

DECEMBER 14, 2012

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352



December 14, 2012

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121455

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 WSCF121455

- * 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 # WSCF121455

Data Deliverable Date 12/14/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X13-005	B2MK74	121455001	WATER	11/13/12	11/13/12
X13-005	B2ML20	121455002	WATER	11/13/12	11/13/12
X13-005	B2ML21	121455003	WATER	11/13/12	11/13/12
X13-005	B2MK75	121455004	WATER	11/13/12	11/13/12
X13-005	B2MK78	121455005	WATER	11/13/12	11/13/12
X13-005	B2ML11	121455006	WATER	11/13/12	11/13/12
X13-005	B2ML39	121455007	WATER	11/13/12	11/13/12
X13-005	B2ML42	121455008	WATER	11/13/12	11/13/12
X13-005	B2ML14	121455009	WATER	11/13/12	11/13/12
X13-005	B2ML16	121455010	WATER	11/13/12	11/13/12
X13-005	B2ML18	121455011	WATER	11/13/12	11/13/12
X13-005	B2MK77	121455012	WATER	11/13/12	11/13/12
X13-005	B2ML38	121455013	WATER	11/13/12	11/13/12
X13-005	B2ML10	121455014	WATER	11/13/12	11/13/12
X13-005	B2ML41	121455015	WATER	11/13/12	11/13/12
X13-005	B2ML13	121455016	WATER	11/13/12	11/13/12
X13-005	B2MK73	121455017	WATER	11/13/12	11/13/12

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

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.

Radiochemistry Comments

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

Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.

Gross Alpha / Gross Beta:

- All applicable QC controls are within the established limits.

Strontium-89/90:

- 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 36 pages
Including cover page

DECEMBER 14, 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 # WSCF121455
Report Date December 14, 2012

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Heather Medley

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

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 # WSCF121455

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210260	210260	2	BLANK	84973	BLANK		Anions by Ion Chromatography (Water)
210260	210260	3	LCS	84974	LCS		Anions by Ion Chromatography (Water)
210260	210260	4	DUP	84975	B2MPH4(121454001DUP)	121454001	Anions by Ion Chromatography (Water)
210260	210260	5	MS	84976	B2MPH4(121454001MS)	121454001	Anions by Ion Chromatography (Water)
210260	210260	6	MSD	84977	B2MPH4(121454001MSD)	121454001	Anions by Ion Chromatography (Water)
210260	210260	10	SAMPLE	121455002	B2ML20		Anions by Ion Chromatography (Water)
210261	210261	2	BLANK	84980	BLANK		Anions by Ion Chromatography (Water)
210261	210261	3	LCS	84981	LCS		Anions by Ion Chromatography (Water)
210261	210261	4	DUP	84982	B2MK74(121455001DUP)	121455001	Anions by Ion Chromatography (Water)
210261	210261	5	MS	84983	B2MK74(121455001MS)	121455001	Anions by Ion Chromatography (Water)
210261	210261	6	MSD	84984	B2MK74(121455001MSD)	121455001	Anions by Ion Chromatography (Water)
210261	210261	8	SAMPLE	121455001	B2MK74		Anions by Ion Chromatography (Water)
210339	210339	1	BLANK	85083	BLANK		Hexavalent chromium Discrete Analyzer
210339	210339	3	LCS	85085	LCS		Hexavalent chromium Discrete Analyzer
210339	210339	4	DUP	85086	B2ML21(121455003DUP)	121455003	Hexavalent chromium Discrete Analyzer
210339	210339	5	MS	85087	B2ML21(121455003MS)	121455003	Hexavalent chromium Discrete Analyzer
210339	210339	7	SAMPLE	121455003	B2ML21		Hexavalent chromium Discrete Analyzer
210339	210339	8	SAMPLE	121455004	B2MK75		Hexavalent chromium Discrete Analyzer
210339	210339	9	SAMPLE	121455005	B2MK78		Hexavalent chromium Discrete Analyzer
210339	210339	10	SAMPLE	121455006	B2ML11		Hexavalent chromium Discrete Analyzer
210339	210339	11	SAMPLE	121455007	B2ML39		Hexavalent chromium Discrete Analyzer
210339	210339	12	SAMPLE	121455008	B2ML42		Hexavalent chromium Discrete Analyzer
210339	210339	13	SAMPLE	121455009	B2ML14		Hexavalent chromium Discrete Analyzer

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121455

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210339	210339	14	SAMPLE	121455010	B2ML16		Hexavalent chromium Discrete Analyzer
210339	210339	15	SAMPLE	121455011	B2ML18		Hexavalent chromium Discrete Analyzer

