

DECEMBER 11, 2012

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352



December 11, 2012

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121474

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 WSCF121474

- * 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 positioned above the typed name.

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 # WSCF121474
Data Deliverable Date 12/17/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
W13-011	B2MNN8	121474001	WATER	11/16/12	11/16/12
W13-011	B2MNP2	121474002	WATER	11/16/12	11/16/12
W13-011	B2MNN9	121474003	WATER	11/16/12	11/16/12
W13-011	B2MNP3	121474004	WATER	11/16/12	11/16/12
W13-011	B2MNP4	121474005	WATER	11/16/12	11/16/12
W13-011	B2MNP0	121474006	WATER	11/16/12	11/16/12

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), Master Contract 39818, Revision 3, "Laboratory Analytical Services to CHPRC Soil and Groundwater Remediation Project."*

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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

Attachment 2
Narrative
WSCF121474

Anions – Hold time requirements for this analysis were met. A Duplicate, 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.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate 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.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 25 pages
Including cover page

DECEMBER 11, 2012

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Scot Fitzgerald

Contract # MOA-FH-CHPRC-2008
Group # WSCF121474
Report Date December 11, 2012

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 # WSCF121474

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210420	210420	2	BLANK	85234	BLANK		Anions by Ion Chromatography (Water)
210420	210420	3	LCS	85235	LCS		Anions by Ion Chromatography (Water)
210420	210420	4	DUP	85236	B2MML9(121469002DUP	121469002	Anions by Ion Chromatography (Water)
210420	210420	5	MS	85237	B2MML9(121469002MS)	121469002	Anions by Ion Chromatography (Water)
210420	210420	6	MSD	85238	B2MML9(121469002MSD	121469002	Anions by Ion Chromatography (Water)
210420	210420	14	SAMPLE	121474003	B2MNN9		Anions by Ion Chromatography (Water)
210420	210420	15	SAMPLE	121474004	B2MNP3		Anions by Ion Chromatography (Water)
210420	210420	16	SAMPLE	121474004	B2MNP3		Anions by Ion Chromatography (Water)
210628	210628	1	BLANK	85301	BLANK		Hexavalent chromium Discrete Analyzer
210628	210628	3	LCS	85303	LCS		Hexavalent chromium Discrete Analyzer
210628	210628	4	DUP	85304	B2MNP0(121474006DUP	121474006	Hexavalent chromium Discrete Analyzer
210628	210628	5	MS	85305	B2MNP0(121474006MS)	121474006	Hexavalent chromium Discrete Analyzer
210628	210628	6	SAMPLE	121474005	B2MNP4		Hexavalent chromium Discrete Analyzer
210628	210628	7	SAMPLE	121474006	B2MNP0		Hexavalent chromium Discrete Analyzer
211116	211129	5	BLANK	85817	BLANK		ICP-6010 - All possible metals
211116	211129	7	LCS	85819	LCS		ICP-6010 - All possible metals
211116	211129	9	MS	85820	B2MMR7(121464012MS)	121464012	ICP-6010 - All possible metals
211116	211129	10	MSD	85821	B2MMR7(121464012MS)	121464012	ICP-6010 - All possible metals
211116	211129	30	SAMPLE	121474001	B2MNN8		ICP-6010 - All possible metals
211116	211129	31	SAMPLE	121474002	B2MNP2		ICP-6010 - All possible metals

Batch QC List

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121474

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210753	210753	1	LCS	85478	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210753	210753	4	DUP	85479	B2MMV7(121464018DUP 121464018		Total Alkalinity as mg/L CaCO3 (Water)
210753	210753	12	SAMPLE	121474001	B2MNN8		Total Alkalinity as mg/L CaCO3 (Water)
210753	210753	13	LCS	85480	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210753	210753	14	SAMPLE	121474002	B2MNP2		Total Alkalinity as mg/L CaCO3 (Water)
210753	210753	19	LCS	85481	LCS		Total Alkalinity as mg/L CaCO3 (Water)

Method Reference

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121474

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-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 Wet Chemistry

