

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 WSCF121499

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 WSCF121499

- * 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 # WSCF121499

Data Deliverable Date 12/27/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
S13-012	B2MYP1	121499001	WATER	11/26/12	11/26/12
S13-012	B2MYN3	121499002	WATER	11/26/12	11/26/12
S13-012	B2MYN7	121499003	WATER	11/26/12	11/26/12
S13-012	B2MYP6	121499004	WATER	11/26/12	11/26/12
S13-012	B2MYP7	121499005	WATER	11/26/12	11/26/12
S13-012	B2MYV2	121499006	WATER	11/26/12	11/26/12
S13-011	B2MM06	121499007	WATER	11/26/12	11/26/12
S13-012	B2MYR6	121499008	WATER	11/26/12	11/26/12
S13-012	B2MYM1	121499009	WATER	11/26/12	11/26/12
S13-012	B2MYT0	121499010	WATER	11/26/12	11/26/12
S13-012	B2MYL7	121499011	WATER	11/26/12	11/26/12
S13-012	B2N037	121499012	WATER	11/26/12	11/26/12
S13-012	B2MYR2	121499013	WATER	11/26/12	11/26/12
S13-012	B2N041	121499014	WATER	11/26/12	11/26/12
S13-012	B2MYM5	121499015	WATER	11/26/12	11/26/12
S13-012	B2MYM9	121499016	WATER	11/26/12	11/26/12
S13-011	B2MM11	121499017	WATER	11/26/12	11/26/12

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
WSCF121499

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 210822
 - 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.

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 29 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 # WSCF121499
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 # WSCF121499

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210750	210750	2	BLANK	85465	BLANK		Anions by Ion Chromatography (Water)
210750	210750	3	LCS	85466	LCS		Anions by Ion Chromatography (Water)
210750	210750	4	DUP	85467	B2MKH4(121496002DUP)	121496002	Anions by Ion Chromatography (Water)
210750	210750	5	MS	85468	B2MKH4(121496002MS)	121496002	Anions by Ion Chromatography (Water)
210750	210750	6	MSD	85469	B2MKH4(121496002MSD)	121496002	Anions by Ion Chromatography (Water)
210750	210750	15	SAMPLE	121499001	B2MYP1		Anions by Ion Chromatography (Water)
210750	210750	16	SAMPLE	121499002	B2MYN3		Anions by Ion Chromatography (Water)
210750	210750	17	SAMPLE	121499003	B2MYN7		Anions by Ion Chromatography (Water)
210751	210751	2	BLANK	85472	BLANK		Anions by Ion Chromatography (Water)
210751	210751	3	LCS	85473	LCS		Anions by Ion Chromatography (Water)
210751	210751	4	DUP	85474	B2MLC0(121496003DUP)	121496003	Anions by Ion Chromatography (Water)
210751	210751	5	MS	85475	B2MLC0(121496003MS)	121496003	Anions by Ion Chromatography (Water)
210751	210751	6	MSD	85476	B2MLC0(121496003MSD)	121496003	Anions by Ion Chromatography (Water)
210751	210751	9	SAMPLE	121499004	B2MYP6		Anions by Ion Chromatography (Water)
210751	210751	10	SAMPLE	121499005	B2MYP7		Anions by Ion Chromatography (Water)
210751	210751	11	SAMPLE	121499006	B2MYV2		Anions by Ion Chromatography (Water)
210751	210751	12	SAMPLE	121499007	B2MM06		Anions by Ion Chromatography (Water)
210751	210751	13	SAMPLE	121499008	B2MYR6		Anions by Ion Chromatography (Water)
210751	210751	14	SAMPLE	121499009	B2MYM1		Anions by Ion Chromatography (Water)
210751	210751	15	SAMPLE	121499010	B2MYT0		Anions by Ion Chromatography (Water)
210751	210751	16	SAMPLE	121499011	B2MYL7		Anions by Ion Chromatography (Water)
210751	210751	17	SAMPLE	121499012	B2N037		Anions by Ion Chromatography (Water)
210822	210822	2	BLANK	85588	BLANK		Anions by Ion Chromatography (Water)

