

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 WSCF121466

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 WSCF121466

- * 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 # WSCF121466

Data Deliverable Date 12/17/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X13-005	B2MLD9	121466001	WATER	11/15/12	11/15/12
X13-005	B2MLF7	121466002	WATER	11/15/12	11/15/12
X13-005	B2ML30	121466003	WATER	11/15/12	11/15/12
X13-005	B2MKV7	121466004	WATER	11/15/12	11/15/12
X13-005	B2MKV8	121466005	WATER	11/15/12	11/15/12
X13-005	B2ML29	121466006	WATER	11/15/12	11/15/12
X13-005	B2MKT6	121466007	WATER	11/15/12	11/15/12
X13-005	B2MKT7	121466008	WATER	11/15/12	11/15/12
X13-005	B2MLC7	121466009	WATER	11/15/12	11/15/12
X13-005	B2ML33	121466010	WATER	11/15/12	11/15/12
X13-005	B2ML27	121466011	WATER	11/15/12	11/15/12
X13-005	B2ML34	121466012	WATER	11/15/12	11/15/12
X13-005	B2ML28	121466013	WATER	11/15/12	11/15/12
X13-005	B2MLC6	121466014	WATER	11/15/12	11/15/12
X13-005	B2MLC9	121466015	WATER	11/15/12	11/15/12
X13-005	B2MKT4	121466016	WATER	11/15/12	11/15/12
X13-005	B2MKT5	121466017	WATER	11/15/12	11/15/12
X13-005	B2MKV5	121466018	WATER	11/15/12	11/15/12
X13-005	B2MKV6	121466019	WATER	11/15/12	11/15/12
X13-005	B2MLD8	121466020	WATER	11/15/12	11/15/12
X13-005	B2MLF6	121466021	WATER	11/15/12	11/15/12

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
WSCF121466

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):

- Batch QC 210367
 - Nitrite – Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were “N” flagged.
- Batch QC 210368
 - Chloride – Matrix Spike recovery was outside established laboratory limits. Affected sample results in this batch were “N” flagged.
 - Sulfate – Exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
 - All other applicable QC controls are within the established limits.

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):

- Silver – MS / MSD Relative Percent Difference (RPD) is outside established laboratory limits. The quality control report was flagged for RPD failure.
- Silver –Matrix Spike Duplicate recovery was outside established laboratory limits. Affected sample results in this batch were “N” flagged.
- All other applicable QC controls are within the established limits.

Radiochemistry Comments

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

Tritium:

- All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 47 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 # WSCF121466
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 # WSCF121466

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210366	210366	2	BLANK	85169	BLANK		Anions by Ion Chromatography (Water)
210366	210366	3	LCS	85170	LCS		Anions by Ion Chromatography (Water)
210366	210366	4	DUP	85171	B2MMV8(121464006DUP	121464006	Anions by Ion Chromatography (Water)
210366	210366	5	MS	85172	B2MMV8(121464006MS)	121464006	Anions by Ion Chromatography (Water)
210366	210366	6	MSD	85173	B2MMV8(121464006MSD	121464006	Anions by Ion Chromatography (Water)
210366	210366	12	SAMPLE	121466001	B2MLD9		Anions by Ion Chromatography (Water)
210366	210366	13	SAMPLE	121466003	B2ML30		Anions by Ion Chromatography (Water)
210366	210366	14	SAMPLE	121466004	B2MKV7		Anions by Ion Chromatography (Water)
210366	210366	15	SAMPLE	121466005	B2MKV8		Anions by Ion Chromatography (Water)
210366	210366	16	SAMPLE	121466006	B2ML29		Anions by Ion Chromatography (Water)
210366	210366	17	SAMPLE	121466007	B2MKT6		Anions by Ion Chromatography (Water)
210367	210367	2	BLANK	85176	BLANK		Anions by Ion Chromatography (Water)
210367	210367	3	LCS	85177	LCS		Anions by Ion Chromatography (Water)
210367	210367	4	DUP	85178	B2MYX0(121464009DUP	121464009	Anions by Ion Chromatography (Water)
210367	210367	5	MS	85179	B2MYX0(121464009MS)	121464009	Anions by Ion Chromatography (Water)
210367	210367	6	MSD	85180	B2MYX0(121464009MSD	121464009	Anions by Ion Chromatography (Water)
210367	210367	9	SAMPLE	121466008	B2MKT7		Anions by Ion Chromatography (Water)
210367	210367	10	SAMPLE	121466009	B2MLC7		Anions by Ion Chromatography (Water)
210368	210368	2	BLANK	85183	BLANK		Anions by Ion Chromatography (Water)
210368	210368	3	LCS	85184	LCS		Anions by Ion Chromatography (Water)
210368	210368	4	DUP	85185	B2MLF7(121466002DUP)	121466002	Anions by Ion Chromatography (Water)
210368	210368	5	MS	85186	B2MLF7(121466002MS)	121466002	Anions by Ion Chromatography (Water)
210368	210368	6	MSD	85187	B2MLF7(121466002MSD)	121466002	Anions by Ion Chromatography (Water)

Batch QC List

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121466

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210368	210368	8	SAMPLE	121466002	B2MLF7		Anions by Ion Chromatography (Water)
210914	211131	5	BLANK	85622	BLANK		ICP-6010 - All possible metals
210914	211131	7	LCS	85624	LCS		ICP-6010 - All possible metals
210914	211131	9	MS	85625	B2MMY0(121459003MS)	121459003	ICP-6010 - All possible metals
210914	211131	10	MSD	85626	B2MMY0(121459003MSD)	121459003	ICP-6010 - All possible metals
210914	211131	26	SAMPLE	121466010	B2ML33		ICP-6010 - All possible metals
210914	211131	27	SAMPLE	121466011	B2ML27		ICP-6010 - All possible metals
210914	211131	28	SAMPLE	121466012	B2ML34		ICP-6010 - All possible metals
210914	211131	29	SAMPLE	121466013	B2ML28		ICP-6010 - All possible metals
210914	211131	30	SAMPLE	121466014	B2MLC6		ICP-6010 - All possible metals
210914	211131	31	SAMPLE	121466015	B2MLC9		ICP-6010 - All possible metals

