

JANUARY 7, 2014

**WSCF Laboratory**

PO Box 650 S3-30  
Richland, WA 99352



January 7, 2014

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

Dear Scot Fitzgerald,

**FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF131579**

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 WSCF131579

- \* 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

JANUARY 7, 2014

ATTACHMENT 1

**COVER SHEET**

Consisting of 2 pages  
Including cover page

**WSCF SAF Number Cross Reference**

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Group # WSCF131579

Data Deliverable Date 01/20/14

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
S14-012	B2TH17	131579001	WATER	12/20/13	12/20/13
S14-012	B2TH32	131579002	WATER	12/20/13	12/20/13
S14-012	B2TFW7	131579003	WATER	12/20/13	12/20/13
S14-012	B2TFX2	131579004	WATER	12/20/13	12/20/13
S14-012	B2TFY7	131579005	WATER	12/20/13	12/20/13
S14-012	B2TH18	131579006	WATER	12/20/13	12/20/13
S14-012	B2TH33	131579007	WATER	12/20/13	12/20/13
S14-012	B2TH48	131579008	WATER	12/20/13	12/20/13
S14-012	B2TH98	131579009	WATER	12/20/13	12/20/13
S14-012	B2TH99	131579010	WATER	12/20/13	12/20/13
S14-012	B2TFW8	131579011	WATER	12/20/13	12/20/13
S14-012	B2TFX3	131579012	WATER	12/20/13	12/20/13
S14-012	B2TFY8	131579013	WATER	12/20/13	12/20/13

JANUARY 7, 2014

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):

- Batch QC 225277
  - Sulfate – 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.

**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.

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.

JANUARY 7, 2014

ATTACHMENT 3

**ANALYTICAL RESULTS**

Consisting of 24 pages  
Including cover page

JANUARY 7, 2014

**WSCF ANALYTICAL RESULTS REPORT**

For

CH2M Hill Plateau Remediation

PO Box 1600  
Richland, WA 99352

Attention: Scot Fitzgerald

**Contract #** MOA-FH-CHPRC-2008  
**Group #** WSCF131579  
**Report Date** January 7, 2014

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Bruce Buchanan

*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 #** WSCF131579

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
225260	225260	1	BLANK	102958	BLANK		Hexavalent chromium Discrete Analyzer
225260	225260	3	LCS	102960	LCS		Hexavalent chromium Discrete Analyzer
225260	225260	4	DUP	102961	B2TH18(131579006DUP)	131579006	Hexavalent chromium Discrete Analyzer
225260	225260	5	MS	102962	B2TH18(131579006MS)	131579006	Hexavalent chromium Discrete Analyzer
225260	225260	6	SAMPLE	131579006	B2TH18		Hexavalent chromium Discrete Analyzer
225260	225260	7	SAMPLE	131579007	B2TH33		Hexavalent chromium Discrete Analyzer
225260	225260	8	SAMPLE	131579008	B2TH48		Hexavalent chromium Discrete Analyzer
225260	225260	9	SAMPLE	131579009	B2TH98		Hexavalent chromium Discrete Analyzer
225260	225260	10	SAMPLE	131579010	B2TH99		Hexavalent chromium Discrete Analyzer
225260	225260	11	SAMPLE	131579011	B2TFW8		Hexavalent chromium Discrete Analyzer
225260	225260	12	SAMPLE	131579012	B2TFX3		Hexavalent chromium Discrete Analyzer
225260	225260	13	SAMPLE	131579013	B2TFY8		Hexavalent chromium Discrete Analyzer
225276	225276	2	BLANK	103009	BLANK		Anions by Ion Chromatography (Water)
225276	225276	3	LCS	103010	LCS		Anions by Ion Chromatography (Water)
225276	225276	4	MS	103011	B2TH17(131579001MS)	131579001	Anions by Ion Chromatography (Water)
225276	225276	5	MSD	103012	B2TH17(131579001MSD)	131579001	Anions by Ion Chromatography (Water)
225276	225276	9	SAMPLE	131579001	B2TH17		Anions by Ion Chromatography (Water)
225276	225276	10	SAMPLE	131579003	B2TFW7		Anions by Ion Chromatography (Water)
225276	225276	11	SAMPLE	131579004	B2TFX2		Anions by Ion Chromatography (Water)
225276	225276	12	SAMPLE	131579005	B2TFY7		Anions by Ion Chromatography (Water)
225277	225277	2	BLANK	103014	BLANK		Anions by Ion Chromatography (Water)
225277	225277	3	LCS	103015	LCS		Anions by Ion Chromatography (Water)
225277	225277	4	MS	103016	B2TH32(131579002MS)	131579002	Anions by Ion Chromatography (Water)