Batch QC List

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121499

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210822	210822	3	LCS	85589	LCS		Anions by Ion Chromatography (Water)
210822	210822	4	DUP	85590	B2MM11(121499017DUP	121499017	Anions by Ion Chromatography (Water)
210822	210822	5	MS	85591	B2MM11(121499017MS)	121499017	Anions by Ion Chromatography (Water)
210822	210822	6	MSD	85592	B2MM11(121499017MSD	121499017	Anions by Ion Chromatography (Water)
210822	210822	8	SAMPLE	121499013	B2MYR2		Anions by Ion Chromatography (Water)
210822	210822	9	SAMPLE	121499014	B2N041		Anions by Ion Chromatography (Water)
210822	210822	10	SAMPLE	121499015	B2MYM5		Anions by Ion Chromatography (Water)
210822	210822	11	SAMPLE	121499016	B2MYM9		Anions by Ion Chromatography (Water)
210822	210822	12	SAMPLE	121499017	B2MM11		Anions by Ion Chromatography (Water)

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121499

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-533-410	Anion Analysis by Ion Chromatography		Determination of Inorganic Anions by Ion Chromatography
	EPA-600/R-94-111	300.0	
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at <http://www7.rl.gov/rapidweb/AS-DOL/index.cfm>

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121499

Sample # 121499001
 SAF# S13-012
 Sample ID B2MYP1

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.178		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	10.3		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	BD	0.0421		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	4.68		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	51.8		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499002
 SAF# S13-012
 Sample ID B2MYN3

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.138		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	19.4		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	BD	0.0472		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	93.6		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499003
 SAF# S13-012
 Sample ID B2MYN7

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.165		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	5.19		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	BD	0.0387		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	1.99		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	36.8		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499004
 SAF# S13-012
 Sample ID B2MYP6

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	UD	<0.046		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	UD	<0.12		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	UD	<0.22		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499005
 SAF# S13-012
 Sample ID B2MYP7

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.152		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	7.21		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	2.97		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	100		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499006
 SAF# S13-012
 Sample ID B2MYV2

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.205		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	11.0		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	3.55		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	59.0		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499007
 SAF# S13-011
 Sample ID B2MM06

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.178		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	8.96		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	3.54		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	62.5		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499008
 SAF# S13-012
 Sample ID B2MYR6

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.175		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	8.22		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	3.48		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	68.2		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499009
 SAF# S13-012
 Sample ID B2MYM1

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.144		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	12.5		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	4.81		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	63.9		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499010
 SAF# S13-012
 Sample ID B2MYT0

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.207		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	8.55		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	3.30		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	67.6		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499011
 SAF# S13-012
 Sample ID B2MYL7

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.177		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	11.5		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	4.14		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	57.5		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499012
 SAF# S13-012
 Sample ID B2N037

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.223		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	14.5		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	4.89		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	63.7		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499013
 SAF# S13-012
 Sample ID B2MYR2

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.192		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	14.4		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	5.40		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	74.3		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499014
 SAF# S13-012
 Sample ID B2N041

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.246		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	14.4		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	4.88		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	64.4		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499015
 SAF# S13-012
 Sample ID B2MYM5

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.147		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	10.0		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	3.03		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	76.5		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499016
 SAF# S13-012
 Sample ID B2MYM9

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	BD	0.117		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	8.20		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	2.75		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	72.4		ug/mL	2	0.22	2.1	11/27/12

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 # WSCF121499

Sample # 121499017
 SAF# S13-011
 Sample ID B2MM11

Matrix WATER
 Sampled 11/26/12
 Received 11/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
11/27/12										
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.157		ug/mL	2	0.046	0.14	11/27/12
Chloride	16887-00-6	LA-533-410	D	6.65		ug/mL	2	0.12	0.81	11/27/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/27/12
Nitrate-N	NO3-N	LA-533-410	D	2.47		ug/mL	2	0.038	0.20	11/27/12
Sulfate	14808-79-8	LA-533-410	D	47.8		ug/mL	2	0.22	2.1	11/27/12

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.

