WSCF Laboratory

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RECEIVED FEBRUARY 10, 2010 REVISION 1 0088601

Memorandum

To: Michael Neely
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Date: February 9, 2010

From: WSCF Laboratory
WSCF Analytical Chemistry

CC:

Subject: REVISED90697 - 202578 [Report ID: 90697]

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, Rev 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF90697

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

Electronically signed by Scot Fitzgerald
For Lab Manager

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JUN 03 2010
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Attachments 4

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF90697
Data Deliverable Date 07/28/09

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F09-039	B212F1	90697001	WATER	07/01/09	07/02/09
F09-039	B212F2	90697002	WATER	07/01/09	07/02/09

ATTACHMENT 2

NARRATIVE

Consisting of 6 pages
Including cover page

Attachment 2
Rev1 Narrative
WSCF90697

P & D Correction – Case Narrative Replaces the Prior

Introduction

Two (2) S&GRP) samples were received at the WSCF Laboratory on July 2, 2009. 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), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

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. **Additionally, a copy of the completed P & D # 90697 is included with the narrative.**

It should be noted that the attached chain of custody was stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, and J) 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 wetchem analyses), as appropriate.
- **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.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report*, pages for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements (48 hours and 28 days) 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):

- 48 hour hold time for nitrate-N missed for sample B212F2 (see attached Issue Resolution Form, IRF)
- The Fluoride spike recovery in the MS/MSD did not meet the Laboratory Established Limit of greater than 80% recovery at 78.6% and 78.3% recovery respectively. The appropriate sample was N flagged.

Attachment 2
Rev1 **Narrative**
WSCF90697

All QC controls are within the established limits.

ICP-AES Metals – The hold time requirements (28 days [Si and P] and 6 months) 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):

- Batch QC analyzed on sample# B212D6
  - Sodium – sample concentration exceeded established laboratory limits by a factor of 4. Spike recoveries are not valid.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time requirements (28 days [Hg] and 6 months) for this analysis were met. A Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time requirements (7/40 days or 14/40 days) 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):

- The chemical matrix of the sample chosen for the MS/MSD caused low recoveries for some of the phenolic surrogate and phenolic matrix pike compounds. This effect was not found in the other samples, LCS or blank, thus confirming the matrix effect on the spiked sample.

All other QC controls are within the established limits.

VOA – The hold time requirement (14 days) 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 QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirements for these analyses were met. A Duplicate, Matrix Spike *(Matrix Spikes apply only to Neptunium, Technetium & Tritium and Matrix Spike Duplicate applies to Neptunium)*, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gamma Energy Analysis (QC Sample B212D5) – Duplicate Relative Percent Difference (RPD) exceeded established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity. No flags issued.

Attachment 2
Rev1 Narrative
WSCF90697

- Gross Alpha Analysis (QC Sample B212F1) – Duplicate Relative Percent Difference (RPD) exceeded established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity. No flags issued.
- Gross Alpha Analysis (QC Sample B212F2) – Duplicate Relative Percent Difference (RPD) exceeded established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity. No flags issued.
- Gross Beta Analysis (QC Sample Blank 11788) – Gross Beta contamination detected in this blank sample was less than 5% of the concentration detected in the sample. No flags issued.

All other QC controls are within the established limits.

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

Attachment 2
Rev1 Narrative
WSCF90697

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 09-071

Date : **7-20-2009** SAF No. **F09-039**

SDG: **WSCF90697** LOGIN No.: TEST: ANIONS (@IC-30)

Sample No.(s) **B212F2**

90697002

Submitted By: WW Baird Submitted To: H Hampt
Phone No. 373-7189 Phone No. 376-4319
Fax No. 372-0456 Fax No

ISSUE	PROPOSED RESOLUTION
The 48-hour regulatory hold time requirement for Nitrate-N was missed on sample identified above. Sample was collected in the field on July 1, 2009, and delivered to the WSCF Laboratory on July 2, 2009. Initial analysis was performed within the regulatory hold time. Both a primary and secondary dilution was performed; however due to the high concentration of Nitrate-N present in the above sample, Nitrate-N re-analysis was required at an even higher dilution (@ dilution factor of ~10). Due to a facility closure, we were not able to successfully complete the analysis of this sample until July 7, 2009.	Accept Nitrate-N analytical results (accept as-is) and document missed holding time in the case narrative.

GRP COMMENTS
Accept proposed resolution.

Heidi Hampt 7/20/09
Signature and Date

8/18/2009

4

Attachment 2
Rev1 **Narrative**
WSCF90697

Problem and Discrepancy Report

WSCF

SDGWSCF90697

1. The data package has the following issues:

a) QC results, Batch # 54064, MSD, Sodium recovery and RPD are out of limits and are not discussed in the narrative.

Resolution: *Provide discussion.*

Lab Response: **The laboratory narrative has been revised. The MSD failure for sodium has been added to the narrative.**

b) Narrative, Rad Chem, Statement saying, "All QC controls are within…" is incorrect. Please revise to say, "All other QC controls…"

Resolution: *Provide correction.*

Lab Response: **The laboratory narrative has been revised to include "other" in the rad chemistry QC control statement.**

c) QC comments, Dept 11061 and 11062, Sodium sample concentration did not exceed the spike level by a factor of 4. These comments should be removed.

Resolution: *Provide correction.*

Lab Response: **Upon review of the report and all supporting QC data, it has been determined that the original comments concerning the sodium concentration in regards to spike levels are correct. The MS & MSD for this work order was analyzed on B212D6 (909694002); which had a sodium concentration of 8340 ug/L.**

Please correct the issues and resubmit the hard copy and electronic data package

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 47 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Michael Neely

Contract #	MOA-FH-CHPRC-2008
Group #	WSCF90697
Report Date	February 9, 2010

Analytical: Electronically signed by Scot Fitzgerald

Client Services: Electronically signed by Andrew Kopriva

All radiochemistry 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) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Michael Neely
Department Inorganic

Group # WSCF90697

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
54042	54042	2	BLANK	11017	BLANK		Anions by Ion Chromatography (Water)
54042	54042	3	LCS	11018	LCS		Anions by Ion Chromatography (Water)
54042	54042	4	SAMPLE	90697002	B212F2		Anions by Ion Chromatography (Water)
54042	54042	5	DUP	11019	B214M4(90698002DUP)	90698002	Anions by Ion Chromatography (Water)
54042	54042	6	MS	11020	B214M4(90698002MS)	90698002	Anions by Ion Chromatography (Water)
54042	54042	7	MSD	11021	B214M4(90698002MSD)	90698002	Anions by Ion Chromatography (Water)
54064	54224	1	BLANK	11059	BLANK		ICP-6010 - All possible metals
54064	54224	2	LCS	11060	LCS		ICP-6010 - All possible metals
54064	54224	5	MS	11061	B212D6(90694002MS)	90694002	ICP-6010 - All possible metals
54064	54224	6	MSD	11062	B212D6(90694002MSD)	90694002	ICP-6010 - All possible metals
54064	54224	10	SAMPLE	90697001	B212F1		ICP-6010 - All possible metals
54064	54224	12	SAMPLE	90697002	B212F2		ICP-6010 - All possible metals
54064	54230	13	SAMPLE	90697001	B212F1		ICP-6010 - All possible metals
54064	54230	14	SAMPLE	90697002	B212F2		ICP-6010 - All possible metals
54073	54073	2	BLANK	11073	BLANK		Anions by Ion Chromatography (Water)
54073	54073	3	LCS	11074	LCS		Anions by Ion Chromatography (Water)
54073	54073	4	SAMPLE	90697002	B212F2		Anions by Ion Chromatography (Water)
54073	54073	5	DUP	11075	B1YMK4(90702001DUP)	90702001	Anions by Ion Chromatography (Water)
54073	54073	6	MS	11076	B1YMK4(90702001MS)	90702001	Anions by Ion Chromatography (Water)
54073	54073	7	MSD	11077	B1YMK4(90702001MSD)	90702001	Anions by Ion Chromatography (Water)

