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

May 15, 2014

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

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF140717

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 WSCF140717

* 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 # WSCF140717
Data Deliverable Date 05/21/14

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F14-003	B2W2P2	140717001	WATER	04/21/14	04/21/14
F14-003	B2W2P6	140717002	WATER	04/21/14	04/21/14
F14-003	B2W2P5	140717003	WATER	04/21/14	04/21/14
F14-003	B2W2X6	140717004	WATER	04/21/14	04/21/14
F14-003	B2W2P3	140717005	WATER	04/21/14	04/21/14
F14-003	B2W2P7	140717006	WATER	04/21/14	04/21/14

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 37 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 #	WSCF140717
Report Date	May 15, 2014

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 # WSCF140717

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
232064	233071	5	BLANK	109230	BLANK		ICP-6010 - All possible metals
232064	233071	7	LCS	109232	LCS		ICP-6010 - All possible metals
232064	233071	9	MS	109233	B2W6F0(140711004MS)	140711004	ICP-6010 - All possible metals
232064	233071	10	MSD	109234	B2W6F0(140711004MSD	140711004	ICP-6010 - All possible metals
232064	233071	12	SAMPLE	140717005	B2W2P3		ICP-6010 - All possible metals
232064	233071	13	SAMPLE	140717006	B2W2P7		ICP-6010 - All possible metals
232151	232151	2	BLANK	109256	BLANK		Anions by Ion Chromatography (Water)
232151	232151	3	LCS	109257	LCS		Anions by Ion Chromatography (Water)
232151	232151	4	MS	109258	B2W6L5(140719007MS)	140719007	Anions by Ion Chromatography (Water)
232151	232151	5	MSD	109259	B2W6L5(140719007MSD	140719007	Anions by Ion Chromatography (Water)
232151	232151	6	SAMPLE	140717005	B2W2P3		Anions by Ion Chromatography (Water)
232151	232151	7	SAMPLE	140717006	B2W2P7		Anions by Ion Chromatography (Water)
232153	232153	1	BLANK	109265	BLANK		Hexavalent chromium Discrete Analyzer
232153	232153	3	LCS	109267	LCS		Hexavalent chromium Discrete Analyzer
232153	232153	4	DUP	109268	B2W6L8(140719004DUP)	140719004	Hexavalent chromium Discrete Analyzer
232153	232153	5	MS	109269	B2W6L8(140719004MS)	140719004	Hexavalent chromium Discrete Analyzer
232153	232153	11	SAMPLE	140717001	B2W2P2		Hexavalent chromium Discrete Analyzer
232153	232153	12	SAMPLE	140717002	B2W2P6		Hexavalent chromium Discrete Analyzer
233080	233274	4	BLANK	110017	BLANK		ICP-2008 MS All possible metal
233080	233274	5	LCS	110018	LCS		ICP-2008 MS All possible metal
233080	233274	7	MS	110019	B2W7D9(140710007MS)	140710007	ICP-2008 MS All possible metal
233080	233274	8	MSD	110020	B2W7D9(140710007MSD	140710007	ICP-2008 MS All possible metal
233080	233274	20	SAMPLE	140717005	B2W2P3		ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
233080	233274	21	SAMPLE	140717006	B2W2P7		ICP-2008 MS All possible metal

Batch QC List

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
232156	232157	1	BLANK	109296	BLANK		SW-846 8260B Volatiles
232156	232157	2	LCS	109297	LCS		SW-846 8260B Volatiles
232156	232157	3	MS	109298	B2RVY4(140693010MS)	140693010	SW-846 8260B Volatiles
232156	232157	5	MSD	109299	B2RVY4(140693010MSD	140693010	SW-846 8260B Volatiles
232156	232157	17	SAMPLE	140717003	B2W2P5		SW-846 8260B Volatiles
232156	232157	18	SAMPLE	140717004	B2W2X6		SW-846 8260B Volatiles

Batch QC List

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140717

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
232060	232256	1	BLANK	109212	BLANK		Tritium by LSC
232060	232256	2	LCS	109213	LCS		Tritium by LSC
232060	232256	4	DUP	109214	B2W887(140697008DUP)	140697008	Tritium by LSC
232060	232256	5	MSPK	109215	B2W887(140697008MSP		Tritium by LSC
232060	232256	17	SAMPLE	140717005	B2W2P3		Tritium by LSC
232060	232256	18	SAMPLE	140717006	B2W2P7		Tritium by LSC
232870	232877	1	BLANK	109870	BLANK		Technetium-99 by ICP MS
232870	232877	2	LCS	109871	LCS		Technetium-99 by ICP MS
232870	232877	7	SAMPLE	140717005	B2W2P3		Technetium-99 by ICP MS
232870	232877	8	SAMPLE	140717006	B2W2P7		Technetium-99 by ICP MS

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

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-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 # WSCF140717

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 Radiochemistry

Group # WSCF140717

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-218-413	Tritium By Ion Removal Using Eichrom Resin Columns (Prep)		
	N/A	PREP METHOD	
LA-508-421	Operation of the Tri-Carb Model 2500TR Liquid Scintillation Analyzer		
	HEIS	ALPHA_LSC	A/B Liquid Scintillation
	HEIS	BETA_LSC	A/B Liquid Scintillation
	HEIS	TC99_3MDSK_LSC	TC99 by Liquid Scintillation
	HEIS	TRITIUM_EIE_LSC	Tritium, by Eichrome ion exchange, LSC
LA-505-412	Technicium-99 by ICP-MS		
	HEIS	RADISOTOPES_ICPMS	Tc-99 by ICPMS

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

WSCF Analytical Results Report

May 15, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Sample # 140717001
SAF# F14-003
Sample ID B2W2P2

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/21/14
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	04/21/14

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.