Batch QC List

Attention Scot Fitzgerald
 Department Radiochemistry

Group # WSCF121466

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210359	210743	1	BLANK	85145	BLANK		Tritium by LSC
210359	210743	2	LCS	85146	LCS		Tritium by LSC
210359	210743	4	DUP	85147	B2MMN7(121461004DUP	121461004	Tritium by LSC
210359	210743	5	MS	85148	B2MMN7(121461004MS)	121461004	Tritium by LSC
210359	210743	7	SAMPLE	121466014	B2MLC6		Tritium by LSC
210359	210743	8	SAMPLE	121466016	B2MKT4		Tritium by LSC
210359	210743	9	SAMPLE	121466017	B2MKT5		Tritium by LSC
210359	210743	10	SAMPLE	121466018	B2MKV5		Tritium by LSC
210359	210743	11	SAMPLE	121466019	B2MKV6		Tritium by LSC
210359	210743	12	SAMPLE	121466020	B2MLD8		Tritium by LSC
210359	210743	13	SAMPLE	121466021	B2MLF6		Tritium by LSC

Method Reference

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121466

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-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 Radiochemistry

Group # WSCF121466

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-508-421	Operation of the Tri-Carb Model 2500TR Liquid Scintillation Analyzer		
	HEIS	ALPHA_LSC	A/B Liquid Scintillation
	HEIS	BETA_LSC	A/B Liquid Scintillation
	HEIS	TC99_3MDSK_LSC	TC99 by Liquid Scintillation
	HEIS	TRITIUM_EIE_LSC	Tritium, by Eichrome ion exchange, LSC

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 # WSCF121466

Sample # 121466001
 SAF# X13-005
 Sample ID B2MLD9

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.199		ug/mL	2	0.046	0.14	11/15/12
Chloride	16887-00-6	LA-533-410	D	2.94		ug/mL	2	0.12	0.81	11/15/12
Nitrite-N	NO2-N	LA-533-410	BD	0.0447		ug/mL	2	0.038	0.20	11/15/12
Nitrate-N	NO3-N	LA-533-410	D	1.10		ug/mL	2	0.038	0.20	11/15/12
Sulfate	14808-79-8	LA-533-410	D	16.7		ug/mL	2	0.22	2.1	11/15/12

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 # WSCF121466

Sample # 121466002
 SAF# X13-005
 Sample ID B2MLF7

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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	0.179		ug/mL	2	0.046	0.14	11/16/12
Chloride	16887-00-6	LA-533-410	DN	5.11		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
Nitrate-N	NO3-N	LA-533-410	D	2.10		ug/mL	2	0.038	0.20	11/16/12
Sulfate	14808-79-8	LA-533-410	D	26.6		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 # WSCF121466

Sample # 121466003
 SAF# X13-005
 Sample ID B2ML30

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.213		ug/mL	2	0.046	0.14	11/15/12
Chloride	16887-00-6	LA-533-410	D	3.11		ug/mL	2	0.12	0.81	11/15/12
Nitrite-N	NO2-N	LA-533-410	BD	0.0418		ug/mL	2	0.038	0.20	11/15/12
Nitrate-N	NO3-N	LA-533-410	D	1.13		ug/mL	2	0.038	0.20	11/15/12
Sulfate	14808-79-8	LA-533-410	D	16.7		ug/mL	2	0.22	2.1	11/15/12

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 # WSCF121466

Sample # 121466004
 SAF# X13-005
 Sample ID B2MKV7

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.126		ug/mL	2	0.046	0.14	11/15/12
Chloride	16887-00-6	LA-533-410	D	2.96		ug/mL	2	0.12	0.81	11/15/12
Nitrite-N	NO2-N	LA-533-410	BD	0.0506		ug/mL	2	0.038	0.20	11/15/12
Nitrate-N	NO3-N	LA-533-410	D	0.931		ug/mL	2	0.038	0.20	11/15/12
Sulfate	14808-79-8	LA-533-410	D	18.8		ug/mL	2	0.22	2.1	11/15/12

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 # WSCF121466

Sample # 121466005
 SAF# X13-005
 Sample ID B2MKV8

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.116		ug/mL	2	0.046	0.14	11/15/12
Chloride	16887-00-6	LA-533-410	D	2.93		ug/mL	2	0.12	0.81	11/15/12
Nitrite-N	NO2-N	LA-533-410	BD	0.0710		ug/mL	2	0.038	0.20	11/15/12
Nitrate-N	NO3-N	LA-533-410	D	0.895		ug/mL	2	0.038	0.20	11/15/12
Sulfate	14808-79-8	LA-533-410	D	18.7		ug/mL	2	0.22	2.1	11/15/12

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 # WSCF121466

Sample # 121466006
 SAF# X13-005
 Sample ID B2ML29

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/15/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	UD	<0.046		ug/mL	2	0.046	0.14	11/15/12
Chloride	16887-00-6	LA-533-410	UD	<0.12		ug/mL	2	0.12	0.81	11/15/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/15/12
Nitrate-N	NO3-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/15/12
Sulfate	14808-79-8	LA-533-410	UD	<0.22		ug/mL	2	0.22	2.1	11/15/12

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 # WSCF121466

Sample # 121466007
 SAF# X13-005
 Sample ID B2MKT6

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/15/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	UD	<0.046		ug/mL	2	0.046	0.14	11/15/12
Chloride	16887-00-6	LA-533-410	UD	<0.12		ug/mL	2	0.12	0.81	11/15/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/15/12
Nitrate-N	NO3-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/15/12
Sulfate	14808-79-8	LA-533-410	UD	<0.22		ug/mL	2	0.22	2.1	11/15/12

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 # WSCF121466

Sample # 121466008
 SAF# X13-005
 Sample ID B2MKT7

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.130		ug/mL	2	0.046	0.14	11/15/12
Chloride	16887-00-6	LA-533-410	D	5.56		ug/mL	2	0.12	0.81	11/15/12
Nitrite-N	NO2-N	LA-533-410	BD	0.0552		ug/mL	2	0.038	0.20	11/15/12
Nitrate-N	NO3-N	LA-533-410	D	1.99		ug/mL	2	0.038	0.20	11/15/12
Sulfate	14808-79-8	LA-533-410	D	28.3		ug/mL	2	0.22	2.1	11/15/12