Batch QC List

REVISION 1

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
54040	54167	2	BLANK	11012	BLANK		SW-846 8270D Semivolatiles
54040	54167	3	LCS	11013	LCS		SW-846 8270D Semivolatiles
54040	54167	9	MS	11014	B212F2(90697002MS)	90697002	SW-846 8270D Semivolatiles
54040	54167	10	MSD	11015	B212F2(90697002MSD)	90697002	SW-846 8270D Semivolatiles
54040	54167	11	SAMPLE	90697002	B212F2		SW-846 8270D Semivolatiles
54040	54167	12	SAMPLE	90697002	B212F2		SW-846 8270D Semivolatiles

REVISION 1

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90697

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
53940	53941	1	BLANK	11002	BLANK		SW-846 8260B Volatiles, separate prep
53940	53941	2	LCS	11003	LCS		SW-846 8260B Volatiles, separate prep
53940	53941	3	MS	11004	B20PW5(90690007MS)	90690007	SW-846 8260B Volatiles, separate prep
53940	53941	4	MSD	11005	B20PW5(90690007MSD)	90690007	SW-846 8260B Volatiles, separate prep
53940	53941	14	SAMPLE	90697002	B212F2		SW-846 8260B Volatiles, separate prep

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF90697

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
54037	54038	1	BLANK	11010	BLANK		Technicium-99 by ICP MS
54037	54038	2	LCS	11011	LCS		Technicium-99 by ICP MS
54037	54038	9	SAMPLE	90697001	B212F1		Technicium-99 by ICP MS
54037	54038	10	SAMPLE	90697002	B212F2		Technicium-99 by ICP MS
54080	54097	1	BLANK	11092	BLANK		Tritium by LSC
54080	54097	2	LCS	11093	LCS		Tritium by LSC
54080	54097	4	DUP	11094	B212D5(90694001DUP)	90694001	Tritium by LSC
54080	54097	5	MS	11095	B212D5(90694001MS)	90694001	Tritium by LSC
54080	54097	11	SAMPLE	90697002	B212F2		Tritium by LSC
54118	54163	1	IBLANK	11167	IBLANK		Gamma Energy Analysis-general
54118	54163	2	LCS	11168	LCS		Gamma Energy Analysis-general
54118	54163	4	DUP	11169	B212D5(90694001DUP)	90694001	Gamma Energy Analysis-general
54118	54163	8	SAMPLE	90697001	B212F1		Gamma Energy Analysis-general
54118	54163	16	SAMPLE	90697002	B212F2		Gamma Energy Analysis-general
54264	54341	1	BLANK	11532	BLANK		Gross Alpha/Gross Beta
54264	54341	2	LCS	11533	LCS		Gross Alpha/Gross Beta
54264	54341	3	SAMPLE	90697001	B212F1		Gross Alpha/Gross Beta
54264	54341	4	SAMPLE	90697001	B212F1		Gross Alpha/Gross Beta
54264	54341	5	DUP	11534	B212F1(90697001DUP)	90697001	Gross Alpha/Gross Beta
54447	54472	1	BLANK	11788	BLANK		Gross Alpha/Gross Beta
54447	54472	2	LCS	11789	LCS		Gross Alpha/Gross Beta
54447	54472	3	SAMPLE	90697002	B212F2		Gross Alpha/Gross Beta
54447	54472	4	SAMPLE	90697002	B212F2		Gross Alpha/Gross Beta

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Batch QC List

REVISION 1

Attention Michael Neely
Department Radiochemistry

Group # WSCF90697

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
54447	54472	5	DUP	11790	B212F2(90697002DUP)	90697002	Gross Alpha/Gross Beta

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF90697

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

LA-505-411	Elemental Analysis by ICP Atomic Emission Spectroscopy (ICP-AES)		
	EPA SW-846	6010C	Inductively Coupled Plasma-Atomic Emmision Spectrometry
	HEIS	6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-533-410	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

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

Method Reference

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

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-523-456	Semivolatile Sample Analysis by SW-846 Method 8270D		
	EPA SW-846	8000B	Determinative Chromagraphic Separations
	EPA SW-846	8270D	Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8270_SVOA_GCMS	Semivolatile 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 Michael Neely
Department Organic, Volatiles

Group # WSCF90697

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 Michael Neely
Department Radiochemistry

Group # WSCF90697

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

LA-505-412	Technicium-99 by ICP-MS		
	HEIS	RADISOTOPES_ICPMS	Tc-99 by ICPMS
LA-508-415	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples		
	HEIS	ALPHA_GPC	Gross Alpha by GPC
	HEIS	BETA_GPC	Gross Beta by GPC
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium beta isotopic, GPC
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-508-481	Gamma Energy Analysis using the Canberra Genie Ssystem		
	HEIS	GAMMA_GS	Gamma Energy Analysis

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

REVISION 1

Attention Michael Neely
Department Inorganic

Group # WSCF90697

Sample # 90697001
SAF# F09-039
Sample ID B212F1

Matrix WATER
Sampled 07/01/09
Received 07/02/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICP Prep										**07/07/09**
ICP-AES										
Magnesium	7439-95-4	LA-505-411	D	2.57E5		ug/L	10	160	800	07/09/09
Sodium	7440-23-5	LA-505-411	U	<23		ug/L	1	23	120	07/14/09
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	07/14/09
Chromium	7440-47-3	LA-505-411	U	<13		ug/L	1	13	65	07/14/09
Calcium	7440-70-2	LA-505-411	D	1.56E6		ug/L	10	390	2000	07/09/09
Arsenic	7440-38-2	LA-505-411	U	<65		ug/L	1	65	320	07/14/09
Silicon	7440-21-3	LA-505-411		1460		ug/L	1	61	300	07/14/09

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

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

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

REVISED90697 -

WSCF Analytical Results Report

REVISION 1

Attention Michael Neely
Department Inorganic

Group # WSCF90697

Sample # 90697002
SAF# F09-039
Sample ID B212F2

Matrix WATER
Sampled 07/01/09
Received 07/02/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/02/09**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UDN	<1.5		ug/mL	51	1.5	10	07/02/09
Chloride	16887-00-6	LA-533-410	D	293		ug/mL	51	2.2	20	07/02/09
Nitrate-N	NO3-N	LA-533-410	DX	7080		ug/mL	2121	66	210	07/06/09
Sulfate	14808-79-8	LA-533-410	D	203		ug/mL	51	3.3	51	07/02/09
ICP Prep										**07/07/09**
ICP-AES										
Magnesium	7439-95-4	LA-505-411	D	3.30E5		ug/L	10	160	800	07/09/09
Sodium	7440-23-5	LA-505-411	U	<23		ug/L	1	23	120	07/14/09
Cadmium	7440-43-9	LA-505-411	U	<4.0		ug/L	1	4.0	20	07/14/09
Chromium	7440-47-3	LA-505-411	U	<13		ug/L	1	13	65	07/14/09
Calcium	7440-70-2	LA-505-411	D	2.03E6		ug/L	10	390	2000	07/09/09
Arsenic	7440-38-2	LA-505-411	U	<65		ug/L	1	65	320	07/14/09
Silicon	7440-21-3	LA-505-411		1880		ug/L	1	61	300	07/14/09

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

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

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

REVISED90697 -

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Sample # 90697002
SAF# F09-039
Sample ID B212F2

Matrix WATER
Sampled 07/01/09
Received 07/02/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8270 Prep										**07/06/09**
SW-846 8270D										
4-Nitrophenol	100-02-7	LA-523-456		37		ug/L	1	0.6	4	07/09/09
1,4-Dichlorobenzene	106-46-7	LA-523-456	U	<0.9		ug/L	1	0.9	4	07/09/09
Phenol	108-95-2	LA-523-456		56		ug/L	1	0.9	4	07/09/09
1,2,4-Trichlorobenzene	120-82-1	LA-523-456	U	<0.7		ug/L	1	0.7	4	07/09/09
2,4-Dinitrotoluene	121-14-2	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Pyrene	129-00-0	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
4-Chloro-3-methylphenol	59-50-7	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
n-Nitroso-di-n-propylamine	621-64-7	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Acenaphthene	83-32-9	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Pentachlorophenol	87-86-5	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
2-Chlorophenol	95-57-8	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
4-Nitroaniline	100-01-6	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
4-Bromophenyl-phenylether	101-55-3	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
2,4-Dimethylphenol	105-67-9	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
4-Chloroaniline	106-47-8	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09

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X,Y or Z - See comment detail and/or narrative.

