Mission Support Alliance
P.O. Box 650
Richland, Washington 99352

M4W41-SLF-10-046

February 3, 2010

Mr. M. A. Neely, Manager
Analytical Services
CH2M HILL Plateau Remediation Contract
PO Box 1600 MSIN R3-60
Richland, WA 99352

Dear Mike,

FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20091313 – SAF NUMBER F10-011

References: (1) Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, 'FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER'

(2) HNF-SD-CD-QAPP-017, Rev. 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following attachments for sample delivery group WSCF20091313:

- Cover Sheet (Attachment 1)
- Narrative (Attachment 2)
- Analytical Results (Attachment 3)
- Sample Receipt Information w/Sample Record Sheet (Attachment 4)

Very truly yours,

for William L. Barnard
S. L. Fitzgerald
WSCF Analytical Lab

SLF/grf

Attachments 4

cc: w/Attachments

R. L. Barker	S3-30
H. K. Meznarich	S3-30
J. E. Trechter	S3-30
S. J. Trent	R3-50
File/LB	

M4W41-SLF-10-046

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20091313
Data Deliverable Date: 29-jan-2010
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
F10-011	B22RR3	W09GR01203	SOIL
	B22RR4	W09GR01205	SOIL

M4W41-SLF-10-046

ATTACHMENT 2

NARRATIVE

Consisting of 6 pages
Including cover page

Introduction

Three (3) S&GRP samples were received at the WSCF Laboratory on December 17th, 2009. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), 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.

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.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 15 through 17, for a complete listing of approved analytical methods.

Inorganic Comments

Ammonia – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See page 20 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01258 (B238T3 in work order 20091345)

All QC controls are within the established limits.

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 21 through 22 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01258 (B238T3 in work order 20091345)
    - Matrix Spike/ Matrix Spike Duplicate recoveries out of limits for all analytes except NO3 due to matrix interference in sample. Sample results were "N" flagged.

All other QC controls are within the established limits.

Cyanide – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See page 23 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01203 (B22RR3 in work order 20091313)
    - The percent recovery for LCS was within the manufacturer's acceptable range of 38-162%. Sample results were "X" flagged.

All other QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See page 24 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W10GR00004 (B23JF7 in work order 20100003)

All QC controls are within the established limits.

ICP-AES Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 25 through 26 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01155 (B22RL1 in work order 20091286)
    - Soil LCS has no certified Lithium or Bismuth results. The missing elements were spiked into the LCS, digested, analyzed and reported.
    - Iron contamination was detected in the Blank and was evaluated. No sample results in this batch were affected.
    - Iron – exceeded spiking levels by a factor of 4. Spike recoveries are not valid.
    - Estimated Boron results due to Iron interference. Sample results were "E" flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 27 through 30 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01170 (B22RM0 in work order 20091293)
    - Aluminum MSD recovery outside laboratory control limits. Sample data "N" flagged.

All other QC controls are within the established limits.

Organic Comments
Sample concentrations are corrected for moisture content and reported on a dry weight basis.

Alcohol/Glycols - The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See page 39 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01155 (B22RL1 in work order 20091286)

All QC controls are within the established limits.

PCB – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 41 through 42 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01213 (B236R4 in work order 20091319)

All QC controls are within the established limits.

Semi-VOA – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 43 through 48 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01203 (B22RR3 in work order 20091313)
    - Slightly high recovery of one target compound in the MS. The Upper Control Limit of 4-Chloro-3-Methylphenol is 116% and the MS % recovery for this spike compound was 117%. The MSD and LCS were within acceptable limits.

All other QC controls are within the established limits.

TPHD-WA – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See page 40 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01203 (B22RR3 in work order 20091313)
    - Due to the co-elution of analytes for TPHD-WA (DRO) and kerosene analysis, samples are spiked and evaluated for TPHD only.

All other QC controls are within the established limits.

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 49 through 51 for QC details. Analytical Note(s):

- Batch QC analyzed on sample# W09GR01159 (B22RL2 in work order 20091286)
- B22RR5 – Analysis of this Methanol Blank sample and its associated high concentration VOA sample was not required.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike (Matrix Spikes apply only to Technetium), Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 56 through 63 for QC details. Analytical Note(s):

- Rad Chem requested to be performed included: Americium-241 by AEA, Gamma Energy Analysis, Gross Alpha and Beta analysis, Plutonium Isotopic and Uranium Isotopic by AEA, Strontium-89/90, and Technetium-99 by LCS.
- Americium-241: Batch QC analyzed on sample# W09GR01033 (B22V40 in work order 20091211)
- Gamma energy analysis: Batch QC analyzed on sample# W09GR01203 (B22RR3 in work order 20091313)
- Gross Alpha / Gross Beta: Batch QC analyzed on sample# W09GR01203 (B22RR3 in work order 20091313)
    - Gross alpha duplicate Relative Percent Differences (RPD) exceeded established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity. No flags issued.
- Isotopic plutonium analysis: Batch QC analyzed on sample# W09GR01033 (B22V40 in work order 20091211)
- Isotopic uranium analysis: Batch QC analyzed on sample# W09GR01033 ((B22V40 in work order 20091211)

- Strontium-89/90: Batch QC analyzed on sample# W10GR00081 (B22NM1 in work order 20100040)
- Technetium-99: Batch QC analyzed on sample# W09GR01213 (B236R4 in work order 20091319)
    - Technetium-99 – Matrix Spike percent recovery and RPD are flagged but the scientist has reviewed and approved the batch.

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 the following signatures.

for William H. Baird
Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Richard Barker 2-3-10
Richard Barker
WSCF Client Services

M4W41-SLF-10-046

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 57 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: WW Baird 2/4/10

Client Services: Richard Barker 2-3-10 Richard Barker

All results are reported on an "as received" basis unless otherwise noted in the comment section.

Contract#: MOA-FH-CHPRC-2008
Report#: WSCF20091313
Report Date: 3-feb-2010
Report WGPP/ver. 5.2
Groundwater Remediation Program