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 # WSCF121466

Sample # 121466009
 SAF# X13-005
 Sample ID B2MLC7

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/15/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.0533		ug/mL	2	0.046	0.14	11/15/12
Chloride	16887-00-6	LA-533-410	D	1.41		ug/mL	2	0.12	0.81	11/15/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/15/12
Nitrate-N	NO3-N	LA-533-410	D	0.335		ug/mL	2	0.038	0.20	11/15/12
Sulfate	14808-79-8	LA-533-410	D	12.1		ug/mL	2	0.22	2.1	11/15/12

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 # WSCF121466

Sample # 121466010
 SAF# X13-005
 Sample ID B2ML33

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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	U	<4.0		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	U	<76		ug/L	1	76	380	12/04/12
Silver	7440-22-4	LA-505-411	UN	<4.0		ug/L	1	4.0	20	12/04/12
Sodium	7440-23-5	LA-505-411	U	<10		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	U	<4.0		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	U	<5.0		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	U	<5.0		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	U	<49		ug/L	1	49	240	12/04/12
Strontium	7440-24-6	LA-505-411	U	<9.0		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 # WSCF121466

Sample # 121466010
 SAF# X13-005
 Sample ID B2ML33

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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 # WSCF121466

Sample # 121466011
 SAF# X13-005
 Sample ID B2ML27

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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	U	<4.0		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	U	<76		ug/L	1	76	380	12/04/12
Silver	7440-22-4	LA-505-411	UN	<4.0		ug/L	1	4.0	20	12/04/12
Sodium	7440-23-5	LA-505-411	B	12.1		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	U	<4.0		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	U	<5.0		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	U	<5.0		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	U	<49		ug/L	1	49	240	12/04/12
Strontium	7440-24-6	LA-505-411	U	<9.0		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 # WSCF121466

Sample # 121466011
 SAF# X13-005
 Sample ID B2ML27

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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 # WSCF121466

Sample # 121466012
 SAF# X13-005
 Sample ID B2ML34

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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		5070		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		1700		ug/L	1	76	380	12/04/12
Silver	7440-22-4	LA-505-411	UN	<4.0		ug/L	1	4.0	20	12/04/12
Sodium	7440-23-5	LA-505-411		6800		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		39.1		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	U	<5.0		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	5.30		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		26400		ug/L	1	49	240	12/04/12
Strontium	7440-24-6	LA-505-411		116		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 # WSCF121466

Sample # 121466012
 SAF# X13-005
 Sample ID B2ML34

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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 # WSCF121466

Sample # 121466013
 SAF# X13-005
 Sample ID B2ML28

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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		110		ug/L	1	19	95	12/04/12
Magnesium	7439-95-4	LA-505-411		5020		ug/L	1	4.0	20	12/04/12
Manganese	7439-96-5	LA-505-411	B	5.60		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		1640		ug/L	1	76	380	12/04/12
Silver	7440-22-4	LA-505-411	UN	<4.0		ug/L	1	4.0	20	12/04/12
Sodium	7440-23-5	LA-505-411		6710		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		40.6		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	5.70		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	U	<5.0		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		26400		ug/L	1	49	240	12/04/12
Strontium	7440-24-6	LA-505-411		116		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 # WSCF121466

Sample # 121466013
 SAF# X13-005
 Sample ID B2ML28

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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 # WSCF121466

Sample # 121466014
 SAF# X13-005
 Sample ID B2MLC6

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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		180		ug/L	1	19	95	12/04/12
Magnesium	7439-95-4	LA-505-411		4140		ug/L	1	4.0	20	12/04/12
Manganese	7439-96-5	LA-505-411	B	11.1		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		1510		ug/L	1	76	380	12/04/12
Silver	7440-22-4	LA-505-411	UN	<4.0		ug/L	1	4.0	20	12/04/12
Sodium	7440-23-5	LA-505-411		4150		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	B	19.7		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	U	<5.0		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	6.50		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		26400		ug/L	1	49	240	12/04/12
Strontium	7440-24-6	LA-505-411		106		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 # WSCF121466

Sample # 121466014
 SAF# X13-005
 Sample ID B2MLC6

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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 # WSCF121466

Sample # 121466015
 SAF# X13-005
 Sample ID B2MLC9

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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		4120		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		1530		ug/L	1	76	380	12/04/12
Silver	7440-22-4	LA-505-411	UN	<4.0		ug/L	1	4.0	20	12/04/12
Sodium	7440-23-5	LA-505-411		4150		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	B	17.4		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	U	<5.0		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	U	<5.0		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		26300		ug/L	1	49	240	12/04/12
Strontium	7440-24-6	LA-505-411		104		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 # WSCF121466

Sample # 121466015
 SAF# X13-005
 Sample ID B2MLC9

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

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 Radiochemistry

Group # WSCF121466

Sample # 121466014
 SAF# X13-005
 Sample ID B2MLC6

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Tritium by LSC EICHROM WA/LIQ PREP										11/16/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		660	250	pCi/L	1	320		11/26/12

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 # WSCF121466

Sample # 121466016
 SAF# X13-005
 Sample ID B2MKT4

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Tritium by LSC EICHROM WA/LIQ PREP										11/16/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421	U	-40	240	pCi/L	1	320		11/26/12

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 # WSCF121466

Sample # 121466017
 SAF# X13-005
 Sample ID B2MKT5

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Tritium by LSC EICHROM WA/LIQ PREP										11/16/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1600	400	pCi/L	1	320		11/26/12

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 # WSCF121466

Sample # 121466018
 SAF# X13-005
 Sample ID B2MKV5

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Tritium by LSC EICHROM WA/LIQ PREP										11/16/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		920	300	pCi/L	1	320		11/26/12

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 # WSCF121466

Sample # 121466019
 SAF# X13-005
 Sample ID B2MKV6

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Tritium by LSC EICHROM WA/LIQ PREP										11/16/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		770	260	pCi/L	1	320		11/26/12

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 # WSCF121466

Sample # 121466020
 SAF# X13-005
 Sample ID B2MLD8

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Tritium by LSC EICHROM WA/LIQ PREP										11/16/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		1400	380	pCi/L	1	320		11/26/12

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 # WSCF121466

Sample # 121466021
 SAF# X13-005
 Sample ID B2MLF6

Matrix WATER
 Sampled 11/15/12
 Received 11/15/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Tritium by LSC EICHROM WA/LIQ PREP										11/16/12
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		3000	670	pCi/L	1	320		11/26/12