Batch QC List

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121455

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210242	211277	1	BLANK	84917	BLANK		Strontium 89/90 (GPC/GEA)
210242	211277	2	LCS	84918	LCS		Strontium 89/90 (GPC/GEA)
210242	211277	3	DUP	84919	B2MXM7(121450008DUP 121450008		Strontium 89/90 (GPC/GEA)
210242	211277	6	SAMPLE	121455012	B2MK77		Strontium 89/90 (GPC/GEA)
210242	211277	7	SAMPLE	121455013	B2ML38		Strontium 89/90 (GPC/GEA)
210242	211277	8	SAMPLE	121455014	B2ML10		Strontium 89/90 (GPC/GEA)
210242	211277	9	SAMPLE	121455015	B2ML41		Strontium 89/90 (GPC/GEA)
210242	211277	10	SAMPLE	121455016	B2ML13		Strontium 89/90 (GPC/GEA)
210322	210643	1	BLANK	85005	BLANK		GAB Discrete analysis Alpha only
210322	210643	2	LCS	85006	LCS		GAB Discrete analysis Alpha only
210322	210643	4	DUP	85007	B2MPH3(121454005DUP 121454005		GAB Discrete analysis Alpha only
210322	210643	5	SAMPLE	121455017	B2MK73		GAB Discrete analysis Alpha only
210634	211034	1	BLANK	85324	BLANK		Strontium 89/90 (GPC/GEA)
210634	211034	2	LCS	85325	LCS		Strontium 89/90 (GPC/GEA)
210634	211034	3	DUP	85326	B2MXJ3(121423008DUP) 121423008		Strontium 89/90 (GPC/GEA)
210634	211034	5	SAMPLE	121455017	B2MK73		Strontium 89/90 (GPC/GEA)
211268	211279	1	BLANK	85005	BLANK		GAB Discrete analysis Beta only
211268	211279	2	LCS	85006	LCS		GAB Discrete analysis Beta only
211268	211279	3	DUP	85007	B2MPH3(121454005DUP 121454005		GAB Discrete analysis Beta only
211268	211279	4	SAMPLE	121455017	B2MK73		GAB Discrete analysis Beta only

Method Reference

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121455

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>

Method Reference

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121455

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-220-406	Strontium-89 and 90 in Aqueous Samples by SR-SPEC Separation		
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium 89/90, by Sr-Spec Sep.
LA-508-415	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples		
	HEIS	ALPHA_GPC	Gross Alpha by GPC
	HEIS	BETA_GPC	Gross Beta by GPC
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium beta isotopic, GPC

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 # WSCF121455

Sample # 121455001
 SAF# X13-005
 Sample ID B2MK74

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/13/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.0992		ug/mL	2	0.046	0.14	11/13/12
Chloride	16887-00-6	LA-533-410	D	0.936		ug/mL	2	0.12	0.81	11/13/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/13/12
Nitrate-N	NO3-N	LA-533-410	D	0.373		ug/mL	2	0.038	0.20	11/13/12
Sulfate	14808-79-8	LA-533-410	D	12.7		ug/mL	2	0.22	2.1	11/13/12

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 # WSCF121455

Sample # 121455002
 SAF# X13-005
 Sample ID B2ML20

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/13/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.0976		ug/mL	2	0.046	0.14	11/13/12
Chloride	16887-00-6	LA-533-410	D	18.2		ug/mL	2	0.12	0.81	11/13/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/13/12
Nitrate-N	NO3-N	LA-533-410	D	5.33		ug/mL	2	0.038	0.20	11/13/12
Sulfate	14808-79-8	LA-533-410	D	49.4		ug/mL	2	0.22	2.1	11/13/12

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 # WSCF121455

Sample # 121455003
 SAF# X13-005
 Sample ID B2ML21

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/13/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.00920		mg/L	1	0.0020	0.0050	11/13/12

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 # WSCF121455

Sample # 121455004
 SAF# X13-005
 Sample ID B2MK75

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/13/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/13/12

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 # WSCF121455

Sample # 121455005
 SAF# X13-005
 Sample ID B2MK78

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/13/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00260		mg/L	1	0.0020	0.0050	11/13/12

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 # WSCF121455

Sample # 121455006
 SAF# X13-005
 Sample ID B2ML11

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/13/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/13/12

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 # WSCF121455

Sample # 121455007
 SAF# X13-005
 Sample ID B2ML39

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/13/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00210		mg/L	1	0.0020	0.0050	11/13/12

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 # WSCF121455

Sample # 121455008
 SAF# X13-005
 Sample ID B2ML42

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/13/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0246		mg/L	1	0.0020	0.0050	11/13/12

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 # WSCF121455

Sample # 121455009
 SAF# X13-005
 Sample ID B2ML14

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/13/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.00830		mg/L	1	0.0020	0.0050	11/13/12

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 # WSCF121455

Sample # 121455010
 SAF# X13-005
 Sample ID B2ML16

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/13/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/13/12

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 # WSCF121455

Sample # 121455011
 SAF# X13-005
 Sample ID B2ML18

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/13/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00440		mg/L	1	0.0020	0.0050	11/13/12

