WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

December 10, 2012

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121438

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 WSCF121438

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

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager, Dan T. Smith

WSCF Analytical Lab

(509) 373-4804

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages

Including cover page

WSCF SAF Number Cross Reference

Group # WSCF121438
Data Deliverable Date 12/10/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
I13-004	B2MP61	121438001	WATER	11/07/12	11/07/12
W13-011	B2MNR4	121438002	WATER	11/07/12	11/07/12
W13-011	B2MNR2	121438003	WATER	11/07/12	11/07/12
I13-004	B2MP60	121438004	WATER	11/07/12	11/07/12
I13-004	B2MP62	121438005	WATER	11/07/12	11/07/12
W13-011	B2MNV4	121438006	WATER	11/07/12	11/07/12
W13-011	B2MNV2	121438007	WATER	11/07/12	11/07/12
W13-011	B2MNV3	121438008	WATER	11/07/12	11/07/12
W13-011	B2MNR1	121438009	WATER	11/07/12	11/07/12
W13-011	B2MNR3	121438010	WATER	11/07/12	11/07/12

ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Attachment 2
Narrative
WSCF121438

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
WSCF121438

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

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

- All applicable QC controls are within the established limits.

ICP-AES Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

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

- All applicable QC controls are within the established limits.

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

- All applicable QC controls are within the established limits.

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

- All applicable QC controls are within the established limits.

Organic Comments

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

- All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF121438

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 44 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Scot Fitzgerald

Contract # MOA-FH-CHPRC-2008
Group # WSCF121438
Report Date December 10, 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.

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
209933	209933	2	BLANK	84741	BLANK		Anions by Ion Chromatography (Water)
209933	209933	3	LCS	84742	LCS		Anions by Ion Chromatography (Water)
209933	209933	4	DUP	84743	B2MKL1(121430004DUP)	121430004	Anions by Ion Chromatography (Water)
209933	209933	5	MS	84744	B2MKL1(121430004MS)	121430004	Anions by Ion Chromatography (Water)
209933	209933	6	MSD	84745	B2MKL1(121430004MSD	121430004	Anions by Ion Chromatography (Water)
209933	209933	15	SAMPLE	121438001	B2MP61		Anions by Ion Chromatography (Water)
210325	210325	1	BLANK	85027	BLANK		Hexavalent chromium Discrete Analyzer
210325	210325	3	LCS	85029	LCS		Hexavalent chromium Discrete Analyzer
210325	210325	4	DUP	85030	B2MNR4(121438002DUP	121438002	Hexavalent chromium Discrete Analyzer
210325	210325	5	MS	85031	B2MNR4(121438002MS)	121438002	Hexavalent chromium Discrete Analyzer
210325	210325	6	SAMPLE	121438002	B2MNR4		Hexavalent chromium Discrete Analyzer
210325	210325	7	SAMPLE	121438003	B2MNR2		Hexavalent chromium Discrete Analyzer
210516	210517	1	BLANK	85260	BLANK		Total Organic Halides
210516	210517	2	LCS	85261	LCS		Total Organic Halides
210516	210517	10	MS	85265	B2MNV6(121436007MS)	121436007	Total Organic Halides
210516	210517	11	MSD	85266	B2MNV6(121436007MSD	121436007	Total Organic Halides
210516	210517	13	SAMPLE	121438006	B2MNV4		Total Organic Halides
210516	210517	14	SAMPLE	121438007	B2MNV2		Total Organic Halides
210516	210517	15	SAMPLE	121438008	B2MNV3		Total Organic Halides
210516	210517	16	SAMPLE	121438009	B2MNR1		Total Organic Halides
210637	210818	5	BLANK	85335	BLANK		ICP-6010 - All possible metals
210637	210818	7	LCS	85337	LCS		ICP-6010 - All possible metals
210637	210818	9	MS	85338	B2MPD0(121411001MS)	121411001	ICP-6010 - All possible metals

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210637	210818	10	MSD	85339	B2MPD0(121411001MSD	121411001	ICP-6010 - All possible metals
210637	210818	32	SAMPLE	121438004	B2MP60		ICP-6010 - All possible metals
210637	210818	33	SAMPLE	121438005	B2MP62		ICP-6010 - All possible metals
210827	211022	4	BLANK	85614	BLANK		ICP-2008 MS All possible metal
210827	211022	5	LCS	85615	LCS		ICP-2008 MS All possible metal
210827	211022	7	MS	85616	B2MNT0(121436001MS)	121436001	ICP-2008 MS All possible metal
210827	211022	8	MSD	85617	B2MNT0(121436001MSD	121436001	ICP-2008 MS All possible metal
210827	211022	16	SAMPLE	121438009	B2MNR1		ICP-2008 MS All possible metal
210827	211022	17	SAMPLE	121438010	B2MNR3		ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121438

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
209925	209927	1	BLANK	84701	BLANK		SW-846 8260B Volatiles
209925	209927	2	LCS	84702	LCS		SW-846 8260B Volatiles
209925	209927	3	MS	84703	B2MN89(121404001MS)	121404001	SW-846 8260B Volatiles
209925	209927	4	MSD	84704	B2MN89(121404001MSD	121404001	SW-846 8260B Volatiles
209925	209927	15	SAMPLE	121438004	B2MP60		SW-846 8260B Volatiles