WSCF Analytical Results Report

May 15, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Sample # 140717002
SAF# F14-003
Sample ID B2W2P6

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/21/14
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	04/21/14

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.

WSCF Analytical Results Report

May 15, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Sample # 140717005
SAF# F14-003
Sample ID B2W2P3

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/21/14
Anions by Ion Chromatography (Water)										
Nitrate-N	NO3-N	LA-533-410	D	21.7		ug/mL	2	0.040	0.20	04/21/14
ICPAES Prep (W)										**05/08/14**
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	B	40.4		ug/L	1	40	50	05/08/14
Magnesium	7439-95-4	LA-505-411		17800		ug/L	1	60	750	05/08/14
Calcium	7440-70-2	LA-505-411		53600		ug/L	1	50	1000	05/08/14
ICPMS Prep (W)										**05/13/14**
ICP-2008 MS All possible metal										
Aluminum	7429-90-5	LA-505-412	UD	<20		ug/L	2	20	100	05/13/14
Manganese	7439-96-5	LA-505-412	BD	0.800		ug/L	2	0.20	2.0	05/13/14
Nickel	7440-02-0	LA-505-412	BD	0.200		ug/L	2	0.20	2.0	05/13/14
Barium	7440-39-3	LA-505-412	BD	1.25		ug/L	2	0.40	4.0	05/13/14
Cadmium	7440-43-9	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Chromium	7440-47-3	LA-505-412	BD	0.350		ug/L	2	0.20	2.0	05/13/14
Cobalt	7440-48-4	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	05/13/14
Copper	7440-50-8	LA-505-412	BD	0.634		ug/L	2	0.20	2.0	05/13/14
Vanadium	7440-62-2	LA-505-412	UD	<0.40		ug/L	2	0.40	4.0	05/13/14

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.

WSCF Analytical Results Report

May 15, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Sample # 140717005
SAF# F14-003
Sample ID B2W2P3

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Lead	7439-92-1	LA-505-412	BD	0.220		ug/L	2	0.10	1.0	05/13/14
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	05/13/14
Strontium	7440-24-6	LA-505-412	UD	<0.40		ug/L	2	0.40	2.0	05/13/14
Uranium	7440-61-1	LA-505-412	UD	<0.10		ug/L	2	0.10	0.50	05/13/14
Arsenic	7440-38-2	LA-505-412	UD	<0.40		ug/L	2	0.40	4.0	05/13/14

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.

WSCF Analytical Results Report

May 15, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Sample # 140717006
SAF# F14-003
Sample ID B2W2P7

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										04/21/14
Anions by Ion Chromatography (Water)										
Nitrate-N	NO3-N	LA-533-410	UD	<0.040		ug/mL	2	0.040	0.20	04/21/14
ICPAES Prep (W)										**05/08/14**
ICP-6010 - All possible metals										
Iron	7439-89-6	LA-505-411	U	<40		ug/L	1	40	50	05/08/14
Magnesium	7439-95-4	LA-505-411	U	<60		ug/L	1	60	750	05/08/14
Calcium	7440-70-2	LA-505-411	B	160		ug/L	1	50	1000	05/08/14
ICPMS Prep (W)										**05/13/14**
ICP-2008 MS All possible metal										
Aluminum	7429-90-5	LA-505-412	UD	<20		ug/L	2	20	100	05/13/14
Manganese	7439-96-5	LA-505-412	D	63.7		ug/L	2	0.20	2.0	05/13/14
Nickel	7440-02-0	LA-505-412	BD	0.456		ug/L	2	0.20	2.0	05/13/14
Barium	7440-39-3	LA-505-412	D	50.6		ug/L	2	0.40	4.0	05/13/14
Cadmium	7440-43-9	LA-505-412	UD	<0.10		ug/L	2	0.10	1.0	05/13/14
Chromium	7440-47-3	LA-505-412	BD	1.45		ug/L	2	0.20	2.0	05/13/14
Cobalt	7440-48-4	LA-505-412	BD	0.116		ug/L	2	0.10	0.50	05/13/14
Copper	7440-50-8	LA-505-412	BD	0.946		ug/L	2	0.20	2.0	05/13/14
Vanadium	7440-62-2	LA-505-412	D	14.1		ug/L	2	0.40	4.0	05/13/14

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.

WSCF Analytical Results Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Sample # 140717006
SAF# F14-003
Sample ID B2W2P7

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Lead	7439-92-1	LA-505-412	BD	0.366		ug/L	2	0.10	1.0	05/13/14
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	05/13/14
Strontium	7440-24-6	LA-505-412	D	179		ug/L	2	0.40	2.0	05/13/14
Uranium	7440-61-1	LA-505-412	D	0.620		ug/L	2	0.10	0.50	05/13/14
Arsenic	7440-38-2	LA-505-412	BD	0.776		ug/L	2	0.40	4.0	05/13/14

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.