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 Radiochemistry

Group # WSCF121455

Sample # 121455012
 SAF# X13-005
 Sample ID B2MK77

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406		7.0	1.7	pCi/L	1	1.1		12/11/12

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

B - Analyte was detected in both the BLANK and SAMPLE
 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 Radiochemistry

Group # WSCF121455

Sample # 121455013
 SAF# X13-005
 Sample ID B2ML38

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406		4.4	1.2	pCi/L	1	1.1		12/11/12

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

B - Analyte was detected in both the BLANK and SAMPLE
 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 Radiochemistry

Group # WSCF121455

Sample # 121455014
 SAF# X13-005
 Sample ID B2ML10

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	1.0	.74	pCi/L	1	1.1		12/11/12

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

B - Analyte was detected in both the BLANK and SAMPLE
 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 Radiochemistry

Group # WSCF121455

Sample # 121455015
 SAF# X13-005
 Sample ID B2ML41

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406		3.4	1.1	pCi/L	1	1.1		12/11/12

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

B - Analyte was detected in both the BLANK and SAMPLE
 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 Radiochemistry

Group # WSCF121455

Sample # 121455016
 SAF# X13-005
 Sample ID B2ML13

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Strontium 89/90 WATER/LIQUID PREP										12/06/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406	U	0.66	.69	pCi/L	1	1.1		12/11/12

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

B - Analyte was detected in both the BLANK and SAMPLE
 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 Radiochemistry

Group # WSCF121455

Sample # 121455017
 SAF# X13-005
 Sample ID B2MK73

Matrix WATER
 Sampled 11/13/12
 Received 11/13/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
GAB Prep for Discrete Analysis (W)										11/20/12
GAB Discrete analysis Alpha only										
Gross Alpha	12587-46-1	LA-508-415	U	0.81	1.2	pCi/L	1	2.1		11/30/12
GAB Discrete analysis Beta only										
Gross Beta	12587-47-2	LA-508-415		18	3.4	pCi/L	1	3.5		12/10/12
Strontium 89/90 WATER/LIQUID PREP										11/29/12
Strontium 89/90 (GPC/GEA)										
Strontium-89_90	SR-RAD	LA-220-406		8.2	1.9	pCi/L	1	0.90		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 was detected in both the BLANK and SAMPLE
 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 # WSCF121455

Analytical Batch 210260 (QC Batch: 210260)
Associated Samples 121455002

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #84973								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/13/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/13/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/13/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/13/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/13/12
LCS		QC Sample #84974								
Fluoride	16984-48-8	0.974		ug/mL	98.4	90 - 110				11/13/12
Chloride	16887-00-6	1.79		ug/mL	90.2	90 - 110				11/13/12
Nitrite-N	NO2-N	1.00		ug/mL	102.5	90 - 110				11/13/12
Nitrate-N	NO3-N	0.881		ug/mL	99.5	90 - 110				11/13/12
Sulfate	14808-79-8	3.92		ug/mL	100.1	90 - 110				11/13/12
DUP		QC Sample #84975								
		Original 121454001								
Fluoride	16984-48-8	0.188		ug/mL			0.60	20	D	11/13/12
Chloride	16887-00-6	12.7		ug/mL			0.70	20	D	11/13/12
Nitrite-N	NO2-N	<0.038		ug/mL			0.00	20	UD	11/13/12
Nitrate-N	NO3-N	5.66		ug/mL			0.20	20	D	11/13/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121455

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		38.4	ug/mL			0.10	20	D	11/13/12
MS			QC Sample #84976							
			Original 121454001							
Fluoride	16984-48-8		0.979	ug/mL	97.9	80 - 120			D	11/13/12
Chloride	16887-00-6		1.92	ug/mL	96.2	80 - 120			D	11/13/12
Nitrite-N	NO2-N		0.964	ug/mL	97.6	80 - 120			D	11/13/12
Nitrate-N	NO3-N		0.877	ug/mL	98.1	80 - 120			D	11/13/12
Sulfate	14808-79-8		3.68	ug/mL	92.9	80 - 120			D	11/13/12
MSD			QC Sample #84977							
			Original 121454001						Paired 84976	
Fluoride	16984-48-8		0.976	ug/mL	97.6	80 - 120	0.30	20	D	11/13/12
Chloride	16887-00-6		1.97	ug/mL	98.3	80 - 120	0.30	20	D	11/13/12
Nitrite-N	NO2-N		0.957	ug/mL	96.8	80 - 120	0.80	20	D	11/13/12
Nitrate-N	NO3-N		0.837	ug/mL	93.6	80 - 120	0.60	20	D	11/13/12
Sulfate	14808-79-8		3.74	ug/mL	94.3	80 - 120	0.10	20	D	11/13/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121455