Group # WSCF121474

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-531-411	Alkalinity		
	SM	2320	Alkalinity
	HEIS	2320_ALKALINITY	Alkalinity

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 # WSCF121474

Sample # 121474001
 SAF# W13-011
 Sample ID B2MNN8

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										12/03/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<19		ug/L	1	19	95	12/04/12
Magnesium	7439-95-4	LA-505-411		24200		ug/L	1	4.0	20	12/04/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Potassium	7440-09-7	LA-505-411		5780		ug/L	1	76	380	12/04/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Sodium	7440-23-5	LA-505-411		22300		ug/L	1	10	50	12/04/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	12/04/12
Barium	7440-39-3	LA-505-411		69.6		ug/L	1	4.0	20	12/04/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Chromium	7440-47-3	LA-505-411	B	9.30		ug/L	1	5.0	25	12/04/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Vanadium	7440-62-2	LA-505-411	B	20.0		ug/L	1	5.0	25	12/04/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/04/12
Calcium	7440-70-2	LA-505-411		73900		ug/L	1	49	240	12/04/12
Strontium	7440-24-6	LA-505-411		291		ug/L	1	9.0	45	12/04/12

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 # WSCF121474

Sample # 121474001
 SAF# W13-011
 Sample ID B2MNN8

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12

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 # WSCF121474

Sample # 121474002
 SAF# W13-011
 Sample ID B2MNP2

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										12/03/12
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	B	53.8		ug/L	1	19	95	12/04/12
Magnesium	7439-95-4	LA-505-411		37900		ug/L	1	4.0	20	12/04/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Nickel	7440-02-0	LA-505-411	B	15.4		ug/L	1	4.0	20	12/04/12
Potassium	7440-09-7	LA-505-411		8470		ug/L	1	76	380	12/04/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Sodium	7440-23-5	LA-505-411		45200		ug/L	1	10	50	12/04/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	12/04/12
Barium	7440-39-3	LA-505-411		148		ug/L	1	4.0	20	12/04/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Chromium	7440-47-3	LA-505-411	B	10.9		ug/L	1	5.0	25	12/04/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12
Vanadium	7440-62-2	LA-505-411	B	10.1		ug/L	1	5.0	25	12/04/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	12/04/12
Calcium	7440-70-2	LA-505-411		1.19E5		ug/L	1	49	240	12/04/12
Strontium	7440-24-6	LA-505-411		467		ug/L	1	9.0	45	12/04/12

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 # WSCF121474

Sample # 121474002
 SAF# W13-011
 Sample ID B2MNP2

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Beryllium	7440-41-7	LA-505-411	U	<4.0		ug/L	1	4.0	20	12/04/12

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 # WSCF121474

Sample # 121474003
 SAF# W13-011
 Sample ID B2MNN9

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/16/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.291		ug/mL	2	0.046	0.14	11/16/12
Chloride	16887-00-6	LA-533-410	D	40.6		ug/mL	2	0.12	0.81	11/16/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/16/12
Bromide	24959-67-9	LA-533-410	BD	0.286		ug/mL	2	0.22	0.96	11/16/12
Nitrate-N	NO3-N	LA-533-410	D	32.3		ug/mL	2	0.038	0.20	11/16/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/16/12
Sulfate	14808-79-8	LA-533-410	D	48.4		ug/mL	2	0.22	2.1	11/16/12

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 # WSCF121474

Sample # 121474004
 SAF# W13-011
 Sample ID B2MNP3

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/16/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.463		ug/mL	2	0.046	0.14	11/16/12
Chloride	16887-00-6	LA-533-410	D	32.8		ug/mL	2	0.12	0.81	11/16/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/16/12
Bromide	24959-67-9	LA-533-410	UD	<0.22		ug/mL	2	0.22	0.96	11/16/12
Nitrate-N	NO3-N	LA-533-410	D	91.3		ug/mL	10	0.19	0.99	11/16/12
Phosphate-P	PO4-P	LA-533-410	UD	<0.084		ug/mL	2	0.084	0.72	11/16/12
Sulfate	14808-79-8	LA-533-410	D	36.7		ug/mL	2	0.22	2.1	11/16/12