w13qlog v4.2 03-feb-2010 13:24:41

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20091313

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
				SAMPLE	W09GR01203	Percent Solids
40392	1	40838	45406	BLANK		ICP-200.8 MS All possible meta
40392	2	40838	45406	LCS		ICP-200.8 MS All possible meta
40392	4	40838	45406	MS	W09GR01170	ICP-200.8 MS All possible meta
40392	5	40838	45406	MSD	W09GR01170	ICP-200.8 MS All possible meta
40392	5	40838	45406	SPK-RPD	W09GR01170	ICP-200.8 MS All possible meta
40392	11	40838	45406	SAMPLE	W09GR01203	ICP-200.8 MS All possible meta
40425	1	40842	45430	BLANK		ICP Metals Analysis, Grd H20 P
40425	2	40842	45430	LCS		ICP Metals Analysis, Grd H20 P
40425	4	40842	45430	MS	W09GR01155	ICP Metals Analysis, Grd H20 P
40425	5	40842	45430	MSD	W09GR01155	ICP Metals Analysis, Grd H20 P
40425	5	40842	45430	SPK-RPD	W09GR01155	ICP Metals Analysis, Grd H20 P
40425	8	40842	45430	SAMPLE	W09GR01203	ICP Metals Analysis, Grd H20 P
40425	11	40842	45430	MS	W09GR01248	ICP Metals Analysis, Grd H20 P
40425	12	40842	45430	MSD	W09GR01248	ICP Metals Analysis, Grd H20 P
40425	12	40842	45430	SPK-RPD	W09GR01248	ICP Metals Analysis, Grd H20 P
40430	1	40866	45432	BLANK		Cyanide by Midi/Spectrophotom
40430	2	40866	45432	LCS		Cyanide by Midi/Spectrophotom
40430	4	40866	45432	MS	W09GR01203	Cyanide by Midi/Spectrophotom
40430	5	40866	45432	MSD	W09GR01203	Cyanide by Midi/Spectrophotom
40430	3	40866	45432	SAMPLE	W09GR01203	Cyanide by Midi/Spectrophotom
40430	5	40866	45432	SPK-RPD	W09GR01203	Cyanide by Midi/Spectrophotom
40452	2	40892	45466	BLNK-PREP		Hexavalent chromium
40452	3	40892	45466	LCS		Hexavalent chromium
40452	15	40892	45466	SAMPLE	W09GR01203	Hexavalent chromium
40452	5	40892	45466	DUP	W10GR00004	Hexavalent chromium
40452	6	40892	45466	MS	W10GR00004	Hexavalent chromium
40452	7	40892	45466	MSD	W10GR00004	Hexavalent chromium
40452	9	40892	45466	SPK-POST	W10GR00004	Hexavalent chromium
40452	7	40892	45466	SPK-RPD	W10GR00004	Hexavalent chromium
40457	1	40897	45475	BLANK		Ammonia (N) by IC
40457	12	40897	45475	BLANK		Ammonia (N) by IC
40457	3	40897	45475	LCS		Ammonia (N) by IC
40457	8	40897	45475	SAMPLE	W09GR01203	Ammonia (N) by IC
40457	5	40897	45475	DUP	W09GR01258	Ammonia (N) by IC
40457	6	40897	45475	MS	W09GR01258	Ammonia (N) by IC
40457	7	40897	45475	MSD	W09GR01258	Ammonia (N) by IC
40457	7	40897	45475	SPK-RPD	W09GR01258	Ammonia (N) by IC
40456	2	40896	45477	BLANK		Anions by Ion Chromatography
40456	13	40896	45477	BLANK		Anions by Ion Chromatography
40456	3	40896	45477	LCS		Anions by Ion Chromatography
40456	8	40896	45477	SAMPLE	W09GR01203	Anions by Ion Chromatography
40456	5	40896	45477	DUP	W09GR01258	Anions by Ion Chromatography
40456	6	40896	45477	MS	W09GR01258	Anions by Ion Chromatography
40456	7	40896	45477	MSD	W09GR01258	Anions by Ion Chromatography
40456	7	40896	45477	SPK-RPD	W09GR01258	Anions by Ion Chromatography

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Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20091313

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			45413	BLANK		NWTPH-D TPH Diesel Range (Wa)
			45413	LCS		NWTPH-D TPH Diesel Range (Wa)
			45413	MS	W09GR01203	NWTPH-D TPH Diesel Range (Wa)
			45413	MSD	W09GR01203	NWTPH-D TPH Diesel Range (Wa)
			45413	SAMPLE	W09GR01203	NWTPH-D TPH Diesel Range (Wa)
			45413	SPK-RPD	W09GR01203	NWTPH-D TPH Diesel Range (Wa)
			45413	SURR	W09GR01203	NWTPH-D TPH Diesel Range (Wa)
			45434	BLANK		SW-846 8270C Semi-Vols
			45434	LCS		SW-846 8270C Semi-Vols
			45434	MS	W09GR01203	SW-846 8270C Semi-Vols
			45434	MSD	W09GR01203	SW-846 8270C Semi-Vols
			45434	SAMPLE	W09GR01203	SW-846 8270C Semi-Vols
			45434	SPK-RPD	W09GR01203	SW-846 8270C Semi-Vols
			45434	SURR	W09GR01203	SW-846 8270C Semi-Vols
			45443	BLANK		PCBs complete list
			45443	LCS		PCBs complete list
			45443	SAMPLE	W09GR01203	PCBs complete list
			45443	SURR	W09GR01203	PCBs complete list
			45443	MS	W09GR01213	PCBs complete list
			45443	MSD	W09GR01213	PCBs complete list
			45443	SPK-RPD	W09GR01213	PCBs complete list
			45543	BLANK		VOA Ground Water Protection
			45543	LCS		VOA Ground Water Protection
			45543	MS	W09GR01159	VOA Ground Water Protection
			45543	MSD	W09GR01159	VOA Ground Water Protection
			45543	SPK-RPD	W09GR01159	VOA Ground Water Protection
			45543	SAMPLE	W09GR01205	VOA Ground Water Protection
			45543	SURR	W09GR01205	VOA Ground Water Protection
40572	1	41017	45574	BLANK		Alcohols, Glycols - 8015
40572	2	41017	45574	LCS		Alcohols, Glycols - 8015
40572	4	41017	45574	DUP	W09GR01155	Alcohols, Glycols - 8015
40572	5	41017	45574	MS	W09GR01155	Alcohols, Glycols - 8015
40572	6	41017	45574	MSD	W09GR01155	Alcohols, Glycols - 8015
40572	6	41017	45574	SPK-RPD	W09GR01155	Alcohols, Glycols - 8015
40572	9	41017	45574	SAMPLE	W09GR01203	Alcohols, Glycols - 8015

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Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20091313

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
40382	1	40818	45425	BLANK		Gamma Energy Analysis-grd H2O
40382	2	40818	45425	LCS		Gamma Energy Analysis-grd H2O
40382	3	40818	45425	DUP	W09GR01203	Gamma Energy Analysis-grd H2O
40382	4	40818	45425	SAMPLE	W09GR01203	Gamma Energy Analysis-grd H2O
40431	1	40868	45436	BLANK		TC99 by Liquid Scin.
40431	4	40868	45436	LCS		TC99 by Liquid Scin.
40431	11	40868	45436	SAMPLE	W09GR01203	TC99 by Liquid Scin.
40431	3	40868	45436	DUP	W09GR01213	TC99 by Liquid Scin.
40431	2	40868	45436	MS	W09GR01213	TC99 by Liquid Scin.
40445	1	40885	45458	BLANK		Uranium Isotopics by AEA
40445	2	40885	45458	LCS		Uranium Isotopics by AEA
40445	3	40885	45458	DUP	W09GR01033	Uranium Isotopics by AEA
40445	16	40885	45458	SAMPLE	W09GR01203	Uranium Isotopics by AEA
40445	17	40885	45458	SURR	W09GR01203	Uranium Isotopics by AEA
40437	1	40876	45465	BLANK		Americium by AEA
40437	2	40876	45465	LCS		Americium by AEA
40437	3	40876	45465	DUP	W09GR01033	Americium by AEA
40437	17	40876	45465	SAMPLE	W09GR01203	Americium by AEA
40437	16	40876	45465	SURR	W09GR01203	Americium by AEA
40436	1	40875	45472	BLANK		Plutonium Isotopics by AEA
40436	2	40875	45472	LCS		Plutonium Isotopics by AEA
40436	3	40875	45472	DUP	W09GR01033	Plutonium Isotopics by AEA
40436	17	40875	45472	SAMPLE	W09GR01203	Plutonium Isotopics by AEA
40436	16	40875	45472	SURR	W09GR01203	Plutonium Isotopics by AEA
40496	1	40938	45550	BLANK		Strontium 89/90
40496	2	40938	45550	LCS		Strontium 89/90
40496	6	40938	45550	SAMPLE	W09GR01203	Strontium 89/90
40496	7	40938	45550	SURR	W09GR01203	Strontium 89/90
40496	3	40938	45550	DUP	W10GR00081	Strontium 89/90
40620	1	41068	45646	BLANK		Gross Alpha on Alpha Plateau
40620	2	41068	45646	LCS		Gross Alpha on Alpha Plateau
40620	3	41068	45646	DUP	W09GR01203	Gross Alpha on Alpha Plateau
40620	4	41068	45646	SAMPLE	W09GR01203	Gross Alpha on Alpha Plateau
40621	1	41069	45647	BLANK		Gross Alpha/Gross Beta (AB32)
40621	2	41069	45647	LCS		Gross Alpha/Gross Beta (AB32)
40621	3	41069	45647	DUP	W09GR01203	Gross Alpha/Gross Beta (AB32)
40621	4	41069	45647	SAMPLE	W09GR01203	Gross Alpha/Gross Beta (AB32)