Batch QC List

Attention Scot Fitzgerald  
Department Inorganic

Group # WSCF131579

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
225277	225277	5	MSD	103017	B2TH32(131579002MSD)	131579002	Anions by Ion Chromatography (Water)
225277	225277	6	SAMPLE	131579002	B2TH32		Anions by Ion Chromatography (Water)

**Method Reference**

**Attention** Scot Fitzgerald  
**Department** Inorganic

**Group #** WSCF131579

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.

<b>LA-265-403</b>	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium
<b>LA-533-410</b>	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>

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579001  
 SAF# S14-012  
 Sample ID B2TH17

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>12/20/13</b>										
<b>Anions by Ion Chromatography (Water)</b>										
Fluoride	16984-48-8	LA-533-410	BD	0.244		ug/mL	2	0.050	1.0	12/20/13
Chloride	16887-00-6	LA-533-410	D	2.15		ug/mL	2	0.12	0.80	12/20/13
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	12/20/13
Nitrate-N	NO3-N	LA-533-410	D	1.09		ug/mL	2	0.040	0.20	12/20/13
Sulfate	14808-79-8	LA-533-410	D	31.2		ug/mL	2	0.22	1.1	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579002  
 SAF# S14-012  
 Sample ID B2TH32

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>12/20/13</b>										
<b>Anions by Ion Chromatography (Water)</b>										
Fluoride	16984-48-8	LA-533-410	BD	0.436		ug/mL	2	0.050	1.0	12/20/13
Chloride	16887-00-6	LA-533-410	D	3.04		ug/mL	2	0.12	0.80	12/20/13
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	12/20/13
Nitrate-N	NO3-N	LA-533-410	BD	0.0607		ug/mL	2	0.040	0.20	12/20/13
Sulfate	14808-79-8	LA-533-410	D	68.6		ug/mL	2	0.22	1.1	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579003  
 SAF# S14-012  
 Sample ID B2TFW7

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>12/20/13</b>										
<b>Anions by Ion Chromatography (Water)</b>										
Fluoride	16984-48-8	LA-533-410	BD	0.0885		ug/mL	2	0.050	1.0	12/20/13
Chloride	16887-00-6	LA-533-410	D	28.0		ug/mL	2	0.12	0.80	12/20/13
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	12/20/13
Nitrate-N	NO3-N	LA-533-410	D	8.26		ug/mL	2	0.040	0.20	12/20/13
Sulfate	14808-79-8	LA-533-410	D	128		ug/mL	2	0.22	1.1	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579004  
 SAF# S14-012  
 Sample ID B2TFX2

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										<b>12/20/13</b>
<b>Anions by Ion Chromatography (Water)</b>										
Fluoride	16984-48-8	LA-533-410	BD	0.111		ug/mL	2	0.050	1.0	12/20/13
Chloride	16887-00-6	LA-533-410	D	1.10		ug/mL	2	0.12	0.80	12/20/13
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	12/20/13
Nitrate-N	NO3-N	LA-533-410	D	0.653		ug/mL	2	0.040	0.20	12/20/13
Sulfate	14808-79-8	LA-533-410	D	10.7		ug/mL	2	0.22	1.1	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579005  
 SAF# S14-012  
 Sample ID B2TFY7