Batch QC List

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF121438

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210122	210122	1	LCS	84826	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210122	210122	5	DUP	84827	B2LLT4(121422001DUP)	121422001	Total Alkalinity as mg/L CaCO3 (Water)
210122	210122	13	LCS	84828	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210122	210122	15	SAMPLE	121438009	B2MNR1		Total Alkalinity as mg/L CaCO3 (Water)
210122	210122	19	LCS	84829	LCS		Total Alkalinity as mg/L CaCO3 (Water)
210417	210417	2	BLANK	85225	BLANK		Total Organic Carbon
210417	210417	3	LCS	85226	LCS		Total Organic Carbon
210417	210417	4	MS	85227	B2MNR7(121436004MS)	121436004	Total Organic Carbon
210417	210417	5	MSD	85228	B2MNR7(121436004MSD	121436004	Total Organic Carbon
210417	210417	14	SAMPLE	121438006	B2MNV4		Total Organic Carbon
210417	210417	15	SAMPLE	121438007	B2MNV2		Total Organic Carbon
210417	210417	17	MS	85230	B2MNR1(121438009MS)	121438009	Total Organic Carbon
210417	210417	18	MSD	85231	B2MNR1(121438009MSD	121438009	Total Organic Carbon
210417	210417	19	SAMPLE	121438009	B2MNR1		Total Organic Carbon
210417	210417	20	SAMPLE	121438008	B2MNV3		Total Organic Carbon

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-265-403	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium
LA-505-411	Elemental Analysis by ICP Atomic Emission Spectroscopy (ICP AES)		
	EPA SW-846	6010C	Inductively Coupled Plasma-Atomic Emmision Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	Determination of Trace Elements in Waters & Wastes by ICP Mass Spectrometry		
	EPA-600/R-94-111	200.8	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma
	HEIS	200.8_METALS_ICPMS	Determination of Trace Elements in Waters and Waste by Inductively Coupled Plasma, Mass Spec.
LA-523-444	Total Organic Halides Based on SW-846 Method 9020B		
	EPA SW-846	9020B	Total Organic Halides (TOX)
	HEIS	9020_TOX	Total Organic Halides (TOX)
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 Organic, Volatiles

Group # WSCF121438

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-523-455 Volatile Sample Analysis by SW-846 Method 8260B

EPA SW-846	8000B	Determinative Chromographic Separations
EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

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

Method Reference

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF121438

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-531-411	Alkalinity		
	SM	2320	Alkalinity
	HEIS	2320_ALKALINITY	Alkalinity
LA-344-406	Total Organic Carbon (TOC) Based on SW-846		
	EPA SW-846	9060	Total Organic Carbon
	HEIS	9060_TOC	Total Organic Carbon

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 # WSCF121438

Sample # 121438001
SAF# I13-004
Sample ID B2MP61

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/08/12
Anions by Ion Chromatography (Water)										
Fluoride	16984-48-8	LA-533-410	D	0.348		ug/mL	2	0.046	0.14	11/08/12
Chloride	16887-00-6	LA-533-410	D	9.09		ug/mL	2	0.12	0.81	11/08/12
Nitrite-N	NO2-N	LA-533-410	UD	<0.038		ug/mL	2	0.038	0.20	11/08/12
Nitrate-N	NO3-N	LA-533-410	D	3.43		ug/mL	2	0.038	0.20	11/08/12
Sulfate	14808-79-8	LA-533-410	D	25.5		ug/mL	2	0.22	2.1	11/08/12

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 # WSCF121438

Sample # 121438002
SAF# W13-011
Sample ID B2MNR4

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/07/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0156		mg/L	1	0.0020	0.0050	11/07/12

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Sample # 121438003
SAF# W13-011
Sample ID B2MNR2

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/07/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0158		mg/L	1	0.0020	0.0050	11/07/12

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 # WSCF121438

Sample # 121438004
SAF# I13-004
Sample ID B2MP60

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										**11/26/12**
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<19		ug/L	1	19	95	11/29/12
Magnesium	7439-95-4	LA-505-411		11800		ug/L	1	4.0	20	11/29/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Potassium	7440-09-7	LA-505-411		3780		ug/L	1	76	380	11/29/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Sodium	7440-23-5	LA-505-411		18300		ug/L	1	10	50	11/29/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	11/29/12
Barium	7440-39-3	LA-505-411		32.8		ug/L	1	4.0	20	11/29/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Chromium	7440-47-3	LA-505-411	B	17.8		ug/L	1	5.0	25	11/29/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Vanadium	7440-62-2	LA-505-411		27.6		ug/L	1	5.0	25	11/29/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	11/29/12
Calcium	7440-70-2	LA-505-411		35500		ug/L	1	49	240	11/29/12
Strontium	7440-24-6	LA-505-411		135		ug/L	1	9.0	45	11/29/12

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Sample # 121438004
SAF# I13-004
Sample ID B2MP60

Matrix WATER
Sampled 11/07/12
Received 11/07/12

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	11/29/12

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 # WSCF121438

Sample # 121438005
SAF# I13-004
Sample ID B2MP62

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPAES Prep (W)										**11/26/12**
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	B	21.4		ug/L	1	19	95	11/29/12
Magnesium	7439-95-4	LA-505-411		11700		ug/L	1	4.0	20	11/29/12
Manganese	7439-96-5	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Nickel	7440-02-0	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Potassium	7440-09-7	LA-505-411		3790		ug/L	1	76	380	11/29/12
Silver	7440-22-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Sodium	7440-23-5	LA-505-411		18300		ug/L	1	10	50	11/29/12
Antimony	7440-36-0	LA-505-411	U	<36		ug/L	1	36	180	11/29/12
Barium	7440-39-3	LA-505-411		32.5		ug/L	1	4.0	20	11/29/12
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Chromium	7440-47-3	LA-505-411	B	16.8		ug/L	1	5.0	25	11/29/12
Cobalt	7440-48-4	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Copper	7440-50-8	LA-505-411	U	<4.0		ug/L	1	4.0	20	11/29/12
Vanadium	7440-62-2	LA-505-411	B	24.1		ug/L	1	5.0	25	11/29/12
Zinc	7440-66-6	LA-505-411	U	<5.0		ug/L	1	5.0	25	11/29/12
Calcium	7440-70-2	LA-505-411		35200		ug/L	1	49	240	11/29/12
Strontium	7440-24-6	LA-505-411		137		ug/L	1	9.0	45	11/29/12