Analytical Batch 210261 (QC Batch: 210261)
Associated Samples 121455001

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #84980								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/13/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/13/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/13/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/13/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/13/12
LCS		QC Sample #84981								
Fluoride	16984-48-8	0.973		ug/mL	98.3	90 - 110				11/13/12
Chloride	16887-00-6	1.80		ug/mL	91	90 - 110				11/13/12
Nitrite-N	NO2-N	1.04		ug/mL	105.9	90 - 110				11/13/12
Nitrate-N	NO3-N	0.908		ug/mL	102.6	90 - 110				11/13/12
Sulfate	14808-79-8	3.98		ug/mL	101.6	90 - 110				11/13/12
DUP		QC Sample #84982								
		Original 121455001								
Fluoride	16984-48-8	0.0992	0.101	ug/mL			2.20	20	BD	11/13/12
Chloride	16887-00-6	0.936	0.898	ug/mL			4.10	20	D	11/13/12
Nitrite-N	NO2-N	<0.038	<0.038	ug/mL			0.00	20	UD	11/13/12
Nitrate-N	NO3-N	0.373	0.386	ug/mL			3.60	20	D	11/13/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121455

Analytical Batch 210339 (QC Batch: 210339) Test Hexavalent chromium Discrete Analyzer
 Associated Samples 121455003, 121455004, 121455005, 121455006, 121455007, 121455008, 121455009, 121455010, 121455011

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #85083							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/13/12
LCS			QC Sample #85085							
Hexavalent chromium	18540-29-9		0.0518	mg/L	103.6	90 - 110				11/13/12
DUP			QC Sample #85086							
			Original 121455003							
Hexavalent chromium	18540-29-9	0.00920	0.00920	mg/L			0.00	20		11/13/12
MS			QC Sample #85087							
			Original 121455003							
Hexavalent chromium	18540-29-9	0.00920	0.0433	mg/L	108.2	85 - 115				11/13/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121455

Analytical Batch 210643 (QC Batch: 210322)
 Associated Samples 121455017

Test GAB Discrete analysis Alpha only

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85005								
Gross Alpha	12587-46-1		-0.089	pCi/L					U	11/30/12
LCS		QC Sample #85006								
Gross Alpha	12587-46-1		55	pCi/L	92.6	80 - 120				11/30/12
DUP		QC Sample #85007								
		Original 121454005								
Gross Alpha	12587-46-1		1.1	pCi/L			71.70	20	* U	11/30/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121455

Analytical Batch 211034 (QC Batch: 210634) Test Strontium 89/90 (GPC/GEA)
 Associated Samples 121455017

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85324								
Strontium-89_90	SR-RAD		0.21	pCi/L					U	12/04/12
LCS		QC Sample #85325								
Strontium-89_90	SR-RAD		97	pCi/L	109	80 - 120				12/04/12
DUP		QC Sample #85326								
		Original 121423008								
Strontium-89_90	SR-RAD		0.44	pCi/L			120.60	20	* U	12/04/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121455

Analytical Batch 211277 (QC Batch: 210242) Test Strontium 89/90 (GPC/GEA)
 Associated Samples 121455012, 121455013, 121455014, 121455015, 121455016

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #84917							
Strontium-89_90	SR-RAD		0.26	pCi/L					U	12/11/12
LCS										
			QC Sample #84918							
Strontium-89_90	SR-RAD		94	pCi/L	105.9	80 - 120				12/11/12
DUP										
			QC Sample #84919							
			Original 121450008							
Strontium-89_90	SR-RAD		9800	pCi/L			11.00	20		12/11/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121455

Analytical Batch 211279 (QC Batch: 211268) Test GAB Discrete analysis Beta only
 Associated Samples 121455017

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			QC Sample #85005							
Gross Beta	12587-47-2		-2.4	pCi/L					U	12/10/12
LCS			QC Sample #85006							
Gross Beta	12587-47-2		250	pCi/L	97.9	80 - 120				12/10/12
DUP			QC Sample #85007							
			Original 121454005							
Gross Beta	12587-47-2		44	pCi/L			9.00	20		12/10/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121455

Analytical Batch 211034 (QC Batch: 210634) Test Strontium 89/90 (GPC/GEA)
 Associated Samples 121455017

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE		Sample #121455017								
Strontium Nitrate	10042-76-9			mg	78.5	25 - 105				12/04/12
BLANK		QC Sample #85324								
Strontium Nitrate	10042-76-9			mg	102.5	25 - 105				12/04/12
LCS		QC Sample #85325								
Strontium Nitrate	10042-76-9			mg	74.4	25 - 105				12/04/12
DUP		QC Sample #85326								
		Original 121423008								
Strontium Nitrate	10042-76-9			mg	79.3	25 - 105	n/a			12/04/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121455

Analytical Batch 211277 (QC Batch: 210242) **Test** Strontium 89/90 (GPC/GEA)
Associated Samples 121455012, 121455013, 121455014, 121455015, 121455016