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 # WSCF121466

Analytical Batch 210366 (QC Batch: 210366) **Test** Anions by Ion Chromatography (Water)
Associated Samples 121466001, 121466003, 121466004, 121466005, 121466006, 121466007

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85169								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/15/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/15/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/15/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/15/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/15/12
LCS		QC Sample #85170								
Fluoride	16984-48-8	0.930		ug/mL	93.9	90 - 110				11/15/12
Chloride	16887-00-6	1.83		ug/mL	92.4	90 - 110				11/15/12
Nitrite-N	NO2-N	1.01		ug/mL	102.9	90 - 110				11/15/12
Nitrate-N	NO3-N	0.878		ug/mL	99.1	90 - 110				11/15/12
Sulfate	14808-79-8	3.86		ug/mL	98.5	90 - 110				11/15/12
DUP		QC Sample #85171								
		Original 121464006								
Fluoride	16984-48-8	0.334		ug/mL			1.30	20	D	11/15/12
Chloride	16887-00-6	4.56		ug/mL			0.70	20	D	11/15/12
Nitrite-N	NO2-N	0.0766		ug/mL			16.20	20	BD	11/15/12
Nitrate-N	NO3-N	0.440		ug/mL			4.40	20	D	11/15/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121466

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		11.9	ug/mL			0.50	20	D	11/15/12
MS			QC Sample #85172							
			Original 121464006							
Fluoride	16984-48-8		0.989	ug/mL	98.9	80 - 120			D	11/15/12
Chloride	16887-00-6		1.89	ug/mL	94.4	80 - 120			D	11/15/12
Nitrite-N	NO2-N		0.893	ug/mL	90.4	80 - 120			D	11/15/12
Nitrate-N	NO3-N		0.916	ug/mL	102.5	80 - 120			D	11/15/12
Sulfate	14808-79-8		4.19	ug/mL	105.7	80 - 120			D	11/15/12
MSD			QC Sample #85173							
			Original 121464006						Paired 85172	
Fluoride	16984-48-8		0.978	ug/mL	97.8	80 - 120	0.80	20	D	11/15/12
Chloride	16887-00-6		1.79	ug/mL	89.4	80 - 120	1.60	20	D	11/15/12
Nitrite-N	NO2-N		0.875	ug/mL	88.5	80 - 120	1.90	20	D	11/15/12
Nitrate-N	NO3-N		0.886	ug/mL	99.1	80 - 120	2.30	20	D	11/15/12
Sulfate	14808-79-8		4.03	ug/mL	101.7	80 - 120	1.00	20	D	11/15/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121466

Analytical Batch 210367 (QC Batch: 210367)
Associated Samples 121466008, 121466009

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85176								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/15/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/15/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/15/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/15/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/15/12
LCS		QC Sample #85177								
Fluoride	16984-48-8	0.936		ug/mL	94.5	90 - 110				11/15/12
Chloride	16887-00-6	1.85		ug/mL	93.5	90 - 110				11/15/12
Nitrite-N	NO2-N	1.03		ug/mL	105	90 - 110				11/15/12
Nitrate-N	NO3-N	0.901		ug/mL	101.8	90 - 110				11/15/12
Sulfate	14808-79-8	3.98		ug/mL	101.4	90 - 110				11/15/12
DUP		QC Sample #85178								
		Original 121464009								
Fluoride	16984-48-8	0.134		ug/mL			4.70	20	BD	11/15/12
Chloride	16887-00-6	3.64		ug/mL			0.90	20	D	11/15/12
Nitrite-N	NO2-N	<0.038		ug/mL			85.50	20	* UXD	11/15/12
Nitrate-N	NO3-N	1.24		ug/mL			3.10	20	D	11/15/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121466

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		22.6	ug/mL			1.70	20	D	11/15/12
MS			QC Sample #85179							
			Original 121464009							
Fluoride	16984-48-8		0.979	ug/mL	97.9	80 - 120			D	11/15/12
Chloride	16887-00-6		1.90	ug/mL	94.8	80 - 120			D	11/15/12
Nitrite-N	NO2-N		0.915	ug/mL	92.6	80 - 120			D	11/15/12
Nitrate-N	NO3-N		0.949	ug/mL	106.1	80 - 120			D	11/15/12
Sulfate	14808-79-8		4.36	ug/mL	110.1	80 - 120			D	11/15/12
MSD			QC Sample #85180							
			Original 121464009						Paired 85179	
Fluoride	16984-48-8		0.963	ug/mL	96.3	80 - 120	1.40	20	D	11/15/12
Chloride	16887-00-6		1.88	ug/mL	94.1	80 - 120	0.30	20	D	11/15/12
Nitrite-N	NO2-N		0.893	ug/mL	90.4	80 - 120	2.30	20	D	11/15/12
Nitrate-N	NO3-N		0.935	ug/mL	104.6	80 - 120	0.70	20	D	11/15/12
Sulfate	14808-79-8		4.26	ug/mL	107.5	80 - 120	0.40	20	D	11/15/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121466

Analytical Batch 210368 (QC Batch: 210368)
Associated Samples 121466002

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85183								
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
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/16/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/16/12
LCS		QC Sample #85184								
Fluoride	16984-48-8	0.966		ug/mL	97.6	90 - 110				11/16/12
Chloride	16887-00-6	1.87		ug/mL	94.5	90 - 110				11/16/12
Nitrite-N	NO2-N	1.01		ug/mL	103.6	90 - 110				11/16/12
Nitrate-N	NO3-N	0.894		ug/mL	101	90 - 110				11/16/12
Sulfate	14808-79-8	4.01		ug/mL	102.3	90 - 110				11/16/12
DUP		QC Sample #85185								
		Original 121466002								
Fluoride	16984-48-8	0.179	0.183	ug/mL			2.50	20	D	11/16/12
Chloride	16887-00-6	5.11	4.94	ug/mL			3.30	20	D	11/16/12
Nitrite-N	NO2-N	<0.038	<0.038	ug/mL			3.90	20	UD	11/16/12
Nitrate-N	NO3-N	2.10	2.06	ug/mL			1.80	20	D	11/16/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF121466

Analytical Batch 210743 (QC Batch: 210359) **Test** Tritium by LSC
Associated Samples 121466014, 121466016, 121466017, 121466018, 121466019, 121466020, 121466021