WSCF Analytical Results Report

May 15, 2014

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Sample # 140717003
SAF# F14-003
Sample ID B2W2P5

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (W)										**04/22/14**
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Trichloroethene	79-01-6	LA-523-455	U	<0.5		ug/L	1	0.5	1	04/22/14
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	4	04/22/14
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	04/22/14

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 - 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

May 15, 2014

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Sample # 140717003
SAF# F14-003
Sample ID B2W2P5

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	3	04/22/14
2-Hexanone	591-78-6	LA-523-455	U	<5		ug/L	1	5	20	04/22/14
Acetone	67-64-1	LA-523-455	U	<5		ug/L	1	5	20	04/22/14
Chloroform	67-66-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Chloromethane	74-87-3	LA-523-455	U	<2		ug/L	1	2	10	04/22/14
Chloroethane	75-00-3	LA-523-455	U	<2		ug/L	1	2	10	04/22/14
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Bromodichloromethane	75-27-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14

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 - 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

May 15, 2014

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Sample # 140717004
SAF# F14-003
Sample ID B2W2X6

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Preparation for 8260B (W)										**04/22/14**
SW-846 8260B Volatiles										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Trichloroethene	79-01-6	LA-523-455	U	<0.5		ug/L	1	0.5	1	04/22/14
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	4	04/22/14
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	04/22/14

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 - 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

May 15, 2014

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Sample # 140717004
SAF# F14-003
Sample ID B2W2X6

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455	U	<1		ug/L	1	1	3	04/22/14
2-Hexanone	591-78-6	LA-523-455	U	<5		ug/L	1	5	20	04/22/14
Acetone	67-64-1	LA-523-455	U	<5		ug/L	1	5	20	04/22/14
Chloroform	67-66-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Chloromethane	74-87-3	LA-523-455	U	<2		ug/L	1	2	10	04/22/14
Chloroethane	75-00-3	LA-523-455	U	<2		ug/L	1	2	10	04/22/14
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Bromodichloromethane	75-27-4	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	04/22/14

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 - 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

May 15, 2014

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140717

Sample # 140717005
SAF# F14-003
Sample ID B2W2P3

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										**05/06/14**
Technetium-99 by ICP MS										
Technetium-99	14133-76-7	LA-505-412		0.0080		ug/L	1	0.0010		05/06/14
Tritium by LSC EICHROM WA/LIQ PREP										**04/22/14**
Tritium by LSC										
Tritium	10028-17-8	LA-508-421		740	250	pCi/L	1	280		04/29/14

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

B - The associated QC sample Blank has a result > or = the MDA
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

May 15, 2014

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140717

Sample # 140717006
SAF# F14-003
Sample ID B2W2P7

Matrix WATER
Sampled 04/21/14
Received 04/21/14

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep (W)										**05/06/14**
Technetium-99 by ICP MS										
Technetium-99	14133-76-7	LA-505-412	U	<0.0010		ug/L	1	0.0010		05/06/14
Tritium by LSC EICHROM WA/LIQ PREP										**04/22/14**
Tritium by LSC										
Tritium	10028-17-8	LA-508-421	U	57	250	pCi/L	1	280		04/29/14

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

B - The associated QC sample Blank has a result > or = the MDA
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

o - LCS recovery outside established laboratory acceptance limits.

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Analytical Batch 232151 (QC Batch: 232151)
Associated Samples 140717005, 140717006

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109256**							
Nitrate-N	NO3-N		<0.020	ug/mL					U	04/21/14
LCS			**QC Sample #109257**							
Nitrate-N	NO3-N		0.871	ug/mL	98.4	90 - 110				04/21/14
MS			**QC Sample #109258**							
			Original 140719007							
Nitrate-N	NO3-N		0.880	ug/mL	98.4	80 - 120			D	04/21/14
MSD			**QC Sample #109259**							
			Original 140719007					**Paired**	**109258**	
Nitrate-N	NO3-N		0.872	ug/mL	97.6	80 - 120	0.60	20	D	04/21/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Analytical Batch 232153 (QC Batch: 232153)
Associated Samples 140717001, 140717002

Test Hexavalent chromium Discrete Analyzer

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109265**							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	04/21/14
LCS			**QC Sample #109267**							
Hexavalent chromium	18540-29-9		0.0525	mg/L	105	90 - 110				04/21/14
DUP			**QC Sample #109268**							
			Original 140719004							
Hexavalent chromium	18540-29-9		0.0111	mg/L			2.70	20		04/21/14
MS			**QC Sample #109269**							
			Original 140719004							
Hexavalent chromium	18540-29-9		0.0422	mg/L	105.5	85 - 115				04/21/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Analytical Batch 232157 (QC Batch: 232156)
Associated Samples 140717003, 140717004

