

JANUARY 13, 2014

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352



January 13, 2014

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF140003

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 WSCF140003

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

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager, Dan T. Smith

WSCF Analytical Lab

(509) 373-4804

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF140003
Data Deliverable Date 02/03/14

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
I14-011	B2TKX2	140003001	WATER	01/02/14	01/02/14
I14-011	B2TKV9	140003002	WATER	01/02/14	01/02/14
I14-011	B2TKT5	140003003	WATER	01/02/14	01/02/14
I14-011	B2TKX1	140003004	WATER	01/02/14	01/02/14
I14-011	B2TKV8	140003005	WATER	01/02/14	01/02/14
I14-011	B2TKT4	140003006	WATER	01/02/14	01/02/14

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):

- Chloride – 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 13, 2014

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 14 pages
Including cover page

JANUARY 13, 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 # WSCF140003
Report Date January 13, 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 # WSCF140003

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
225814	225814	2	BLANK	103384	BLANK		Anions by Ion Chromatography (Water)
225814	225814	3	LCS	103385	LCS		Anions by Ion Chromatography (Water)
225814	225814	4	MS	103386	B2TKV8(140003005MS)	140003005	Anions by Ion Chromatography (Water)
225814	225814	5	MSD	103387	B2TKV8(140003005MSD)	140003005	Anions by Ion Chromatography (Water)
225814	225814	8	SAMPLE	140003004	B2TKX1		Anions by Ion Chromatography (Water)
225814	225814	9	SAMPLE	140003005	B2TKV8		Anions by Ion Chromatography (Water)
225814	225814	10	SAMPLE	140003006	B2TKT4		Anions by Ion Chromatography (Water)
225903	225903	1	BLANK	103453	BLANK		Hexavalent chromium Discrete Analyzer
225903	225903	3	LCS	103455	LCS		Hexavalent chromium Discrete Analyzer
225903	225903	4	DUP	103456	B2TKT5(140003003DUP)	140003003	Hexavalent chromium Discrete Analyzer
225903	225903	5	MS	103457	B2TKT5(140003003MS)	140003003	Hexavalent chromium Discrete Analyzer
225903	225903	6	SAMPLE	140003003	B2TKT5		Hexavalent chromium Discrete Analyzer
225903	225903	7	SAMPLE	140003001	B2TKX2		Hexavalent chromium Discrete Analyzer
225903	225903	8	SAMPLE	140003002	B2TKV9		Hexavalent chromium Discrete Analyzer

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140003

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-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>

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140003

Sample # 140003001
 SAF# 114-011
 Sample ID B2TKX2

Matrix WATER
 Sampled 01/02/14
 Received 01/02/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
01/02/14										
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	01/02/14

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.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140003

Sample # 140003002
 SAF# 114-011
 Sample ID B2TKV9

Matrix WATER
 Sampled 01/02/14
 Received 01/02/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										01/02/14
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	01/02/14

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.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140003

Sample # 140003003
 SAF# 114-011
 Sample ID B2TKT5

Matrix WATER
 Sampled 01/02/14
 Received 01/02/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										01/02/14
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	01/02/14

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.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140003

Sample # 140003004
 SAF# 114-011
 Sample ID B2TKX1

Matrix WATER
 Sampled 01/02/14
 Received 01/02/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
01/02/14										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	UD	<0.050		ug/mL	2	0.050	1.0	01/02/14
Chloride	16887-00-6	LA-533-410	UD	<0.12		ug/mL	2	0.12	0.80	01/02/14
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	01/02/14
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.50	01/02/14
Nitrate-N	NO3-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	01/02/14
Phosphate-P	PO4-P	LA-533-410	UD	<0.10		ug/mL	2	0.10	1.0	01/02/14
Sulfate	14808-79-8	LA-533-410	UD	<0.22		ug/mL	2	0.22	1.1	01/02/14

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.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140003

Sample # 140003005
 SAF# 114-011
 Sample ID B2TKV8

Matrix WATER
 Sampled 01/02/14
 Received 01/02/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
01/02/14										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.353		ug/mL	2	0.050	1.0	01/02/14
Chloride	16887-00-6	LA-533-410	D	11.7		ug/mL	2	0.12	0.80	01/02/14
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	01/02/14
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.50	01/02/14
Nitrate-N	NO3-N	LA-533-410	D	1.90		ug/mL	2	0.040	0.20	01/02/14
Phosphate-P	PO4-P	LA-533-410	UD	<0.10		ug/mL	2	0.10	1.0	01/02/14
Sulfate	14808-79-8	LA-533-410	D	21.6		ug/mL	2	0.22	1.1	01/02/14