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
			QC Sample #85145							
Tritium	10028-17-8		-110	pCi/L					U	11/26/12
LCS			QC Sample #85146							
Tritium	10028-17-8		3100	pCi/L	100.6	80 - 120				11/26/12
DUP			QC Sample #85147							
			Original 121461004							
Tritium	10028-17-8		3700	pCi/L			5.40	20		11/26/12
MS			QC Sample #85148							
			Original 121461004							
Tritium	10028-17-8		21000	pCi/L	100	75 - 125				11/26/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121466

Analytical Batch 211131 (QC Batch: 210914) **Test** ICP-6010 - All possible metals
Associated Samples 121466010, 121466011, 121466012, 121466013, 121466014, 121466015

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85622								
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 # WSCF121466

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 #85624										
Iron	7439-89-6		1000	ug/L	100.3	80 - 120				12/04/12
Magnesium	7439-95-4		10200	ug/L	101.6	80 - 120				12/04/12
Manganese	7439-96-5		1020	ug/L	102.3	80 - 120				12/04/12
Nickel	7440-02-0		1010	ug/L	101	80 - 120				12/04/12
Potassium	7440-09-7		10600	ug/L	106	80 - 120				12/04/12
Silver	7440-22-4		1000	ug/L	100.3	80 - 120				12/04/12
Sodium	7440-23-5		10200	ug/L	101.6	80 - 120				12/04/12
Antimony	7440-36-0		1040	ug/L	103.5	80 - 120				12/04/12
Barium	7440-39-3		1020	ug/L	102.3	80 - 120				12/04/12
Cadmium	7440-43-9		1010	ug/L	101.3	80 - 120				12/04/12
Chromium	7440-47-3		1010	ug/L	101.2	80 - 120				12/04/12
Cobalt	7440-48-4		1000	ug/L	100	80 - 120				12/04/12
Copper	7440-50-8		1010	ug/L	101.2	80 - 120				12/04/12
Vanadium	7440-62-2		1000	ug/L	100.3	80 - 120				12/04/12
Zinc	7440-66-6		1040	ug/L	103.8	80 - 120				12/04/12
Calcium	7440-70-2		20500	ug/L	102.6	80 - 120				12/04/12
Strontium	7440-24-6		995	ug/L	99.5	80 - 120				12/04/12
Beryllium MS	7440-41-7		1020	ug/L	102.1	80 - 120				12/04/12
QC Sample #85625										
Original 121459003										
Iron	7439-89-6		1020	ug/L	101.7	75 - 125				12/04/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121466

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Magnesium	7439-95-4		10600	ug/L	105.7	75 - 125				12/04/12
Manganese	7439-96-5		1030	ug/L	103.3	75 - 125				12/04/12
Nickel	7440-02-0		997	ug/L	99.7	75 - 125				12/04/12
Potassium	7440-09-7		10800	ug/L	108.5	75 - 125				12/04/12
Silver	7440-22-4		1010	ug/L	101.3	75 - 125				12/04/12
Sodium	7440-23-5		10400	ug/L	103.6	75 - 125				12/04/12
Antimony	7440-36-0		1050	ug/L	105.4	75 - 125				12/04/12
Barium	7440-39-3		1030	ug/L	103.4	75 - 125				12/04/12
Cadmium	7440-43-9		1020	ug/L	102.3	75 - 125				12/04/12
Chromium	7440-47-3		1020	ug/L	101.6	75 - 125				12/04/12
Cobalt	7440-48-4		990	ug/L	99	75 - 125				12/04/12
Copper	7440-50-8		1010	ug/L	101.4	75 - 125				12/04/12
Vanadium	7440-62-2		1020	ug/L	101.8	75 - 125				12/04/12
Zinc	7440-66-6		1050	ug/L	105.1	75 - 125				12/04/12
Calcium	7440-70-2		21900	ug/L	109.7	75 - 125				12/04/12
Strontium	7440-24-6		1020	ug/L	101.6	75 - 125				12/04/12
Beryllium	7440-41-7		1040	ug/L	104.2	75 - 125				12/04/12
MSD			QC Sample #85626							
			Original	121459003				Paired	85625	
Iron	7439-89-6		1080	ug/L	107.7	75 - 125	5.50	20		12/04/12
Magnesium	7439-95-4		11100	ug/L	111.1	75 - 125	2.00	20		12/04/12
Manganese	7439-96-5		1050	ug/L	105.1	75 - 125	1.70	20		12/04/12
Nickel	7440-02-0		1020	ug/L	101.8	75 - 125	2.10	20		12/04/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121466

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Potassium	7440-09-7		11100	ug/L	111	75 - 125	1.70	20		12/04/12
Silver	7440-22-4		48.3	ug/L	4.8	75 - 125	181.80	20	* NX	12/04/12
Sodium	7440-23-5		10800	ug/L	108.1	75 - 125	1.00	20		12/04/12
Antimony	7440-36-0		1070	ug/L	106.6	75 - 125	1.10	20		12/04/12
Barium	7440-39-3		1030	ug/L	103.1	75 - 125	0.30	20		12/04/12
Cadmium	7440-43-9		1060	ug/L	106.2	75 - 125	3.70	20		12/04/12
Chromium	7440-47-3		1030	ug/L	103.2	75 - 125	1.50	20		12/04/12
Cobalt	7440-48-4		1000	ug/L	100.5	75 - 125	1.50	20		12/04/12
Copper	7440-50-8		1020	ug/L	102.4	75 - 125	1.00	20		12/04/12
Vanadium	7440-62-2		1030	ug/L	102.8	75 - 125	1.00	20		12/04/12
Zinc	7440-66-6		1090	ug/L	108.6	75 - 125	3.30	20		12/04/12
Calcium	7440-70-2		24400	ug/L	121.9	75 - 125	2.70	20		12/04/12
Strontium	7440-24-6		1040	ug/L	104.3	75 - 125	2.00	20		12/04/12
Beryllium	7440-41-7		1060	ug/L	106.2	75 - 125	1.90	20		12/04/12

* - QC result out of range

n/a - Not Applicable

Attention: Scot Fitzgerald

Group #

WSCF121466

Quality Control Comments

Department Inorganic

85178 B2MYX0(121464009DUP)

Analyte Nitrite-N - Anions by Ion Chromatography (Water)

[1] Duplicate is flagged for RPD out-of-limits. RPD does not apply to samples concentrations below the calibration range. RPD is calculated on measured values and not applicable for a result below the RDL.