Test SW-846 8260B Volatiles

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109296**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	04/22/14
Trichloroethene	79-01-6		<0.5	ug/L					U	04/22/14
Benzene	71-43-2		<1	ug/L					U	04/22/14
Toluene	108-88-3		<1	ug/L					U	04/22/14
Chlorobenzene	108-90-7		<1	ug/L					U	04/22/14
1,1-Dichloroethane	75-34-3		<1	ug/L					U	04/22/14
Ethylbenzene	100-41-4		<1	ug/L					U	04/22/14
Styrene	100-42-5		<1	ug/L					U	04/22/14
cis-1,3-Dichloropropene	10061-01-5		<1	ug/L					U	04/22/14
trans-1,3-Dichloropropene	10061-02-6		<1	ug/L					U	04/22/14
1,2-Dichloroethane	107-06-2		<1	ug/L					U	04/22/14
Methyl isobutyl ketone	108-10-1		<1	ug/L					U	04/22/14
Dibromochloromethane	124-48-1		<1	ug/L					U	04/22/14
Tetrachloroethene	127-18-4		<1	ug/L					U	04/22/14
Total Xylenes	1330-20-7		<1	ug/L					U	04/22/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Total 1,2-Dichloroethene	540-59-0		<1	ug/L					U	04/22/14
Carbon tetrachloride	56-23-5		<1	ug/L					U	04/22/14
2-Hexanone	591-78-6		<5	ug/L					U	04/22/14
Acetone	67-64-1		<5	ug/L					U	04/22/14
Chloroform	67-66-3		<1	ug/L					U	04/22/14
1,1,1-Trichloroethane	71-55-6		<1	ug/L					U	04/22/14
Bromomethane	74-83-9		<1	ug/L					U	04/22/14
Chloromethane	74-87-3		<2	ug/L					U	04/22/14
Chloroethane	75-00-3		<2	ug/L					U	04/22/14
Vinyl chloride	75-01-4		<1	ug/L					U	04/22/14
Methylene chloride	75-09-2		<1	ug/L					U	04/22/14
Carbon disulfide	75-15-0		<1	ug/L					U	04/22/14
Bromoform	75-25-2		<1	ug/L					U	04/22/14
Bromodichloromethane	75-27-4		<1	ug/L					U	04/22/14
1,2-Dichloropropane	78-87-5		<1	ug/L					U	04/22/14
Methyl ethyl ketone	78-93-3		<1	ug/L					U	04/22/14
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	04/22/14
1,1,2,2-Tetrachloroethane	79-34-5		<1	ug/L					U	04/22/14
LCS			**QC Sample #109297**							
1,1-Dichloroethene	75-35-4		22	ug/L	87.1	75 - 125				04/22/14
Trichloroethene	79-01-6		25	ug/L	101.6	75 - 125				04/22/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Benzene	71-43-2		27	ug/L	108.9	75 - 125				04/22/14
Toluene	108-88-3		27	ug/L	108.5	75 - 125				04/22/14
Chlorobenzene	108-90-7		26	ug/L	104.6	75 - 125				04/22/14
1,1-Dichloroethane	75-34-3		26	ug/L	102.3	75 - 125				04/22/14
Ethylbenzene	100-41-4		27	ug/L	109	75 - 125				04/22/14
Styrene	100-42-5		27	ug/L	109.8	75 - 125				04/22/14
trans-1,3-Dichloropropene	10061-02-6		24	ug/L	97.1	75 - 125				04/22/14
1,2-Dichloroethane	107-06-2		26	ug/L	102.3	75 - 125				04/22/14
1,1,1-Trichloroethane	71-55-6		26	ug/L	105.7	75 - 125				04/22/14
Dibromochloromethane	124-48-1		26	ug/L	103.6	75 - 125				04/22/14
Carbon disulfide	75-15-0		22	ug/L	86.4	75 - 125				04/22/14
Bromoform	75-25-2		25	ug/L	98.6	75 - 125				04/22/14
Bromodichloromethane	75-27-4		27	ug/L	109.7	75 - 125				04/22/14
1,2-Dichloropropane	78-87-5		26	ug/L	105.6	75 - 125				04/22/14
1,1,2-Trichloroethane	79-00-5		26	ug/L	105.4	75 - 125				04/22/14
1,1,2,2-Tetrachloroethane	79-34-5		26	ug/L	104	75 - 125				04/22/14
MS			**QC Sample #109298**							
			Original 140693010							
1,1-Dichloroethene	75-35-4		22	ug/L	86.8	75 - 125				04/22/14
Trichloroethene	79-01-6		26	ug/L	104.6	75 - 125				04/22/14
Benzene	71-43-2		27	ug/L	108.2	75 - 125				04/22/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene	108-88-3		27	ug/L	109.6	75 - 125				04/22/14
Chlorobenzene	108-90-7		26	ug/L	104.9	75 - 125				04/22/14
1,1-Dichloroethane	75-34-3		26	ug/L	103.1	75 - 125				04/22/14
Ethylbenzene	100-41-4		27	ug/L	109	75 - 125				04/22/14
Styrene	100-42-5		27	ug/L	109.6	75 - 125				04/22/14
trans-1,3-Dichloropropene	10061-02-6		25	ug/L	99.9	75 - 125				04/22/14
1,2-Dichloroethane	107-06-2		26	ug/L	104.2	75 - 125				04/22/14
1,1,1-Trichloroethane	71-55-6		27	ug/L	106.4	75 - 125				04/22/14
Dibromochloromethane	124-48-1		27	ug/L	107.1	75 - 125				04/22/14
Carbon disulfide	75-15-0		22	ug/L	86.6	75 - 125				04/22/14
Bromoform	75-25-2		26	ug/L	102.2	75 - 125				04/22/14
Bromodichloromethane	75-27-4		28	ug/L	113.2	75 - 125				04/22/14
1,2-Dichloropropane	78-87-5		27	ug/L	109.2	75 - 125				04/22/14
1,1,2-Trichloroethane	79-00-5		27	ug/L	109.2	75 - 125				04/22/14
1,1,2,2-Tetrachloroethane	79-34-5		27	ug/L	107.3	75 - 125				04/22/14
MSD			**QC Sample #109299**							
			Original 140693010						**Paired 109298**	
1,1-Dichloroethene	75-35-4		22	ug/L	86.2	75 - 125	0.60	20		04/22/14
Trichloroethene	79-01-6		26	ug/L	102.3	75 - 125	1.90	20		04/22/14
Benzene	71-43-2		28	ug/L	112	75 - 125	3.40	20		04/22/14
Toluene	108-88-3		28	ug/L	110	75 - 125	0.40	20		04/22/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Chlorobenzene	108-90-7		26	ug/L	105.3	75 - 125	0.40	20		04/22/14
1,1-Dichloroethane	75-34-3		26	ug/L	103.7	75 - 125	0.50	20		04/22/14
Ethylbenzene	100-41-4		27	ug/L	108.6	75 - 125	0.40	20		04/22/14
Styrene	100-42-5		27	ug/L	108.6	75 - 125	1.00	20		04/22/14
trans-1,3-Dichloropropene	10061-02-6		25	ug/L	101.6	75 - 125	1.70	20		04/22/14
1,2-Dichloroethane	107-06-2		27	ug/L	107.1	75 - 125	2.70	20		04/22/14
1,1,1-Trichloroethane	71-55-6		26	ug/L	104.7	75 - 125	1.60	20		04/22/14
Dibromochloromethane	124-48-1		27	ug/L	109	75 - 125	1.80	20		04/22/14
Carbon disulfide	75-15-0		22	ug/L	86	75 - 125	0.70	20		04/22/14
Bromoform	75-25-2		27	ug/L	106.8	75 - 125	4.40	20		04/22/14
Bromodichloromethane	75-27-4		28	ug/L	110.4	75 - 125	2.50	20		04/22/14
1,2-Dichloropropane	78-87-5		27	ug/L	107.7	75 - 125	1.40	20		04/22/14
1,1,2-Trichloroethane	79-00-5		28	ug/L	111.5	75 - 125	2.10	20		04/22/14
1,1,2,2-Tetrachloroethane	79-34-5		28	ug/L	113.8	75 - 125	5.90	20		04/22/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140717