WSCF
METHOD REFERENCES REPORT

Department: Inorganic

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 or industry 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 the 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	LA-265-403: Hexavalent Chromium analysis by Spectrophotometer	
	None	No reference to any industry method.
LA-503-401	LA-503-401: ANALYSIS OF CATIONS BY ION CHROMATOGRAPHY	
	None	No reference to any industry method.
LA-505-411	LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE	
	None	No reference to any industry method.
LA-505-412	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY	
	None	No reference to any industry method.
LA-519-412	LA-519-412: TOTAL RESIDUE/% SOLIDS DRIED AT 103 - 105 C	
	None	No reference to any industry method.
LA-533-410	LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY	
	None	No reference to any industry method.
LA-695-402	LA-695-402: DETERMINATION OF CYANIDE BY MIDIDISTILLATION AND SPECTROPHOTOMETRIC	
	None	No reference to any industry method.

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
METHOD REFERENCES REPORT

Department: Organic

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 or industry 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 the 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-523-427	LA-523-427: POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY	
	EPA SW-846 8082A	POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY
LA-523-455	LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846	
	None	No reference to any industry method.
LA-523-456	LA-523-456: SEMIVOLATILE SAMPLE ANALYSIS BY SW-846, METHOD 8270C	
	None	No reference to any industry method.
LA-523-493	NWTPH-Diesel and/or Gasoline	
	None	No reference to any industry method.
Organics	Organics - Alcohols, Glycols	
	EPA SW-846 8015B	Nonhalogenated Organics Using GC/FID

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
METHOD REFERENCES REPORT

Department: Radiochemistry

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 or industry 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 the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-508-415	LA-508-415: OPERATION OF THE PROTEAN 2-INCH ALPHA/BETA COUNTING SYSTEM FOR GROSS	
	None	No reference to any industry method.
LA-508-421	LA-508-421: OPERATION OF THE TRI-CARB MODEL 2500TR LIQUID SCINTILLATION ANALYZER	
	HEIS ALPHA_LSC	A/B Liquid Scintilillation
	HEIS BETA_LSC	A/B Liquid Scintilallation
LA-508-471	LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP	
	HEIS RAISO_AEA	Radium-226
LA-508-481	LA-508-481: GAMMA ENERGY ANALYSIS USING PROCOUNT SOFTWARE	
	None	No reference to any industry method.

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01203
Client ID: B22RR3 TRENT WSCF
Matrix: SOIL

Group #: WSCF20091313
Department: Inorganic
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography Prep											**01/06/10**
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	DNU	< 1.47	mg/kg			49.00	1.5		01/06/10
Chloride	16887-00-6	LA-533-410	DNU	< 2.11	mg/kg			49.00	2.1		01/06/10
Nitrogen in Nitrite	NO2-N	LA-533-410	DNU	< 0.882	mg/kg			49.00	0.88		01/06/10
Nitrogen in Nitrate	NO3-N	LA-533-410	DU	< 1.52	mg/kg			49.00	1.5		01/06/10
Phosphate (P) by IC	PO4-P	LA-533-410	DNU	< 3.43	mg/kg			49.00	3.4		01/06/10
Sulfate	14808-79-8	LA-533-410	BDN	7.13	mg/kg			49.00	3.2		01/06/10
Cyanide											
Cyanide	57-12-5	LA-695-402	UX	< 0.200	mg/kg			1.00	0.20		12/30/09
Hexavalent Chromium Prep											**01/05/10**
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 0.100	mg/kg			1.00	0.10		01/06/10
ICP Metals Analysis, Grd H20 P Prep											**12/29/09**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		1.58e+04	mg/kg			98.16	1.8		12/30/09
Lithium	7439-93-2	LA-505-411		9.53	mg/kg			98.16	0.39		12/30/09
Boron	7440-42-8	LA-505-411	E	9.54	mg/kg			98.16	1.9		12/30/09
Bismuth	7440-69-9	LA-505-411	U	< 2.26	mg/kg			98.16	2.3		12/30/09
ICP-200.8 MS All possible meta Prep											**12/21/09**
ICP-200.8 MS All possible meta											
Aluminum	7429-90-5	LA-505-412	N	4.65e+03	mg/kg			0.99	4.97		12/22/09
Manganese	7439-96-5	LA-505-412		219	mg/kg			0.99	0.0995		12/22/09
Nickel	7440-02-0	LA-505-412		9.70	mg/kg			0.99	0.199		12/22/09
Silver	7440-22-4	LA-505-412	U	< 0.0995	mg/kg			0.99	0.0995		12/22/09

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01203
Client ID: B22RR3 TRENT WSCF
Matrix: SOIL

Group #: WSCF20091313
Department: Inorganic
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Antimony	7440-36-0	LA-505-412	U	< 0.298	mg/kg			0.99	0.298		12/22/09
Barium	7440-39-3	LA-505-412		42.5	mg/kg			0.99	0.199		12/22/09
Beryllium	7440-41-7	LA-505-412		0.180	mg/kg			0.99	0.0497		12/22/09
Cadmium	7440-43-9	LA-505-412	U	< 0.0995	mg/kg			0.99	0.0995		12/22/09
Chromium	7440-47-3	LA-505-412		8.86	mg/kg			0.99	0.497		12/22/09
Cobalt	7440-48-4	LA-505-412		4.28	mg/kg			0.99	0.0497		12/22/09
Copper	7440-50-8	LA-505-412		8.84	mg/kg			0.99	0.0995		12/22/09
Vanadium	7440-62-2	LA-505-412		24.1	mg/kg			0.99	0.199		12/22/09
Zinc	7440-66-6	LA-505-412		22.4	mg/kg			0.99	0.796		12/22/09
Lead	7439-92-1	LA-505-412		2.59	mg/kg			0.99	0.0995		12/22/09
Mercury	7439-97-6	LA-505-412	U	< 0.0497	mg/kg			0.99	0.0497		12/22/09
Thorium	7440-29-1	LA-505-412		2.36	mg/kg			0.99	0.0995		12/22/09
Uranium	7440-61-1	LA-505-412		0.290	mg/kg			0.99	0.0497		12/22/09
Arsenic	7440-38-2	LA-505-412		2.76	mg/kg			0.99	0.398		12/22/09
Selenium	7782-49-2	LA-505-412		0.390	mg/kg			0.99	0.298		12/22/09
Thallium	7440-28-0	LA-505-412	U	< 0.0995	mg/kg			0.99	0.0995		12/22/09
Strontium	7440-24-6	LA-505-412		22.3	mg/kg			0.99	0.0995		12/22/09
Nitrogen in ammonium Prep											**01/06/10**
Nitrogen in ammonium											
Nitrogen in ammonium	NH4-N	LA-503-401	DU	< 8.43	mg/kg			49.00	8.43		01/06/10
Total solids											
Total solids	TS	LA-519-412		96.6	Percent			1.00	0.0		12/22/09