85186 B2MLF7(121466002MS)

Analyte Sulfate - Anions by Ion Chromatography (Water)

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

85187 B2MLF7(121466002MSD)

Analyte Sulfate - Anions by Ion Chromatography (Water)

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

85626 B2MMY0(121459003MSD)

Analyte Silver - ICP-6010 - All possible metals

[1] Matrix Spike RPD outside established laboratory limits No flags assigned.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 21 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 #: 121466

Profile #: X13-005-355

Proj. Mgr.:

Phone:

The following samples were received from you on 11/15/2012 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		
121466001	B2MLD9	WATER	11/15/2012 11:20	11/15/2012 13:00
		IC-W		
121466002	B2MLF7	WATER	11/15/2012 10:28	11/15/2012 13:00
		IC-W		
121466003	B2ML30	WATER	11/15/2012 09:54	11/15/2012 13:00
		IC-W		
121466004	B2MKV7	WATER	11/15/2012 12:24	11/15/2012 13:00
		IC-W		
121466005	B2MKV8	WATER	11/15/2012 12:24	11/15/2012 13:00
		IC-W		
121466006	B2ML29	WATER	11/15/2012 08:00	11/15/2012 13:00
		IC-W		
121466007	B2MKT6	WATER	11/15/2012 07:40	11/15/2012 13:00
		IC-W		
121466008	B2MKT7	WATER	11/15/2012 11:50	11/15/2012 13:00
		IC-W		
121466009	B2MLC7	WATER	11/15/2012 12:49	11/15/2012 13:00
		IC-W		
121466010	B2ML33	WATER	11/15/2012 08:00	11/15/2012 13:00
		6010-W		
121466011	B2ML27	WATER	11/15/2012 08:00	11/15/2012 13:00

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

121466012	B2ML34	WATER	11/15/2012 09:54	11/15/2012 13:00
6010-W				
121466013	B2ML28	WATER	11/15/2012 09:54	11/15/2012 13:00
6010-W				
121466014	B2MLC6	WATER	11/15/2012 12:49	11/15/2012 13:00
6010-W; H3-COL-W				
121466015	B2MLC9	WATER	11/15/2012 12:49	11/15/2012 13:00
6010-W				
121466016	B2MKT4	WATER	11/15/2012 07:40	11/15/2012 13:00
H3-COL-W				
121466017	B2MKT5	WATER	11/15/2012 11:50	11/15/2012 13:00
H3-COL-W				
121466018	B2MKV5	WATER	11/15/2012 12:24	11/15/2012 13:00
H3-COL-W				
121466019	B2MKV6	WATER	11/15/2012 12:24	11/15/2012 13:00
H3-COL-W				
121466020	B2MLD8	WATER	11/15/2012 11:20	11/15/2012 13:00
H3-COL-W				
121466021	B2MLF6	WATER	11/15/2012 10:28	11/15/2012 13:00
H3-COL-W				

Test Acronym Description

Test Acronym	Description
6010-W	ICP-AES (W)
H3-COL-W	Tritium by EICHROM Column (W)
IC-W	Anions by IC (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

X13-005-355

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.	HNF-N-506 47/1,2	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 5400.5 (1990/1993)		Site Wide Generator Knowledge Information Form applies. The CACH 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	121466	Date	11-15-12	Time	11:20
Filter	N	No./Type Container	1x500-mL P	Sample Analysis	300.0 ANIONS_IC: Lis-1 (5)
B3MLD9		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By	TA Emma	Received By	
		Date/Time	11-15-12 1300	Date/Time	11-15-12 1300
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time		Date/Time	
		Signature		Signature	
		Print		Print	
		Received By		Received By	
		Date/Time			

Chain of Custody

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#
X13-005-360
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.	HNF-N-506 47/1, 2	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 DOE Order 5400.5 (1/90/1/993)

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
BMALF7	N	11-15-12	1028	14500-mL P	300.0 ANIONS_IC_Lab-1 (5)	48 Hours	Cool-4C

Relinquished By	Print J. Aguilar	Sign	Date/Time	Received By	Print T. Proznicka	Sign	Date/Time	Matrix *
Relinquished By			11-15-12 1300	Received By			11-15-12 1300	S - Soil DS - Drum Sludges SF - Sediment DL - Drum Liquids SO - Solid T - Tissue SL - Sludge WI - Wipe W - Water L - Liquid O - Oil V - Volatiles A - Air X - Other
Relinquished By				Received By				
Relinquished By				Received By				

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

PRINTED ON 10/9/2012

A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

X13-005-251

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	303064ESS20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506 47/1,2	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 HAZARD/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 403899.
 FY12 and FY13 samples cannot be in the same SDG.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
BZMKV/4	N	11-15-12	1224	1x500-mL P	300.0 ANIONS, IC: LSI-1 (5)	48 Hours	Cool-4C

Relinquished By	Print J. Aguilar	Sign	Date/Time	Received By	Print DA Frazee	Sign	Date/Time	Matrix *
Relinquished By			11-15-12 1300	Received By			11-15-12 1300	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By				Received By				DS = Drum Solids DL = Drum Liquids T = Tissue WT = Waste 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 _____

PRINTED 0 10/9/2012

A-5004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X13-005-254
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	303064ESS20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506 47/12	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 DUE Order 5400 5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time
 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
B2MKV8	N	11-15-12	1224	1x500-mL P	3000_ANIONS_IC_Lst-1 (5)	48 Hours	Cool-4C

Relinquished By	<i>J. Aguilar</i>	Print	Signature	Date/Time	11-15-12 1700	Received By	<i>TA Provencher</i>	Print	Signature	Date/Time	11-15-12 1500
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	= Dross 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

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

PRINTED 0 10/9/2012

A-5004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

X13-005-292

Page 1 of 1

Collector	J. Aquilar	Contact/Requester	Karon 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 47/12	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 HAZARD/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
 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 No

Sample No.	filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
BZML29	N	11-15-12	0800	1x500-mL P	300.0 ANIONS_IC: List-1 (5)	48 Hours	Cool-4C

Relinquished By	Date	Sign	Date/Time	Received By	Date/Time	Sign	Date/Time	Matrix *
J. Aquilar	11-15-12		1300	Therese Jones	11-15-12		1300	S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge W = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air 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-B42 (REV 2)				