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE										
Strontium Nitrate	10042-76-9			mg	74.4	25 - 105				12/11/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	72.7	25 - 105				12/11/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	71.9	25 - 105				12/11/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	72.7	25 - 105				12/11/12
SAMPLE										
Strontium Nitrate	10042-76-9			mg	72.7	25 - 105				12/11/12
BLANK										
Strontium Nitrate	10042-76-9			mg	75.2	25 - 105				12/11/12
LCS										
Strontium Nitrate	10042-76-9			mg	75.2	25 - 105				12/11/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121455

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
DUP			QC Sample #84919							
			Original 121450008							
Strontium Nitrate	10042-76-9			mg	80.2	25 - 105	n/a			12/11/12
* - QC result out of range				n/a - Not Applicable						

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 20 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 #: 403899

Work Order #: 121455

Profile #: X13-005-153

Proj. Mgr.:

Phone:

The following samples were received from you on 11/13/2012 12:40:00 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		
121455001	B2MK74	WATER	11/13/2012 09:49	11/13/2012 12:40
		IC-W		
121455002	B2ML20	WATER	11/13/2012 11:56	11/13/2012 12:40
		IC-W		
121455003	B2ML21	WATER	11/13/2012 11:56	11/13/2012 12:40
		CR6DA-W		
121455004	B2MK75	WATER	11/13/2012 09:49	11/13/2012 12:40
		CR6DA-W		
121455005	B2MK78	WATER	11/13/2012 10:06	11/13/2012 12:40
		CR6DA-W		
121455006	B2ML11	WATER	11/13/2012 11:09	11/13/2012 12:40
		CR6DA-W		
121455007	B2ML39	WATER	11/13/2012 10:33	11/13/2012 12:40
		CR6DA-W		
121455008	B2ML42	WATER	11/13/2012 10:46	11/13/2012 12:40
		CR6DA-W		
121455009	B2ML14	WATER	11/13/2012 11:19	11/13/2012 12:40
		CR6DA-W		
121455010	B2ML16	WATER	11/13/2012 11:41	11/13/2012 12:40
		CR6DA-W		
121455011	B2ML18	WATER	11/13/2012 11:49	11/13/2012 12:40

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

CR6DA-W

121455012	B2MK77	WATER	11/13/2012 10:06	11/13/2012 12:40
SR89/90-W				
121455013	B2ML38	WATER	11/13/2012 10:33	11/13/2012 12:40
SR89/90-W				
121455014	B2ML10	WATER	11/13/2012 11:09	11/13/2012 12:40
SR89/90-W				
121455015	B2ML41	WATER	11/13/2012 10:46	11/13/2012 12:40
SR89/90-W				
121455016	B2ML13	WATER	11/13/2012 11:19	11/13/2012 12:40
SR89/90-W				
121455017	B2MK73	WATER	11/13/2012 09:49	11/13/2012 12:40
GAB-AO-W; GAB-BO-W; SR89/90-W				

Test Acronym Description

Test Acronym	Description
CR6DA-W	Cr6 (W Discrete analyzer)
GAB-AO-W	Gross Alpha/Beta (A only)(W)
GAB-BO-W	Gross Alpha/Beta (B only)(W)
IC-W	Anions by IC (W)
SR89/90-W	Strontium 89/90 (GPC) (W)

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # X13-005-153
Page 1 of 1

Collector: J. Apple SAF No: X13-005
 Contact/Requester: Karen Waters-Husted Telephone No: 376-4650
 Sampling Origin: Hanford Site Purchase Order/Change Code: 303064ESS20
 Project Title: AQUIFER TUBES, NOVEMBER 2012 Logbook No: HNF-N-506 HU / 92,93 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 Total Activity Exemption: Yes No
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 5100.5 (1990/1993)
SPECIAL INSTRUCTIONS Hold Time:
 Site Wide Generator Knowledge Information Form applies.
 The CANON for all analytical work at WSCF is 403899.
 FY12 and FY13 samples cannot be in the same SDG.

Sample No. 121455 Filter: Date: 11-13-12 Time: 0949 No./Type Container: 1x500-mL P Sample Analysis: 300_0_ANIONS_IC>List-1 (5) Holding Time: 48 Hours Preservative: Coob-4C

Relinquished By	<u>J. Apple</u>	Print	Signature	Date/Time	Received By	<u> </u>	Print	Signature	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		

Matrix *

S	=	Soil	DS	=	Drum Solids
SE	=	Sediment	DL	=	Drum Liquids
SO	=	Solid	T	=	Tissue
SL	=	Slick	W1	=	Wipe
W	=	Water	L	=	Liquid
O	=	Oil	V	=	Vegetation
A	=	Air	X	=	Other

FINAL SAMPLE DISPOSITION: Disposed By: Date/Time:

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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# X13-005-287
Page 1 of 1