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										<b>12/20/13</b>
<b>Anions by Ion Chromatography (Water)</b>										
Fluoride	16984-48-8	LA-533-410	BD	0.179		ug/mL	2	0.050	1.0	12/20/13
Chloride	16887-00-6	LA-533-410	D	10.1		ug/mL	2	0.12	0.80	12/20/13
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	12/20/13
Nitrate-N	NO3-N	LA-533-410	D	3.25		ug/mL	2	0.040	0.20	12/20/13
Sulfate	14808-79-8	LA-533-410	D	50.5		ug/mL	2	0.22	1.1	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579006  
 SAF# S14-012  
 Sample ID B2TH18

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/20/13
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403		0.0128		mg/L	1	0.0020	0.0050	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579007  
 SAF# S14-012  
 Sample ID B2TH33

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/20/13
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579008  
 SAF# S14-012  
 Sample ID B2TH48

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/20/13
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403		0.258		mg/L	1	0.0020	0.0050	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579009  
 SAF# S14-012  
 Sample ID B2TH98

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/20/13
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00350		mg/L	1	0.0020	0.0050	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579010  
 SAF# S14-012  
 Sample ID B2TH99

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/20/13
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00490		mg/L	1	0.0020	0.0050	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579011  
 SAF# S14-012  
 Sample ID B2TFW8

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/20/13
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403		0.148		mg/L	1	0.0020	0.0050	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579012  
 SAF# S14-012  
 Sample ID B2TFX3

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/20/13
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF131579

Sample # 131579013  
 SAF# S14-012  
 Sample ID B2TFY8

Matrix WATER  
 Sampled 12/20/13  
 Received 12/20/13

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										12/20/13
<b>Hexavalent chromium Discrete Analyzer</b>										
Hexavalent chromium	18540-29-9	LA-265-403		0.0184		mg/L	1	0.0020	0.0050	12/20/13

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.  
 o - LCS recovery outside established laboratory acceptance limits.

**Quality Control Report**

**Attention** Scot Fitzgerald  
**Department** Inorganic

**Group #** WSCF131579

**Analytical Batch** 225260 (QC Batch: 225260)      **Test** Hexavalent chromium Discrete Analyzer  
**Associated Samples** 131579006, 131579007, 131579008, 131579009, 131579010, 131579011, 131579012, 131579013

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
			<b>QC Sample #102958</b>							
Hexavalent chromium <b>LCS</b>	18540-29-9		<0.0020	mg/L					U	12/20/13
			<b>QC Sample #102960</b>							
Hexavalent chromium <b>DUP</b>	18540-29-9		0.0511	mg/L	102.2	90 - 110				12/20/13
			<b>QC Sample #102961</b>							
			<b>Original 131579006</b>							
Hexavalent chromium <b>MS</b>	18540-29-9	0.0128	0.0128	mg/L			0.00	20		12/20/13
			<b>QC Sample #102962</b>							
			<b>Original 131579006</b>							
Hexavalent chromium	18540-29-9	0.0128	0.0421	mg/L	105.2	85 - 115				12/20/13

\* - QC result out of range

n/a - Not Applicable

**Quality Control Report**

**Attention** Scot Fitzgerald  
**Department** Inorganic

**Group #** WSCF131579

**Analytical Batch** 225276 (QC Batch: 225276)      **Test** Anions by Ion Chromatography (Water)  
**Associated Samples** 131579001, 131579003, 131579004, 131579005