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
E - Analyte is an estimate, has potentially larger errors(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
U - Analyzed for but not detected above limiting criteria.(org)
X - Other flags/notes described in the comments/narrative(inorg)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: Ammonia (N) by IC

Sample Date: 12/28/09
Receive Date: 12/29/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01258											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Ammonia (N) by IC	7664-41-7	<8.428		RPD			n/a	20.000	U	01/06/10
MS	Ammonia (N) by IC	7664-41-7	0.55848	111.696	% Recov	80.000	120.000				01/06/10
MSD	Ammonia (N) by IC	7664-41-7	0.56532	113.064	% Recov	80.000	120.000				01/06/10
SPK-RPD	Ammonia (N) by IC	7664-41-7	113.064		RPD			1.217	20.000		01/06/10
BATCH QC											
BLANK	Ammonia (N) by IC	7664-41-7	<0.172	n/a	mg/L	0.000	0.002			U	01/06/10
BLANK	Ammonia (N) by IC	7664-41-7	<0.172	n/a	mg/L	0.000	0.002			U	01/06/10
LCS	Ammonia (N) by IC	7664-41-7	97.7111	97.711	% Recov	80.000	120.000				01/06/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: Anions by Ion Chromatography

Sample Date: 12/28/09
Receive Date:12/29/09

Lab ID: W09GR01258
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
DUP	Chloride	16887-00-6	73.1543		RPD			3.773	20.000		01/06/10
DUP	Fluoride	16984-48-8	<1.5		RPD			n/a	20.000	U	01/06/10
DUP	Nitrogen in Nitrite	NO2-N	<0.9		RPD			n/a	20.000	U	01/06/10
DUP	Nitrogen in Nitrate	NO3-N	5.2644		RPD			0.368	20.000		01/06/10
DUP	Phosphate (P) by IC	PO4-P	<3.5		RPD			n/a	20.000	U	01/06/10
DUP	Sulfate	14808-79-8	3.9696		RPD			1.830	20.000		01/06/10
MS	Chloride	16887-00-6	4.912007	493.669	% Recov	80.000	120.000		*		01/06/10
MS	Fluoride	16984-48-8	5.8268e-2	11.425	% Recov	80.000	120.000		*		01/06/10
MS	Nitrogen in Nitrite	NO2-N	8.4286e-2	16.959	% Recov	80.000	120.000		*		01/06/10
MS	Nitrogen in Nitrate	NO3-N	0.392951	87.322	% Recov	80.000	120.000				01/06/10
MS	Phosphate (P) by IC	PO4-P	7.186e-3	0.743	% Recov	80.000	120.000		*		01/06/10
MS	Sulfate	14808-79-8	2.363121	118.156	% Recov	80.000	120.000				01/06/10
MSD	Chloride	16887-00-6	4.951139	497.602	% Recov	80.000	120.000		*		01/06/10
MSD	Fluoride	16984-48-8	6.0454e-2	11.854	% Recov	80.000	120.000		*		01/06/10
MSD	Nitrogen in Nitrite	NO2-N	8.5552e-2	17.214	% Recov	80.000	120.000		*		01/06/10
MSD	Nitrogen in Nitrate	NO3-N	0.399317	88.737	% Recov	80.000	120.000				01/06/10
MSD	Phosphate (P) by IC	PO4-P	7.514e-3	0.777	% Recov	80.000	120.000		*		01/06/10
MSD	Sulfate	14808-79-8	2.407361	120.368	% Recov	80.000	120.000		*		01/06/10
SPK-RPD	Chloride	16887-00-6	497.602		RPD			0.794	20.000		01/06/10
SPK-RPD	Fluoride	16984-48-8	11.854		RPD			3.686	20.000		01/06/10
SPK-RPD	Nitrogen in Nitrite	NO2-N	17.214		RPD			1.492	20.000		01/06/10
SPK-RPD	Nitrogen in Nitrate	NO3-N	88.737		RPD			1.607	20.000		01/06/10
SPK-RPD	Phosphate (P) by IC	PO4-P	0.777		RPD			4.474	20.000		01/06/10
SPK-RPD	Sulfate	14808-79-8	120.368		RPD			1.855	20.000		01/06/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: Anions by Ion Chromatography

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	Chloride	16887-00-6	<4.3e-2	n/a	mg/L	0.000	0.030			U	01/06/10
BLANK	Chloride	16887-00-6	<4.3e-2	n/a	mg/L	0.000	0.030			U	01/06/10
BLANK	Fluoride	16984-48-8	<3e-2	n/a	mg/L	0.000	0.030			U	01/06/10
BLANK	Fluoride	16984-48-8	<3e-2	n/a	mg/L	0.000	0.030			U	01/06/10
BLANK	Nitrogen in Nitrite	NO2-N	<1.8e-2	n/a	mg/L	0.000	0.020			U	01/06/10
BLANK	Nitrogen in Nitrite	NO2-N	<1.8e-2	n/a	mg/L	0.000	0.020			U	01/06/10
BLANK	Nitrogen in Nitrate	NO3-N	<3.1e-2	n/a	mg/L	0.000	0.040			U	01/06/10
BLANK	Nitrogen in Nitrate	NO3-N	<3.1e-2	n/a	mg/L	0.000	0.040			U	01/06/10
BLANK	Phosphate (P) by IC	PO4-P	<7e-2	n/a	mg/L	0.000	0.200			U	01/06/10
BLANK	Phosphate (P) by IC	PO4-P	<7e-2	n/a	mg/L	0.000	0.200			U	01/06/10
BLANK	Sulfate	14808-79-8	<6.6e-2	n/a	mg/L	0.000	0.200			U	01/06/10
BLANK	Sulfate	14808-79-8	<6.6e-2	n/a	mg/L	0.000	0.200			U	01/06/10
LCS	Chloride	16887-00-6	188.9188	94.934	% Recov	80.000	120.000				01/06/10
LCS	Fluoride	16984-48-8	97.6141	95.700	% Recov	80.000	120.000				01/06/10
LCS	Nitrogen in Nitrite	NO2-N	98.8545	99.451	% Recov	80.000	120.000				01/06/10
LCS	Nitrogen in Nitrate	NO3-N	92.1385	102.490	% Recov	80.000	120.000				01/06/10
LCS	Phosphate (P) by IC	PO4-P	186.1721	96.263	% Recov	80.000	120.000				01/06/10
LCS	Sulfate	14808-79-8	403.282	100.820	% Recov	80.000	120.000				01/06/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: Cyanide by Midi/Spectrophotom

Sample Date: 12/17/09
Receive Date:12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cyanide by Midi/Spectrophotom	57-12-5	2.14	107.000	% Recov	75.000	125.000				12/30/09
MSD	Cyanide by Midi/Spectrophotom	57-12-5	1.94	97.000	% Recov	75.000	125.000				12/30/09
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	97.000		RPD			9.804	20.000		12/30/09
BATCH QC											
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	<0.2	n/a	ug/L	-4.000	4.000			U	12/30/09
LCS	Cyanide by Midi/Spectrophotom	57-12-5	70.2	128.336	% Recov	85.000	115.000				12/30/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: Hexavalent chromium