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.
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140003

Sample # 140003006
 SAF# 114-011
 Sample ID B2TKT4

Matrix WATER
 Sampled 01/02/14
 Received 01/02/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
01/02/14										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.234		ug/mL	2	0.050	1.0	01/02/14
Chloride	16887-00-6	LA-533-410	D	31.4		ug/mL	2	0.12	0.80	01/02/14
Nitrite-N	NO2-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	01/02/14
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.50	01/02/14
Nitrate-N	NO3-N	LA-533-410	D	12.4		ug/mL	2	0.040	0.20	01/02/14
Phosphate-P	PO4-P	LA-533-410	UD	<0.10		ug/mL	2	0.10	1.0	01/02/14
Sulfate	14808-79-8	LA-533-410	D	46.9		ug/mL	2	0.22	1.1	01/02/14

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.
 o - LCS recovery outside established laboratory acceptance limits.

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140003

Analytical Batch 225814 (QC Batch: 225814) **Test** Anions by Ion Chromatography (Water)
Associated Samples 140003004, 140003005, 140003006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #103384								
Fluoride	16984-48-8	<0.025		ug/mL					U	01/02/14
Chloride	16887-00-6	<0.060		ug/mL					U	01/02/14
Nitrite-N	NO2-N	<0.020		ug/mL					U	01/02/14
Bromide	24959-67-9	<0.11		ug/mL					U	01/02/14
Nitrate-N	NO3-N	<0.020		ug/mL					U	01/02/14
Phosphate-P	PO4-P	<0.050		ug/mL					U	01/02/14
Sulfate	14808-79-8	<0.11		ug/mL					U	01/02/14
LCS		QC Sample #103385								
Fluoride	16984-48-8	0.988		ug/mL	99.8	90 - 110				01/02/14
Chloride	16887-00-6	1.85		ug/mL	93.5	90 - 110				01/02/14
Nitrite-N	NO2-N	1.02		ug/mL	104.4	90 - 110				01/02/14
Bromide	24959-67-9	3.97		ug/mL	101.1	90 - 110				01/02/14
Nitrate-N	NO3-N	0.895		ug/mL	101.1	90 - 110				01/02/14
Phosphate-P	PO4-P	1.93		ug/mL	101.2	90 - 110				01/02/14
Sulfate	14808-79-8	3.97		ug/mL	101.3	90 - 110				01/02/14
MS		QC Sample #103386								
		Original 140003005								

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF140003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8	0.353	0.992	ug/mL	99.2	80 - 120			D	01/02/14
Chloride	16887-00-6	11.7	2.76	ug/mL	138	80 - 120			DX	01/02/14
Nitrite-N	NO2-N	<0.040	0.988	ug/mL	100	80 - 120			D	01/02/14
Bromide	24959-67-9	<0.22	4.00	ug/mL	101.1	80 - 120			D	01/02/14
Nitrate-N	NO3-N	1.90	0.917	ug/mL	102.5	80 - 120			D	01/02/14
Phosphate-P	PO4-P	<0.10	1.78	ug/mL	92.3	80 - 120			D	01/02/14
Sulfate	14808-79-8	21.6	4.59	ug/mL	115.8	80 - 120			D	01/02/14
MSD		QC Sample #103387								
		Original 140003005				Paired 103386				
Fluoride	16984-48-8	0.353	1.01	ug/mL	100.6	80 - 120	1.10	20	D	01/02/14
Chloride	16887-00-6	11.7	2.70	ug/mL	134.8	80 - 120	0.40	20	DX	01/02/14
Nitrite-N	NO2-N	<0.040	0.984	ug/mL	99.6	80 - 120	0.40	20	D	01/02/14
Bromide	24959-67-9	<0.22	4.10	ug/mL	103.5	80 - 120	2.30	20	D	01/02/14
Nitrate-N	NO3-N	1.90	0.943	ug/mL	105.5	80 - 120	0.90	20	D	01/02/14
Phosphate-P	PO4-P	<0.10	1.84	ug/mL	95.2	80 - 120	3.10	20	D	01/02/14
Sulfate	14808-79-8	21.6	4.40	ug/mL	111.2	80 - 120	0.70	20	D	01/02/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140003