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **X13-005-243**
 Page 1 of 1

Collector	J. Aguilar	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	XT3-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ESS20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506 47 / 1,2	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	SLURV	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
 The 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 No

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
BZMKTR	N	11-15-12	0740	1x500-mL P	300.0 ANIONS_IC: List-1 (5)	48 Hours	Cool-4C

Relinquished By	Sign	Date/Time	Received By	Print	Sign	Date/Time
J. Aguilar		11-15-12 1300	TA Freeman		11-15-12 1300	
Relinquished By	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Sign	Date/Time	Received By	Print	Sign	Date/Time

Matrix *

S	= Soil	DS	= Dross Solids
SE	= Sediment	IDL	= Dross 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 Date/Time

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

X13-005-246

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	303064ESS20
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506 47/1, 2	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 DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time
 Site Wide Generator Knowledge Information Form applies.
 The CALN for all analytical work at WSCR is 403999.
 FY12 and FY13 samples cannot be in the same SDG.

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
BZMKT7	N	11-15-12	1150	1x600-mL P	300.0 ANIONS_IC: List-1 (9)	48 Hours	Cool-4C

Relinquished By	J. Aguilar	Date/Time	11-15-12 1300	Received By	T. Peterson	Date/Time	11-15-12 1300
Relinquished By		Date/Time		Received By		Date/Time	
Relinquished By		Date/Time		Received By		Date/Time	

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

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

PRINTED 0 10/9/2012

A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X13-005-348
Page 1 of 1

Collector J. Aguilar X13-005	Contact/Requester Karen Waters-Husted Hanford Site	Telephone No. 376-4650
Project Title AQUIFER TUBES, NOVEMBER 2012	Sampling Origin Hanford Site	Purchase Order/Charge Code 303064ESS20
Shipped To (Lab) Waste Sampling & Characterization	Logbook No. HNF-N-506 47/1, 2	Ice Chest No. N/A
Protocol SIRV	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A
	Priority: 31 Days	Offsite Property No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Certain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)
 SPECIAL INSTRUCTIONS Hold Time
 Site Wide Generator Knowledge Information Form applies.
 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
BZMLC7	N	11-15-12	1249	1x500-ml P	300.0 ANIONS_IC: Lst-1 (5)	48 Hours	Cool-4C

Relinquished By <i>J. Aguilar</i>	Sign	Date/Time 11-15-12 1300	Received By <i>T. Proxmire</i>	Sign	Date/Time 11-15-12 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

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

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

PRINTED O 10/9/2012

A-6004-842 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **X13-005-291**
 Page 1 of 1

Collector **J. Aquilera** Contact/Requester **Karen Waters-Husted** Telephone No. **376-4650**
 SAF No. **X13-005** Sampling Origin **Hanford Site** Purchase Order/Charge Code **303064FS20**
 Project Title **AQUIFER TUBES, NOVEMBER 2012** Logbook No. **HNF-N-50647/1,2** 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** 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 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
B2M133	Y	11-15-12	0800	1x500-mL GIP	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2M127	N	11-15-12	0800	1x500-mL GIP	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 *
Relinquished By	<i>J. Aquilera</i>	<i>[Signature]</i>	11-15-12 1300	Received By	<i>Tamara [Signature]</i>	<i>[Signature]</i>	11-15-12 1300	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Dism Solids DL = Drain 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) Imposed By Date/Time

PRINTED 0 10/9/2012

A-5004-842 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-294
						Page 1 of 1
Collector J. Aguilar	Contact/Requester Karen Waters-Husted	Telephone No. 376-46510				
SAF No. X13-005	Sampling Origin Hanford Site	Purchase Order/Charge Code 303064ES20				
Project Title AQUIFER TUBES, NOVEMBER 2012	Logbook No. HNF-N-506 47/1,2	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	Office 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 5400.5 (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 SDC.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Preservative
B2M134	Y	11-15-12	0954	1x500-mL GIP	6010_METALS_ICP- LIST-3 (18)	HNO3 to pH <2
B2M128	N	11-15-12	0954	1x500-mL GIP	6010_METALS_ICP- LIST-3 (18)	HNO3 to pH <2
Requisitioned By J. Aguilar		Print Sign	Date/Time 11-15-12 1300	Received By Therese Jensen	Print Sign	Date/Time 11-15-12 1300
Requisitioned By		Date/Time	Received By	Date/Time	Matrix *	
Requisitioned By		Date/Time	Received By	Date/Time	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air	
Requisitioned By		Date/Time	Received By	Date/Time	DS = Dross Solids DL = Dross Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other	
FINAL SAMPLE DISPOSITION		Dispose Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time
PRINTED O 10/9/2012				A-8004-842 (REV 2)		

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C.# **X13-005-347**
 Page 1 of 1

Collector **J. Aquilera** X13-005
 SAF No. **X13-005**
 Project Title **AQUIPER TUBES, NOVEMBER 2012**
 Shipped To (Lab) **Waste Sampling & Characterization**
 Produced **SURV**
 Contact/Requester **Karen Waters-Husted** Telephone No. **376-4650**
 Sampling Origin **Hanford Site** Purchase Order/Charge Code **303064ES20**
 Logbook No. **HNF-N-506 477 / 1, 2** Ice Chest No. **N/A**
 Method of Shipment **GOVERNMENT VEHICLE** Bill of Lading/Air Bill No. **N/A**
 Priority: **31 Days** **PRIORITY** Offsite Property No. **N/A**
 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 SIG.