Sample Date: 01/04/10
Receive Date:01/04/10

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W10GR00004											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	< 0.10		RPD			n/a	15.000	U	01/06/10
MS	Hexavalent chromium	18540-29-9	437	76.000	% Recov	75.000	125.000				01/06/10
MS	Hexavalent chromium	18540-29-9	15.6	83.871	% Recov	75.000	125.000				01/06/10
MSD	Hexavalent chromium	18540-29-9	15.1	82.065	% Recov	75.000	125.000				01/06/10
SPK-POST	Hexavalent chromium	18540-29-9	0.0411	77.256	% Recov	75.000	125.000				01/06/10
SPK-RPD	Hexavalent chromium	18540-29-9	82.065		RPD			2.177	20.000		01/06/10
BATCH QC											
BLNK-PREP	Hexavalent chromium	18540-29-9	< 0.10	n/a	ug/g	0.000	2.000			U	01/06/10
LCS	Hexavalent chromium	18540-29-9	20.0	103.627	% Recov	80.000	120.000				01/06/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 12/09/09
Receive Date:12/09/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01155											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Boron	7440-42-8	194.6	96.337	% Recov	75.000	125.000				12/30/09
MS	Bismuth	7440-69-9	199.5	98.762	% Recov	75.000	125.000				12/30/09
MS	Iron	7439-89-6	1020	504.950	% Recov	75.000	125.000			•	12/30/09
MS	Lithium	7439-93-2	100.88	99.881	% Recov	70.000	130.000				12/30/09
MSD	Boron	7440-42-8	192.8	96.400	% Recov	75.000	125.000				12/30/09
MSD	Bismuth	7440-69-9	200.8	100.400	% Recov	75.000	125.000				12/30/09
MSD	Iron	7439-89-6	-790	-395.000	% Recov	75.000	125.000			•	12/30/09
MSD	Lithium	7439-93-2	100.68	100.680	% Recov	75.000	125.000				12/30/09
SPK-RPD	Boron	7440-42-8	96.400		RPD			0.065	20.000		12/30/09
SPK-RPD	Bismuth	7440-69-9	100.400		RPD			1.645	20.000		12/30/09
SPK-RPD	Iron	7439-89-6	-395.000		RPD			1637.017	20.000	•	12/30/09
SPK-RPD	Lithium	7439-93-2	100.680		RPD			0.797	20.000		12/30/09
Lab ID: W09GR01248											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Boron	7440-42-8	194.87	97.435	% Recov	75.000	125.000				12/30/09
MS	Bismuth	7440-69-9	199.3	99.650	% Recov	75.000	125.000				12/30/09
MS	Iron	7439-89-6	990	495.000	% Recov	75.000	125.000			•	12/30/09
MS	Lithium	7439-93-2	101.447	101.447	% Recov	70.000	130.000				12/30/09
MSD	Boron	7440-42-8	193.57	96.303	% Recov	75.000	125.000				12/30/09
MSD	Bismuth	7440-69-9	200.1	99.552	% Recov	75.000	125.000				12/30/09
MSD	Iron	7439-89-6	1200	597.015	% Recov	75.000	125.000			•	12/30/09
MSD	Lithium	7439-93-2	101.947	101.947	% Recov	75.000	125.000				12/30/09
SPK-RPD	Boron	7440-42-8	96.303		RPD			1.169	20.000		12/30/09
SPK-RPD	Bismuth	7440-69-9	99.552		RPD			0.098	20.000		12/30/09
SPK-RPD	Iron	7439-89-6	597.015		RPD			18.684	20.000		12/30/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 12/28/09
Receive Date: 12/28/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Lithium	7439-93-2	101.947		RPD			0.492	20.000		12/30/09
BATCH QC											
BLANK	Boron	7440-42-8	<1.9e-2	n/a	ug/mL					U	12/30/09
BLANK	Bismuth	7440-69-9	<2.3e-2	n/a	ug/mL					U	12/30/09
BLANK	Iron	7439-89-6	6.5e-2	0.065	ug/mL						12/30/09
BLANK	Lithium	7439-93-2	<4e-3	n/a	ug/mL					U	12/30/09
LCS	Boron	7440-42-8	135	117.391	% Recov	45.000	156.000				12/30/09
LCS	Bismuth	7440-69-9	102	102.513	% Recov	80.000	120.000				12/30/09
LCS	Iron	7439-89-6	15634	116.672	% Recov	47.000	152.000				12/30/09
LCS	Lithium	7439-93-2	114	114.573	% Recov	80.000	120.000				12/30/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: ICP-200.8 MS All possible meta

Sample Date: 12/11/09
Receive Date:12/11/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01170											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Silver	7440-22-4	196.5	98.250	% Recov	70.000	130.000				12/22/09
MS	Aluminum	7429-90-5	2123	106.150	% Recov	70.000	130.000				12/22/09
MS	Arsenic	7440-38-2	198.52	99.260	% Recov	70.000	130.000				12/22/09
MS	Barium	7440-39-3	201.75	100.875	% Recov	70.000	130.000				12/22/09
MS	Beryllium	7440-41-7	196.6	98.300	% Recov	70.000	130.000				12/22/09
MS	Cadmium	7440-43-9	197.2	98.600	% Recov	70.000	130.000				12/22/09
MS	Cobalt	7440-48-4	189.67	94.835	% Recov	70.000	130.000				12/22/09
MS	Chromium	7440-47-3	191.28	95.640	% Recov	70.000	130.000				12/22/09
MS	Copper	7440-50-8	184.27	92.135	% Recov	70.000	130.000				12/22/09
MS	Mercury	7439-97-6	1.88	94.000	% Recov	70.000	130.000				12/22/09
MS	Manganese	7439-96-5	202.7	101.350	% Recov	70.000	130.000				12/22/09
MS	Nickel	7440-02-0	187.09	93.545	% Recov	70.000	130.000				12/22/09
MS	Lead	7439-92-1	198.72	99.360	% Recov	70.000	130.000				12/22/09
MS	Antimony	7440-36-0	195.4	97.700	% Recov	70.000	130.000				12/22/09
MS	Selenium	7782-49-2	197.74	98.870	% Recov	70.000	130.000				12/22/09
MS	Strontium	7440-24-6	203.6	101.800	% Recov	70.000	130.000				12/22/09
MS	Thorium	7440-29-1	198.52	99.260	% Recov	70.000	130.000				12/22/09
MS	Thallium	7440-28-0	195.4	97.700	% Recov	70.000	130.000				12/22/09
MS	Uranium	7440-61-1	196.99	98.495	% Recov	70.000	130.000				12/22/09
MS	Vanadium	7440-62-2	183.04	91.520	% Recov	70.000	130.000				12/22/09
MS	Zinc	7440-66-6	182.19	91.095	% Recov	70.000	130.000				12/22/09
MSD	Silver	7440-22-4	192.1	96.050	% Recov	70.000	130.000				12/22/09
MSD	Aluminum	7429-90-5	3506	175.300	% Recov	70.000	130.000				12/22/09
MSD	Arsenic	7440-38-2	197.42	98.710	% Recov	70.000	130.000				12/22/09
MSD	Barium	7440-39-3	189.65	94.825	% Recov	70.000	130.000				12/22/09
MSD	Beryllium	7440-41-7	192.6	96.300	% Recov	70.000	130.000				12/22/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: ICP-200.8 MS All possible meta