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121499

Analytical Batch 210750 (QC Batch: 210750) Test Anions by Ion Chromatography (Water)
 Associated Samples 121499001, 121499002, 121499003

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85465								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/26/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/26/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/26/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/26/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/26/12
LCS		QC Sample #85466								
Fluoride	16984-48-8	0.933		ug/mL	94.3	90 - 110				11/26/12
Chloride	16887-00-6	1.85		ug/mL	93.2	90 - 110				11/26/12
Nitrite-N	NO2-N	1.01		ug/mL	103.6	90 - 110				11/26/12
Nitrate-N	NO3-N	0.890		ug/mL	100.5	90 - 110				11/26/12
Sulfate	14808-79-8	3.89		ug/mL	99.1	90 - 110				11/26/12
DUP		QC Sample #85467								
		Original 121496002								
Fluoride	16984-48-8	<0.046		ug/mL			3.80	20	UD	11/26/12
Chloride	16887-00-6	0.974		ug/mL			3.30	20	D	11/26/12
Nitrite-N	NO2-N	<0.038		ug/mL			0.00	20	UD	11/26/12
Nitrate-N	NO3-N	0.0568		ug/mL			16.50	20	BD	11/26/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121499

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		10.2	ug/mL			2.70	20	D	11/26/12
MS			QC Sample #85468							
			Original 121496002							
Fluoride	16984-48-8		0.990	ug/mL	99	80 - 120			D	11/26/12
Chloride	16887-00-6		1.79	ug/mL	89.7	80 - 120			D	11/26/12
Nitrite-N	NO2-N		0.972	ug/mL	98.4	80 - 120			D	11/26/12
Nitrate-N	NO3-N		0.856	ug/mL	95.7	80 - 120			D	11/26/12
Sulfate	14808-79-8		3.42	ug/mL	86.4	80 - 120			D	11/26/12
MSD			QC Sample #85469							
			Original 121496002						Paired 85468	
Fluoride	16984-48-8		0.949	ug/mL	94.9	80 - 120	4.30	20	D	11/26/12
Chloride	16887-00-6		1.83	ug/mL	91.3	80 - 120	1.10	20	D	11/26/12
Nitrite-N	NO2-N		1.02	ug/mL	103.5	80 - 120	5.10	20	D	11/26/12
Nitrate-N	NO3-N		0.874	ug/mL	97.7	80 - 120	2.00	20	D	11/26/12
Sulfate	14808-79-8		3.54	ug/mL	89.3	80 - 120	0.80	20	D	11/26/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121499

Analytical Batch 210751 (QC Batch: 210751) **Test** Anions by Ion Chromatography (Water)
Associated Samples 121499004, 121499005, 121499006, 121499007, 121499008, 121499009, 121499010, 121499011, 121499012

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85472								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/27/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/27/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/27/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/27/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/27/12
LCS		QC Sample #85473								
Fluoride	16984-48-8	0.929		ug/mL	93.9	90 - 110				11/27/12
Chloride	16887-00-6	1.84		ug/mL	92.9	90 - 110				11/27/12
Nitrite-N	NO2-N	0.996		ug/mL	101.8	90 - 110				11/27/12
Nitrate-N	NO3-N	0.899		ug/mL	101.6	90 - 110				11/27/12
Sulfate	14808-79-8	3.87		ug/mL	98.6	90 - 110				11/27/12
DUP		QC Sample #85474								
		Original 121496003								
Fluoride	16984-48-8	<0.046		ug/mL			15.00	20	UD	11/27/12
Chloride	16887-00-6	0.723		ug/mL			0.70	20	BD	11/27/12
Nitrite-N	NO2-N	<0.038		ug/mL			0.00	20	UD	11/27/12
Nitrate-N	NO3-N	0.163		ug/mL			0.70	20	BD	11/27/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121499