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #103009</b>								
Fluoride	16984-48-8	<0.025		ug/mL					U	12/20/13
Chloride	16887-00-6	<0.060		ug/mL					U	12/20/13
Nitrite-N	NO2-N	<0.020		ug/mL					U	12/20/13
Nitrate-N	NO3-N	<0.020		ug/mL					U	12/20/13
Sulfate	14808-79-8	<0.11		ug/mL					U	12/20/13
<b>LCS</b>		<b>QC Sample #103010</b>								
Fluoride	16984-48-8	0.980		ug/mL	99	90 - 110				12/20/13
Chloride	16887-00-6	1.82		ug/mL	92	90 - 110				12/20/13
Nitrite-N	NO2-N	1.00		ug/mL	102.6	90 - 110				12/20/13
Nitrate-N	NO3-N	0.864		ug/mL	97.6	90 - 110				12/20/13
Sulfate	14808-79-8	3.91		ug/mL	99.6	90 - 110				12/20/13
<b>MS</b>		<b>QC Sample #103011</b>								
		<b>Original 131579001</b>								
Fluoride	16984-48-8	0.244	0.959	ug/mL	95.9	80 - 120			D	12/20/13
Chloride	16887-00-6	2.15	1.85	ug/mL	92.4	80 - 120			D	12/20/13
Nitrite-N	NO2-N	<0.040	1.08	ug/mL	109.2	80 - 120			D	12/20/13
Nitrate-N	NO3-N	1.09	0.872	ug/mL	97.5	80 - 120			D	12/20/13

\* - QC result out of range

n/a - Not Applicable



**Quality Control Report**

**Attention** Scot Fitzgerald  
**Department** Inorganic

**Group #** WSCF131579

**Analytical Batch** 225277 (QC Batch: 225277)      **Test** Anions by Ion Chromatography (Water)  
**Associated Samples** 131579002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #103014</b>								
Fluoride	16984-48-8	<0.025		ug/mL					U	12/20/13
Chloride	16887-00-6	<0.060		ug/mL					U	12/20/13
Nitrite-N	NO2-N	<0.020		ug/mL					U	12/20/13
Nitrate-N	NO3-N	<0.020		ug/mL					U	12/20/13
Sulfate	14808-79-8	<0.11		ug/mL					U	12/20/13
<b>LCS</b>		<b>QC Sample #103015</b>								
Fluoride	16984-48-8	0.989		ug/mL	99.8	90 - 110				12/20/13
Chloride	16887-00-6	1.84		ug/mL	92.8	90 - 110				12/20/13
Nitrite-N	NO2-N	1.01		ug/mL	103.2	90 - 110				12/20/13
Nitrate-N	NO3-N	0.879		ug/mL	99.3	90 - 110				12/20/13
Sulfate	14808-79-8	3.97		ug/mL	101.3	90 - 110				12/20/13
<b>MS</b>		<b>QC Sample #103016</b>								
		<b>Original 131579002</b>								
Fluoride	16984-48-8	0.436	0.980	ug/mL	98	80 - 120			D	12/20/13
Chloride	16887-00-6	3.04	1.79	ug/mL	89.4	80 - 120			D	12/20/13
Nitrite-N	NO2-N	<0.040	1.04	ug/mL	105.6	80 - 120			D	12/20/13
Nitrate-N	NO3-N	0.0607	0.873	ug/mL	97.6	80 - 120			D	12/20/13

\* - QC result out of range

n/a - Not Applicable



Attention: Scot Fitzgerald

Group #

WSCF131579

**Quality Control Comments**

Department Inorganic

---

103016 B2TH32(131579002MS)

**Analyte** Sulfate - Anions by Ion Chromatography (Water)

[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

103017 B2TH32(131579002MSD)

**Analyte** Sulfate - Anions by Ion Chromatography (Water)

[1] X5: Sample concentration exceed spiking level by a factor of 4. Spike recoveries are not valid.