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Sample # 121438005
SAF# I13-004
Sample ID B2MP62

Matrix WATER
Sampled 11/07/12
Received 11/07/12

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	11/29/12

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Sample # 121438006
SAF# W13-011
Sample ID B2MNV4

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for TOX (W)										**11/13/12**
Total Organic Halides										
Total Organic Halides	59473-04-0	LA-523-444	B	6.23		ug/L	1	5.0	15	11/13/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Sample # 121438007
SAF# W13-011
Sample ID B2MNV2

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for TOX (W)										**11/13/12**
Total Organic Halides										
Total Organic Halides	59473-04-0	LA-523-444	B	6.60		ug/L	1	5.0	15	11/13/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Sample # 121438008
SAF# W13-011
Sample ID B2MNV3

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for TOX (W)										**11/13/12**
Total Organic Halides										
Total Organic Halides	59473-04-0	LA-523-444	B	5.54		ug/L	1	5.0	15	11/13/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Sample # 121438009
SAF# W13-011
Sample ID B2MNR1

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										**11/29/12**
ICP-2008 MS All possible metal										
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	11/30/12
Preparation for TOX (W)										**11/13/12**
Total Organic Halides										
Total Organic Halides	59473-04-0	LA-523-444	B	6.40		ug/L	1	5.0	15	11/13/12

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

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Sample # 121438010
SAF# W13-011
Sample ID B2MNR3

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										**11/29/12**
ICP-2008 MS All possible metal										
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	11/30/12

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 Organic, Volatiles

Group # WSCF121438

Sample # 121438004
SAF# I13-004
Sample ID B2MP60

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (W)										**11/08/12**
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Acetone	67-64-1	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Chloroform	67-66-3	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	11/09/12

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
D - Analyte was reported at a secondary dilution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - GC/MS or N - Non GC/MS - MS/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.

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121438

Sample # 121438004
SAF# I13-004
Sample ID B2MP60

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
1-Butanol	71-36-3	LA-523-455	U	<100		ug/L	1	100	500	11/09/12
Tetrahydrofuran	109-99-9	LA-523-455	U	<2		ug/L	1	2	10	11/09/12
trans-1,2-Dichloroethene	156-60-5	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
cis-1,2-Dichloroethene	156-59-2	LA-523-455	U	<1		ug/L	1	1	5	11/09/12
Propionitrile	107-12-0	LA-523-455	U	<2		ug/L	1	2	10	11/09/12
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	<1		ug/L	1	1	5	11/09/12

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
D - Analyte was reported at a secondary dilution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - GC/MS or N - Non GC/MS - MS/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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF121438

Sample # 121438006
SAF# W13-011
Sample ID B2MNV4

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
Total Organic Carbon										
Total Organic Carbon	TOC	LA-344-406	B	0.165		mg/L	1	0.10	0.30	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 RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

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

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF121438

Sample # 121438007
SAF# W13-011
Sample ID B2MNV2

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
Total Organic Carbon										
Total Organic Carbon	TOC	LA-344-406	B	0.176		mg/L	1	0.10	0.30	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 RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

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

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF121438

Sample # 121438008
SAF# W13-011
Sample ID B2MNV3

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/15/12
Total Organic Carbon										
Total Organic Carbon	TOC	LA-344-406	B	0.182		mg/L	1	0.10	0.30	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 RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

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

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF121438

Sample # 121438009
SAF# W13-011
Sample ID B2MNR1

Matrix WATER
Sampled 11/07/12
Received 11/07/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/12/12
Total Alkalinity as mg/L CaCO3 (Water)										
Total Alkalinity as CaCO3	ALKALINITY	LA-531-411		120		mg/L	1	1	10	11/12/12
Carbonate	CO3ALKALINI	LA-531-411	U	<1		mg/L	1	1		11/12/12
Bicarbonate	71-52-3	LA-531-411		120		mg/L	1	1		11/12/12
Hydroxyl ion	84625-61-6	LA-531-411	U	<1		mg/L	1	1		11/12/12
										11/15/12
Total Organic Carbon										
Total Organic Carbon	TOC	LA-344-406	B	0.181		mg/L	1	0.10	0.30	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 RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121438

Analytical Batch 209927 (QC Batch: 209925) **Test** SW-846 8260B Volatiles
Associated Samples 121438004