Collector SAF No. X13-005 Project Title Shipped To (Lab) Protocol	J. Aguilar X13-005 AQUIFER TUBES, NOVEMBER 2012 Waste Sampling & Characterization SURV	Contact/Requester Sampling Origin Logbook No. Method of Shipment Priority:	Karen Waters-Husted Hanford Site INF-N-506 46/52, 93 GOVERNMENT VEHICLE 31 Days	Telephone No. Purchase Order/Charge Code Ice Chest No. Bill of Lading/Air Bill No. Office Property No.	376-4650 303064IES20 N/A N/A N/A		
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR; all are not releasable per DOE Order 3405 (1990/1995)		SPECIAL INSTRUCTIONS Site Waste Generator Knowledge Information Form applies. The CACH for all analytical work at WSCF is 413899. P172 and P113 samples cannot be in the same SDCO.		Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2M120	N	11-13-12	11:56	1x500-mL P	300 0_ ANIONIC_IC: List-1 (5)	48 Hours	Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
J. Aguilar	[Signature]	[Signature]	11-13-12 1340	C. Johnson	[Signature]	[Signature]	11-13-12 1340	S = Soil SL = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vapour 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		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. # **X13-005-288**
Page 1 of 1

Collector	J. Aguilar	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	X13-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	INFP-N-506 46 / 9.2.9.3	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Produced	SURV	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 (1990/1995)

SPECIAL INSTRUCTIONS Hold Time: Total Activity Exemption: Yes No

Site Wide Generator Knowledge Information Form applies. The GACN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SDG.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2ML21	N	11-13-12	11:50	1x500-mL AG	7196_CIT6: Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	J. Aguilar	Print	Sign	Date/Time	11-13-12	1340	Received By	[Signature]	Print	Sign	Date/Time	11-13-12	1340	Matrix *
Relinquished By	[Signature]	Date/Time	Received By	Date/Time	Received By	Date/Time	Received By	Date/Time	Received By	Date/Time	Received By	Date/Time	Disposed By	Date/Time

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

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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # X13-005-154
Page 1 of 1

Collector: *J. Aguilar*
 SAE No. X13-005
 Project Title: AQUIFER TUBES, NOVEMBER 2012
 Shipped To (Lab): Waste Sampling & Characterization
 Protocol: SURV

Contract/Requester: Karen Waters-Husted
 Sampling Origin: Hanford Site
 Logbook No. HNF-N-506 46 / 92,93
 Method of Shipment: GOVERNMENT VEHICLE
 Priority: 31 Days PRIORITY

Telephone No. 376-4650
 Purchase Order/Charge Code 303064ES20
 Ice Chest No. N/A
 Bill of Lading/Air Bill No. N/A
 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 3405 (1990/1995)

SPECIAL INSTRUCTIONS: Hold Time
 Site Wide Generation Knowledge: Information from applies the CACN for all analytical work at WSCF is 4E3895, FY12 and FY13 samples cannot be in the same SDC.

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No/Type Container	Received By	Sample Analysis	Holding Time	Preservative
B2MK75	4	N	W	11-13-12 0949	1x500-ml a/c	7198_Cr6: Hexavalent Chromium (1)	24 Hours	Cool-4C

Requested By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time	Matrix *
<i>J. Aguilar</i>		<i>[Signature]</i>	11-13-12 1246	<i>[Signature]</i>		<i>[Signature]</i>	11-13-12 1246	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Duan Solids DL = Duan Liquids T = Tissue WI = Wipe L = Liquid V = Vapors X = Other
Requested By			Date/Time	Received By			Date/Time	
Requested By			Date/Time	Received By			Date/Time	
Requested 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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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X13-005-156
Page 1 of 1

Collector <i>J. Aguilar</i>	SAF No. X13-005	Contact/Requester Karen Waters-Husted	Sampling Origin Hanford Site	Telephone No. 376-4650
Project Title AQUIFER TUBES, NOVEMBER 2012	Logbook No. INF-N-506 46 / 92, 93	Method of Shipment Waste Sampling & Characterization	Government Vehicle GOVERNMENT VEHICLE	Purchase Order/Charge Code 303064ES20
Shipped To (Lab) SURV	Priority 31 Days	Hold Time N/A	Bill of Lading/Air Bill No. N/A	Ice Chest 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 5100.5 (1990/1993)	Special Instructions Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SDCI.	Offsite Property No. N/A	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MK78	N	11-13-12	1006	1x500-mL aG	7196_CHE: Hexavalent Chromium (1)	24 Hours	Cool-4C

Requisitioned By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
<i>J. Aguilar</i>			11-13-12 1240	<i>C. Johnson</i>			11-13-12 1240	S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air
Requisitioned By			Date/Time	Received By			Date/Time	DS - Drum Solids DL - Drum Liquids T - Tissue WI - Wire L - Liquid V - Vegetation X - Other
Requisitioned By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Date/Time