ATTACHMENT4

**SAMPLE RECEIPT**

Consisting of 15 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  
**CA CN:** 401647  
**Work Order #:** 131579  
**Customer Work ID:** S14-012-221  
**Due Date:** 01/20/2014

The following samples were received from you on 12/20/2013 1:55:00 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
131579001	B2TH17	WATER	12/20/2013 10:58	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Anions by Ion Chromatography (Water)		F,Cl,NO2,NO3,SO4		
Sample #	Sample ID	Matrix	Collected	Received
131579002	B2TH32	WATER	12/20/2013 10:03	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Anions by Ion Chromatography (Water)		F,Cl,NO2,NO3,SO4		
Sample #	Sample ID	Matrix	Collected	Received
131579003	B2TFW7	WATER	12/20/2013 12:21	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Anions by Ion Chromatography (Water)		F,Cl,NO2,NO3,SO4		
Sample #	Sample ID	Matrix	Collected	Received
131579004	B2TFX2	WATER	12/20/2013 13:10	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Anions by Ion Chromatography (Water)		F,Cl,NO2,NO3,SO4		
Sample #	Sample ID	Matrix	Collected	Received
131579005	B2TFY7	WATER	12/20/2013 08:56	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Anions by Ion Chromatography (Water)		F,Cl,NO2,NO3,SO4		
Sample #	Sample ID	Matrix	Collected	Received
131579006	B2TH18	WATER	12/20/2013 10:58	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Hexavalent chromium Discrete Analyzer		Cr6		
Sample #	Sample ID	Matrix	Collected	Received
131579007	B2TH33	WATER	12/20/2013 10:03	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Hexavalent chromium Discrete Analyzer		Cr6		
Sample #	Sample ID	Matrix	Collected	Received
131579008	B2TH48	WATER	12/20/2013 11:07	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Hexavalent chromium Discrete Analyzer		Cr6		

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

Sample #	Sample ID	Matrix	Collected	Received
131579009	B2TH98	WATER	12/20/2013 12:39	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Hexavalent chromium Discrete Analyzer		C r6		
Sample #	Sample ID	Matrix	Collected	Received
131579010	B2TH99	WATER	12/20/2013 12:39	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Hexavalent chromium Discrete Analyzer		C r6		
Sample #	Sample ID	Matrix	Collected	Received
131579011	B2TFW8	WATER	12/20/2013 12:21	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Hexavalent chromium Discrete Analyzer		C r6		
Sample #	Sample ID	Matrix	Collected	Received
131579012	B2TFX3	WATER	12/20/2013 13:10	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Hexavalent chromium Discrete Analyzer		C r6		
Sample #	Sample ID	Matrix	Collected	Received
131579013	B2TFY8	WATER	12/20/2013 08:56	12/20/2013 13:55
<b>Procedure</b>		<b>Compound List</b>		
Hexavalent chromium Discrete Analyzer		C r6		

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S14-012-221  
Page 1 of 1

Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted	Telephone No.	309-376-4930
SAF No.	S14-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	SURV. DECEMBER 2013	Logbook No.	HNF-N-506 <i>LD / W</i>	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A
<p><b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>                  ** ** Contain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)</p>		<p><b>SPECIAL INSTRUCTIONS</b>                  Site Wide Generator Knowledge Information Form applies.                  The CAGN for analytical work at WSCF is 401647.                  FYJ and T14 samples cannot be in the same SMO.</p>			
Sample No	Filter * Date	Time	Na/Type Container	Sample Analysis	Hold Time
B2TH17 601	N	WDEC 20 2013	1x200-mL P	300.0 ANIONS JC. COMMON	48 Hours
		131579			Preservative
					Cool-4C

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
SCOTT KING	<i>[Signature]</i>		DEC 20 2013 13:55	VIC	<i>[Signature]</i>		DEC 20 2013 13:55	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Waste L = Liquid V = Vegetation X = Other
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per the procedure, used in process)			Disposed By		Date/Time		

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #  
S14-012-230  
Page 1 of 1

Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4850
SAF No.	S14-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	SURV. DECEMBER 2013	Logbook No.	HNF-N-506 LFD/410	Ice Check No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>SPECIAL INSTRUCTIONS</b>		
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)			See Waste Generator Knowledge Information from applic. The CACN for analytical work at WSGCT is 401647. FY13 and FY14 samples cannot be in the same SDO.		
Sample No	Filter	Date	Time	No./Type Container	Sample Analysis
B2TH32	602 L N	DEC 2 0 2013	1003	1x500-mL P	300.0 ANIONS_IC.COMMION
					Holding Time
					48 HOURS
					Preservative
					COOL-4C