Analytical Batch 232256 (QC Batch: 232060)
Associated Samples 140717005, 140717006

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #109212**								
Tritium	10028-17-8		-32	pCi/L						U	04/29/14
LCS			**QC Sample #109213**								
Tritium	10028-17-8		3700	pCi/L	95.6	80 - 120					04/29/14
DUP			**QC Sample #109214**								
			Original 140697008								
Tritium	10028-17-8		120	pCi/L			105.60	20	*	U	04/29/14
MSPK			**QC Sample #109215**								
Tritium	10028-17-8		19000	pCi/L	93.4	75 - 125					04/29/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Radiochemistry

Group # WSCF140717

Analytical Batch 232877 (QC Batch: 232870)
Associated Samples 140717005, 140717006

Test Technetium-99 by ICP MS

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109870**							
Technetium-99	14133-76-7		<0.0010	ug/L					U	05/06/14
LCS			**QC Sample #109871**							
Technetium-99	14133-76-7		0.054	ug/L	100.7	85 - 115				05/06/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Analytical Batch 233071 (QC Batch: 232064)
Associated Samples 140717005, 140717006

Test ICP-6010 - All possible metals

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109230**							
Iron	7439-89-6		<40	ug/L					U	05/08/14
Magnesium	7439-95-4		<60	ug/L					U	05/08/14
Calcium	7440-70-2		<50	ug/L					U	05/08/14
LCS			**QC Sample #109232**							
Iron	7439-89-6		1100	ug/L	109.6	80 - 120				05/08/14
Magnesium	7439-95-4		10600	ug/L	106.3	80 - 120				05/08/14
Calcium	7440-70-2		21200	ug/L	106.2	80 - 120				05/08/14
MS			**QC Sample #109233**							
			Original 140711004							
Iron	7439-89-6		1110	ug/L	111.2	75 - 125				05/08/14
Magnesium	7439-95-4		10800	ug/L	108	75 - 125				05/08/14
Calcium	7440-70-2		20900	ug/L	104.4	75 - 125				05/08/14
MSD			**QC Sample #109234**							
			Original 140711004					**Paired**	**109233**	
Iron	7439-89-6		1060	ug/L	105.5	75 - 125	5.30	20		05/08/14
Magnesium	7439-95-4		9580	ug/L	95.8	75 - 125	6.00	20		05/08/14
Calcium	7440-70-2		17600	ug/L	88.1	75 - 125	5.30	20		05/08/14

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

Quality Control Report

May 15, 2014

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Analytical Batch 233274 (QC Batch: 233080)
Associated Samples 140717005, 140717006

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #110017**							
Aluminum	7429-90-5		<10	ug/L					U	05/13/14
Manganese	7439-96-5		<0.10	ug/L					U	05/13/14
Nickel	7440-02-0		<0.10	ug/L					U	05/13/14
Barium	7440-39-3		<0.20	ug/L					U	05/13/14
Cadmium	7440-43-9		<0.050	ug/L					U	05/13/14
Chromium	7440-47-3		<0.10	ug/L					U	05/13/14
Cobalt	7440-48-4		<0.050	ug/L					U	05/13/14
Copper	7440-50-8		<0.10	ug/L					U	05/13/14
Vanadium	7440-62-2		<0.20	ug/L					U	05/13/14
Lead	7439-92-1		<0.050	ug/L					U	05/13/14
Mercury	7439-97-6		<0.050	ug/L					U	05/13/14
Strontium	7440-24-6		<0.20	ug/L					U	05/13/14
Uranium	7440-61-1		<0.050	ug/L					U	05/13/14
Arsenic	7440-38-2		<0.20	ug/L					U	05/13/14
LCS			**QC Sample #110018**							
Aluminum	7429-90-5		416	ug/L	104.1	85 - 115				05/13/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Manganese	7439-96-5		40.9	ug/L	102.2	85 - 115				05/13/14
Nickel	7440-02-0		39.6	ug/L	99.1	85 - 115				05/13/14
Barium	7440-39-3		38.5	ug/L	96.2	85 - 115				05/13/14
Cadmium	7440-43-9		38.3	ug/L	95.9	85 - 115				05/13/14
Chromium	7440-47-3		40.5	ug/L	101.3	85 - 115				05/13/14
Cobalt	7440-48-4		40.5	ug/L	101.3	85 - 115				05/13/14
Copper	7440-50-8		40.1	ug/L	100.3	85 - 115				05/13/14
Vanadium	7440-62-2		40.7	ug/L	101.8	85 - 115				05/13/14
Lead	7439-92-1		36.9	ug/L	92.3	85 - 115				05/13/14
Mercury	7439-97-6		2.59	ug/L	86.4	85 - 115				05/13/14
Strontium	7440-24-6		394	ug/L	98.5	85 - 115				05/13/14
Uranium	7440-61-1		39.7	ug/L	99.3	85 - 115				05/13/14
Arsenic	7440-38-2		37.0	ug/L	92.5	85 - 115				05/13/14
MS			**QC Sample #110019**							
			Original 140710007							
Aluminum	7429-90-5		327	ug/L	81.7	70 - 130				05/13/14
Manganese	7439-96-5		34.1	ug/L	85.3	70 - 130				05/13/14
Nickel	7440-02-0		32.9	ug/L	82.3	70 - 130				05/13/14
Barium	7440-39-3		29.0	ug/L	72.6	70 - 130				05/13/14
Cadmium	7440-43-9		34.9	ug/L	87.3	70 - 130				05/13/14
Chromium	7440-47-3		-96.6	ug/L	-241.5	70 - 130			X	05/13/14
Cobalt	7440-48-4		34.1	ug/L	85.2	70 - 130				05/13/14
Copper	7440-50-8		32.8	ug/L	82.1	70 - 130				05/13/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF140717