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #84701**						
1,1-Dichloroethene	75-35-4		<1	ug/L				U	11/09/12
Trichloroethene	79-01-6		<1	ug/L				U	11/09/12
Benzene	71-43-2		<1	ug/L				U	11/09/12
Toluene	108-88-3		<1	ug/L				U	11/09/12
Chlorobenzene	108-90-7		<1	ug/L				U	11/09/12
1,1-Dichloroethane	75-34-3		<1	ug/L				U	11/09/12
Ethylbenzene	100-41-4		<1	ug/L				U	11/09/12
1,2-Dichloroethane	107-06-2		<1	ug/L				U	11/09/12
Methyl isobutyl ketone	108-10-1		<1	ug/L				U	11/09/12
Tetrachloroethene	127-18-4		<1	ug/L				U	11/09/12
Total Xylenes	1330-20-7		<1	ug/L				U	11/09/12
Carbon tetrachloride	56-23-5		<1	ug/L				U	11/09/12
Acetone	67-64-1		<1	ug/L				U	11/09/12
Chloroform	67-66-3		<1	ug/L				U	11/09/12
1,1,1-Trichloroethane	71-55-6		<1	ug/L				U	11/09/12
Vinyl chloride	75-01-4		<1	ug/L				U	11/09/12
Methylene chloride	75-09-2		<1	ug/L				U	11/09/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121438

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Carbon disulfide	75-15-0		<1	ug/L					U	11/09/12
Methyl ethyl ketone	78-93-3		<1	ug/L					U	11/09/12
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	11/09/12
1-Butanol	71-36-3		<100	ug/L					U	11/09/12
Tetrahydrofuran	109-99-9		<2	ug/L					U	11/09/12
trans-1,2-Dichloroethene	156-60-5		<1	ug/L					U	11/09/12
cis-1,2-Dichloroethene	156-59-2		<1	ug/L					U	11/09/12
Propionitrile	107-12-0		<2	ug/L					U	11/09/12
1,4-Dichlorobenzene	106-46-7		<1	ug/L					U	11/09/12
LCS			**QC Sample #84702**							
1,1-Dichloroethene	75-35-4		23	ug/L	90.4	75 - 125				11/09/12
Trichloroethene	79-01-6		25	ug/L	99.7	75 - 125				11/09/12
Benzene	71-43-2		26	ug/L	105.9	75 - 125				11/09/12
Toluene	108-88-3		27	ug/L	107.4	75 - 125				11/09/12
Chlorobenzene	108-90-7		26	ug/L	105.2	75 - 125				11/09/12
1,1-Dichloroethane	75-34-3		25	ug/L	98.4	75 - 125				11/09/12
Ethylbenzene	100-41-4		28	ug/L	111	75 - 125				11/09/12
1,2-Dichloroethane	107-06-2		27	ug/L	107.5	75 - 125				11/09/12
1,1,1-Trichloroethane	71-55-6		26	ug/L	103	75 - 125				11/09/12
Carbon disulfide	75-15-0		21	ug/L	85	75 - 125				11/09/12
1,1,2-Trichloroethane	79-00-5		27	ug/L	109.4	75 - 125				11/09/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121438

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
trans-1,2-Dichloroethene	156-60-5		24	ug/L	97.9	75 - 125				11/09/12
cis-1,2-Dichloroethene	156-59-2		25	ug/L	99.4	75 - 125				11/09/12
MS			**QC Sample #84703**							
			Original 121404001							
1,1-Dichloroethene	75-35-4		22	ug/L	86.6	75 - 125				11/09/12
Trichloroethene	79-01-6		25	ug/L	98.6	75 - 125				11/09/12
Benzene	71-43-2		27	ug/L	106.2	75 - 125				11/09/12
Toluene	108-88-3		26	ug/L	105.1	75 - 125				11/09/12
Chlorobenzene	108-90-7		26	ug/L	104.6	75 - 125				11/09/12
1,1-Dichloroethane	75-34-3		25	ug/L	98.5	75 - 125				11/09/12
Ethylbenzene	100-41-4		27	ug/L	108.6	75 - 125				11/09/12
1,2-Dichloroethane	107-06-2		27	ug/L	108.5	75 - 125				11/09/12
1,1,1-Trichloroethane	71-55-6		25	ug/L	101.8	75 - 125				11/09/12
Carbon disulfide	75-15-0		20	ug/L	81.8	75 - 125				11/09/12
1,1,2-Trichloroethane	79-00-5		28	ug/L	111.1	75 - 125				11/09/12
trans-1,2-Dichloroethene	156-60-5		24	ug/L	96.2	75 - 125				11/09/12
cis-1,2-Dichloroethene	156-59-2		25	ug/L	100.6	75 - 125				11/09/12
MSD			**QC Sample #84704**							
			Original 121404001						**Paired 84703**	
1,1-Dichloroethene	75-35-4		22	ug/L	86.8	75 - 125	0.20	20		11/09/12
Trichloroethene	79-01-6		24	ug/L	96.6	75 - 125	2.00	20		11/09/12
Benzene	71-43-2		26	ug/L	103.6	75 - 125	2.50	20		11/09/12
Toluene	108-88-3		26	ug/L	102.6	75 - 125	2.50	20		11/09/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121438