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 # WSCF121474

Sample # 121474005
 SAF# W13-011
 Sample ID B2MNP4

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/16/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00400		mg/L	1	0.0020	0.0050	11/16/12

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 # WSCF121474

Sample # 121474006
 SAF# W13-011
 Sample ID B2MNPO

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/16/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.00870		mg/L	1	0.0020	0.0050	11/16/12

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 Wet Chemistry

Group # WSCF121474

Sample # 121474001
 SAF# W13-011
 Sample ID B2MNN8

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/19/12										
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		100		mg/L	1	1	10	11/19/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/19/12
Bicarbonate	71-52-3	LA-531-411		100		mg/L	1	1		11/19/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/19/12

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

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

N - Spike Recovery is Outside Control Limits.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121474

Sample # 121474002
 SAF# W13-011
 Sample ID B2MNP2

Matrix WATER
 Sampled 11/16/12
 Received 11/16/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/19/12										
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		94		mg/L	1	1	10	11/19/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/19/12
Bicarbonate	71-52-3	LA-531-411		94		mg/L	1	1		11/19/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/19/12

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

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

N - Spike Recovery is Outside Control Limits.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)
 o - LCS recovery outside established laboratory acceptance limits.

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121474

Analytical Batch 210420 (QC Batch: 210420)
Associated Samples 121474003, 121474004

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85234								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/16/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/16/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/16/12
Bromide	24959-67-9	<0.11		ug/mL					U	11/16/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/16/12
Phosphate-P	PO4-P	<0.042		ug/mL					U	11/16/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/16/12
LCS		QC Sample #85235								
Fluoride	16984-48-8	0.968		ug/mL	97.8	90 - 110				11/16/12
Chloride	16887-00-6	1.88		ug/mL	94.7	90 - 110				11/16/12
Nitrite-N	NO2-N	1.01		ug/mL	103.5	90 - 110				11/16/12
Bromide	24959-67-9	4.03		ug/mL	102.7	90 - 110				11/16/12
Nitrate-N	NO3-N	0.911		ug/mL	102.9	90 - 110				11/16/12
Phosphate-P	PO4-P	1.94		ug/mL	101.6	90 - 110				11/16/12
Sulfate	14808-79-8	4.02		ug/mL	102.5	90 - 110				11/16/12
DUP		QC Sample #85236								
		Original 121469002								

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121474

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8		0.159	ug/mL			1.30	20	D	11/16/12
Chloride	16887-00-6		5.09	ug/mL			8.00	20	D	11/16/12
Nitrite-N	NO2-N		<0.038	ug/mL			0.00	20	UD	11/16/12
Bromide	24959-67-9		<0.22	ug/mL			0.00	20	UD	11/16/12
Nitrate-N	NO3-N		0.438	ug/mL			2.30	20	D	11/16/12
Phosphate-P	PO4-P		<0.084	ug/mL			0.00	20	UD	11/16/12
Sulfate	14808-79-8		29.6	ug/mL			0.50	20	D	11/16/12
MS		QC Sample #85237								
		Original 121469002								
Fluoride	16984-48-8		0.958	ug/mL	95.8	80 - 120			D	11/16/12
Chloride	16887-00-6		1.81	ug/mL	90.3	80 - 120			D	11/16/12
Nitrite-N	NO2-N		0.955	ug/mL	96.6	80 - 120			D	11/16/12
Bromide	24959-67-9		4.04	ug/mL	102	80 - 120			D	11/16/12
Nitrate-N	NO3-N		0.910	ug/mL	101.7	80 - 120			D	11/16/12
Phosphate-P	PO4-P		1.96	ug/mL	101.7	80 - 120			D	11/16/12
Sulfate	14808-79-8		3.92	ug/mL	99.1	80 - 120			D	11/16/12
MSD		QC Sample #85238								
		Original 121469002								
		Paired 85237								
Fluoride	16984-48-8		0.924	ug/mL	92.4	80 - 120	3.10	20	D	11/16/12
Chloride	16887-00-6		1.74	ug/mL	87	80 - 120	1.00	20	D	11/16/12
Nitrite-N	NO2-N		0.947	ug/mL	95.8	80 - 120	0.80	20	D	11/16/12
Bromide	24959-67-9		4.03	ug/mL	101.7	80 - 120	0.30	20	D	11/16/12
Nitrate-N	NO3-N		0.880	ug/mL	98.4	80 - 120	2.20	20	D	11/16/12
Phosphate-P	PO4-P		1.94	ug/mL	100.7	80 - 120	1.00	20	D	11/16/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121474