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Vanadium	7440-62-2		33.8	ug/L	84.5	70 - 130				05/13/14
Lead	7439-92-1		33.8	ug/L	84.5	70 - 130				05/13/14
Mercury	7439-97-6		2.03	ug/L	101.4	70 - 130				05/13/14
Strontium	7440-24-6		296	ug/L	73.9	70 - 130				05/13/14
Uranium	7440-61-1		38.1	ug/L	95.3	70 - 130				05/13/14
Arsenic	7440-38-2		34.6	ug/L	86.5	70 - 130				05/13/14
MSD			**QC Sample #110020**							
			Original	**140710007**				**Paired**	**110019**	
Aluminum	7429-90-5		342	ug/L	85.6	70 - 130	4.60	20		05/13/14
Manganese	7439-96-5		35.1	ug/L	87.8	70 - 130	2.90	20		05/13/14
Nickel	7440-02-0		33.9	ug/L	84.6	70 - 130	2.60	20		05/13/14
Barium	7440-39-3		28.4	ug/L	71.1	70 - 130	0.80	20		05/13/14
Cadmium	7440-43-9		34.5	ug/L	86.2	70 - 130	1.20	20		05/13/14
Chromium	7440-47-3		-78.5	ug/L	-196.2	70 - 130	2.20	20	X	05/13/14
Cobalt	7440-48-4		35.0	ug/L	87.4	70 - 130	2.60	20		05/13/14
Copper	7440-50-8		34.2	ug/L	85.6	70 - 130	4.20	20		05/13/14
Vanadium	7440-62-2		35.7	ug/L	89.2	70 - 130	4.10	20		05/13/14
Lead	7439-92-1		33.6	ug/L	84.1	70 - 130	0.50	20		05/13/14
Mercury	7439-97-6		1.97	ug/L	98.6	70 - 130	2.80	20		05/13/14
Strontium	7440-24-6		286	ug/L	71.6	70 - 130	1.30	20		05/13/14
Uranium	7440-61-1		38.2	ug/L	95.4	70 - 130	0.10	20		05/13/14
Arsenic	7440-38-2		34.7	ug/L	86.7	70 - 130	0.30	20		05/13/14

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Analytical Batch 232157 (QC Batch: 232156)
Associated Samples 140717003, 140717004

Test SW-846 8260B Volatiles

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #109296**							
1,2-Dichloroethane-d4	17060-07-0				109.2	75 - 125				04/22/14
Toluene-d8	2037-26-5				103	75 - 125				04/22/14
4-Bromofluorobenzene	460-00-4				102.4	75 - 125				04/22/14
LCS			**QC Sample #109297**							
1,2-Dichloroethane-d4	17060-07-0				103.8	75 - 125				04/22/14
Toluene-d8	2037-26-5				102	75 - 125				04/22/14
4-Bromofluorobenzene	460-00-4				104.9	75 - 125				04/22/14
MS			**QC Sample #109298**							
			Original	**140693010**						
1,2-Dichloroethane-d4	17060-07-0				104.5	75 - 125				04/22/14
Toluene-d8	2037-26-5				101.7	75 - 125				04/22/14
4-Bromofluorobenzene	460-00-4				104.8	75 - 125				04/22/14
MSD			**QC Sample #109299**							
			Original	**140693010**				**Paired**	**109298**	
1,2-Dichloroethane-d4	17060-07-0				108.6	75 - 125	n/a			04/22/14

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

Quality Control Report

Attention Scot Fitzgerald
Department Organic, Volatiles

Group # WSCF140717

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				102.9	75 - 125	n/a			04/22/14
4-Bromofluorobenzene	460-00-4				104.8	75 - 125	n/a			04/22/14
SAMPLE			**Sample #140717003**							
1,2-Dichloroethane-d4	17060-07-0				113.2	75 - 125				04/22/14
Toluene-d8	2037-26-5				101.7	75 - 125				04/22/14
4-Bromofluorobenzene	460-00-4				106.2	75 - 125				04/22/14
SAMPLE			**Sample #140717004**							
1,2-Dichloroethane-d4	17060-07-0				109.4	75 - 125				04/22/14
Toluene-d8	2037-26-5				102.3	75 - 125				04/22/14
4-Bromofluorobenzene	460-00-4				105.3	75 - 125				04/22/14