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Chlorobenzene	108-90-7		26	ug/L	102.7	75 - 125	1.80	20		11/09/12
1,1-Dichloroethane	75-34-3		25	ug/L	98.8	75 - 125	0.30	20		11/09/12
Ethylbenzene	100-41-4		27	ug/L	106.1	75 - 125	2.30	20		11/09/12
1,2-Dichloroethane	107-06-2		27	ug/L	107.9	75 - 125	0.50	20		11/09/12
1,1,1-Trichloroethane	71-55-6		25	ug/L	98.4	75 - 125	3.40	20		11/09/12
Carbon disulfide	75-15-0		20	ug/L	81.2	75 - 125	0.70	20		11/09/12
1,1,2-Trichloroethane	79-00-5		27	ug/L	109.2	75 - 125	1.70	20		11/09/12
trans-1,2-Dichloroethene	156-60-5		24	ug/L	97.2	75 - 125	1.00	20		11/09/12
cis-1,2-Dichloroethene	156-59-2		25	ug/L	101.3	75 - 125	0.70	20		11/09/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Analytical Batch 209933 (QC Batch: 209933) **Test** Anions by Ion Chromatography (Water)
Associated Samples 121438001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #84741**							
Fluoride	16984-48-8		<0.023	ug/mL					U	11/07/12
Chloride	16887-00-6		<0.058	ug/mL					U	11/07/12
Nitrite-N	NO2-N		<0.019	ug/mL					U	11/07/12
Nitrate-N	NO3-N		<0.019	ug/mL					U	11/07/12
Sulfate	14808-79-8		<0.11	ug/mL					U	11/07/12
LCS			**QC Sample #84742**							
Fluoride	16984-48-8		0.972	ug/mL	98.1	90 - 110				11/07/12
Chloride	16887-00-6		2.00	ug/mL	101	90 - 110				11/07/12
Nitrite-N	NO2-N		1.07	ug/mL	109.7	90 - 110				11/07/12
Nitrate-N	NO3-N		0.930	ug/mL	105	90 - 110				11/07/12
Sulfate	14808-79-8		4.17	ug/mL	106.3	90 - 110				11/07/12
DUP			**QC Sample #84743**							
			Original 121430004							
Fluoride	16984-48-8		0.0644	ug/mL			14.00	20	BD	11/07/12
Chloride	16887-00-6		2.92	ug/mL			1.90	20	D	11/07/12
Nitrite-N	NO2-N		<0.038	ug/mL			0.00	20	UD	11/07/12
Nitrate-N	NO3-N		1.46	ug/mL			2.20	20	D	11/07/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Sulfate	14808-79-8		19.3	ug/mL			3.20	20	D	11/07/12
MS			**QC Sample #84744**							
			Original 121430004							
Fluoride	16984-48-8		0.970	ug/mL	97	80 - 120			D	11/07/12
Chloride	16887-00-6		1.92	ug/mL	96.2	80 - 120			D	11/07/12
Nitrite-N	NO2-N		0.980	ug/mL	99.2	80 - 120			D	11/07/12
Nitrate-N	NO3-N		0.933	ug/mL	104.3	80 - 120			D	11/07/12
Sulfate	14808-79-8		4.29	ug/mL	108.3	80 - 120			D	11/07/12
MSD			**QC Sample #84745**							
			Original 121430004					**Paired 84744**		
Fluoride	16984-48-8		0.974	ug/mL	97.4	80 - 120	0.40	20	D	11/08/12
Chloride	16887-00-6		1.91	ug/mL	95.5	80 - 120	0.30	20	D	11/08/12
Nitrite-N	NO2-N		0.969	ug/mL	98.1	80 - 120	1.10	20	D	11/08/12
Nitrate-N	NO3-N		0.935	ug/mL	104.6	80 - 120	0.10	20	D	11/08/12
Sulfate	14808-79-8		4.12	ug/mL	104	80 - 120	0.70	20	D	11/08/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF121438

Analytical Batch 210122 (QC Batch: 210122) **Test** Total Alkalinity as mg/L CaCO3 (Water)
Associated Samples 121438009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #84826**							
Total Alkalinity as CaCO3	ALKALINITY		97	mg/L	97.4	80 - 120				11/12/12
DUP			**QC Sample #84827**							
			Original 121422001							
Total Alkalinity as CaCO3	ALKALINITY		200	mg/L			0.00	20		11/12/12
LCS			**QC Sample #84828**							
Total Alkalinity as CaCO3	ALKALINITY		97	mg/L	97.3	80 - 120				11/12/12
LCS			**QC Sample #84829**							
Total Alkalinity as CaCO3	ALKALINITY		97	mg/L	97.2	80 - 120				11/12/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Analytical Batch 210325 (QC Batch: 210325)
Associated Samples 121438002, 121438003

Test Hexavalent chromium Discrete Analyzer

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #85027**							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/07/12
LCS			**QC Sample #85029**							
Hexavalent chromium	18540-29-9		0.0514	mg/L	102.8	90 - 110				11/07/12
DUP			**QC Sample #85030**							
			Original 121438002							
Hexavalent chromium	18540-29-9	0.0156	0.0153	mg/L			1.90	20		11/07/12
MS			**QC Sample #85031**							
			Original 121438002							
Hexavalent chromium	18540-29-9	0.0156	0.0417	mg/L	104.2	85 - 115				11/07/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Wet Chemistry

Group # WSCF121438

Analytical Batch 210417 (QC Batch: 210417) **Test** Total Organic Carbon
Associated Samples 121438006, 121438007, 121438008, 121438009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #85225**								
Total Organic Carbon	TOC		<0.045	mg/L						U	11/15/12
LCS			**QC Sample #85226**								
Total Organic Carbon	TOC		2.18	mg/L	108.8	80 - 120					11/15/12
MS			**QC Sample #85227**								
			Original 121436004								
Total Organic Carbon	TOC		2.18	mg/L	109	75 - 125					11/15/12
MSD			**QC Sample #85228**								
			Original 121436004						**Paired**	**85227**	
Total Organic Carbon	TOC		2.19	mg/L	109.6	75 - 125	0.50	20			11/15/12
MS			**QC Sample #85230**								
			Original 121438009								
Total Organic Carbon	TOC	0.181	2.15	mg/L	107.5	75 - 125					11/15/12
MSD			**QC Sample #85231**								
			Original 121438009						**Paired**	**85230**	
Total Organic Carbon	TOC	0.181	2.16	mg/L	108.2	75 - 125	0.60	20			11/15/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Analytical Batch 210517 (QC Batch: 210516) **Test** Total Organic Halides
Associated Samples 121438006, 121438007, 121438008, 121438009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #85260**							
Total Organic Halides	59473-04-0		<5.0	ug/L					U	11/13/12
LCS			**QC Sample #85261**							
Total Organic Halides	59473-04-0		395	mg/L	98.8	80 - 120				11/13/12
MS			**QC Sample #85265**							
			Original 121436007							
Total Organic Halides	59473-04-0		40.8	ug/L	101.9	75 - 125				11/13/12
MSD			**QC Sample #85266**							
			Original 121436007					**Paired**	**85265**	
Total Organic Halides	59473-04-0		45.9	ug/L	114.6	75 - 125	8.10	20		11/13/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Analytical Batch 210818 (QC Batch: 210637) **Test** ICP-6010 - All possible metals
Associated Samples 121438004, 121438005