Sample No.	Filter	Date	Time	Nv/Type Container	Sample Analysis	Hold Time	Preservative
B2MLC5	N	11-15-12	1249	1x500-mL G/P	6010_METALS_IOP; List-3 (18)	6 Months	HNO3 to pH <2
B2MLC6	N	11-15-12	1249	1x250-mL G	TRITIUM_EIE_LSC; Tritium (1)	6 Months	None
B2MLC9	Y	11-15-12	1249	1x500-mL G/P	6010_METALS_IOP; List-3 (18)	6 Months	HNO3 to pH <2

Relinquished By **J. Aquilera** Print Sign Date/Time **11-15-12 1300**
 Received By **Theresa...** Print Sign Date/Time **11-15-12 1300**
 Relinquished By **[Signature]** Date/Time
 Received By **[Signature]** Date/Time
 Relinquished By **[Signature]** Date/Time
 Received By **[Signature]** Date/Time

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time
 PRINTED O 10/9/2012 A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X13-005-242
Page 1 of 1

Collector SAF No. <u>J. Aguilar</u> X13-005	Contact/Requester Karen Waters-Husted Hanford Site	Telephone No. 376-4650
Project Title AQUIFER TUBES, NOVEMBER 2012	Sampling Origin Hanford Site	Purchase Order/Charge Code 303064ES20
Shipped To (Lab) Waste Sampling & Characterization	Logbook No. INF-N-506 47/1,2	Ice Chest No. N/A
Protocol SURV	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A
Priority: 31 Days	Priority: 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 3400.5 (1990/1993)

SPECIAL INSTRUCTIONS
Site Wide Generator Knowledge Information Form applies.
The CACH for all analytical work at WSCF is 493899.
FY12 and FY13 samples cannot be in the same SDG.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MK14	N	11-15-12	0740	1x250-mL G	TRITIUM, EIE, LSC, Tritium (1)	6 Months	None

Relinquished By <u>J. Aguilar</u>	Print 	Sign	Date/Time 11-15-12 1300	Received By <u>TARAZA</u>	Print 	Sign	Date/Time 11-15-12 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

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

Matrix *

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

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-245		
Collector J. Aguilar		Contact/Requester Karen Waters-Husted	Telephone No. 376-4650	Purchase Order/Charge Code 303064ES20		Page 1 of 1		
SAF No. X13-005		Sampling Origin Hanford Site	Logbook No. HNF-N-506 47/1,2		Ice Chest No. N/A		Bill of Lading/Air Bill No. N/A	
Project Title AQUIFER TUBES, NOVEMBER 2012		Method of Shipment GOVERNMENT VEHICLE		Priority: 31 Days		Offsite Property No. N/A		
Shipped To (Lab) Waste Sampling & Characterization		Method of Shipment GOVERNMENT VEHICLE		Priority: 31 Days		Offsite Property No. N/A		
Prepared SURV		Priority: 31 Days		PRIORITY		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
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 Site: Waste Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 463899. FY12 and FY13 samples cannot be in the same SDG.								
Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	
B2MKT5	N	11-15-12	1150	1x250-ml G	TRITIUM, EIE, LSC, Tritium (1)	6 Months	None	

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
J. Aguilar			11-15-12 1300	Dawn Lewis, Jr.			11-15-12 1300	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WJ = 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		
PRINTED 10/9/2012								A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X13-005-250**
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. HNF-N-506 47/1,2	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
<p>POSSIBLE SAMPLE HAZARDS/REMARKS</p> <p>*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)</p> <p>SPECIAL INSTRUCTIONS Hold Time <input type="checkbox"/> Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Site Waste Generator Knowledge Information Form applies. The CALN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SDG.</p>			
Sample No. B2MKV5	Filter N	Date 11-15-12	Time 1224
No/Type Container 1x250-ML G	Sample Analysis TRITIUM_EIE_LSC: Tritium (1)	Holding Time 6 Months	Preservative None

Relinquished By J. Aguilar	Print	Sign	Date/Time 11-15-12 1300	Received By T. Enzin	Print	Sign	Date/Time 11-15-12 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
<p>FINAL SAMPLE DISPOSITION</p> <p>Disposal Method (e.g., Return to customer, per lab procedure, used in process)</p>				<p>Disposed By</p>			

Matrix *

S	Soil	DS	Dry Solids
SF	Sediment	DL	Dry Liquids
SO	Solid	T	Tissue
SL	Sediment	WI	Wipe
W	Water	L	Liquid
O	Oil	V	Vegetation
A	Air	X	Other

PRINTED 10/9/2012

A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#
X13-005-253
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 47/1,2	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 DOE Order 5100.5 (1990/1/93)

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	Hold Time	Preservative
BZMKV6	N	11-15-12	1224	1x250-mL G	TRITIUM_LIE_LSC: Tritium (1)	6 Months	None

Relinquished By	<i>J. Aguilar</i>	Print	Sign	Date/Time	Received By	<i>TA Frazee</i>	Print	Sign	Date/Time
Relinquished By				11-15-12 1300	Received By				11-15-12 1300
Relinquished By					Received By				
Relinquished By					Received By				

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

MATRIX *

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

PRINTED 0 10/9/2012

A-8004-842 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-354
Collector <i>J. Aguilar</i>		Contact/Requester	Karen Walters-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 47 / 1, 2		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 2400.2 (1990/1993)			Site Wide Generator Knowledge Information Form applies. The CACM 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	Preservative
B2M1D8	N	11-15-12	1120	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
<i>J. Aguilar</i>			11-15-12 1300	<i>JA From Debi Ag</i>			11-15-12 1300	S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Dross Solids DL - Dross Liquids T - Tissue WI - Waste L - Liquid V - Vegetation X - Other
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time			

PRINTED 0 10/9/2012

A-8004-942 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X13-005-359
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.	HNF-N-506 47/12	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 DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS Hold Time
 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 No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MLF6	N	11-15-12	1028	1x250-ML G	TRITIUM_EIE_Lsc: Tritium (1)	6 Months	None

Relinquished By	J. Aguilar	Print	Sign	Date/Time	11-15-12	1300	Received By	Th Proctor	Print	Sign	Date/Time	11-15-12	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		

Matrix *	DS	DL	WI	L	V	X
S = Soil	DL = Dism Solids	WI = Waste	L = Liquid	V = Vegetation	X = Other	
SE = Sediment	DL = Dism Liquids	WI = Waste	L = Liquid	V = Vegetation	X = Other	
SO = Solid	DL = Dism Liquids	WI = Waste	L = Liquid	V = Vegetation	X = Other	
SL = Sludge	DL = Dism Liquids	WI = Waste	L = Liquid	V = Vegetation	X = Other	
W = Water	DL = Dism Liquids	WI = Waste	L = Liquid	V = Vegetation	X = Other	
O = Oil	DL = Dism Liquids	WI = Waste	L = Liquid	V = Vegetation	X = Other	
A = Air	DL = Dism Liquids	WI = Waste	L = Liquid	V = Vegetation	X = Other	

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

PRINTED 0 10/9/2012 A-6004-942 (REV 2)