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

Analytical Comment Report

Attention: Scot Fitzgerald

Group # WSCF140717

Quality Control Comments

Department Inorganic

110019 B2W7D9(140710007MS)

Analyte Chromium - ICP-2008 MS All possible metal

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

110020 B2W7D9(140710007MSD)

Analyte Chromium - ICP-2008 MS All possible metal

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

May 15, 2014

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 10 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 650 S3-30, Richland WA 99352
Phone: (509) 373-7005/FAX: (509) 372-0456

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

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

ATTN: Scot Fitzgerald

Customer Code: CHPRC
CACN: 403857
Work Order #: 140717
Customer Work ID: F14-003-109
Due Date: 05/21/2014 **(7H)**

The following samples were received from you on 4/21/2014 11:10:00 AM. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact WSCF Client Services. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
140717001	B2W2P2	WATER	4/21/2014 10:15	4/21/2014 11:10

Procedure	Compound List
Hexavalent chromium Discrete Analyzer	Cr6

Sample #	Sample ID	Matrix	Collected	Received
140717002	B2W2P6	WATER	4/21/2014 07:55	4/21/2014 11:10

Procedure	Compound List
Hexavalent chromium Discrete Analyzer	Cr6

Sample #	Sample ID	Matrix	Collected	Received
140717003	B2W2P5	WATER	4/21/2014 07:55	4/21/2014 11:10

Procedure	Compound List
SW-846 8260B Volatiles	8260 GCMS Common + CH01

Sample #	Sample ID	Matrix	Collected	Received
140717004	B2W2X6	WATER	4/21/2014 10:15	4/21/2014 11:10

Procedure	Compound List
SW-846 8260B Volatiles	8260 GCMS Common + CH01

Sample #	Sample ID	Matrix	Collected	Received
140717005	B2W2P3	WATER	4/21/2014 10:15	4/21/2014 11:10

Procedure	Compound List
Anions by Ion Chromatography (Water)	NO3
ICP-2008 MS All possible metal	Al,Mn,Ni,Ba,Cd,Cr,Co,Cu,V,Pb,Hg,Sr,U,As
ICP-6010 - All possible metals	Fe,Mg,Ca
Technetium-99 by ICP MS	Tc-99
Tritium by LSC	H3

Sample #	Sample ID	Matrix	Collected	Received
140717006	B2W2P7	WATER	4/21/2014 07:55	4/21/2014 11:10

Procedure	Compound List
Anions by Ion Chromatography (Water)	NO3
ICP-2008 MS All possible metal	Al,Mn,Ni,Ba,Cd,Cr,Co,Cu,V,Pb,Hg,Sr,U,As
ICP-6010 - All possible metals	Fe,Mg,Ca
Technetium-99 by ICP MS	Tc-99
Tritium by LSC	H3

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F14-003-109	PAGE 1 OF 1
COLLECTOR: Robert Crow	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6477	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 7H
SAMPLING LOCATION: C8716, I-005	PROJECT DESIGNATION: FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F14-003	AIR QUALITY: ☐
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-28-17	ACTUAL SAMPLE DEPTH: 336.08 ft	COA: 302938ES10	METHOD OF SHIPMENT: GOVERNNENT VEHICLE
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	

DATA TURNAROUND: 30 Days / 30 Days

ORIGINAL

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE: 140717

PRESERVATION	Cool<4C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	7196_CR6 COMMON:

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2W2P2 C01	WATER	4-21-14	1015	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Robert Crow R Crow	DATE/TIME: APR 21 2014 1110	RECEIVED BY/STORED IN: Victor Sim	DATE/TIME: APR 21 2014 1110
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 403857.** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.** VOA analysis will be conducted with a 24 hour turnaround time on preliminary data. The VOA samples will be placed on a separate COC.** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.** The laboratory is to report all TICs for Method 8260. TRVL-14-059

TRVL- 14- 059

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 2/10/2014

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F14-803-113	PAGE 1 OF 1
COLLECTOR: Robert Crow	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 7H	DATA TURNAROUND
SAMPLING LOCATION: C8716, I-005 FTB	PROJECT DESIGNATION: FY2014 200-PP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: FL4-003	AIR QUALITY: ☐	30 Days / 30 Days
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-28-17	ACTUAL SAMPLE DEPTH: 336.08 ft	COA: 302938ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE:

PRESERVATION	Cool~4C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	7196_CR6; COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2W2P6 CC2	WATER	4-21-14	0755	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Robert Crow R Crow	APR 21 2014 1110	Victor Sanchez	APR 21 2014 1110
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 403857.** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.** VOA analysis will be conducted with a 24 hour turnaround time on preliminary data. The VOA samples will be placed on a separate COC.** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.** The laboratory is to report all TICs for Method 8260. TRVL-14-059

TRVL 14- 059

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 2/10/2014

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			FL4-003-112	PAGE 1 OF 1
COLLECTOR: Robert Crow	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 7H	DATA TURNAROUND: 30 Days / 30 Days
SAMPLING LOCATION: C8716, I-005 FTB	PROJECT DESIGNATION: FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: FL4-003	AIR QUALITY: ☐	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-28-17	ACTUAL SAMPLE DEPTH: 336.08 m	COA: 302938ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION	HCl or H2SO4 to pH 2
		HOLDING TIME	14 Days
		TYPE OF CONTAINER	aGa²
		NO. OF CONTAINER(S)	3
		VOLUME	40mL
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	8260_VOA_GCMS: COMMON; 8260_VOA_GCMS: Cr 01;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2W2P5 003	WATER	4-21-14	0755	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: Robert Crow R Crow	DATE/TIME: APR 21 2014 1110	RECEIVED BY/STORED IN: Vic Lyn	DATE/TIME: APR 21 2014 1110	** The CACN for all analytical work at WSCF laboratory is 403857.** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.** VOA analysis will be conducted with a 24 hour turnaround time on preliminary data. The VOA samples will be placed on a separate COC.** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.** The laboratory is to report all TICs for Method 8260. TRVL-14-059
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