Sample Date: 12/11/09
Receive Date:12/11/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Cadmium	7440-43-9	194.4	97.200	% Recov	70.000	130.000				12/22/09
MSD	Cobalt	7440-48-4	186.47	93.235	% Recov	70.000	130.000				12/22/09
MSD	Chromium	7440-47-3	190.08	95.040	% Recov	70.000	130.000				12/22/09
MSD	Copper	7440-50-8	180.27	90.135	% Recov	70.000	130.000				12/22/09
MSD	Mercury	7439-97-6	1.85	92.500	% Recov	70.000	130.000				12/22/09
MSD	Manganese	7439-96-5	210.4	105.200	% Recov	70.000	130.000				12/22/09
MSD	Nickel	7440-02-0	185.29	92.645	% Recov	70.000	130.000				12/22/09
MSD	Lead	7439-92-1	194.82	97.410	% Recov	70.000	130.000				12/22/09
MSD	Antimony	7440-36-0	188.2	94.100	% Recov	70.000	130.000				12/22/09
MSD	Selenium	7782-49-2	194.94	97.470	% Recov	70.000	130.000				12/22/09
MSD	Strontium	7440-24-6	208	104.000	% Recov	70.000	130.000				12/22/09
MSD	Thorium	7440-29-1	193.62	96.810	% Recov	70.000	130.000				12/22/09
MSD	Thallium	7440-28-0	191.2	95.600	% Recov	70.000	130.000				12/22/09
MSD	Uranium	7440-61-1	191.99	95.995	% Recov	70.000	130.000				12/22/09
MSD	Vanadium	7440-62-2	184.14	92.070	% Recov	70.000	130.000				12/22/09
MSD	Zinc	7440-66-6	181.59	90.795	% Recov	70.000	130.000				12/22/09
SPK-RPD	Silver	7440-22-4	96.050		RPD			2.265	20.000		12/22/09
SPK-RPD	Aluminum	7429-90-5	175.300		RPD			49.138	20.000 *		12/22/09
SPK-RPD	Arsenic	7440-38-2	98.710		RPD			0.556	20.000		12/22/09
SPK-RPD	Barium	7440-39-3	94.825		RPD			6.183	20.000		12/22/09
SPK-RPD	Beryllium	7440-41-7	96.300		RPD			2.055	20.000		12/22/09
SPK-RPD	Cadmium	7440-43-9	97.200		RPD			1.430	20.000		12/22/09
SPK-RPD	Cobalt	7440-48-4	93.235		RPD			1.701	20.000		12/22/09
SPK-RPD	Chromium	7440-47-3	95.040		RPD			0.629	20.000		12/22/09
SPK-RPD	Copper	7440-50-8	90.135		RPD			2.195	20.000		12/22/09
SPK-RPD	Mercury	7439-97-6	92.500		RPD			1.609	20.000		12/22/09
SPK-RPD	Manganese	7439-96-5	105.200		RPD			3.728	20.000		12/22/09
SPK-RPD	Nickel	7440-02-0	92.645		RPD			0.967	20.000		12/22/09
SPK-RPD	Lead	7439-92-1	97.410		RPD			1.982	20.000		12/22/09
SPK-RPD	Antimony	7440-36-0	94.100		RPD			3.754	20.000		12/22/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: ICP-200.8 MS All possible meta

Sample Date: 12/11/09
Receive Date:12/11/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Selenium	7782-49-2	97.470		RPD			1.426	20.000		12/22/09
SPK-RPD	Strontium	7440-24-6	104.000		RPD			2.138	20.000		12/22/09
SPK-RPD	Thorium	7440-29-1	96.810		RPD			2.499	20.000		12/22/09
SPK-RPD	Thallium	7440-28-0	95.600		RPD			2.173	20.000		12/22/09
SPK-RPD	Uranium	7440-61-1	95.995		RPD			2.571	20.000		12/22/09
SPK-RPD	Vanadium	7440-62-2	92.070		RPD			0.599	20.000		12/22/09
SPK-RPD	Zinc	7440-66-6	90.795		RPD			0.330	20.000		12/22/09
BATCH QC											
BLANK	Silver	7440-22-4	<0.1	n/a	ug/L					U	12/22/09
BLANK	Aluminum	7429-90-5	<5	n/a	ug/L					U	12/22/09
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	12/22/09
BLANK	Barium	7440-39-3	<0.2	n/a	ug/L					U	12/22/09
BLANK	Beryllium	7440-41-7	<5e-2	n/a	ug/L					U	12/22/09
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L					U	12/22/09
BLANK	Cobalt	7440-48-4	<5e-2	n/a	ug/L					U	12/22/09
BLANK	Chromium	7440-47-3	<0.5	n/a	ug/L					U	12/22/09
BLANK	Copper	7440-50-8	<0.1	n/a	ug/L					U	12/22/09
BLANK	Mercury	7439-97-6	<5e-2	n/a	ug/L					U	12/22/09
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L					U	12/22/09
BLANK	Nickel	7440-02-0	<0.2	n/a	ug/L					U	12/22/09
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L					U	12/22/09
BLANK	Antimony	7440-36-0	<0.3	n/a	ug/L					U	12/22/09
BLANK	Selenium	7782-49-2	<0.3	n/a	ug/L					U	12/22/09
BLANK	Strontium	7440-24-6	<0.1	n/a	ug/L					U	12/22/09
BLANK	Thorium	7440-29-1	<0.1	n/a	ug/L					U	12/22/09
BLANK	Thallium	7440-28-0	<0.1	n/a	ug/L					U	12/22/09
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	12/22/09
BLANK	Vanadium	7440-62-2	<0.2	n/a	ug/L					U	12/22/09
BLANK	Zinc	7440-66-6	<0.8	n/a	ug/L					U	12/22/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091313
Matrix: SOLID
Test: ICP-200.8 MS All possible meta

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Silver	7440-22-4	118.3	117.129	% Recov	81.000	128.000				12/22/09
LCS	Aluminum	7429-90-5	7165	86.743	% Recov	47.000	122.000				12/22/09
LCS	Arsenic	7440-38-2	145.3	110.076	% Recov	78.000	124.000				12/22/09
LCS	Barium	7440-39-3	336.8	105.580	% Recov	77.000	119.000				12/22/09
LCS	Beryllium	7440-41-7	99.74	111.441	% Recov	78.000	118.000				12/22/09
LCS	Cadmium	7440-43-9	78.1	117.444	% Recov	75.000	127.000				12/22/09
LCS	Cobalt	7440-48-4	78.43	107.291	% Recov	75.000	124.000				12/22/09
LCS	Chromium	7440-47-3	74.72	102.497	% Recov	67.000	119.000				12/22/09
LCS	Copper	7440-50-8	62.19	90.788	% Recov	68.000	122.000				12/22/09
LCS	Mercury	7439-97-6	9.17	110.749	% Recov	72.000	117.000				12/22/09
LCS	Manganese	7439-96-5	475	104.857	% Recov	72.000	123.000				12/22/09
LCS	Nickel	7440-02-0	58.14	104.568	% Recov	73.000	123.000				12/22/09
LCS	Lead	7439-92-1	143.7	110.538	% Recov	77.000	125.000				12/22/09
LCS	Antimony	7440-36-0	129.1	143.126	% Recov	65.000	203.000				12/22/09
LCS	Selenium	7782-49-2	184	114.286	% Recov	82.000	129.000				12/22/09
LCS	Strontium	7440-24-6	59.34	109.081	% Recov	77.000	118.000				12/22/09
LCS	Thorium	7440-29-1	424.4	106.100	% Recov	79.000	108.000				12/22/09
LCS	Thallium	7440-28-0	149.3	112.256	% Recov	55.000	130.000				12/22/09
LCS	Uranium	7440-61-1	439.6	109.900	% Recov	84.000	110.000				12/22/09
LCS	Vanadium	7440-62-2	83.72	100.867	% Recov	65.000	122.000				12/22/09
LCS	Zinc	7440-66-6	187.2	105.763	% Recov	75.000	130.000				12/22/09