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		8.59	ug/mL			0.30	20	D	11/27/12
MS			QC Sample #85475							
			Original 121496003							
Fluoride	16984-48-8		0.967	ug/mL	96.7	80 - 120			D	11/27/12
Chloride	16887-00-6		1.85	ug/mL	92.5	80 - 120			D	11/27/12
Nitrite-N	NO2-N		0.968	ug/mL	98	80 - 120			D	11/27/12
Nitrate-N	NO3-N		0.901	ug/mL	100.8	80 - 120			D	11/27/12
Sulfate	14808-79-8		4.09	ug/mL	103.4	80 - 120			D	11/27/12
MSD			QC Sample #85476							
			Original 121496003						Paired 85475	
Fluoride	16984-48-8		0.938	ug/mL	93.8	80 - 120	3.10	20	D	11/27/12
Chloride	16887-00-6		1.83	ug/mL	91.3	80 - 120	0.90	20	D	11/27/12
Nitrite-N	NO2-N		1.05	ug/mL	105.9	80 - 120	7.80	20	D	11/27/12
Nitrate-N	NO3-N		0.872	ug/mL	97.5	80 - 120	2.80	20	D	11/27/12
Sulfate	14808-79-8		4.02	ug/mL	101.4	80 - 120	0.60	20	D	11/27/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
 Department Inorganic

Group # WSCF121499

Analytical Batch 210822 (QC Batch: 210822) **Test** Anions by Ion Chromatography (Water)
Associated Samples 121499013, 121499014, 121499015, 121499016, 121499017

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85588								
Fluoride	16984-48-8	<0.023		ug/mL					U	11/27/12
Chloride	16887-00-6	<0.058		ug/mL					U	11/27/12
Nitrite-N	NO2-N	<0.019		ug/mL					U	11/27/12
Nitrate-N	NO3-N	<0.019		ug/mL					U	11/27/12
Sulfate	14808-79-8	<0.11		ug/mL					U	11/27/12
LCS		QC Sample #85589								
Fluoride	16984-48-8	0.979		ug/mL	98.9	90 - 110				11/27/12
Chloride	16887-00-6	1.88		ug/mL	95	90 - 110				11/27/12
Nitrite-N	NO2-N	1.01		ug/mL	103	90 - 110				11/27/12
Nitrate-N	NO3-N	0.899		ug/mL	101.6	90 - 110				11/27/12
Sulfate	14808-79-8	4.06		ug/mL	103.5	90 - 110				11/27/12
DUP		QC Sample #85590								
		Original 121499017								
Fluoride	16984-48-8	0.157	0.151	ug/mL			3.80	20	D	11/27/12
Chloride	16887-00-6	6.65	6.66	ug/mL			0.10	20	D	11/27/12
Nitrite-N	NO2-N	<0.038	<0.038	ug/mL			0.00	20	UD	11/27/12
Nitrate-N	NO3-N	2.47	2.49	ug/mL			0.60	20	D	11/27/12

* - QC result out of range

n/a - Not Applicable

Attention: Scot Fitzgerald

Group #

WSCF121499

Quality Control Comments

Department Inorganic

85591 B2MM11(121499017MS)

Analyte Sulfate - Anions by Ion Chromatography (Water)

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

85592 B2MM11(121499017MSD)

Analyte Sulfate - Anions by Ion Chromatography (Water)

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

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 20 pages
Including cover page

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

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory

PO Box 650 S3-30
 Richland, WA 99352

ATTN: Scot Fitzgerald

Customer Code: CHPRC

PO #: 401647

Work Order #: 121499

Profile #: S13-012-324

Proj. Mgr.:

Phone:

The following samples were received from you on 11/26/2012 3:07:00 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		
121499001	B2MYP1	WATER	11/26/2012 11:15	11/26/2012 15:07
		IC-W		
121499002	B2MYN3	WATER	11/26/2012 10:33	11/26/2012 15:07
		IC-W		
121499003	B2MYN7	WATER	11/26/2012 10:18	11/26/2012 15:07
		IC-W		
121499004	B2MYP6	WATER	11/26/2012 08:25	11/26/2012 15:07
		IC-W		
121499005	B2MYP7	WATER	11/26/2012 09:58	11/26/2012 15:07
		IC-W		
121499006	B2MYV2	WATER	11/26/2012 14:23	11/26/2012 15:07
		IC-W		
121499007	B2MM06	WATER	11/26/2012 10:51	11/26/2012 15:07
		IC-W		
121499008	B2MYR6	WATER	11/26/2012 11:30	11/26/2012 15:07
		IC-W		
121499009	B2MYM1	WATER	11/26/2012 12:15	11/26/2012 15:07
		IC-W		
121499010	B2MYT0	WATER	11/26/2012 11:46	11/26/2012 15:07
		IC-W		
121499011	B2MYL7	WATER	11/26/2012 12:34	11/26/2012 15:07