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #85335**							
Iron	7439-89-6		<19	ug/L					U	11/29/12
Magnesium	7439-95-4		<4.0	ug/L					U	11/29/12
Manganese	7439-96-5		<4.0	ug/L					U	11/29/12
Nickel	7440-02-0		<4.0	ug/L					U	11/29/12
Potassium	7440-09-7		<76	ug/L					U	11/29/12
Silver	7440-22-4		<4.0	ug/L					U	11/29/12
Sodium	7440-23-5		<10	ug/L					U	11/29/12
Antimony	7440-36-0		<36	ug/L					U	11/29/12
Barium	7440-39-3		<4.0	ug/L					U	11/29/12
Cadmium	7440-43-9		<4.0	ug/L					U	11/29/12
Chromium	7440-47-3		<5.0	ug/L					U	11/29/12
Cobalt	7440-48-4		<4.0	ug/L					U	11/29/12
Copper	7440-50-8		<4.0	ug/L					U	11/29/12
Vanadium	7440-62-2		<5.0	ug/L					U	11/29/12
Zinc	7440-66-6		<5.0	ug/L					U	11/29/12
Calcium	7440-70-2		<49	ug/L					U	11/29/12
Strontium	7440-24-6		<9.0	ug/L					U	11/29/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium	7440-41-7		<4.0	ug/L					U	11/29/12
LCS			**QC Sample #85337**							
Iron	7439-89-6		1030	ug/L	103.4	80 - 120				11/29/12
Magnesium	7439-95-4		10600	ug/L	105.5	80 - 120				11/29/12
Manganese	7439-96-5		1050	ug/L	104.7	80 - 120				11/29/12
Nickel	7440-02-0		1020	ug/L	102.5	80 - 120				11/29/12
Potassium	7440-09-7		11000	ug/L	110.4	80 - 120				11/29/12
Silver	7440-22-4		1040	ug/L	103.9	80 - 120				11/29/12
Sodium	7440-23-5		10600	ug/L	106.4	80 - 120				11/29/12
Antimony	7440-36-0		1050	ug/L	105.2	80 - 120				11/29/12
Barium	7440-39-3		1060	ug/L	105.9	80 - 120				11/29/12
Cadmium	7440-43-9		1030	ug/L	103.3	80 - 120				11/29/12
Chromium	7440-47-3		1040	ug/L	103.9	80 - 120				11/29/12
Cobalt	7440-48-4		1020	ug/L	101.7	80 - 120				11/29/12
Copper	7440-50-8		1050	ug/L	105	80 - 120				11/29/12
Vanadium	7440-62-2		1030	ug/L	102.9	80 - 120				11/29/12
Zinc	7440-66-6		1050	ug/L	105.3	80 - 120				11/29/12
Calcium	7440-70-2		21000	ug/L	105	80 - 120				11/29/12
Strontium	7440-24-6		1020	ug/L	101.5	80 - 120				11/29/12
Beryllium	7440-41-7		1040	ug/L	104.2	80 - 120				11/29/12
MS			**QC Sample #85338**							
			Original 121411001							
Iron	7439-89-6		910	ug/L	91	75 - 125				11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Magnesium	7439-95-4		9840	ug/L	98.4	75 - 125				11/29/12
Manganese	7439-96-5		1000	ug/L	100.3	75 - 125				11/29/12
Nickel	7440-02-0		976	ug/L	97.6	75 - 125				11/29/12
Potassium	7440-09-7		10700	ug/L	106.6	75 - 125				11/29/12
Silver	7440-22-4		1010	ug/L	101.5	75 - 125				11/29/12
Sodium	7440-23-5		10100	ug/L	101.2	75 - 125				11/29/12
Antimony	7440-36-0		1040	ug/L	104.3	75 - 125				11/29/12
Barium	7440-39-3		1040	ug/L	103.8	75 - 125				11/29/12
Cadmium	7440-43-9		1000	ug/L	100.5	75 - 125				11/29/12
Chromium	7440-47-3		1000	ug/L	100.1	75 - 125				11/29/12
Cobalt	7440-48-4		969	ug/L	96.9	75 - 125				11/29/12
Copper	7440-50-8		1020	ug/L	102.5	75 - 125				11/29/12
Vanadium	7440-62-2		996	ug/L	99.6	75 - 125				11/29/12
Zinc	7440-66-6		1020	ug/L	102.3	75 - 125				11/29/12
Calcium	7440-70-2		18500	ug/L	92.5	75 - 125				11/29/12
Strontium	7440-24-6		966	ug/L	96.6	75 - 125				11/29/12
Beryllium	7440-41-7		1020	ug/L	101.8	75 - 125				11/29/12
MSD			**QC Sample #85339**							
			Original 121411001						**Paired 85338**	
Iron	7439-89-6		814	ug/L	81.4	75 - 125	3.60	20		11/29/12
Magnesium	7439-95-4		9140	ug/L	91.4	75 - 125	3.40	20		11/29/12
Manganese	7439-96-5		980	ug/L	98	75 - 125	2.10	20		11/29/12
Nickel	7440-02-0		954	ug/L	95.4	75 - 125	2.30	20		11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Potassium	7440-09-7		10200	ug/L	101.7	75 - 125	3.10	20		11/29/12
Silver	7440-22-4		996	ug/L	99.6	75 - 125	1.80	20		11/29/12
Sodium	7440-23-5		9140	ug/L	91.4	75 - 125	4.40	20		11/29/12
Antimony	7440-36-0		1010	ug/L	101.3	75 - 125	2.90	20		11/29/12
Barium	7440-39-3		1010	ug/L	101.3	75 - 125	2.40	20		11/29/12
Cadmium	7440-43-9		992	ug/L	99.2	75 - 125	1.30	20		11/29/12
Chromium	7440-47-3		979	ug/L	97.9	75 - 125	2.20	20		11/29/12
Cobalt	7440-48-4		953	ug/L	95.3	75 - 125	1.70	20		11/29/12
Copper	7440-50-8		999	ug/L	99.9	75 - 125	2.60	20		11/29/12
Vanadium	7440-62-2		978	ug/L	97.8	75 - 125	1.80	20		11/29/12
Zinc	7440-66-6		1010	ug/L	101	75 - 125	1.30	20		11/29/12
Calcium	7440-70-2		17000	ug/L	84.8	75 - 125	3.10	20		11/29/12
Strontium	7440-24-6		940	ug/L	94	75 - 125	2.30	20		11/29/12
Beryllium	7440-41-7		995	ug/L	99.5	75 - 125	2.30	20		11/29/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121438