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-011

Group #: WSCF20091313
Department: Organic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-MS: Aluminum MSD recovery 175%. "N" flag
				Cyanide LCS: Mfc. acceptable range is 38%-162%;X-flag
				ICP-AES: High iron preparation blank result; "C" flag if applicable.
				Soil LCS has no certified lithium and bismuth results. The missing elements were spiked into the LCS, digested, analyzed, and reported.
				Iron sample result exceeds spiking level by a factor of 4 so spike recoveries are not valid.
				Sample results less than 5 times the MDL; "B" flag.
				Estimated boron result due to iron interference; "E" flag.
				Organics: Sample concentrations corrected for moisture and reported dry weight basis. gar
				SVOA:
				4-Chloro-3-methylphenol exceeded the UCL of 116 %R with 118 %R but the MSD and LCS were good. gar/ms
				Tc-99 matrix spike and RPD are flagged but the scientist has reviewed and approved the batch. lmh

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-011

Group #: WSCF20091313
Department: Organic

Sample #	Client ID	Lab Area	Test	Comment
				IC Anion - MS/MSD recoveries out of limits for all analytes except NO3 due to matrix interference in sample. Data N-flagged. DTS
				Gross alpha RPD is n/a due to low activity.

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01203
Client ID: B22RR3 TRENT WSCF
Matrix: SOIL

Group #: WSCF20091313
Department: Organic
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Alcohols, Glycols - 8015 Prep											**12/21/09**
Alcohols, Glycols - 8015											
Diethyl ether	60-29-7	Organics	U	< 5.00e+03	ug/kg			1.00	5.0e+03		12/21/09
Ethylene glycol	107-21-1	Organics	U	< 5.00e+03	ug/kg			1.00	5.0e+03		12/21/09
NWTPH-D TPH Diesel Range (Wa) Prep											**12/22/09**
NWTPH-D TPH Diesel Range (Wa)											
Total Pet. Hydrocarbons Diesel	TPHDIESEL	LA-523-493	U	< 5.20	mg/kg			1.00	5.2		12/29/09
Kerosene	TPHKEROSENE	LA-523-493	U	< 5.20	mg/kg			1.00	5.2		12/29/09
PCBs complete list Prep											**12/22/09**
PCBs complete list											
Aroclor-1016	12674-11-2	LA-523-427	U	< 10.0	ug/kg			1.00	10		01/04/10
Aroclor-1221	11104-28-2	LA-523-427	U	< 20.0	ug/kg			1.00	20		01/04/10
Aroclor-1232	11141-16-5	LA-523-427	U	< 10.0	ug/kg			1.00	10		01/04/10
Aroclor-1242	53469-21-9	LA-523-427	U	< 10.0	ug/kg			1.00	10		01/04/10
Aroclor-1248	12672-29-6	LA-523-427	U	< 10.0	ug/kg			1.00	10		01/04/10
Aroclor-1254	11097-69-1	LA-523-427	U	< 10.0	ug/kg			1.00	10		01/04/10
Aroclor-1260	11096-82-5	LA-523-427	U	< 10.0	ug/kg			1.00	10		01/04/10
Aroclor-1262	37324-23-5	LA-523-427	U	< 10.0	ug/kg			1.00	10		01/04/10
Aroclor-1268	11100-14-4	LA-523-427	U	< 10.0	ug/kg			1.00	10		01/04/10
SW-846 8270C Semi-Vols Prep											**12/22/09**
SW-846 8270C Semi-Vols											
4-Nitrophenol	100-02-7	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		12/29/09
1,4-Dichlorobenzene	106-46-7	LA-523-456	U	< 260	ug/kg			1.00	2.6e+02		12/29/09
Phenol	108-95-2	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
1,2,4-Trichlorobenzene	120-82-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01203
Client ID: B22RR3 TRENT WSCF

Matrix: SOIL

Group #: WSCF20091313
Department: Organic
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
2,4-Dinitrotoluene	121-14-2	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Pyrene	129-00-0	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
4-Chloro-3-methylphenol	59-50-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
N-Nitrosodi-n-dipropylamine	621-64-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Acenaphthene	83-32-9	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Pentachlorophenol	87-86-5	LA-523-456	U	< 410	ug/kg			1.00	4.1e+02		12/29/09
2-Chlorophenol	95-57-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
4-Nitroaniline	100-01-6	LA-523-456	U	< 290	ug/kg			1.00	2.9e+02		12/29/09
4-Bromophenylphenyl ether	101-55-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
2,4-Dimethylphenol	105-67-9	LA-523-456	U	< 230	ug/kg			1.00	2.3e+02		12/29/09
4-Chloroaniline	106-47-8	LA-523-456	U	< 290	ug/kg			1.00	2.9e+02		12/29/09
Bis(2-chloro-1-methylethyl)eth	108-60-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Bis(2-chloroethyl) ether	111-44-4	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Bis(2-Chloroethoxy)methane	111-91-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Bis(2-ethylhexyl) phthalate	117-81-7	LA-523-456	U	< 410	ug/kg			1.00	4.1e+02		12/29/09
Di-n-octylphthalate	117-84-0	LA-523-456	U	< 410	ug/kg			1.00	4.1e+02		12/29/09
Hexachlorobenzene	118-74-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Anthracene	120-12-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
2,4-Dichlorophenol	120-83-2	LA-523-456	U	< 180	ug/kg			1.00	1.8e+02		12/29/09
Dimethyl phthalate	131-11-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Dibenzofuran	132-64-9	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Benzo(ghi)perylene	191-24-2	LA-523-456	U	< 330	ug/kg			1.00	3.3e+02		12/29/09
Indeno(1,2,3-cd)pyrene	193-39-5	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		12/29/09
Benzo(b)fluoranthene	205-99-2	LA-523-456	U	< 210	ug/kg			1.00	2.1e+02		12/29/09
Fluoranthene	206-44-0	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09

MDL = Minimum Detection Limit
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D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01203
Client ID: B22RR3 TRENT WSCF
Matrix: SOIL

Group #: WSCF20091313
Department: Organic
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Benzo(k)fluoranthene	207-08-9	LA-523-456	U	< 210	ug/kg			1.00	2.1e+02		12/29/09
Acenaphthylene	208-96-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Chrysene	218-01-9	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Benzo(a)pyrene	50-32-8	LA-523-456	U	< 230	ug/kg			1.00	2.3e+02		12/29/09
2,4-Dinitrophenol	51-28-5	LA-523-456	U	< 640	ug/kg			1.00	6.4e+02		12/29/09
Dibenz[a,h]anthracene	53-70-3	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		12/29/09
4,6-Dinitro-2-methylphenol	534-52-1	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		12/29/09
1,3-Dichlorobenzene	541-73-1	LA-523-456	U	< 280	ug/kg			1.00	2.8e+02		12/29/09
Benzo(a)anthracene	56-55-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
2,6-Dinitrotoluene	606-20-2	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
4-Chlorophenylphenyl ether	7005-72-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Hexachlorocyclopentadiene	77-47-4	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Isophorone	78-59-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Diethylphthalate	84-66-2	LA-523-456	U	< 410	ug/kg			1.00	4.1e+02		12/29/09
Di-n-butylphthalate	84-74-2	LA-523-456	U	< 410	ug/kg			1.00	4.1e+02		12/29/09
Phenanthrene	85-01-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Butylbenzylphthalate	85-68-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
N-Nitrosodiphenylamine	86-30-6	LA-523-456	U	< 170	ug/kg			1.00	1.7e+02		12/29/09
Fluorene	86-73-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Carbazole	86-74-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Hexachlorobutadiene	87-68-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
2-Nitroaniline	88-74-4	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
2-Nitrophenol	88-75-5	LA-523-456	U	< 180	ug/kg			1.00	1.8e+02		12/29/09
Naphthalene	91-20-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
2-Methylnaphthalene	91-57-6	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01203
Client ID: B22RR3 TRENT WSCF
Matrix: SOIL

