples will be placed on a separate COC. ** Cf VI holding times MUST BE MET.
 Sample Management: Project Coordinator must be contacted immedately if there is a problem. ** The laboratory is to report all TICs for Method 8260. TRVL-14-055
 (1) 200.8_MERCURY; COMMON; 200.8_METALS_ICPMS; ALUMINUM, BARIUM, CADMIUM, CHROMIUM, COBALT, COPPER, LEAD); 200.8_METALS_ICPMS; COMMON (Add-on) (ARSENIC, MANGANESE, NICKEL, STRONTIUM, URANIUM, VANADIUM); 6010_METALS_ICP: COMMON (CALCIUM, IRON, MAGNESIUM);

TR/L 14 - 055

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A 6003 618 (REV 2)