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
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IC-W				
121499012	B2N037	WATER	11/26/2012 12:50	11/26/2012 15:07
IC-W				
121499013	B2MYR2	WATER	11/26/2012 13:06	11/26/2012 15:07
IC-W				
121499014	B2N041	WATER	11/26/2012 13:24	11/26/2012 15:07
IC-W				
121499015	B2MYM5	WATER	11/26/2012 13:37	11/26/2012 15:07
IC-W				
121499016	B2MYM9	WATER	11/26/2012 13:53	11/26/2012 15:07
IC-W				
121499017	B2MM11	WATER	11/26/2012 14:09	11/26/2012 15:07
IC-W				

Test Acronym Description

Test Acronym	Description
IC-W	Anions by IC (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S13-012-324
Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURY, DECEMBER 2012	Logbook No.	HNF-N-506 471/52	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	SURY	Priority:	31 Days PRIORITY	Offsite Property No.	N/A

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

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

Sample No.	121499	Date	11-26-12	Time	1115	No./Type Container	1x500-mL P	Received By	300 O_ANIONS_IC: Lab-1 (5)	Sample Analysis		Holding Time	48 Hours	Preservative	Cool-4C
------------	--------	------	----------	------	------	--------------------	------------	-------------	----------------------------	-----------------	--	--------------	----------	--------------	---------

Relinquished By	Robert Crow	Print	Sign	Date/Time	NOV 26 2012 1501	Received By	Cynthia R. Johnson	Print	Sign	Date/Time	NOV 26 2012 1501	Matrix *	
Relinquished By				Date/Time		Received By				Date/Time		S = Soil	DS = Drum Solids
Relinquished By				Date/Time		Received By				Date/Time		SE = Sediment	DL = Drum Liquids
Relinquished By				Date/Time		Received By				Date/Time		SO = Solid	T = Tissue
Relinquished By				Date/Time		Received By				Date/Time		SL = Sludge	WI = Wipe
Relinquished By				Date/Time		Received By				Date/Time		W = Water	L = Liquid
Relinquished By				Date/Time		Received By				Date/Time		O = Oil	V = Vegetation
Relinquished By				Date/Time		Received By				Date/Time		A = Air	X = Other

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A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # S13-012-321
				Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	30007IES20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 <i>LR/82</i>	Ice Check No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5100.5 (1990/1995)

SPECIAL INSTRUCTIONS
 EY12 and EY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Received By	Sample Analysis	Holding Time	Preservative
E2MNV17	N	11-20-12	1018	1x500-mL P	300.0_ANIONS_IC: Let: 1 (6)		48 Hours	Cool-4C

Redequired By	Print	Sign	Date/Time	Received By	Date	Sign	Date/Time	Matrix *
Redequired By	Robert Crow	<i>R Crow</i>	NOV 26 2012 1501	Cynthia R Johnson	NOV 26 2012	<i>CR</i>	1501	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Redequired By								DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wire L = Liquid V = Vegetation X = Other

Redequired By	Date/Time	Received By	Date/Time	Disposed By	Date/Time

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

PRINTED: 0 10/24/2012 A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-327**
 Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 49 / 82	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 (1990/1995)

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

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2WVP6	N	11-26-12	0805	1x500-mL P	300_0_ANIONS_IC: List-1 (5)	48 Hours	COOL-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	Robert Crow	<i>Robert Crow</i>	NOV 26 2012 1507	Received By	Cynthia R Johnson	<i>Cynthia R Johnson</i>	NOV 26 2012 1507	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: _____

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Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-330**
 Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-50649 / 82	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
 *** Contain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5108.3 (1990/1993)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401547.

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MWV7	N	11-26-12	0958	1x500-mL P	300.0_ANIONS_IC: Lst-1 (5)	48 Hours	COOL-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By Robert Crow			NOV 26 2012 1507	Received By Cynthia R Johnson			NOV 26 2012 1507	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 = Label V = Vapors 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: _____

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Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-348**
 Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 <u>49 / 83</u>	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
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401547.