Chain of Custody

Relinquished By	SCOTT KING	Print	Sign	Date/Time	DEC 2 0 2013	13 53	Received By	Print	Sign	Date/Time	DEC 2 0 2013	13 55													
Relinquished By				Date/Time			Received By			Date/Time															
Relinquished By				Date/Time			Received By			Date/Time															
Relinquished By				Date/Time			Received By			Date/Time															
Relinquished By				Date/Time			Received By			Date/Time															
<table border="0"> <tr> <td>SE = Soil</td> <td>DS = Dross Solids</td> </tr> <tr> <td>SD = Sediment</td> <td>DL = Druss Liquids</td> </tr> <tr> <td>SL = Solid</td> <td>T = Tissue</td> </tr> <tr> <td>W = Sludge</td> <td>WI = Wipe</td> </tr> <tr> <td>O = Oil</td> <td>L = Liquid</td> </tr> <tr> <td>A = Air</td> <td>Y = Vegetation</td> </tr> <tr> <td></td> <td>X = Other</td> </tr> </table>												SE = Soil	DS = Dross Solids	SD = Sediment	DL = Druss Liquids	SL = Solid	T = Tissue	W = Sludge	WI = Wipe	O = Oil	L = Liquid	A = Air	Y = Vegetation		X = Other
SE = Soil	DS = Dross Solids																								
SD = Sediment	DL = Druss Liquids																								
SL = Solid	T = Tissue																								
W = Sludge	WI = Wipe																								
O = Oil	L = Liquid																								
A = Air	Y = Vegetation																								
	X = Other																								
<b>FINAL SAMPLE DISPOSITION</b> Disposal Method (e.g., Return to customer, per lab procedure, used in process)																									
Disposed By: _____ Date/Time: _____																									

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A 8004 842 (REV 2)



CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

S14-012-200

Page 1 of 1

Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAP No.	S14-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071BSS20
Project Title	SURV, DECEMBER 2013	Logbook No.	HN-F-N-506 <i>LED/4le</i>	Ice Check No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Prepared	SURV	Priority	31 Days	Offsite Property No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>SPECIAL INSTRUCTIONS</b>		
*** Consider Radioactive Material at concentrations that are not regulated for transportation per 49 CFR Part are not releasable per DOE Order 5400.5 (12/30/1993).			Site With Generator Knowledge Information Form applies This CACH for analytical work at WSCF is 401547. FY13 and FY14 samples cannot be in the same SDU.		
Sample No	Filter	Date	Time	No. Type Container	Sample Analysis
B2TFX2 <i>254</i>	N	DEC 20 2013	13:10	1x500-mL P	300 0 ANIONS, JC. COMMON
					48 Hours
					Preservative
					Cool-4C

Chain of Custody

Relinquished By	Print	Date/Time	Received By	Print	Date/Time
SCOTT KING	<i>[Signature]</i>	DEC 20 2013 13:55	<i>[Signature]</i>	<i>[Signature]</i>	DEC 20 2013 13:55
Relinquished By	Date/Time	Received By	Date/Time	Matrix *	
				NS = Drum Solids	
Relinquished By	Date/Time	Received By	Date/Time	DL = Drum Liquids	
				SE = Sediment	
Relinquished By	Date/Time	Received By	Date/Time	SD = Solid	
				SL = Sludge	
Relinquished By	Date/Time	Received By	Date/Time	W = Water	
				C = Oil	
Relinquished By	Date/Time	Received By	Date/Time	A = Air	
				X = Other	
FINAL SAMPLE DISPOSITION			Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By	Date/Time
PRINTED ON 10/16/2013					

A-6004-842 (REV 2)





CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S14-012-231  
Page 1 of 1

Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4850
SAF No.	S14-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	SURV. DECEMBER 2013	Logbook No.	HNF-N-506 <i>600 / 46</i>	Ice Check No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Product	SURV	Priority	31 Days	Offsite Property No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>SPECIAL INSTRUCTIONS</b>		
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)			Site Waste Generator Knowledge/Information Form applies. The CACN for analytical work at WSECF is 401647. FY13 and FY14 samples cannot be in the same SDG.		
Sample No.	B2TH33 <i>607</i>	Filter	N	Date	DEC 7 0 2013
		Time	1003	No/Type Container	1x500-mL SG
		Received By	719C CR6 COMMON	Sample Analysis	
		Folding Time	24 Hours	Preservative	Cool-4C
		Total Activity Exemption:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Chain of Custody

Relinquished By	SCOTT KING	Sign	<i>[Signature]</i>	Date/Time	DEC 20 2013 1355	Received By	<i>[Signature]</i>	Sign	<i>[Signature]</i>	Date/Time	DEC 20 2013 1355
Relinquished By		Date/Time		Received By		Date/Time		Date/Time		Matrix *	
Relinquished By		Date/Time		Received By		Date/Time		Soil	DS	=	Drum Solids
Relinquished By		Date/Time		Received By		Date/Time		Sediment	DL	=	Drum Liquids
Relinquished By		Date/Time		Received By		Date/Time		Solid	T	=	Tissue
Relinquished By		Date/Time		Received By		Date/Time		Shales	WT	=	Wipe
Relinquished By		Date/Time		Received By		Date/Time		Water	L	=	Liquid
Relinquished By		Date/Time		Received By		Date/Time		Oil	V	=	Vegetation
Relinquished By		Date/Time		Received By		Date/Time		Air	X	=	Chile
FINAL SAMPLE DISPOSITION	Disposed Method (e.g., Return to customer, per the procedure, used in process)										
Disposed By											

PRINTED ON 10/16/2013

A-6004-842 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # <b>S14-012-244</b>									
								Page 1 of 1									
Collector	Jason Aguilera	Contact/Requester	Karen Waters-Husted	Telephone No.	509-375-4650												
SAF No.	S14-012	Sampling Origin	Hamford Site	Purchase Order/Charge Code	300071ES20												
Project Title	SURV, DECEMBER 2013	Logbook No.	HNF-N-506 58 / 48	Ice Check No.	N/A												
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A												
Protocol	SURV	Priority	31 Days	Offsite Property No.	N/A												
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>				<b>SPECIAL INSTRUCTIONS</b>		<b>Hold Time</b>		<b>Total Activity Exemption:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>									
** ** Certain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR Part are not releasable per DOE Order 5600.5 (1990/1993)				Site With Generator Knowledge Information Form applies. The CACH for analytical work at WSGT is 401647. FY13 and FY14 samples cannot be in the same SDG.													
Sample No.	B2TH40	Filter	008	N	W	Date	12-20-13	Time	1107	No./Type Container	1x500-mL AG	Sample Analysis	7190_CFO6_COMMON	Holding Time	24 Hours	Preservative	Cool-4C

Relinquished By	Jason Aguilera	Final Sign	[Signature]	Date/Time	DEC 20 2013 1355	Received By	Richard Singh	Final Sign	[Signature]	Date/Time	DEC 20 2013 1355
Relinquished By		Date/Time		Received By		Date/Time					
Relinquished By		Date/Time		Received By		Date/Time					
Relinquished By		Date/Time		Received By		Date/Time					
<b>FINAL SAMPLE DISPOSITION</b>						Disposal Method (e.g., Return to customer, per lab procedure, used in process):					
PRINTED ON 10/16/2013						Disposed By					

MATRIX *	
NS	= Drum Solids
SE	= Sediment
SD	= Solid
SL	= Sludge
W	= Water
C	= Cell
A	= Air
DL	= Drum Liquids
T	= Tissue
WI	= Wipe
L	= Liquid
V	= Vegetation
X	= Other