REVISED90697 -

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Sample # 90697002
SAF# F09-039
Sample ID B212F2

Matrix WATER
Sampled 07/01/09
Received 07/02/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Bis-(2-Chloro-1-methyl) ether	108-60-1	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Bis-(2-Chloroethyl) ether	111-44-4	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
Bis-(2-Chloroethoxy)methane	111-91-1	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Bis-(2-Ethylhexyl)phthalate	117-81-7	LA-523-456		13		ug/L	1	0.8	4	07/09/09
Di-n-octylphthalate	117-84-0	LA-523-456	U	<0.9		ug/L	1	0.9	4	07/09/09
Hexachlorobenzene	118-74-1	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
Anthracene	120-12-7	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
2,4-Dichlorophenol	120-83-2	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Dimethylphthalate	131-11-3	LA-523-456	J	1.2		ug/L	1	0.5	4	07/09/09
Dibenzofuran	132-64-9	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Benzo(g,h,i)perylene	191-24-2	LA-523-456	U	<0.7		ug/L	1	0.7	4	07/09/09
Indeno(1,2,3-cd)pyrene	193-39-5	LA-523-456	U	<0.7		ug/L	1	0.7	4	07/09/09
Benzo(b)fluoranthene	205-99-2	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Fluoranthene	206-44-0	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Benzo(k)fluoranthene	207-08-9	LA-523-456	U	<0.7		ug/L	1	0.7	4	07/09/09
Acenaphthylene	208-96-8	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
Chrysene	218-01-9	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09

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REVISED90697 -

WSCF Analytical Results Report

REVISION 1

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Sample # 90697002
SAF# F09-039
Sample ID B212F2

Matrix WATER
Sampled 07/01/09
Received 07/02/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Benzo(a)pyrene	50-32-8	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
2,4-Dinitrophenol	51-28-5	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
Dibenzo(a,h)anthracene	53-70-3	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
4,6-Dinitro-2-methylphenol	534-52-1	LA-523-456	U	<0.7		ug/L	1	0.7	4	07/09/09
1,3-Dichlorobenzene	541-73-1	LA-523-456	U	<1		ug/L	1	1	4	07/09/09
Benzo(a)anthracene	56-55-3	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
2,6-Dinitrotoluene	606-20-2	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
4-Chlorophenyl-phenylether	7005-72-3	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Hexachlorocyclopentadiene	77-47-4	LA-523-456	U	<0.8		ug/L	1	0.8	4	07/09/09
Isophorone	78-59-1	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Diethyl phthalate	84-66-2	LA-523-456	J	3.2		ug/L	1	1	4	07/09/09
Di-n-butylphthalate	84-74-2	LA-523-456	U	<1		ug/L	1	1	4	07/09/09
Phenanthrene	85-01-8	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Butylbenzylphthalate	85-68-7	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
n-Nitrosodiphenylamine	86-30-6	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Fluorene	86-73-7	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09

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REVISED90697 -

WSCF Analytical Results Report

REVISION 1

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Sample # 90697002
SAF# F09-039
Sample ID B212F2

Matrix WATER
Sampled 07/01/09
Received 07/02/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbazole	86-74-8	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Hexachlorobutadiene	87-68-3	LA-523-456	U	<0.9		ug/L	1	0.9	4	07/09/09
2-Nitroaniline	88-74-4	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
2-Nitrophenol	88-75-5	LA-523-456		37		ug/L	1	0.5	4	07/09/09
Naphthalene	91-20-3	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
2-Methylnaphthalene	91-57-6	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
2-Chloronaphthalene	91-58-7	LA-523-456	U	<0.8		ug/L	1	0.8	4	07/09/09
3,3-Dichlorobenzidine	91-94-1	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
2-Methylphenol	95-48-7	LA-523-456	U	<0.8		ug/L	1	0.8	4	07/09/09
1,2-Dichlorobenzene	95-50-1	LA-523-456	U	<0.9		ug/L	1	0.9	4	07/09/09
2,4,5-Trichlorophenol	95-95-4	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Nitrobenzene	98-95-3	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
3-Nitroaniline	99-09-2	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
3 & 4 Methylphenol, Total	65794-96-9	LA-523-456	U	<0.6		ug/L	1	0.6	4	07/09/09
Hexachloroethane	67-72-1	LA-523-456	U	<0.8		ug/L	1	0.8	4	07/09/09
2,4,6-Trichlorophenol	88-06-2	LA-523-456	U	<0.5		ug/L	1	0.5	4	07/09/09
Tributyl phosphate	126-73-8	LA-523-456	D	80		ug/L	3.333	2	10	07/10/09
Benzoic Acid	65-85-0	LA-523-456	D	73		ug/L	3.333	20	30	07/10/09
Benzothiazole	95-16-9	LA-523-456	D	83		ug/L	3.333	2	10	07/10/09

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X,Y or Z - See comment detail and/or narrative.

REVISED90697 -

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90697

Sample # 90697002
SAF# F09-039
Sample ID B212F2

Matrix WATER
Sampled 07/01/09
Received 07/02/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**07/02/09**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	07/02/09

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X,Y or Z - See comment detail and/or narrative.

REVISED90697 -

WSCF Analytical Results Report

REVISION 1

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90697

Sample # 90697002
SAF# F09-039
Sample ID B212F2

Matrix WATER
Sampled 07/01/09
Received 07/02/09

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	5	07/02/09
2-Hexanone	591-78-6	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Acetone	67-64-1	LA-523-455		50		ug/L	1	1	5	07/02/09
Chloroform	67-66-3	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Chloromethane	74-87-3	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Chloroethane	75-00-3	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Carbon disulfide	75-15-0	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Bromodichloromethane	75-27-4	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
Methyl ethyl ketone	78-93-3	LA-523-455		11		ug/L	1	1	5	07/02/09
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	07/02/09
2-Pentanone	107-87-9	LA-523-455	U	<1		ug/L	1	1	5	07/02/09

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N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

REVISED90697 -

WSCF Analytical Results Report

REVISION 1

Attention Michael Neely
Department Radiochemistry

Group # WSCF90697

Sample # 90697001
SAF# F09-039
Sample ID B212F1

Matrix WATER
Sampled 07/01/09
Received 07/02/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**07/17/09**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	23	110	pCi/L	1	200		07/23/09
Gross Beta	12587-47-2	LA-508-415		1.1E5	11000	pCi/L	1	340		07/23/09
GEA Prep										**07/09/09**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	0.11	4.2	pCi/L	1	7.4		07/13/09
Cobalt-60	10198-40-0	LA-508-481		31	6.1	pCi/L	1	7.7		07/13/09
Europium-152	14683-23-9	LA-508-481	U	-6.3	13	pCi/L	1	22		07/13/09
Europium-154	15585-10-1	LA-508-481	U	-6.8	10	pCi/L	1	18		07/13/09
Europium-155	14391-16-3	LA-508-481	U	1.0	15	pCi/L	1	26		07/13/09
ICPMS Prep										**07/02/09**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		10		ug/L	1	0.0010		07/02/09