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		3.49	ug/mL	88.1	80 - 120	1.30	20	D	11/16/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121474

Analytical Batch 210628 (QC Batch: 210628) **Test** Hexavalent chromium Discrete Analyzer
Associated Samples 121474005, 121474006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #85301							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/16/12
LCS										
			QC Sample #85303							
Hexavalent chromium	18540-29-9		0.0506	mg/L	101.2	90 - 110				11/16/12
DUP										
			QC Sample #85304							
			Original 121474006							
Hexavalent chromium	18540-29-9	0.00870	0.00820	mg/L			5.90	20		11/16/12
MS										
			QC Sample #85305							
			Original 121474006							
Hexavalent chromium	18540-29-9	0.00870	0.0406	mg/L	101.5	85 - 115				11/16/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Wet Chemistry

Group # WSCF121474

Analytical Batch 210753 (QC Batch: 210753) Test Total Alkalinity as mg/L CaCO3 (Water)
 Associated Samples 121474001, 121474002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			QC Sample #85478							
Total Alkalinity as CaCO3	ALKALINITY		97	mg/L	97.1	80 - 120				11/19/12
DUP			QC Sample #85479							
			Original 121464018							
Total Alkalinity as CaCO3	ALKALINITY		84	mg/L			1.20	20		11/19/12
LCS			QC Sample #85480							
Total Alkalinity as CaCO3	ALKALINITY		98	mg/L	97.6	80 - 120				11/19/12
LCS			QC Sample #85481							
Total Alkalinity as CaCO3	ALKALINITY		97	mg/L	96.9	80 - 120				11/19/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121474

Analytical Batch 211129 (QC Batch: 211116) Test ICP-6010 - All possible metals
 Associated Samples 121474001, 121474002

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85817								
Iron	7439-89-6	<19		ug/L					U	12/04/12
Magnesium	7439-95-4	<4.0		ug/L					U	12/04/12
Manganese	7439-96-5	<4.0		ug/L					U	12/04/12
Nickel	7440-02-0	<4.0		ug/L					U	12/04/12
Potassium	7440-09-7	<76		ug/L					U	12/04/12
Silver	7440-22-4	<4.0		ug/L					U	12/04/12
Sodium	7440-23-5	<10		ug/L					U	12/04/12
Antimony	7440-36-0	<36		ug/L					U	12/04/12
Barium	7440-39-3	<4.0		ug/L					U	12/04/12
Cadmium	7440-43-9	<4.0		ug/L					U	12/04/12
Chromium	7440-47-3	<5.0		ug/L					U	12/04/12
Cobalt	7440-48-4	<4.0		ug/L					U	12/04/12
Copper	7440-50-8	<4.0		ug/L					U	12/04/12
Vanadium	7440-62-2	<5.0		ug/L					U	12/04/12
Zinc	7440-66-6	<5.0		ug/L					U	12/04/12
Calcium	7440-70-2	<49		ug/L					U	12/04/12
Strontium	7440-24-6	<9.0		ug/L					U	12/04/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121474