**CH2MHill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C.# **S14-012-198**  
Page 1 of 1

Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	314-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV, DECEMBER 2013	Logbook No.	HNF-N-566 <i>60146</i>	Ice Check No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Preteel	SURV	Priority:	31 Days	Office Property No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>					
*** ** Contain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993). SPECIAL INSTRUCTIONS: Hold Time Site Wide Generator Knowledge: Information Form applies. This CANON for analytical work. * WSCF is 40647. P-113 and P-114 samples cannot be in the same SLV.					
Sample No.	Filter	* <i>18-80-13</i>	Date/Time	No./Type Container	1x500-mL aG
B2TFW9	611	N	<i>DEC 20 2013 1329</i>	Sample Analysis	7196_C36: COMMON
				Holding Time	24 Hours
				Preservative	Cool-4C

Retransmitted By	Date/Time	Received By	Date/Time
SCOTT KING <i>[Signature]</i>	DEC 20 2013 1325	VIC HOLO <i>[Signature]</i>	DEC 20 2013 1355
Retransmitted By	Date/Time	Received By	Date/Time
Retransmitted By	Date/Time	Received By	Date/Time
Retransmitted By	Date/Time	Received By	Date/Time
FINAL SAMPLE DISPOSITION		Disposed By	
Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Date/Time	

PRINTED ON 10/16/2013 A-6004-442 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # <b>S14-012-201</b>	
Collector		Contact/Requester		Telephone No.		509-376-4650	
SAF No.		Sampling Origin		Purchase Order/Charge Code		300071ESS20	
Project Title		Logbook No.		Ice Check No.		N/A	
Shipped To (Lab)		Method of Shipment		Bill of Lading/Air Bill No.		N/A	
Protocol		Priority:		Offsite Property No.		N/A	
SURV		31 Days		N/A		N/A	
<p><b>POSSIBLE SAMPLE HAZARDS/REMARKS</b></p> <p>*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)</p>							
Sample No		Filter		Date		Time	
BZTFX3 C7		N		DEC 20 2013		1310	
NaVType Container		Sample Analysis		Folding Time		Preservative	
1x500-mL AG		719E CR6. COMMON		24 Hours		Cool-4C	
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>Site Wide Generator Knowledge Information Form applies The CACN for analytical work at WSCF is 401642. FY13 and FY14 samples cannot be in the same SDG.</p>				Hold Time		Trial Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Relinquished By	Sign	Date/Time	Received By	Sign	Date/Time	MATRIX *
SCOTT KING		DEC 20 2013 1355	Vicki King		DEC 20 2013 1355	S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By	Sign	Date/Time	Received By	Sign	Date/Time	
Relinquished By	Sign	Date/Time	Received By	Sign	Date/Time	
Relinquished By	Sign	Date/Time	Received By	Sign	Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per the procedure, used in process)				Date/Time

PRINTED ON 10/16/2013

A-6004-912 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S14-012-210  
Page 1 of 1

Collector	SCOTT KING	Contact/Requester	Karen Waters-Fusted	Telephone No.	509-376-4850		
SAF No.	S14-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20		
Project Title	SURV. DECEMBER 2013	Logbook No.	HNF-N-505 60 / 44	Ice Check No.	N/A		
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A		
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A		
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>PRIORITY</b>				
*** Contains radioactive material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)			<b>SPECIAL INSTRUCTIONS</b> Site Wide Generator Knowledge Information Form applies The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDU.				
Sample No	Filter	Date	Time	Na/Type Container	Sample Analysis	Holding Time	Preservative
B2FYB 013	N	DEC 27 2013	0854	1x500-mL EG	7196 CRG. COMMON	24 Hours	Coel-4C

Chain of Custody

Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time	Matrix *
SCOTT KING		<i>[Signature]</i>	DEC 20 2013 1355	V. C. King		<i>[Signature]</i>	DEC 20 2013 1755	SE = Soil SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Dism. Solids DL = Dism. Liquids T = Tissue WT = Wipe L = Leachate V = Vegetation X = Other
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date/Time		

PRINTED 0 10/6/2013

A6004-942 (REV 2)