Total Activity Exemption: Yes No

Sample No	Filter	Date	Time	Vol/Type Container	Sample Analysis	Holding Time	Preservative
B2MNV2	N	12/11/2012	1423	1x500-mL P	300_0_ANIONS_IC: List-1 (5)	48 Hours	Cool-to-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	Robert Crow	<i>R Crow</i>	NOV 26 2012 1507	Received By	Cynthia R Johnson	<i>C Johnson</i>	NOV 26 2012 1507	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vapors X = Other
Relinquished By				Received By				
Relinquished By				Received By				

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

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A:6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S13-011-146**
Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Illsted	Telephone No.	376-4650
SAF No.	S13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV. NOVEMBER 2012	Logbook No.	HNF-N-506 <i>49/82</i>	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	31 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1999/1995)

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

Total Activity Exemption: Yes No

Sample No.	B2MM06	Filter	N	Date	11-20-12	Time	1:51	No./Type Container	1x500 mL P	Sample Analysis	300_0_ANIONS_IC_List 1 (5)	Holding Time	48 Hours	Preservative	Cool-AC
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Relinquished By	Robert Crow	Print	Sign	Date/Time	NOV 26 2012 1:50	Received By	Cynthia R. Johnson	Print	Sign	Date/Time	NOV 26 2012 1:50	Matrix *	S - Soil SE - Sediment SD - Solid SL - Sludge W - Water O - Oil A - Air	DS - Drum Solids DL - Drum Leachate T - Tissue W1 - Wire L - Liquid V - Vegetation X - Other
Relinquished By		Date/Time		Received By		Date/Time		Date/Time		Disposed By		Date/Time		
Relinquished By		Date/Time		Received By		Date/Time		Date/Time		Disposed By		Date/Time		
Relinquished By		Date/Time		Received By		Date/Time		Date/Time		Disposed By		Date/Time		

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

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A-5004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-336**
 Page 1 of 1

Collector: Robert Crow
 SAF No.: S13-012
 Project Title: SURV, DECEMBER 2012
 Shipped To (Lab): Waste Sampling & Characterization
 Protocol: SURV

Contact/Requester: Karen Waters-Husted
 Sampling Origin: Hanford Site
 Logbook No.: HNF-N-506 49 / 82
 Method of Shipment: GOVERNMENT VEHICLE
 Priority: 31 Days
 SPECIAL INSTRUCTIONS: PRIORITY

Telephone No.: 376-4650
 Purchase Order/Charge Code: 300071ES20
 Ice Chest No.: N/A
 Bill of Lading/Air Bill No.: N/A
 Office 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 3409.5 (1990/1993)

SPECIAL INSTRUCTIONS
 FY12 and FY13 samples cannot be in the same SDC. Site-Wide Generator Knowledge Informative Form applies. The CACN for all analytical work at WSCF is 40647.

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Received By	Sample Analysis	Holding Time	Preservative
E2MYR6	N	11-26-12	11:30	1x500-mL P	300 O_ANIONS_IC: List-1 (5)		48 Hours	Cool-4C

Redequired By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Redequired By: Robert Crow			NOV 26 2012 15:07	Received By: Cynthia R Johnson			NOV 26 2012 15:07	S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air
Redequired By:			Date/Time	Received By:			Date/Time	DS - Drum Solids DL - Drum Liquids T - Tissue WT - Wire L - Liquid V - Vegetation X - Other
Redequired By:			Date/Time	Received By:			Date/Time	
FINAL SAMPLE DISPOSITION								
Disposal Method (e.g. Return to customer, per lab procedure, used in process)								Date/Time

PRINTED 0 10/24/2012

A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-309**
 Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 49/82	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Procedural	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 SA005 (1990/1993)

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

Total Activity Exemption: Yes No

Sample No.	B2WVW1	Filter	N	Date	11-20-12	Time	1815	No/Type Container	1X500 mL P	Sample Analysis	300 O_ ANIONS_IC: List 1 (9)	Holding Time	48 Hours	Preservative	COOL-4C
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Relinquished By	Print Robert Crow	Sign <i>Robert Crow</i>	Date/Time NOV 26 2012 1501	Received By	Print Cynthia R. Johnson	Sign <i>Cynthia R. Johnson</i>	Date/Time NOV 26 2012 1501
Relinquished By				Received By			
Relinquished By				Received By			
Relinquished By				Received By			

Matrix *

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

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

PRINTED 0 10/24/2012 A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-339**
 Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAP No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 4988	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
 FY12 and FY13 samples cannot be in the same SIG. Site-Wide Generator Knowledge Information form applies. The CACN for all analytical work at WSCF is 401647.