Analytical Batch 225903 (QC Batch: 225903) **Test** Hexavalent chromium Discrete Analyzer
Associated Samples 140003001, 140003002, 140003003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #103453							
Hexavalent chromium LCS	18540-29-9	<0.0020		mg/L					U	01/02/14
			QC Sample #103455							
Hexavalent chromium DUP	18540-29-9	0.0516		mg/L	103.2	90 - 110				01/02/14
			QC Sample #103456							
			Original 140003003							
Hexavalent chromium MS	18540-29-9	<0.0020	<0.0020	mg/L			333.30	20	* U	01/02/14
			QC Sample #103457							
			Original 140003003							
Hexavalent chromium	18540-29-9	<0.0020	0.0382	mg/L	95.5	85 - 115				01/02/14

* - QC result out of range

n/a - Not Applicable

Attention: Scot Fitzgerald

Group #

WSCF140003

Quality Control Comments

Department Inorganic

103386 B2TKV8(140003005MS)

Analyte Chloride - Anions by Ion Chromatography (Water)

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

103387 B2TKV8(140003005MSD)

Analyte Chloride - 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 8 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 #: 140003
Customer Work ID: I14-011-078
Due Date: 02/03/2014

The following samples were received from you on 1/2/2014 12:50:00 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
140003001	B2TKX2	WATER	1/2/2014 07:30	1/2/2014 12:50
Procedure		Compound List		
Hexavalent chromium Discrete Analyzer		C r6		
Sample #	Sample ID	Matrix	Collected	Received
140003002	B2TKV9	WATER	1/2/2014 10:03	1/2/2014 12:50
Procedure		Compound List		
Hexavalent chromium Discrete Analyzer		C r6		
Sample #	Sample ID	Matrix	Collected	Received
140003003	B2TKT5	WATER	1/2/2014 11:51	1/2/2014 12:50
Procedure		Compound List		
Hexavalent chromium Discrete Analyzer		C r6		
Sample #	Sample ID	Matrix	Collected	Received
140003004	B2TKX1	WATER	1/2/2014 07:30	1/2/2014 12:50
Procedure		Compound List		
Anions by Ion Chromatography (Water)		F,Cl,NO2,Br,NO3,P04,SO4		
Sample #	Sample ID	Matrix	Collected	Received
140003005	B2TKV8	WATER	1/2/2014 10:03	1/2/2014 12:50
Procedure		Compound List		
Anions by Ion Chromatography (Water)		F,Cl,NO2,Br,NO3,P04,SO4		
Sample #	Sample ID	Matrix	Collected	Received
140003006	B2TKT4	WATER	1/2/2014 11:51	1/2/2014 12:50
Procedure		Compound List		
Anions by Ion Chromatography (Water)		F,Cl,NO2,Br,NO3,P04,SO4		

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
114-011-078
Page 1 of 1

Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4050
SAF No.	114-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	ZZP1, DECEMBER 2013	Logbook No.	HNF-N-506 53/87	Ice Check No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Precedent	CERCLA	Priority:	31 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DQCE Order 54005 (1990/1993)		SPECIAL INSTRUCTIONS 200 Area Generator Knowledge Information Item applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis
BZTKX2	N	1-2-14	0730	1x50-mL aG	7196_CRF: COMMON
					Holding Time
					24 Hours
					Preservative
					Cool-4C

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
SCOTT KING			JAN 02 2014 1350 T	A Frazier			JAN 02 2014 1350	S = Soil SS = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Dross Solids DL = Drain 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 lab procedure, used in process)		Disposed By		Date/Time		

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A-6004-842 (REV 2)

Sample Receipt

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
114-011-082
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Collector	SCOTT KING	Contact/Requester	Karen Waters-Fusted	Telephone No.	509-376-4650
SAF No.	114-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	22P1, DECEMBER 2013	Logbook No.	HNF-N-506 53 / 57	ke Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Precedent	CERCLA	Priority:	31 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Hold Time	
*** Contact: Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DCEI Order 54005 (1996/1992)		2011 Area Generator Knowledge Information Form applies. The CACHN for analytical work at WSCF is 40/647. FT13 and FT14 samples cannot be in the same SDG.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	Time	Nc/Type Container	Sample Analysis
B27KV9	2	N	W 1-2-14	1x500-tL AG	7196_CR6_COMMON
					1003
					24 Hours
					Hold Time
					Preservative
					COOL-4C

Chain of Custody

Relinquished By	SCOTT KING	3 rd Sign	Date/Time	Received By	John Frazer	Print	Sign	Date/Time
Relinquished By	<i>Scott King</i>		JAN 02 2014 1950	Received By	<i>John Frazer</i>			JAN 02 2014 1950
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 procedures, used in process)			Disposed By		Date/Time		