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B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

REVISED90697 -

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90697

Sample # 90697002
SAF# F09-039
Sample ID B212F2

Matrix WATER
Sampled 07/01/09
Received 07/02/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**07/21/09**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	-110	140	pCi/L	1	290		07/23/09
Gross Beta	12587-47-2	LA-508-415		1.2E5	12000	pCi/L	1	330		07/23/09
GEA Prep										**07/09/09**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	-4.1	8.5	pCi/L	1	14		07/15/09
Cobalt-60	10198-40-0	LA-508-481		58	14	pCi/L	1	13		07/15/09
Europium-152	14683-23-9	LA-508-481	U	4.0	24	pCi/L	1	40		07/15/09
Europium-154	15585-10-1	LA-508-481	U	21	24	pCi/L	1	47		07/15/09
Europium-155	14391-16-3	LA-508-481	U	3.6	26	pCi/L	1	46		07/15/09
H3 EICHROM										**07/07/09**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421		1.8E5	36000	pCi/L	1	210		07/09/09
ICPMS Prep										**07/02/09**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		13		ug/L	1	0.0010		07/02/09

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REVISED90697 -

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90697

QC Batch 53940
Associated Samples 90697002

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11002**						
1,1-Dichloroethene	75-35-4		<1	ug/L				U	07/02/09
Trichloroethene	79-01-6		<1	ug/L				U	07/02/09
Benzene	71-43-2		<1	ug/L				U	07/02/09
Toluene	108-88-3		<1	ug/L				U	07/02/09
Chlorobenzene	108-90-7		<1	ug/L				U	07/02/09
1,1-Dichloroethane	75-34-3		<1	ug/L				U	07/02/09
Ethylbenzene	100-41-4		<1	ug/L				U	07/02/09
Styrene	100-42-5		<1	ug/L				U	07/02/09
cis-1,3-Dichloropropene	10061-01-5		<1	ug/L				U	07/02/09
trans-1,3-Dichloropropene	10061-02-6		<1	ug/L				U	07/02/09
1,2-Dichloroethane	107-06-2		<1	ug/L				U	07/02/09
Methyl isobutyl ketone	108-10-1		<1	ug/L				U	07/02/09
Dibromochloromethane	124-48-1		<1	ug/L				U	07/02/09
Tetrachloroethene	127-18-4		<1	ug/L				U	07/02/09
Total Xylenes	1330-20-7		<1	ug/L				U	07/02/09
Total 1,2-Dichloroethene	540-59-0		<1	ug/L				U	07/02/09
Carbon tetrachloride	56-23-5		<1	ug/L				U	07/02/09

REVISED90697 -

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
2-Hexanone	591-78-6		<1	ug/L					U	07/02/09
Acetone	67-64-1		<1	ug/L					U	07/02/09
Chloroform	67-66-3		<1	ug/L					U	07/02/09
1,1,1-Trichloroethane	71-55-6		<1	ug/L					U	07/02/09
Bromomethane	74-83-9		<1	ug/L					U	07/02/09
Chloromethane	74-87-3		<1	ug/L					U	07/02/09
Chloroethane	75-00-3		<1	ug/L					U	07/02/09
Vinyl chloride	75-01-4		<1	ug/L					U	07/02/09
Methylene chloride	75-09-2		<1	ug/L					U	07/02/09
Carbon disulfide	75-15-0		<1	ug/L					U	07/02/09
Bromoform	75-25-2		<1	ug/L					U	07/02/09
Bromodichloromethane	75-27-4		<1	ug/L					U	07/02/09
1,2-Dichloropropane	78-87-5		<1	ug/L					U	07/02/09
Methyl ethyl ketone	78-93-3		<1	ug/L					U	07/02/09
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	07/02/09
1,1,2,2-Tetrachloroethane	79-34-5		<1	ug/L					U	07/02/09
2-Pentanone	107-87-9		<1	ug/L					U	07/02/09
LCS			**QC Sample #11003**							
1,1-Dichloroethene	75-35-4		20	ug/L	80.5	75 - 125				07/02/09
Trichloroethene	79-01-6		20	ug/L	80.6	75 - 125				07/02/09
Benzene	71-43-2		22	ug/L	88.8	75 - 125				07/02/09
Toluene	108-88-3		23	ug/L	91.3	75 - 125				07/02/09
Chlorobenzene	108-90-7		23	ug/L	90.7	75 - 125				07/02/09

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Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #11004**							
			Original 90690007							
1,1-Dichloroethene	75-35-4		22	ug/L	88.6	75 - 125				07/02/09
Trichloroethene	79-01-6		20	ug/L	82	75 - 125				07/02/09
Benzene	71-43-2		23	ug/L	91.8	75 - 125				07/02/09
Toluene	108-88-3		24	ug/L	95.4	75 - 125				07/02/09
Chlorobenzene	108-90-7		24	ug/L	98	75 - 125				07/02/09
MSD			**QC Sample #11005**							
			Original 90690007					**Paired**	**11004**	
1,1-Dichloroethene	75-35-4		22	ug/L	88	75 - 125	0.70	20		07/02/09
Trichloroethene	79-01-6		21	ug/L	83.8	75 - 125	2.20	20		07/02/09
Benzene	71-43-2		23	ug/L	93.5	75 - 125	1.80	20		07/02/09
Toluene	108-88-3		25	ug/L	98.2	75 - 125	2.90	20		07/02/09
Chlorobenzene	108-90-7		25	ug/L	100.4	75 - 125	2.40	20		07/02/09

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

QC Batch 54040
Associated Samples 90697002

Test SW-846 8270D Semivolatiles

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11012**						
4-Nitrophenol	100-02-7		<0.6	ug/L				U	07/09/09
1,4-Dichlorobenzene	106-46-7		<1	ug/L				U	07/09/09
Phenol	108-95-2		<1	ug/L				U	07/09/09
1,2,4-Trichlorobenzene	120-82-1		<0.7	ug/L				U	07/09/09
2,4-Dinitrotoluene	121-14-2		<0.5	ug/L				U	07/09/09
Pyrene	129-00-0		<0.5	ug/L				U	07/09/09
4-Chloro-3-methylphenol	59-50-7		<0.5	ug/L				U	07/09/09
n-Nitroso-di-n-propylamine	621-64-7		<0.5	ug/L				U	07/09/09
Acenaphthene	83-32-9		<0.5	ug/L				U	07/09/09
Pentachlorophenol	87-86-5		<0.5	ug/L				U	07/09/09
2-Chlorophenol	95-57-8		<0.5	ug/L				U	07/09/09
4-Nitroaniline	100-01-6		<0.6	ug/L				U	07/09/09
4-Bromophenyl-phenylether	101-55-3		<0.5	ug/L				U	07/09/09
2,4-Dimethylphenol	105-67-9		<0.5	ug/L				U	07/09/09
4-Chloroaniline	106-47-8		<0.7	ug/L				U	07/09/09
Bis-(2-Chloro-1-methyl) ether	108-60-1		<0.6	ug/L				U	07/09/09