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative	
B2WVTO	0	N	W	11-26-12 1442	1x500-mL P	300.0_ANIONS_JC: L191-1 (5)	48 Hours	Cool-AC

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	Robert Crow	<i>R Crow</i>	NOV 26 2012 1501	Received By	Cynthia R Johnson	<i>C Johnson</i>	NOV 26 2012 1501	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 = Wipe L = Liquid V = Vegetation X = Other
Relinquished By				Received By				

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

Disposed By: _____ Date/Time: _____

PRINTED ON 10/24/2012

A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

C.O.C. #
S13-012-306
Page 1 of 1

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 49 / 82	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
 FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2MV L7 11	N	11-24-12	1834	1x500-mL P	300.0_ANIONS_IC: List: 1 (5)	48 Hours	Cool-4C

Requisitioned By Robert Crow	Print [Signature]	Sign [Signature]	Date/Time NOV 26 2012 1550	Received By Cynthia R Johnson	Print [Signature]	Sign [Signature]	Date/Time NOV 26 2012 1550
Requisitioned By	Date/Time	Received By	Date/Time	Requisitioned By	Date/Time	Received By	Date/Time
Requisitioned By	Date/Time	Received By	Date/Time	Requisitioned By	Date/Time	Received By	Date/Time
Requisitioned By	Date/Time	Received By	Date/Time	Requisitioned By	Date/Time	Received By	Date/Time

FINAL SAMPLE DISPOSITION

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

PRINTED 0 10/24/2012

A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S13-012-398

Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 <u>49/83</u>	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 DDE Order 3400 5 (1990/1993)

Total Activity Exemption: Yes No

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

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2N037	N	11/20/12	1850	1x500-mL P	300.0_ANIONS_IC: List-1 (G)	48 Hours	Cool--4C

Retransmitted By	Robert Crow	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
				NOV 26 2012 150	Cynthia R Johnson			NOV 26 2012 150
Retransmitted By				Date/Time	Received By			Date/Time
Retransmitted By				Date/Time	Received By			Date/Time
Retransmitted By				Date/Time	Received By			Date/Time

FINAL SAMPLE DISPOSITION	Disposal Method (e.g. Return to customer per lab procedure, used in process)
PRINTED 10/24/2012	A-6004-842 (REV 2)

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

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # S13-012-333			
Collector	Robert Crow	Contact/Requester	Karen Waters-Husted		Telephone No.	376-4650			
SAF No.	S13-012	Sampling Origin	Hanford Site		Purchase Order/Charge Code	300071ES20			
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 <u>49 / 83</u>		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						
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DGF Order 5400 5 (1/90/1/973)			Hold Time FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work is WSCF 14-01647.						
Sample No	Filter *	Date	Time	No./Type Container	Sample Analysis	Preservative			
B2MV/R2	3	N	W	11/26/12	130L	1x500 mL P	300 O_ ANIONS_IC: List 1 (9)	48 Hours	Cool-AG

Relinquished By	Robert Crow	Print	Sign	Date/Time	NOV 26 2012	Received By	Cynthia R Johnson	Print	Sign	Date/Time	NOV 26 2012
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)					

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

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Chain of Custody

CH2M Hill Plateau Remediation Company
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C. # **S13-012-401**
 Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	30007IESS20
Project Title	SURV. DECEMBER 2012	Logbook No.	HNF-N-506 4183	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
 FY12 and FY13 samples cannot be in the same SIG. Site-Wide Generator Knowledge Information Form applies. The CCM for all analytical work at WSCF is 401647

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2N041	14	N	11-20-12	14500-ml P	300.0_ANIONS_IC: List: 1 (9)	48 Hours	Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	Robert Crow	<i>R. Crow</i>	NOV 26 2012	Received By	Cynthia R Johnson	<i>CRJ</i>	NOV 26 2012	S = Soil SE = Sediment SD = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By				Received By				DS = Drums/Skids DL = Drum Liquids T = Tissue WT = Waste L = Liquid V = Vegetation X = Other
Relinquished By				Received By				
Relinquished By				Received By				
Relinquished By				Received By				