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium LCS	7440-41-7		<4.0	ug/L					U	12/04/12
QC Sample #85819										
Iron	7439-89-6		1030	ug/L	103	80 - 120				12/04/12
Magnesium	7439-95-4		10400	ug/L	104	80 - 120				12/04/12
Manganese	7439-96-5		1040	ug/L	104.3	80 - 120				12/04/12
Nickel	7440-02-0		1030	ug/L	103	80 - 120				12/04/12
Potassium	7440-09-7		10700	ug/L	107.4	80 - 120				12/04/12
Silver	7440-22-4		1030	ug/L	102.5	80 - 120				12/04/12
Sodium	7440-23-5		10400	ug/L	104.1	80 - 120				12/04/12
Antimony	7440-36-0		1050	ug/L	104.8	80 - 120				12/04/12
Barium	7440-39-3		1040	ug/L	103.7	80 - 120				12/04/12
Cadmium	7440-43-9		1030	ug/L	102.9	80 - 120				12/04/12
Chromium	7440-47-3		1040	ug/L	103.9	80 - 120				12/04/12
Cobalt	7440-48-4		1020	ug/L	101.8	80 - 120				12/04/12
Copper	7440-50-8		1040	ug/L	103.8	80 - 120				12/04/12
Vanadium	7440-62-2		1030	ug/L	102.7	80 - 120				12/04/12
Zinc	7440-66-6		1050	ug/L	105.4	80 - 120				12/04/12
Calcium	7440-70-2		21000	ug/L	105	80 - 120				12/04/12
Strontium	7440-24-6		1020	ug/L	101.9	80 - 120				12/04/12
Beryllium MS	7440-41-7		1040	ug/L	104	80 - 120				12/04/12
QC Sample #85820										
Original 121464012										
Iron	7439-89-6		1010	ug/L	101.3	75 - 125				12/04/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121474

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Magnesium	7439-95-4		10500	ug/L	105.3	75 - 125				12/04/12
Manganese	7439-96-5		1030	ug/L	102.7	75 - 125				12/04/12
Nickel	7440-02-0		995	ug/L	99.5	75 - 125				12/04/12
Potassium	7440-09-7		10900	ug/L	109.1	75 - 125				12/04/12
Silver	7440-22-4		1010	ug/L	101.4	75 - 125				12/04/12
Sodium	7440-23-5		10500	ug/L	104.8	75 - 125				12/04/12
Antimony	7440-36-0		1060	ug/L	105.5	75 - 125				12/04/12
Barium	7440-39-3		1040	ug/L	103.8	75 - 125				12/04/12
Cadmium	7440-43-9		1020	ug/L	102.1	75 - 125				12/04/12
Chromium	7440-47-3		1020	ug/L	102.1	75 - 125				12/04/12
Cobalt	7440-48-4		985	ug/L	98.5	75 - 125				12/04/12
Copper	7440-50-8		1040	ug/L	103.6	75 - 125				12/04/12
Vanadium	7440-62-2		1020	ug/L	101.5	75 - 125				12/04/12
Zinc	7440-66-6		1040	ug/L	104.4	75 - 125				12/04/12
Calcium	7440-70-2		21700	ug/L	108.4	75 - 125				12/04/12
Strontium	7440-24-6		1000	ug/L	100.4	75 - 125				12/04/12
Beryllium	7440-41-7		1040	ug/L	103.6	75 - 125				12/04/12
MSD			QC Sample #85821							
			Original	121464012				Paired	85820	
Iron	7439-89-6		1010	ug/L	101.2	75 - 125	0.10	20		12/04/12
Magnesium	7439-95-4		10400	ug/L	104	75 - 125	0.70	20		12/04/12
Manganese	7439-96-5		1020	ug/L	102.1	75 - 125	0.60	20		12/04/12
Nickel	7440-02-0		989	ug/L	98.9	75 - 125	0.60	20		12/04/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121474