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Chain of Custody

CH2MHILL Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X13-005-282
Page 1 of 1

Collector	<i>S. Aguilera</i>	Contact/Requester	Karen Waters-Flusted	Telephone No.	376-4650
SAF No.	X13-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506 <i>46/92, 93</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

POSSIBLE SAMPLE HAZARDS/REMARKS

*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not tele-liable per DOE Order 5400.5 (1990/1995)

SPECIAL INSTRUCTIONS Hold Time: Total Activity Exemption: Yes No

Site Wide Generator Knowledge Information Form applies: The CACN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SDG

Sample No.	Filter	Date	Time	Vol/Type Container	Sample Analysis	Holding Time	Preservative
B2ML11	N	11-13-12	1109	1x500-mL aG	7196_CR6 Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	<i>S. Aguilera</i>	Print	Sign	Date/Time	11-13-12	1240	Received By	<i>C. Chinn</i>	Print	Sign	Date/Time	11-13-12	1340
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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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X13-005-299**
Page 1 of 1

Collector	<i>J. Aguilar</i>	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	X13-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064HS20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506 46/9293	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
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS		
*** 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 Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403897. FY12 and FY13 samples cannot be in the same SDG.		
Sample No.	B2ML39	Filter	N	Date	11-13-12
		Time	1033	No/Type Container	1x500-mL AG
		Sample Analysis	7198_CRE Hexavalent Chromium (1)	Holding Time	24 Hours
		Preservative	Cool-AC		
		Total Activity Exemption	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
<i>J. Aguilar</i>			11-13-12 1240	<i>C. Johnson</i>			11-13-12 1240	S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids T - Tissue WT - Wine L - Lizard 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 (c.f. Return to customer per lab procedure, used in process) Disposed By Date/Time

Chain of Custody

CH2M Hill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **X13-005-301**
 Page 1 of 1

Collector	<i>J. Aguilar</i>	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	X13-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506 <i>46/92,93</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
Protocol	SURV	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

Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403897. FY12 and FY13 samples cannot be in the same SDG.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Preservative
B2ML42	N	11-13-12	1046	1x500-mL 40G	7198_CR6 -Hexavalent Chromium (1)	Cool-4C

Relinquished By	<i>J. Aguilar</i>	Print	Sign	Date/Time	Received By	<i>C Johnson</i>	Print	Sign	Date/Time	Matrix *
Relinquished By				11-13-12 1040	Received By				11-13-12 1040	S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air
Relinquished By					Received By					DS - Drums Solids DL - Drum Liquids T - Tissue WI - Wipe L - Liquid V - Vegetation X - Other
Relinquished By					Received By					

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

Disposed By: _____ Date/Time: _____

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **X13-005-284**
 Page 1 of 1

Collector J. Aguilar Contact/Requester Karen Waters-Husted Telephone No. 376-4650
 SAF No. X13-005 Sampling Origin Hartford Site Purchase Order/Charge Code 303064ES20
 Project Title AQUIFER TUBES, NOVEMBER 2012 Logbook No. HNF-N-506 46 / 9,2,93 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 **PRIORITY** 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 (1990/1995)

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 403899.
 FY12 and FY13 samples cannot be in the same SDG.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2ML14	N	11-13-12	1119	1x500-mL aIG	7196_CR6 Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
J. Aguilar			11-13-12 1340	CAHUS			11-13-12 1340	S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids T - Tissue WI - Wipe 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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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # X13-005-286
Page 1 of 1

Collector SAF No. X13-005 Project Title Shipped To (Lab) Protocol	J. Agutter X13-005 AQUIFER TUBES, NOVEMBER 2012 Waste Sampling & Characterization SURV	Contact/Requester Sampling Origin Logbook No. Method of Shipment Priority:	Karen Waters-Husted Hanford Site HNF-N-506 H6 / 92,93 GOVERNMENT VEHICLE 31 Days	Telephone No. Purchase Order/Charge Code Ice Chest No. Bill of Lading/Air Bill No. Offsite Property No.	376-4650 303064ES20 N/A N/A N/A		
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS					
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1995)		Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403899. LY12 and PY13 samples cannot be in the same SDC.					
Sample No.	Filter	Date	Time	Not Type Container	Sample Analysis	Holding Time	Preservative
BZML 18	N	11-13-12	1149	1x500-mL aG	7196_CR6, Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time
J. Agutter		[Signature]	11-13-12 0940	[Signature]		[Signature]	11-13-12 1240
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	WI	=	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. # X13-005-155
Page 1 of 1