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

Disposed By

Date/Time

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A-5004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

C.O.C. #
S13-012-312

Page 1 of 1

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector	Robert Crow	Contact/Requestor	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 49/83	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 5400.51 (1990/1993)

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

Total Activity Exemption: Yes No

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
D2MVM5 15	N	11-20-12	1337	1x500-mL P	300.0_ANIONS_IC: Lst: 1 (5)	48 Hours	Cool-4C

Relinquished By	Print Robert Crow	Sign	<i>[Signature]</i>	Date/Time	NOV 26 2012 <i>[Signature]</i>	Received By	Print Cynthia R Johnson	Sign	<i>[Signature]</i>	Date/Time	NOV 26 2012 <i>[Signature]</i>
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)					

Matrix *

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

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#
S13-012-315
Page 1 of 1

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAP No.	S13-012	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20
Project Title	SURV, DECEMBER 2012	Logbook No.	HNF-N-506 49 / 83	Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DCE Order 5100 5 (1990/1993)

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

Sample No.	Filter	+	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2MVM9	4	N	12-12	1353	1x500-mL P	300.0_ANIONS_JC: Lst-1 (5)	48 Hours	COOL-4C

Relinquished By	Robert Crow	Print	Sign	Date/Time	NOV 26 2012 1506	Received By	Cynthia R Johnson	Print	Sign	Date/Time	NOV 26 2012 1506	Matrix *
Relinquished By				Date/Time		Received By				Date/Time		S = Soil
Relinquished By				Date/Time		Received By				Date/Time		SE = Sediment
Relinquished By				Date/Time		Received By				Date/Time		SO = Solid
Relinquished By				Date/Time		Received By				Date/Time		SL = Sludge
Relinquished By				Date/Time		Received By				Date/Time		W = Water
Relinquished By				Date/Time		Received By				Date/Time		O = Oil
Relinquished By				Date/Time		Received By				Date/Time		A = Air
Relinquished By				Date/Time		Received By				Date/Time		DS = Dism. Solids
Relinquished By				Date/Time		Received By				Date/Time		DL = Drain Liquids
Relinquished By				Date/Time		Received By				Date/Time		T = Tissue
Relinquished By				Date/Time		Received By				Date/Time		WI = Wipe
Relinquished By				Date/Time		Received By				Date/Time		L = Liquid
Relinquished By				Date/Time		Received By				Date/Time		V = Vegetation
Relinquished By				Date/Time		Received By				Date/Time		X = Other

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

Disposed By: _____ Date/Time: _____

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A-6004-842 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # S13-011-149	
								Page 1 of 1	
Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650				
SAP No.	S13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ESS20				
Project Title	SURV. NOVEMBER 2012	Logbook No.	HNF-N-506 49 / 83	Ice Chest No.	N/A				
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A				
Protocol	CERCLA	Priority:	31 Days	Offsite Property No.	N/A				
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS		Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.51 (1990/1995)				FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CONN for all analytical work at WSCF is 401/47					
Sample No.	B2MM11	Filter	N	Date	11/26/2012	Time	14:09	Preservative	
		No./Type Container	1x500-mL P	Sample Analysis	300.0_ANIONS_IC_Let-1 (5)	Holding Time	48 Hours	Cool-4C	

Relinquished By	Robert Crow	Print	Sign	NOV 26 2012	15:07	Received By	Cynthia R Johnson	Print	Sign	NOV 26 2012	15:07	Matrix *
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	S = Soil
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	SE = Sediment
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	SD = Solid
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	SL = Sludge
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	W = Water
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	O = Oil
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	A = Air
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	DS = Drum Solids
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	DL = Drum Liquids
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	T = Tissue
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	WT = Wipe
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	L = Liquid
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	V = Vegetation
Relinquished By		Date/Time	Date/Time	Date/Time	Date/Time	Received By		Date/Time	Date/Time	Date/Time	Date/Time	X = Other
FINAL SAMPLE DISPOSITION												
Disposal Method (e.g. Return to customer per lab procedure, used in process)						Disposed By						

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A-6004-842 (REV 2)