TRVL- 14- 059

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 2/10/2014

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F14-003-163	PAGE 1 OF 1
COLLECTOR: Robert Crow	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 711	DATA TURNAROUND: 30 Days / 30 Days
SAMPLING LOCATION: CR716, FXR-5	PROJECT DESIGNATION: FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F14 003	AIR QUALITY: ☐	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF -N-507-28-17	ACTUAL SAMPLE DEPTH: (N/A)	COA: 302938ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH
HOLDING TIME	14 Days
TYPE OF CONTAINER	VOA
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	8260_VOA_COMS: COMMON; 8260_VOA_COMS: CH 81;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2W2X6 004	WATER	4-21-14	1015	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Robert Crow R Crow	DATE/TIME: APR 2 1 2014 1110	RECEIVED BY/STORED IN: V.C.	DATE/TIME: APR 2 1 2014 1110
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 403857.** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.** VOA analysis will be conducted with a 24 hour turnaround time on preliminary data. The VOA samples will be placed or a separate COC.** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.** The laboratory is to report all TICs for Method 8260. TRVL-14-059

TRVL- 14 - 059

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 2/10/2014

A-6001-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F14-003-110	PAGE 1 OF 2
COLLECTOR: Robert Crow	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 711	DATA TURNAROUND
SAMPLING LOCATION: C8716, I-005	PROJECT DESIGNATION: FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F14-003	AIR QUALITY ☐	30 Days / 30 Days
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-28-17	ACTUAL SAMPLE DEPTH: 336.08	COA: 302938ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL HANDLING AND/OR STORAGE:

PRESERVATION	HNO3 to pH <2	Cool~4C	HNO3 to pH <2 (ULTREX)	None
HOLDING TIME	28 Days	48 Hours	None	6 Months
TYPE OF CONTAINER	G	P	Nalgene	G
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	500mL	500mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	300.0_ANIONS_IC: COMMON (Nitrogen in Nitrate);	RADISO_ICPMS : COMMON (Technetium-99);	TRITIUM_LSC_LSC: COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2W2P3 005	WATER	4-21-14	1015	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Robert Crow RCrow	DATE/TIME: APR 21 2014 1110	RECEIVED BY/STORED IN: Vicky Simms	DATE/TIME: APR 21 2014 1110
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

TRVL 14- 059

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 2/10/2014

A-6003-6.8 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F14-003-110	PAGE 2 OF 2
COLLECTOR Robert Crow	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H AIR QUALITY ☐	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8716, I-005	PROJECT DESIGNATION FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F14-003		
ICE CHEST NO. NA	FIELD LOGBOOK NO. HNF-N-507-28-17	ACTUAL SAMPLE DEPTH 336.08	COA 302938ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 403857.** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.** VOA analysis will be conducted with a 24 hour turnaround time on preliminary data. The VOA samples will be placed on a separate COC.** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.** The laboratory is to report all TICs for Method 8260. TRVL-14-059
(1) 200.8_MERCURY: COMMON; 200.8_METALS_ICPMS: COMMON {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Lead}; 200.8_METALS_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Strontium, Uranium, Vanadium}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium};

TRVL 14- 059

PRINTED ON 2/10/2014

A-60C3-018 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F14-003-114	PAGE 1 OF 2
COLLECTOR: Robert Crow	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6927	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 7H	DATA TURNAROUND
SAMPLING LOCATION: C8716, I-005 FTB	PROJECT DESIGNATION: FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F14-003	AIR QUALITY ☐	30 Days / 30 Days
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: INF-N-507-28-17	ACTUAL SAMPLE DEPTH: 336.08 Ft	COA: 302938ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 450.1.

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	Cool<4C	HNO3 to pH <2 (ULTREX)	None
HOLDING TIME	28 Days	48 Hours	None	6 Months
TYPE OF CONTAINER	G	P	Nalgene	G
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	500mL	500mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	300.0_ANIONS_IC: COMMON (Nitrogen in Nitrate);	RADISO_ICPMS: COMMON (Technetium-99);	TRITIUM_EIE_LSC: COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
R2W2P7 006	WATER	4-21-14	0755	/	/	/	/

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: Robert Crow R Crow	DATE/TIME: APR 21 2014 1110	RECEIVED BY/STORED IN: Valerie Simpson	DATE/TIME: APR 21 2014 1110	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

TRVL- 14- 059

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 2/10/2014

A-6003-618 (REV 2)

Chain of Custody

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F14-003-114	PAGE 2 OF 2
COLLECTOR Robert Crow	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376 6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND
SAMPLING LOCATION C8716, 1-005 FIB	PROJECT DESIGNATION FY2014 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F14-003	AIR QUALITY ☐	30 Days / 30 Days
ICE CHEST NO. NA	FIELD LOGBOOK NO. HNF-N-507-28-17	ACTUAL SAMPLE DEPTH 336.08 ft	COA 302938ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 403857.** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.** VOA analysis will be conducted with a 24 hour turnaround time on preliminary data. The VOA samples will be placed on a separate COC.** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.** The laboratory is to report all TICs for Method 8260. TRVL-14-059
(1) 200.8_MERCURY: COMMON; 200.8_METALS_ICPMS: COMMON {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Lead}; 200.8_METALS_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Strontium, Uranium, Vanadium}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium};

TRVL- 14- 059

PRINTED ON 2/10/2014

A-6003-610 (REV 2)