Analytical Batch 211022 (QC Batch: 210827) **Test** ICP-2008 MS All possible metal
Associated Samples 121438009, 121438010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #85614**							
Mercury	7439-97-6		<0.050	ug/L					U	11/30/12
LCS			**QC Sample #85615**							
Mercury	7439-97-6		2.07	ug/L	103.6	85 - 115				11/30/12
MS			**QC Sample #85616**							
			Original 121436001							
Mercury	7439-97-6		2.18	ug/L	109.2	70 - 130				11/30/12
MSD			**QC Sample #85617**							
			Original 121436001					**Paired 85616**		
Mercury	7439-97-6		2.18	ug/L	108.8	70 - 130	0.40	20		11/30/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121438

Analytical Batch 209927 (QC Batch: 209925) **Test** SW-846 8260B Volatiles
Associated Samples 121438004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #121438004**							
1,2-Dichloroethane-d4	17060-07-0				103.6	75 - 125				11/09/12
Toluene-d8	2037-26-5				94.3	75 - 125				11/09/12
4-Bromofluorobenzene	460-00-4				101.6	75 - 125				11/09/12
BLANK			**QC Sample #84701**							
1,2-Dichloroethane-d4	17060-07-0				98.1	75 - 125				11/09/12
Toluene-d8	2037-26-5				95.5	75 - 125				11/09/12
4-Bromofluorobenzene	460-00-4				100.8	75 - 125				11/09/12
LCS			**QC Sample #84702**							
1,2-Dichloroethane-d4	17060-07-0				100.8	75 - 125				11/09/12
Toluene-d8	2037-26-5				95.6	75 - 125				11/09/12
4-Bromofluorobenzene	460-00-4				97.4	75 - 125				11/09/12
MS			**QC Sample #84703**							
			Original 121404001							
1,2-Dichloroethane-d4	17060-07-0				104.1	75 - 125				11/09/12

* - QC result out of range n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF121438

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				93.4	75 - 125				11/09/12
4-Bromofluorobenzene	460-00-4				97.9	75 - 125				11/09/12
MSD			**QC Sample #84704**							
			Original 121404001					**Paired 84703**		
1,2-Dichloroethane-d4	17060-07-0				102.4	75 - 125	n/a			11/09/12
Toluene-d8	2037-26-5				93.8	75 - 125	n/a			11/09/12
4-Bromofluorobenzene	460-00-4				97.2	75 - 125	n/a			11/09/12

* - QC result out of range n/a - Not Applicable

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 7 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 #: 121438
Profile #: I13-004-027
Proj. Mgr.:
Phone:

The following samples were received from you on 11/7/2012 3:00:00 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		
121438001	B2MP61	WATER	11/7/2012 14:20	11/7/2012 15:00
		IC-W		
121438002	B2MNR4	WATER	11/7/2012 14:20	11/7/2012 15:00
		CR6DA-W		
121438003	B2MNR2	WATER	11/7/2012 14:20	11/7/2012 15:00
		CR6DA-W		
121438004	B2MP60	WATER	11/7/2012 14:20	11/7/2012 15:00
		6010-W; 8260V-W		
121438005	B2MP62	WATER	11/7/2012 14:20	11/7/2012 15:00
		6010-W		
121438006	B2MNV4	WATER	11/7/2012 14:20	11/7/2012 15:00
		TOC-W; TOX-W		
121438007	B2MNV2	WATER	11/7/2012 14:20	11/7/2012 15:00
		TOC-W; TOX-W		
121438008	B2MNV3	WATER	11/7/2012 14:20	11/7/2012 15:00
		TOC-W; TOX-W		
121438009	B2MNR1	WATER	11/7/2012 14:20	11/7/2012 15:00
		2008-W; ALK-W; TOC-W; TOX-W		
121438010	B2MNR3	WATER	11/7/2012 14:20	11/7/2012 15:00
		2008-W		