Collector: <u>J. Aguilar</u>	Contact/Requester: Karen Waters-Husted	Telephone No.: 376-4650
SAF No.: X13-005	Sampling Origin: Hanford Site	Purchase Order/Change Code: 303064E520
Project Title: AQUIFER TUBES, NOVEMBER 2012	Logbook No.: HNF-N-506 46 / 92, 93	Lee 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
POSSIBLE SAMPLE HAZARDS/REMARKS *** 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)		
Sample No.: B2MKT77	Filter: N	Date: 11-13-12
Time: 1006	No/Type Container: 1X1-L-GFP	Strontium-89/90 -- Total Sr
Sample Analysis: HNO3 to pH <2	Holding Time: 6 Months	Preservative:
SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information Form applies The CACN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SDG.		
Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Relinquished By	Mat	Sign	Date/Time	Received By	Mat	Sign	Date/Time	Matrix *
J. Aguilar			11-13-12 1240	C. Johnson			11-13-12 7240	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
								DS = Drum Solids DL = Drum Liquids T = Tissue WI = Waste L = Liquid V = Volatilization 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)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X13-005-281

Page 1 of 1

Collector J. Aguilera	SAF No. X13-005	Project Title AQUIFER TUBES, NOVEMBER 2012	Shipped To (Lab) Waste Sampling & Characterization	Protocol SURV	Contact/Requester Karen Waters-Husted	Sampling Origin Hanford Site	Logbook No. HNF-N-506-46 / 92293	Method of Shipment GOVERNMENT VEHICLE	Priority: 31 Days	Hold Time SPECIAL INSTRUCTIONS	Offsite Property No. N/A	Telephone No. 376-4650	Purchase Order/Charge Code 303064ESS20	Ice Chest No. N/A	Bill of Lading/Air Bill No. N/A	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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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 5605 5 (1990/1993)

SPECIAL INSTRUCTIONS
 Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SLX.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
DM110	N	11-13-12	1109	1x1-L-GIP	Srionium-89,90 -- Total Sr	9 Months	HNO3 to pH <2

Redquisitioned By <i>J. Aguilera</i>	Date/Time 11-13-12 1340	Received By <i>C. Munsie</i>	Date/Time 11-13-12 1340	Matrix *
Redquisitioned By	Date/Time	Received By	Date/Time	S = Soil
Redquisitioned By	Date/Time	Received By	Date/Time	SE = Sediment
Redquisitioned By	Date/Time	Received By	Date/Time	SO = Solid
Redquisitioned By	Date/Time	Received By	Date/Time	SL = Sludge
Redquisitioned By	Date/Time	Received By	Date/Time	W = Water
Redquisitioned By	Date/Time	Received By	Date/Time	O = Oil
Redquisitioned By	Date/Time	Received By	Date/Time	A = Air
Redquisitioned By	Date/Time	Received By	Date/Time	DS = Dried Solids
Redquisitioned By	Date/Time	Received By	Date/Time	DL = Dried Liquids
Redquisitioned By	Date/Time	Received By	Date/Time	T = Tissue
Redquisitioned By	Date/Time	Received By	Date/Time	WI = Waste
Redquisitioned By	Date/Time	Received By	Date/Time	L = Leachate
Redquisitioned By	Date/Time	Received By	Date/Time	V = Vegetation
Redquisitioned By	Date/Time	Received By	Date/Time	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. # **X13-005-300**
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Collector	<i>J. Aquilino</i>	Contract/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAP No.	X13-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ESS20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	INF-N-506-46/92, 93	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

POSSIBLE SAMPLE HAZARDS/REMARKS

*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DCE Order 5400 5 (1/96/1993)

SPECIAL INSTRUCTIONS Hold Time: **PRIORITY**
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 403899.
 VY12 and VY13 samples cannot be in the same SDX.

Total Activity Exemption: Yes No

Sample No.	Filter	+	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2ML41	IS	N	11-13-12	1046	1x1-L-GFP	Strontium-89,90 -- Total Sr	6 Months	HN03 to pH <2

Relinquished By	<i>J. Aquilino</i>	Print	Sign	Date/Time	Received By	<i>C. Waters</i>	Print	Sign	Date/Time
Relinquished At		Date/Time		11-13-12 1340	Received By		Date/Time		11-13-12 1340
Relinquished By		Date/Time			Received By		Date/Time		
Relinquished By		Date/Time			Received By		Date/Time		

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drain Liquids
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

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Chain of Custody

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#
X13-005-283

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Collector	J. Aguilar	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	X13-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ESS20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506-46/92-93	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
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 DOE Order 5403.5 (1990/1993)		Site Wide Generator Knowledge Information Form applies. The CACN For all analytical work at WSCF is 403899. FY12 and FY13 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
B2ML13	14	N	W	11-13-12 1119	1x1-L-GP
					Strontium-89,90 -- Total Sr
					Holding Time
					9 Months
					Preservative
					HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
J. Aguilar			-11-13-12 1340	C. Waters			11-13-12 1340	S - Soil SF - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air
Relinquished By			Date/Time	Received By			Date/Time	DS - Drum Solids DL - Drum Liquids T - Tissue WI - Wipe 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)				
PRINTED O 10/9/2012				A-6004-842 (REV 2)				