MATRIX *	
S	= Soil
SE	= Sediment
SO	= Solid
SL	= Sludge
W	= Water
O	= Oil
A	= Air
DS	= Drums Solids
DL	= Drums Liquids
T	= Tissue
WT	= Waste
L	= Liquid
V	= Vegetation
X	= Other

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A-6004-942 (REV 2)

Sample Receipt

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C.# 114-011-069
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Collector	SCOTT/KMG	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	114-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	22P1, DECEMBER 2013	Logbook No.	HNF-N-306 <u>53/87</u>	Ice Chart No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Product	CERCLA	Priority:	31 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Held Time	
*** 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).		200 Area Generator Knowledge Information Form, apply. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDS.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis
B21K15	N	1-2-14	1151	1X500-ML AG	7196_CRG: COMMON
					Holding Time
					24 Hours
					Preservative
					COOL-4C

Chain of Custody

Relinquished By	Permit Sign	Date/Time	Received By	Permit Sign	Date/Time	Matrix *
SCOTT/KMG	<i>[Signature]</i>	JAN 02 2014 1350	T A Frazier	<i>[Signature]</i>	JAN 02 2014 1350	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Dams Soils DL = Dams Leachate T = Tissue WT = Wipes L = Liquid V = Vegetation X = Other
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time

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Sample Receipt

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
114-011-077
Page 1 of 1

Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	114-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	22PL DECEMBER 2013	Logbook No.	HNF-N-506 83 / 87	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	CERCLA	Priority:	31 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Hold Time	
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DCE Order 5400 5 (1990/1993)		200 Area Generator Knowledge Information Form applies. The CACH for analytical work at WSCF is 401647. FT13 and FT14 samples cannot be in the same SDG.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis
BZTKX1 4	N	1-2-14	0730	1x500-mL P	300.0 ANIONS IC: COMMON; 300.0 ANIONS IC: GW 02
					Holding Time
					48 HOURS
					Preservative
					COOL-4C

Chain of Custody

Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time
SCOTT KING	<i>[Signature]</i>		JAN 02 2014 12:50	A Frazier	<i>[Signature]</i>		JAN 02 2014 12:50
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
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 as process)			Disposed By			

Matrix *

S	=	Soil	DS	=	Drum Solids
SE	=	Sediment	LJL	=	Drum Liquids
SO	=	Solid	T	=	Tissue
SL	=	Sludges	WI	=	Wipe
W	=	Water	L	=	Liquid
O	=	Oil	V	=	Vegetation
A	=	Air	X	=	Others

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Sample Receipt

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # 114-011-081
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Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted	Telephone No.	509-375-4550
SAF No.	114-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	22P1, DECEMBER 2013	Logbook No.	HNF-N-506 53/47	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	CERCLA	Priority:	31 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS *** 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)		SPECIAL INSTRUCTIONS 200 Area Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.		Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis
BZTKV6	S	N	W	1-2-14 1003	1x500-mL P
					300.0 ANIONS_IC:COMMON; 300.0 ANIONS_IC:GW 02
					48 HOURS
					Preservative
					COOL-4C

Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
SCOTT KING			JAN 02 2014 1350	PA Frazier			JAN 02 2014 1350	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By				Received By				DS = Drums Solids DL = Drums Liquids T = Tissue W1 = Wipe L = Liquid Y = Vegetation X = Other
Relinquished By				Received By				
Relinquished By				Received By				
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date/Time		

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Sample Receipt

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

CO.C.#
114-011-068
Page 1 of 1

Collector	SCOTTINGS	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	114-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	22P1, DECEMBER 2013	Logbook No.	HNF-N-506 53 / 57	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	CERCLA	Priority	31 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS		
*** ** Confine Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)			206 Area Generator Knowledge Information from signifier. The CACN for analytical work at WSCF is 401647. FT13 and FT14 samples cannot be in the same SDG.		
Sample No	Filter	Date	Time	No/Type Container	Sample Analyte
B2TK14	N	1-2-14	1151	1x500-mL P	300.0_ANICNS_IC:COMMON 300.0_ANICNS_IC:GW 02
					Hold ng Time
					48 Hours
					Preservative
					COOL-4C

Chain of Custody

Relinquished By	SCOTTINGS	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	<i>[Signature]</i>			JAN 02 2014 1:50	TA Frazier	<i>[Signature]</i>		JAN 02 2014 1:50
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

- MATRIX *
- S = Soil
 - SE = Sediment
 - SO = Solid
 - SL = Sludge
 - W = Water
 - O = Oil
 - A = Air
 - DS = Dregs/Solids
 - DL = Drums/Liquids
 - T = Tissue
 - WI = Wipe
 - L = Landfill
 - V = Vegetation
 - X = Other

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