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
Bis-(2-Chloroethyl) ether	111-44-4		<0.6	ug/L				U	07/09/09
Bis-(2-Chloroethoxy)methane	111-91-1		<0.5	ug/L				U	07/09/09
Bis-(2-Ethylhexyl)phthalate	117-81-7		<0.8	ug/L				U	07/09/09
Di-n-octylphthalate	117-84-0		<0.9	ug/L				U	07/09/09
Hexachlorobenzene	118-74-1		<0.6	ug/L				U	07/09/09
Anthracene	120-12-7		<0.6	ug/L				U	07/09/09
2,4-Dichlorophenol	120-83-2		<0.5	ug/L				U	07/09/09
Dimethylphthalate	131-11-3		<0.5	ug/L				U	07/09/09
Dibenzofuran	132-64-9		<0.5	ug/L				U	07/09/09
Benzo(g,h,i)perylene	191-24-2		<0.7	ug/L				U	07/09/09
Indeno(1,2,3-cd)pyrene	193-39-5		<0.7	ug/L				U	07/09/09
Benzo(b)fluoranthene	205-99-2		<0.5	ug/L				U	07/09/09
Fluoranthene	206-44-0		<0.5	ug/L				U	07/09/09
Benzo(k)fluoranthene	207-08-9		<0.8	ug/L				U	07/09/09
Acenaphthylene	208-96-8		<0.7	ug/L				U	07/09/09
Chrysene	218-01-9		<0.5	ug/L				U	07/09/09
Benzo(a)pyrene	50-32-8		<0.6	ug/L				U	07/09/09
2,4-Dinitrophenol	51-28-5		<0.6	ug/L				U	07/09/09
Dibenzo(a,h)anthracene	53-70-3		<0.6	ug/L				U	07/09/09
4,6-Dinitro-2-methylphenol	534-52-1		<0.7	ug/L				U	07/09/09
1,3-Dichlorobenzene	541-73-1		<1	ug/L				U	07/09/09

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Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
Benzo(a)anthracene	56-55-3		<0.5	ug/L				U	07/09/09
2,6-Dinitrotoluene	606-20-2		<0.6	ug/L				U	07/09/09
4-Chlorophenyl-phenylether	7005-72-3		<0.6	ug/L				U	07/09/09
Hexachlorocyclopentadiene	77-47-4		<0.9	ug/L				U	07/09/09
Isophorone	78-59-1		<0.5	ug/L				U	07/09/09
Diethyl phthalate	84-66-2		<1	ug/L				U	07/09/09
Di-n-butylphthalate	84-74-2		<1	ug/L				U	07/09/09
Phenanthrene	85-01-8		<0.6	ug/L				U	07/09/09
Butylbenzylphthalate	85-68-7		<0.5	ug/L				U	07/09/09
n-Nitrosodiphenylamine	86-30-6		<0.5	ug/L				U	07/09/09
Fluorene	86-73-7		<0.7	ug/L				U	07/09/09
Carbazole	86-74-8		<0.5	ug/L				U	07/09/09
Hexachlorobutadiene	87-68-3		<1	ug/L				U	07/09/09
2-Nitroaniline	88-74-4		<0.5	ug/L				U	07/09/09
2-Nitrophenol	88-75-5		<0.5	ug/L				U	07/09/09
Naphthalene	91-20-3		<0.5	ug/L				U	07/09/09
2-Methylnaphthalene	91-57-6		<0.5	ug/L				U	07/09/09
2-Chloronaphthalene	91-58-7		<0.9	ug/L				U	07/09/09
3,3-Dichlorobenzidine	91-94-1		<0.6	ug/L				U	07/09/09
2-Methylphenol	95-48-7		<0.9	ug/L				U	07/09/09
1,2-Dichlorobenzene	95-50-1		<1	ug/L				U	07/09/09
2,4,5-Trichlorophenol	95-95-4		<0.5	ug/L				U	07/09/09
Nitrobenzene	98-95-3		<0.5	ug/L				U	07/09/09

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Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
3-Nitroaniline	99-09-2		<0.5	ug/L					U	07/09/09
3 & 4 Methylphenol, Total	65794-96-9		<0.7	ug/L					U	07/09/09
Hexachloroethane	67-72-1		<0.9	ug/L					U	07/09/09
2,4,6-Trichlorophenol	88-06-2		<0.5	ug/L					U	07/09/09
Tributyl phosphate	126-73-8		<0.5	ug/L					U	07/09/09
Benzoic Acid	65-85-0		<5	ug/L					U	07/09/09
Benzothiazole	95-16-9		<0.6	ug/L					U	07/09/09
LCS			**QC Sample #11013**							
4-Nitrophenol	100-02-7		25	ug/L	84.6	32 - 118				07/09/09
1,4-Dichlorobenzene	106-46-7		19	ug/L	94.2	42 - 111				07/09/09
Phenol	108-95-2		28	ug/L	93.5	67 - 105				07/09/09
1,2,4-Trichlorobenzene	120-82-1		19	ug/L	96.4	46 - 107				07/09/09
2,4-Dinitrotoluene	121-14-2		19	ug/L	93.8	59 - 106				07/09/09
Pyrene	129-00-0		21	ug/L	106.9	66 - 118				07/09/09
4-Chloro-3-methylphenol	59-50-7		28	ug/L	93.8	61 - 106				07/09/09
n-Nitroso-di-n-propylamine	621-64-7		19	ug/L	93.8	71 - 114				07/09/09
Acenaphthene	83-32-9		19	ug/L	94.8	61 - 116				07/09/09
Pentachlorophenol	87-86-5		31	ug/L	102.9	62 - 114				07/09/09
2-Chlorophenol	95-57-8		29	ug/L	95.7	66 - 106				07/09/09
MS			**QC Sample #11014**							
			Original 90697002							
4-Nitrophenol	100-02-7	37	-0.12	ug/L	-0.4				T	07/09/09

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Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
1,4-Dichlorobenzene	106-46-7	<0.9	16	ug/L	85.1						07/09/09
Phenol	108-95-2	56	26	ug/L	91.1						07/09/09
1,2,4-Trichlorobenzene	120-82-1	<0.7	17	ug/L	87.6						07/09/09
2,4-Dinitrotoluene	121-14-2	<0.5	18	ug/L	91.9						07/09/09
Pyrene	129-00-0	<0.5	18	ug/L	93.5						07/09/09
4-Chloro-3-methylphenol	59-50-7	<0.5	13	ug/L	44.4					T	07/09/09
n-Nitroso-di-n-propylamine	621-64-7	<0.5	18	ug/L	92.9						07/09/09
Acenaphthene	83-32-9	<0.5	16	ug/L	84.5						07/09/09
Pentachlorophenol	87-86-5	<0.5	25	ug/L	88.5						07/09/09
2-Chlorophenol	95-57-8	<0.5	13	ug/L	46.5					T	07/09/09
MSD			**QC Sample #11015**								
			Original 90697002						**Paired**	**11014**	
4-Nitrophenol	100-02-7	37	30	ug/L	106.5		201.50	20	*		07/09/09
1,4-Dichlorobenzene	106-46-7	<0.9	17	ug/L	86.9		2.10	20			07/09/09
Phenol	108-95-2	56	7.4	ug/L	25.9		111.50	20	*	T	07/09/09
1,2,4-Trichlorobenzene	120-82-1	<0.7	17	ug/L	87.1		0.60	20			07/09/09
2,4-Dinitrotoluene	121-14-2	<0.5	18	ug/L	94.5		2.80	20			07/09/09
Pyrene	129-00-0	<0.5	21	ug/L	110.8		16.90	20			07/09/09
4-Chloro-3-methylphenol	59-50-7	<0.5	3.9	ug/L	13.6		106.20	20	*	JT	07/09/09
n-Nitroso-di-n-propylamine	621-64-7	<0.5	18	ug/L	96.2		3.50	20			07/09/09
Acenaphthene	83-32-9	<0.5	17	ug/L	88.1		4.20	20			07/09/09
Pentachlorophenol	87-86-5	<0.5	25	ug/L	87.5		1.10	20			07/09/09

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Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
2-Chlorophenol	95-57-8	<0.5	12	ug/L	43.6	6.40	20	T	07/09/09