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Potassium	7440-09-7		10800	ug/L	107.8	75 - 125	0.80	20		12/04/12
Silver	7440-22-4		1010	ug/L	100.6	75 - 125	0.70	20		12/04/12
Sodium	7440-23-5		10300	ug/L	102.8	75 - 125	1.10	20		12/04/12
Antimony	7440-36-0		1030	ug/L	103.2	75 - 125	2.20	20		12/04/12
Barium	7440-39-3		1030	ug/L	102.6	75 - 125	1.10	20		12/04/12
Cadmium	7440-43-9		1010	ug/L	101.2	75 - 125	0.90	20		12/04/12
Chromium	7440-47-3		1020	ug/L	102	75 - 125	0.10	20		12/04/12
Cobalt	7440-48-4		980	ug/L	98	75 - 125	0.50	20		12/04/12
Copper	7440-50-8		1020	ug/L	102.2	75 - 125	1.40	20		12/04/12
Vanadium	7440-62-2		1010	ug/L	101	75 - 125	0.50	20		12/04/12
Zinc	7440-66-6		1030	ug/L	103.1	75 - 125	1.30	20		12/04/12
Calcium	7440-70-2		21800	ug/L	109.1	75 - 125	0.20	20		12/04/12
Strontium	7440-24-6		996	ug/L	99.6	75 - 125	0.60	20		12/04/12
Beryllium	7440-41-7		1030	ug/L	103	75 - 125	0.60	20		12/04/12

* - QC result out of range

n/a - Not Applicable

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 8 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory

PO Box 650 S3-30
 Richland, WA 99352

ATTN: Scot Fitzgerald

Customer Code: CHPRC

PO #: 401647

Work Order #: 121474

Profile #: W13-011-189

Proj. Mgr.:

Phone:

The following samples were received from you on 11/16/2012 1:00:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
Tests scheduled				
121474001	B2MNN8	WATER	11/16/2012 12:37	11/16/2012 13:00
		6010-W; ALK-W		
121474002	B2MNP2	WATER	11/16/2012 12:08	11/16/2012 13:00
		6010-W; ALK-W		
121474003	B2MNN9	WATER	11/16/2012 12:37	11/16/2012 13:00
		IC-W		
121474004	B2MNP3	WATER	11/16/2012 12:08	11/16/2012 13:00
		IC-W		
121474005	B2MNP4	WATER	11/16/2012 12:08	11/16/2012 13:00
		CR6DA-W		
121474006	B2MNPO	WATER	11/16/2012 12:37	11/16/2012 13:00
		CR6DA-W		

Test Acronym Description

Test Acronym	Description
6010-W	ICP-AES (W)
ALK-W	Total Alkalinity (W)
CR6DA-W	Cr6 (W Discrete analyzer)
IC-W	Anions by IC (W)

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C.# W13-011-189
 Page 1 of 1

Collector	AL MONTRE / CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 51 / 51	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	RCRA	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 Hold Time: Total Activity Exemption: Yes No
 FY12 and FY13 samples cannot be in the same SDG. Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MNN8 1	N	11/16/12	1337	1x250-mL G/P	2320_ALKALINITY: List-1 (4)	14 Days	Cool-4C
B2MNN8 2	N	11/16/12	1337	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	6 Months	-HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
AL MONTRE / CHPRC		<i>[Signature]</i>	NOV 16 2012 1300	Ta Frantz		<i>[Signature]</i>	NOV 16 2012 1300	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drem Solids DL = Drem 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	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) _____ Disposed By _____ Date/Time _____

PRINTED O 10/10/2012 A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W13-011-192
Page 1 of 1

Collector	AL MCINTYRE / CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071BS20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 51/50	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	RCRA	Priority:	31 Days PRIORITY	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR; bill are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time
 FY12 and FY13 samples cannot be in the same SDG.
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 401647.

Total Activity Exemption: Yes No

Sample No	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MNP2	N	11/16/12	1208	1x250-mL GIP	2320_ALKALINITY: Lst-1 (4)	14 Days	Cool-4C
B2MNP2	N	11/16/12	1208	1x500-mL GIP	6010_METALS_IOP: Lst-3 (18)	6 Months	HNO3 to pH <2

Relinquished By	AL MCINTYRE / CHPRC	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time
Relinquished By				NOV 16 2012 1300	TH ENOZIKEN			NOV 16 2012 1300
Relinquished By								
Relinquished By								

Matrix *

S	-	Soil	DS	-	Duran Solids
SE	-	Sediment	DL	-	Trace
SO	-	Solid	T	-	Tissue
SL	-	Sludge	WI	-	Wipe
W	-	Water	L	-	Liquid
O	-	Oil	V	-	Vegetation
A	-	Air	X	-	Other