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

Test Acronym Description

Test Acronym	Description
2008-W	ICP-MS (W)
6010-W	ICP-AES (W)
8260V-W	Volatiles by 8260B (W)
ALK-W	Total Alkalinity (W)
CR6DA-W	Cr6 (W Discrete analyzer)
IC-W	Anions by IC (W)
TOC-W	Total Organic Carbon (W)
TOX-W	Total Organic Halides (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **I13-004-027**

Page 1 of 1

Collector	F. M. Hall	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	113-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	2UP1, NOVEMBER 2012	Logbook No.	HNF-N-506 49 / 74-75	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	**PRIORITY**	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentations that are not regulated for transportation per 49 CRF but are not releasable per DOE Order 5400 5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

200 Area Generator Knowledge Information Form applies
The CACN for all analytical work at WSCF is 401647

121438

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2MP61	N	W	11-7-12	1420	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
F. M. Hall	F. M. Hall	NOV 07 2012 1500	TA Frazier	TA Frazier	NOV 07 2012 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 = Drum Solids		
SE = Sediment	DL = Drum Liquids		
SO = Solid	T = Tissue		
SL = Sludge	WI = Wipe		
W = Water	L = Liquid		
O = Oil	V = Vegetation		
A = Air	X = Other		

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

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A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W13-011-200**

Page 1 of 1

Collector	F.M. Hall	Contact/Requester	Karen Waters-Husted	Telephone No. 376-4650	
SAF No.	W13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	RCRA, NOVEMBER 2012	Logbook No.	HNF-N-506 [illegible]	Ice Chest No. N/A	
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A	
Protocol	RCRA	Priority: 31 Days	**PRIORITY**	Offsite Property No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption. Yes ☑ No ☐

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

Sample No	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2MNR4	Y	W	11-7-12	1420	1x500-mL aG	7196_CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C
B2MNR2	N	W	↓	↓	1x500-mL aG	7196_CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By F.M. Hall	Print	Sign	Date/Time NOV 07 2012 1500	Received By	Print	Sign	Date/Time NOV 07 2012 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
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time

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

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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # 113-004-026

Page 1 of 1

Collector	F. M. Hall	Contact/Requester	Karen Waters-Husted	Telephone No. 376-4650	
SAF No.	113-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	21P1, NOVEMBER 2012	Logbook No.	HNF-N-506 49 / 74-75	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	PRIORITY	Offsite Property No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

200 Area 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
B2MP60	N	W	11-7-12	1420	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2MP60	N	W			3x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	14 Days	HCl or H2SO4 to pH <2/Cool~4C
B2MP62	Y	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2

Relinquished By F. M. Hall	Print	Sign	Date/Time NOV 07 2012 1500	Received By	Print	Sign	Date/Time NOV 07 2012 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
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time

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

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Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# **W13-011-198**

Page 1 of 1

Collector	F. M. Hall	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	376-4650
SAF No.	W13-011	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071FS20
Project Title	RCRA, NOVEMBER 2012	**Logbook No.**	HNF-N-506 99 / 79-75	**Ice Chest No.**	N/A
Shipped To (Lab)	Waste Sampling & Characterization	**Method of Shipment**	GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.**	N/A
Protocol	RCRA	**Priority:**	31 Days	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

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

PRIORITY

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2MNV4	N	W	11-7-12	1420	1x1-L aGs*	9020_TOX: TOX (1)	28 Days	H2SO4 to pH <2/Cool~4C
B2MNV4	N	W			1x250-mL aG	9060_TOC: TOC (1)	28 Days	HCl or H2SO4 to pH <2/Cool~4C
B2MNV2	N	W			1x1-L aGs*	9020_TOX: TOX (1)	28 Days	H2SO4 to pH <2/Cool~4C
B2MNV2	N	W			1x250-mL aG	9060_TOC: TOC (1)	28 Days	HCl or H2SO4 to pH <2/Cool~4C
B2MNR3	Y	W			1x500-mL G	200.8_HG - ICPMS	28 Days	HNO3 to pH <2
B2MNV3	N	W			1x1-L aGs*	9020_TOX: TOX (1)	28 Days	H2SO4 to pH <2/Cool~4C
B2MNV3	N	W			1x250-mL aG	9060_TOC: TOC (1)	28 Days	HCl or H2SO4 to pH <2/Cool~4C
B2MNR1	N	W			1x500-mL G	200.8_HG - ICPMS	28 Days	HNO3 to pH <2
B2MNR1	N	W			1x250-mL GP	2320_ALKALINITY: List-1 (4)	14 Days	Cool~4C
B2MNR1	N	W			1x1-L aGs*	9020_TOX: TOX (1)	28 Days	H2SO4 to pH <2/Cool~4C
B2MNR1	N	W			1x250-mL aG	9060_TOC: TOC (1)	28 Days	HCl or H2SO4 to pH <2/Cool~4C

Relinquished By	F. M. Hall	Print / Sign	Date/Time NOV 07 2012 1500	Received By	Print / Sign TA Frye / Laura Frye
Relinquished By			Date/Time	Received By	Date/Time
Relinquished By			Date/Time	Received By	Date/Time
Relinquished By			Date/Time	Received By	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By	Date/Time

Matrix *

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

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