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90697

QC Batch 54042
Associated Samples 90697002

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11017**							
Fluoride	16984-48-8		<0.030	ug/mL					U	07/02/09
Chloride	16887-00-6		<0.043	ug/mL					U	07/02/09
Sulfate	14808-79-8		<0.066	ug/mL					U	07/02/09
LCS			**QC Sample #11018**							
Fluoride	16984-48-8		1.00	ug/mL	100	90 - 110				07/02/09
Chloride	16887-00-6		2.01	ug/mL	103.3	90 - 110				07/02/09
Sulfate	14808-79-8		3.92	ug/mL	100.1	90 - 110				07/02/09
DUP			**QC Sample #11019**							
			Original 90698002							
Fluoride	16984-48-8		<0.30	ug/mL			0.00	20	UD	07/02/09
Chloride	16887-00-6		12.5	ug/mL			0.80	20	D	07/02/09
Sulfate	14808-79-8		30.2	ug/mL			2.30	20	D	07/02/09
MS			**QC Sample #11020**							
			Original 90698002							
Fluoride	16984-48-8		3.97	ug/mL	78.6	80 - 120			DN	07/02/09
Chloride	16887-00-6		9.69	ug/mL	98.4	80 - 120			D	07/02/09
Sulfate	14808-79-8		19.2	ug/mL	97	80 - 120			D	07/02/09
MSD			**QC Sample #11021**							
			Original 90698002					**Paired**	**11020**	

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Fluoride	16984-48-8		3.96	ug/mL	78.3	80 - 120	0.40	20	DN	07/02/09
Chloride	16887-00-6		9.76	ug/mL	99	80 - 120	0.60	20	D	07/02/09
Sulfate	14808-79-8		19.8	ug/mL	100.1	80 - 120	3.10	20	D	07/02/09

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90697

QC Batch 54064
Associated Samples 90697001, 90697002

Test ICP-6010 - All possible metals

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11059**							
Magnesium	7439-95-4		<16	ug/L					U	07/14/09
Sodium	7440-23-5		<23	ug/L					U	07/14/09
Cadmium	7440-43-9		<4.0	ug/L					U	07/14/09
Chromium	7440-47-3		<13	ug/L					U	07/14/09
Calcium	7440-70-2		<39	ug/L					U	07/14/09
Arsenic	7440-38-2		<65	ug/L					U	07/14/09
Silicon	7440-21-3		<61	ug/L					U	07/14/09
LCS			**QC Sample #11060**							
Magnesium	7439-95-4		1000	ug/L	100.1	80 - 120				07/14/09
Sodium	7440-23-5		1060	ug/L	105.5	80 - 120				07/14/09
Cadmium	7440-43-9		995	ug/L	99.5	80 - 120				07/14/09
Chromium	7440-47-3		1040	ug/L	103.7	80 - 120				07/14/09
Calcium	7440-70-2		1030	ug/L	102.8	80 - 120				07/14/09
Arsenic	7440-38-2		1080	ug/L	108	80 - 120				07/14/09
Silicon	7440-21-3		991	ug/L	99.1	80 - 120				07/14/09
MS			**QC Sample #11061**							
			Original 90694002							
Magnesium	7439-95-4		1000	ug/L	100.2	75 - 125				07/14/09

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Sodium	7440-23-5		1110	ug/L	111	75 - 125				1X	07/14/09
Cadmium	7440-43-9		987	ug/L	98.7	75 - 125					07/14/09
Chromium	7440-47-3		1060	ug/L	106.3	75 - 125					07/14/09
Calcium	7440-70-2		1030	ug/L	102.9	75 - 125					07/14/09
Arsenic	7440-38-2		1060	ug/L	105.6	75 - 125					07/14/09
Silicon	7440-21-3		1040	ug/L	104	75 - 125					07/14/09
MSD			**QC Sample #11062**								
			Original	**90694002**					**Paired**	**11061**	
Magnesium	7439-95-4		952	ug/L	95.2	75 - 125	5.10	20			07/14/09
Sodium	7440-23-5		707	ug/L	70.7	75 - 125	44.40	20	*	1X	07/14/09
Cadmium	7440-43-9		963	ug/L	96.3	75 - 125	2.50	20			07/14/09
Chromium	7440-47-3		1010	ug/L	101.1	75 - 125	5.00	20			07/14/09
Calcium	7440-70-2		939	ug/L	93.9	75 - 125	9.10	20			07/14/09
Arsenic	7440-38-2		1090	ug/L	109.4	75 - 125	3.50	20			07/14/09
Silicon	7440-21-3		1080	ug/L	107.8	75 - 125	3.60	20			07/14/09

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90697

QC Batch 54073
Associated Samples 90697002

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11073**							
Nitrate-N	NO3-N		<0.031	ug/mL					U	07/06/09
LCS			**QC Sample #11074**							
Nitrate-N	NO3-N		0.903	ug/mL	102.5	90 - 110				07/06/09
DUP			**QC Sample #11075**							
			Original 90702001							
Nitrate-N	NO3-N		47.3	ug/mL			0.00	20	D	07/06/09
MS			**QC Sample #11076**							
			Original 90702001							
Nitrate-N	NO3-N		4.16	ug/mL	93.5	80 - 120			D	07/06/09
MSD			**QC Sample #11077**							
			Original 90702001					**Paired**	**11076**	
Nitrate-N	NO3-N		4.32	ug/mL	97	80 - 120	3.70	20	D	07/06/09

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90697

QC Batch 54037
Associated Samples 90697001, 90697002

Test Technicium-99 by ICP MS

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11010**							
Technetium-99	14133-76-7		<0.0010	ug/L					U	07/02/09
LCS			**QC Sample #11011**							
Technetium-99	14133-76-7		0.040	ug/L	91.8	49 - 125				07/02/09

REVISION 1

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90697

QC Batch 54080
Associated Samples 90697002

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11092**							
Tritium	10028-17-8		58	pCi/L					U	07/09/09
LCS			**QC Sample #11093**							
Tritium	10028-17-8		2700	pCi/L	91.3	80 - 120				07/09/09
DUP			**QC Sample #11094**							
			Original 90694001							
Tritium	10028-17-8		1.3E5	pCi/L			7.40	-20 - 20		07/09/09
MS			**QC Sample #11095**							
			Original 90694001							
Tritium	10028-17-8		19000	pCi/L	81.1	75 - 125				07/09/09

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90697

QC Batch 54118
Associated Samples 90697001, 90697002

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #11167**								
Cesium-137	10045-97-3		1100	pCi/sample						U	07/15/09
Cobalt-60	10198-40-0		980	pCi/sample						U	07/15/09
Europium-152	14683-23-9		-2800	pCi/sample						U	07/15/09
Europium-154	15585-10-1		-7100	pCi/sample						U	07/15/09
Europium-155	14391-16-3		2400	pCi/sample						U	07/15/09
LCS			**QC Sample #11168**								
Cesium-137	10045-97-3		6300	pCi/sample	103.6	80 - 120					07/15/09
Cobalt-60	10198-40-0		9900	pCi/sample	100	80 - 120					07/15/09
DUP			**QC Sample #11169**								
			Original 90694001								
Cesium-137	10045-97-3		10	pCi/L			569.20	-20 - 20	*	U	07/15/09
Cobalt-60	10198-40-0		4.9	pCi/L			475.90	-20 - 20	*	U	07/15/09
Europium-152	14683-23-9		-22	pCi/L			-466.70	-20 - 20	*	U	07/15/09
Europium-154	15585-10-1		0.80	pCi/L			-215.80	-20 - 20	*	U	07/15/09
Europium-155	14391-16-3		22	pCi/L			160.70	-20 - 20	*	U	07/15/09