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-5004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # W13-011-190	
Collector	AL MONTYRE /CHPRC	Contact/Requester	Karen Waters-Husted		Telephone No.	376-4650	
SAF No.	W13-011	Sampling Origin	Hanford Site		Purchase Order/Charge Code	300071ESS20	
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 51/51		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	RCRA	Priority:	31 Days		Offsite Property No.	N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS		Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
*** 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)			FY12 and FY13 samples cannot be in the same SDG. See Waste Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.				
Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Preservative	
BZNNN9	N	11/16/12	1337	1x500-mL P	300.0_ANIONS_IC: List-1 + Brom_Prosp (7)	48 Hours	Cool-4C

Relinquished By	Print	Date/Time	Received By	Print	Sign	Date/Time
AL MONTYRE /CHPRC	<i>[Signature]</i>	NOV 16 2012 1300	TA Frazier	<i>[Signature]</i>		NOV 16 2012 1300
Relinquished By	Date/Time	Received By	Date/Time	Matrix *		
Relinquished By	Date/Time	Received By	Date/Time	S = Soil	DS = Drum Solids	
Relinquished By	Date/Time	Received By	Date/Time	SE = Sediment	DL = Drum Liquids	
Relinquished By	Date/Time	Received By	Date/Time	SO = Solid	T = Tissue	
Relinquished By	Date/Time	Received By	Date/Time	SL = Sludge	WT = Wipe	
Relinquished By	Date/Time	Received By	Date/Time	W = Water	L = Liquid	
Relinquished By	Date/Time	Received By	Date/Time	O = Oil	V = Vegetation	
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		

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A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W13-011-193
Page 1 of 1

Collector	AL MONTYRE / CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 51/50	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	RCRA	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
 FY12 and FY13 samples cannot be in the same SDG Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.

Total Activity Exemption: Yes No

Sample No.	Filter	+	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2MNP3	X	N	W	11/16/12	1308	300_U_ANIONS_IC: List-1 + Brom_Phosp (7)	48 Hours	COOL-4C

Relinquished By	AL MONTYRE / CHPRC	Print	Signature	Date/Time	1300	Received By	J.A. Frazzese	Print	Signature	Date/Time	1300
Relinquished By				NOV 16 2012		Received By				NOV 16 2012	
Relinquished By						Received By					
Relinquished By						Received By					

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquids
SU = Solid	T = Triene
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process)

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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

W13-011-194

Page 1 of 1

Collector	AL MONTYRE / CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 51/50	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	RCRA	Priority:	31 Days PRIORITY	Onsite 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
 FY12 and FY13 samples cannot be in the same SDG. Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
BZMNP4	N	11/16/12	1208	1x500-ml. AG	7196_C106: Hexavalent Chromium (1)	24 Hours	Cool-4C

Total Activity Exemption: Yes No

Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time
AL MONTYRE / CHPRC		<i>[Signature]</i>	NOV 16 2012 1300	TH FERRER		<i>[Signature]</i>	NOV 16 2012 1300
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 lab procedure, used in process)	Disposed By	Date/Time				

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquids
SO = Solid	T = Tissue
SL = Sludge	WL = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

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A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

W13-011-191

Page 1 of 1

Collector	AL MCINTYRE / CHPRC	Contact/Requester	Karen Waters-Fusted	Telephone No.	376-4650
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-306 51/51	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	RCRA	Priority:	31 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARD/REMARKS

** * Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 3400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time: Total Activity Exemption: Yes No
 FY12 and FY13 samples cannot be in the same SDG.
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 401647.

Sample No.	Filter	*	Date	Time	No/Type Container	Type	Sample Analysis	Holding Time	Preservative
BZMNP0	N		11/16/12	1337	1x300-ml. AG	7196_Chr6: Hexavalent Chromium (1)		24 Hours	Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
AL MCINTYRE / CHPRC			NOV 16 2012 1300	TH Frazier			NOV 16 2012 1300	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue VI = Vial 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	Relinquished By	Date/Time	Received By	Date/Time	
FINAL SAMPLE DISPOSITION		Disposition 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)