REVISION 1

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90697

QC Batch 54264
Associated Samples 90697001

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #11532**								
Gross Alpha	12587-46-1		-0.0020	pCi/L						U	07/23/09
Gross Beta	12587-47-2		-1.1	pCi/L						U	07/23/09
LCS			**QC Sample #11533**								
Gross Alpha	12587-46-1		39	pCi/L	95.6	80 - 120					07/23/09
Gross Beta	12587-47-2		160	pCi/L	113.1	80 - 120					07/23/09
DUP			**QC Sample #11534**								
			Original 90697001								
Gross Alpha	12587-46-1	23	-35	pCi/L			-966.70	-20 - 20	*	U	07/23/09
Gross Beta	12587-47-2	1.1E5	1.1E5	pCi/L			0.00	-20 - 20			07/23/09

Quality Control Report

REVISION 1

Attention Michael Neely
Department Radiochemistry

Group # WSCF90697

QC Batch 54447
Associated Samples 90697002

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #11788**								
Gross Alpha	12587-46-1		-44	pCi/L						U	07/23/09
Gross Beta	12587-47-2		1300	pCi/L							07/23/09
LCS			**QC Sample #11789**								
Gross Alpha	12587-46-1		5500	pCi/L	84.8	80 - 120					07/23/09
Gross Beta	12587-47-2		24000	pCi/L	107.8	80 - 120					07/23/09
DUP			**QC Sample #11790**								
			Original 90697002								
Gross Alpha	12587-46-1	-110	-140	pCi/L			-24.00	-20 - 20	*	U	07/23/09
Gross Beta	12587-47-2	1.2E5	1.4E5	pCi/L			15.40	-20 - 20			07/23/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90697

QC Batch 53940
Associated Samples 90697002

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11002**							
1,2-Dichloroethane-d4	17060-07-0				105.9	75 - 125				07/02/09
Toluene-d8	2037-26-5				96.6	75 - 125				07/02/09
4-Bromofluorobenzene	460-00-4				98.2	75 - 125				07/02/09
LCS			**QC Sample #11003**							
1,2-Dichloroethane-d4	17060-07-0				110.1	75 - 125				07/02/09
Toluene-d8	2037-26-5				96.8	75 - 125				07/02/09
4-Bromofluorobenzene	460-00-4				95.6	75 - 125				07/02/09
MS			**QC Sample #11004**							
			Original 90690007							
1,2-Dichloroethane-d4	17060-07-0				109.4	75 - 125				07/02/09
Toluene-d8	2037-26-5				96.8	75 - 125				07/02/09
4-Bromofluorobenzene	460-00-4				96	75 - 125				07/02/09
MSD			**QC Sample #11005**							
			Original 90690007					**Paired 11004**		
1,2-Dichloroethane-d4	17060-07-0				107.6	75 - 125	1.70	20		07/02/09
Toluene-d8	2037-26-5				97	75 - 125	0.20	20		07/02/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				96.6	75 - 125	0.60	20		07/02/09
SAMPLE			**Sample #90697002**							
4-Bromofluorobenzene	460-00-4				95.3	75 - 125				07/02/09
1,2-Dichloroethane-d4	17060-07-0			ug/L	105.7	75 - 125				07/02/09
Toluene-d8	2037-26-5			ug/L	97	75 - 125				07/02/09

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

QC Batch 54040
Associated Samples 90697002

Test SW-846 8270D Semivolatiles

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11012**							
2-Fluorophenol	367-12-4				81.8	50 - 110				07/09/09
Phenol-d5	4165-62-2				90	59 - 116				07/09/09
Nitrobenzene-d5	4165-60-0				96.9	60 - 118				07/09/09
2-Fluorobiphenyl	321-60-8				95.8	58 - 109				07/09/09
2,4,6-Tribromophenol	118-79-6				89.2	60 - 120				07/09/09
Terphenyl-d14	98904-43-9				114.8	60 - 120				07/09/09
LCS			**QC Sample #11013**							
2-Fluorophenol	367-12-4				106.1	50 - 110				07/09/09
Phenol-d5	4165-62-2				98.7	59 - 116				07/09/09
Nitrobenzene-d5	4165-60-0				97.3	60 - 118				07/09/09
2-Fluorobiphenyl	321-60-8				97.6	58 - 109				07/09/09
2,4,6-Tribromophenol	118-79-6				98.9	60 - 120				07/09/09
Terphenyl-d14	98904-43-9				110.5	60 - 120				07/09/09
MS			**QC Sample #11014**							
			Original 90697002							
2-Fluorophenol	367-12-4				10.6	50 - 110				07/09/09
Phenol-d5	4165-62-2				65	59 - 116				07/09/09
Nitrobenzene-d5	4165-60-0				92.8	60 - 118				07/09/09

REVISED90697 -

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
2-Fluorobiphenyl	321-60-8				86.9	58 - 109				07/09/09
2,4,6-Tribromophenol	118-79-6				63.9	60 - 120				07/09/09
Terphenyl-d14	98904-43-9				66.9	60 - 120				07/09/09
MSD			**QC Sample #11015**							
			Original	**90697002**				**Paired**	**11014**	
2-Fluorophenol	367-12-4				27.5	50 - 110	88.70	20	*	07/09/09
Phenol-d5	4165-62-2				44.7	59 - 116	37.00	20	*	07/09/09
Nitrobenzene-d5	4165-60-0				89.2	60 - 118	4.00	20		07/09/09
2-Fluorobiphenyl	321-60-8				96.5	58 - 109	10.50	20		07/09/09
2,4,6-Tribromophenol	118-79-6				26	60 - 120	84.30	20	*	07/09/09
Terphenyl-d14	98904-43-9				116.9	60 - 120	54.40	20	*	07/09/09
SAMPLE			**Sample #90697002**							
2-Fluorophenol	367-12-4				33.7	50 - 110				07/09/09
Nitrobenzene-d5	4165-60-0				93.8	60 - 118				07/09/09
2-Fluorobiphenyl	321-60-8				93.4	58 - 109				07/09/09
2,4,6-Tribromophenol	118-79-6				12.8	60 - 120				07/09/09
Terphenyl-d14	98904-43-9				127.1	60 - 120				07/09/09
Phenol-d5	4165-62-2				0	59 - 116				07/09/09

Tentatively Identified Peak Report

REVISION 1

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF90697

Peak Name	CAS #	RT	RQ	Result	Units
90697002 B212F2					
Unknown Alkane	UNKNOWN-01	6.76116		19	ug/L
Cyclohexane, 1-ethyl-1	4926-90-3	7.0123		23	ug/L
Octane, 3,3-dimethyl-	4110-44-5	7.1139		22	ug/L
Unknown	UNKNOWN-04	7.4025		20	ug/L
Unknown Phthalate	UNKNOWN-05	7.8995		67	ug/L
2-Propenoic acid, 2-et	103-11-7	8.7225		24	ug/L
Unknown Alkane	UNKNOWN-07	9.0645		19	ug/L
Unknown Amine	UNKNOWN-08	9.2997		23	ug/L
Unknown Amine	UNKNOWN-09	9.3852		33	ug/L
Unknown Amine	UNKNOWN-10	9.7593		57	ug/L
Unknown Ketone	UNKNOWN-11	12.142		35	ug/L
Unknown	UNKNOWN-12	12.313		16	ug/L
Unknown Phthalate	UNKNOWN-13	13.366		15	ug/L
Tetradecanoic acid	544-63-8	13.922		22	ug/L
Benzenesulfonanilide	1678-25-7	14.612		150	ug/L
Unknown Ketone	UNKNOWN-16	14.959		42	ug/L

Analytical Comment Report

Attention: Michael Neely

Group # WSCF90697

90697001	B212F1

ICP-AES: High/Check standard used to ensure linearity

due to sample results exceeding the calibration standard

for the following elements: magnesium and calcium.

90697002	B212F2

IC Anion - 48hr. sample hold time missed for nitrate-N. Sample analyzed before facility closure date (July 3); Nitrate-N result exceeded calibration range and required re-analysis. DTS

ICP-AES: High/Check standard used to ensure linearity

due to sample results exceeding the calibration standard

for the following elements: magnesium and calcium.

SVOA: The chemical matrix of the sample chosen for matrix spiking caused low recoveries for some of the phenolic surrogate and phenolic matrix spike compounds. This effect was not found in other samples, LCS, or blank in this batch confirming matrix effect of the sample spiked. cgc

Quality Control Comments

Department Inorganic

11061 B212D6(90694002MS)

Analyte Sodium - ICP-6010 - All possible metals

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

11062 B212D6(90694002MSD)

Analyte Sodium - ICP-6010 - All possible metals

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

Analytical Comment Report

Attention: Michael Neely

Group # WSCF90697

Quality Control Comments

11014	**B212F2(90697002MS)**

SVOA: several of the phenolic spikes low in the MS/MSD, but recoveries were good in the LCS. gar

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 5 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 1000 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code:	CHPRC
PO #:	131280
Work Order #:	90697
Profile #:	F09-039-007
Proj. Mgr.:	
Phone:	

The following samples were received from you on 7/2/2009 9:00:00 AM. 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		
90697001	B212F1	WATER	7/1/2009 16:15	7/2/2009 09:00
		6010-W; GAB-AO-W; GAB-BO-W; GEA-W; TC99-MS-W		
90697002	B212F2	WATER	7/1/2009 18:15	7/2/2009 09:00
		6010-W; 8260V-W; 8270SV-W; GAB-AO-W; GAB-BO-W; GEA-W; H3-COL-W; IC-W; TC99-MS-W		

Test Acronym Description

Test Acronym	Description
6010-W	ICP-AES (W)
8260V-W	Volatiles by 8260B (W)
8270SV-W	Semivolatiles by 8270D (W)
GAB-AO-W	Gross Alpha/Beta (A only)(W)
GAB-BO-W	Gross Alpha/Beta (B only)(W)
GEA-W	Gamma Energy Analysis (W)
H3-COL-W	Tritium by EICHROM Column (W)
IC-W	Anions by IC (W)
TC99-MS-W	TECHNICIUM 99 BY ICP-MS

CH2M HILL Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F09-039-002	PAGE 1 OF 1
COLLECTOR: Fulton, Walt	COMPANY CONTACT: DYKMAN, DL	TELEPHONE NO.: 373-2536	PROJECT COORDINATOR: DYKMAN, DL	PRICE CODE: 7G	DATA TURNAROUND
SAMPLING LOCATION: 200-BC-1 DVZ Soil Desiccation; WATER - 8 HR.	PROJECT DESIGNATION: 200-BC-1 DVZ Soil Desiccation Pilot Test - Characterization Phase (Water)		SAF NO.: F09-039	AIR QUALITY: ☐	15 Days / 30 Days
ICE CHEST NO.: —	FIELD LOGBOOK NO.: HNF-N-585-3	ACTUAL SAMPLE DEPTH: —	COA: 301403ES18	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HNO3 to pH <2	HNO3 to pH <2
A=Air, B=Bulk, G=Gas, O=Other, S=Soil, L=Liquid, O=Oil, S=Sol, 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 5400.5 (11/30/1993).	TYPE OF CONTAINER	5L	Plastic Bottle - Poly
		NO. OF CONTAINER(S)	1	1
		VOLUME	500mL	500mL
	SPECIAL HANDLING AND/OR STORAGE: 90697	SAMPLE ANALYSIS	SEE ITEM 10 IN SPECIAL INSTRUCTIONS	SEE ITEM 10 IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B212F1	WATER	7-1-09	1615	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Fulton, Walt	7-1-09 1615	MO413 SSURR	7-1-09 1615
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
MO413 SSURR	7-2-09 / 0800	[illegible]	7-2-09 / 0800
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	7-2-09 / 0900	[illegible]	7-2-09 / 0900
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 200 Area SSGRP Characterization and Monitoring Sampling and Analysis QKI applies to this SAF.
(1)ICP Metals - 6010A (TAL) (Cadmium, Calcium, Chromium, Magnesium, Sodium)
ICP Metals - 6010A (Add-on): (Arsenic, Silica) Tc-99 by ICPMS (Technetium-99)
(2)Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155) Gross Alpha (Gross alpha) Gross Beta (Gross beta)

ICED

CHEMHILL Phleas Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F09-032-008	PAGE 2 OF 2
COLLECTOR Fulton, Will	COMPANY CONTACT DYERMAN, DL	TELEPHONE NO. 373-2533	PROJECT COORDINATOR DYERMAN, DL	PRICE CODE 2G	DATA TURNAROUND 15 Days / 30 Days
SAMPLING LOCATION 200-BC-1 OU2 Soil Desiccation WATER - 12 HR	PROJECT DESIGNATION 200-BC-1 OU2 Soil Desiccation Pilot Test - Characterization Phase (Water)		SAF NO. F09-039	AIR QUALITY	
ICE CHEST NO. —	FIELD LOGBOOK NO. HNF-N-583-3	ACTUAL SAMPLE DEPTH —	COC 301465E518	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** See 300 Area SAQRP Characterization and Monitoring Sampling and Analysis Oil notes in the SAF.
(1) VOA - 8260B (TCL) (1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,2-Dichloroethene (Total), 1,2-Dichloropropane, 2-Butanone, 2-Hexanone, 2-Propanone, 4-Methyl, Acetone, Benzene, Bromodichloromethane, Bromoform, Bromomethane, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, Dibromochloromethane, Methylene chloride, Tetrachloroethene, Toluene, Trichloroethene, Vinyl chloride, Xylenes (total), trans-1,3-Dichloropropene)
(2) ICP Metals - 6010A (TAL) (Calcium, Cadium, Chromium, Magnesium, Sodium) ICP Metals - 6010A (As5-ok) (Arsenic, Silica) Tc-99 by ICPMS (Technetium-99)
(3) IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Sulfate)
(4) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155; Gross Alpha (Gross alpha) Gross Beta (Gross beta)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			100-026-008	PAGE 1 OF 2
COLLECTOR: Fulton, Webb	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2519	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 7G	DATA TURNAROUND: 15 Days / 30 Days
SAMPLING LOCATION: 200-BC-1 DVZ Soil Desiccation; WATER - 10 HR	PROJECT DESIGNATION: 200-BC-1 DVZ Soil Desiccation Pilot Test - Characterization Phase (Water)		SAF NO.: 518-039	AIR QUALITY: ☐	
ICE CHEST NO.: —	FIELD LOGBOOK NO.: HNF-N-595-3	ACTUAL SAMPLE DEPTH: —	COA: 10-MORES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DS=Drum Solids, DL=Drum Liquids, S=Soil, SD=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, O=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 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or NaOH to pH <2/Cool <4C	Cool <4C	HNO3 to pH <2	Cool <4C	HNO3 to pH <2	None
TYPE OF CONTAINER	VOC*	VOC	VOC	P	Square Wide - Poly	G
NO. OF CONTAINER(S)	3	3	3	3	3	3
VOLUME	40mL	100mL	40mL	500mL	500mL	250mL
SAMPLE ANALYSIS	See Attached Special Instructions	Gross Alpha Gross Beta	See Attached Special Instructions	See Attached Special Instructions	See Attached Special Instructions	Tritium

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B212F2 002	WATER	7-1-09	1815	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: Webb Fulton	DATE/TIME: 7-1-09 2015	RECEIVED BY/STORED IN: MO413 594K2	DATE/TIME: 7-1-09 2015	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: MO413 594K2	DATE/TIME: 7-2-09 / 0800	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 7-2-09 / 0800	
RELINQUISHED BY/REMOVED FROM: [illegible]	DATE/TIME: 7-2-09 / 0900	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 7-2-09 / 0900	
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	

ICED