Group #: WSCF20091313
Department: Organic
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
2-Chloronaphthalene	91-58-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
3,3'-Dichlorobenzidine	91-94-1	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		12/29/09
2-Methylphenol (cresol, o-)	95-48-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
1,2-Dichlorobenzene	95-50-1	LA-523-456	U	< 230	ug/kg			1.00	2.3e+02		12/29/09
2,4,5-Trichlorophenol	95-95-4	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Nitrobenzene	98-95-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
3-Nitroaniline	99-09-2	LA-523-456	U	< 190	ug/kg			1.00	1.9e+02		12/29/09
3 & 4 Methylphenol Total	65794-96-9	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Hexachloroethane	67-72-1	LA-523-456	U	< 260	ug/kg			1.00	2.6e+02		12/29/09
2,4,6-Trichlorophenol	88-06-2	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09
Tributyl phosphate	126-73-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		12/29/09

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01205
Client ID: B22RR4 TRENT WSCF
Matrix: SOIL

Group #: WSCF20091313
Department: Organic
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Trichloroethene	79-01-6	LA-523-455	U	< 0.200	ug/kg			1.00	0.20		12/18/09
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Styrene	100-42-5	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Dibromochloromethane	124-48-1	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
1,2-Dichloroethene(Total)	540-59-0	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
2-Hexanone	591-78-6	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Bromomethane	74-83-9	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Chloromethane	74-87-3	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Chloroethane	75-00-3	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

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N - Spike sample recovery is outside control limits.(inorg)
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- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01205
Client ID: B22RR4 TRENT WSCF
Matrix: SOIL

Group #: WSCF20091313
Department: Organic
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Bromoform	75-25-2	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
Bromodichloromethane	75-27-4	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
1,2-Dichloropropane	78-87-5	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/kg			1.00	1.0e+02		12/18/09
Trichloromonofluoromethane	75-69-4	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/kg			1.00	1.0		12/18/09

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

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D - Analyte was identified at a secondary dilution factor(inorg)
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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: Alcohols, Glycols - 8015

Sample Date: 12/09/09
Receive Date:12/09/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01155											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	2-Bromoethanol	540-51-2	13500		RPD			24.675	25.000		12/21/09
DUP	Diethyl ether	60-29-7	<5000		RPD			n/a	25.000	U	12/21/09
DUP	Ethylene glycol	107-21-1	<5000		RPD			n/a	25.000	U	12/21/09
MS	2-Bromoethanol	540-51-2	13700	77.841	% Recov	70.000	125.000				12/21/09
MS	Diethyl ether	60-29-7	8300	116.901	% Recov	75.000	125.000				12/21/09
MS	Ethylene glycol	107-21-1	9300	83.784	% Recov	75.000	125.000				12/21/09
MSD	2-Bromoethanol	540-51-2	15500	88.068	% Recov	70.000	125.000				12/21/09
MSD	Diethyl ether	60-29-7	8100	114.085	% Recov	75.000	125.000				12/21/09
MSD	Ethylene glycol	107-21-1	10100	90.991	% Recov	75.000	125.000				12/21/09
SPK-RPD	2-Bromoethanol	540-51-2	88.068		RPD			12.328	20.000		12/21/09
SPK-RPD	Diethyl ether	60-29-7	114.085		RPD			2.438	20.000		12/21/09
SPK-RPD	Ethylene glycol	107-21-1	90.991		RPD			8.247	20.000		12/21/09
BATCH QC											
BLANK	2-Bromoethanol	540-51-2	17300	98.295	% Recov	75.000	125.000				12/21/09
BLANK	Diethyl ether	60-29-7	<5000	n/a	ug/Kg	0.000	10.000			U	12/21/09
BLANK	Ethylene glycol	107-21-1	<5000	n/a	ug/Kg	0.000	5.000			U	12/21/09
LCS	2-Bromoethanol	540-51-2	18800	106.818	% Recov	70.000	130.000				12/21/09
LCS	Diethyl ether	60-29-7	7400	104.225	% Recov	70.000	130.000				12/21/09
LCS	Ethylene glycol	107-21-1	10200	91.892	% Recov	70.000	130.000				12/21/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: NWTPH-D TPH Diesel Range (Wa)

Sample Date: 12/17/09
Receive Date: 12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	ortho-Terphenyl Surr	84-15-1	21.917	106.000	% Recov	70.000	130.000				12/29/09
MS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	112.38	109.000	% Recov	75.000	125.000				12/29/09
MSD	ortho-Terphenyl Surr	84-15-1	21.889	106.000	% Recov	70.000	130.000				12/29/09
MSD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	120.90	117.000	% Recov	75.000	125.000				12/29/09
SPK-RPD	ortho-Terphenyl Surr	84-15-1	106.000		RPD			0.000	20.000		12/29/09
SPK-RPD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	117.000		RPD			7.080	20.000		12/29/09
SURR	ortho-Terphenyl Surr	84-15-1	22.374	108.000	% Recov	70.000	130.000				12/29/09
BATCH QC											
BLANK	Kerosene	TPHKEROSENE	< 5.0	n/a	ug/Kg					U	12/29/09
BLANK	ortho-Terphenyl Surr	84-15-1	21.003	105.000	% Recov	70.000	130.000				12/29/09
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 5.0	n/a	ug/Kg					U	12/29/09
LCS	ortho-Terphenyl Surr	84-15-1	20.034	100.000	% Recov	70.000	130.000				12/29/09
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	106.33	106.000	% Recov	80.000	120.000				12/29/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: PCBs complete list

Sample Date: 12/17/09
Receive Date:12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Decachlorobiphenyl	2051-24-3	215.87	106.000	% Recov	50.000	150.000				01/04/10
SURR	Tetrachloro-m-xylene	877-09-8	195.06	95.600	% Recov	50.000	150.000				01/04/10
Lab ID: W09GR01213											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Aroclor-1254	11097-69-1	260.96	120.000	% Recov	75.000	125.000				01/04/10
MS	Decachlorobiphenyl	2051-24-3	250.12	115.000	% Recov	50.000	150.000				01/04/10
MS	Tetrachloro-m-xylene	877-09-8	210.16	96.800	% Recov	50.000	150.000				01/04/10
MSD	Aroclor-1254	11097-69-1	245.72	115.000	% Recov	75.000	125.000				01/04/10
MSD	Decachlorobiphenyl	2051-24-3	217.20	101.000	% Recov	50.000	150.000				01/04/10
MSD	Tetrachloro-m-xylene	877-09-8	202.33	94.300	% Recov	50.000	150.000				01/04/10
SPK-RPD	Aroclor-1254	11097-69-1	115.000		RPD			4.255	25.000		01/04/10
SPK-RPD	Decachlorobiphenyl	2051-24-3	101.000		RPD			12.963	20.000		01/04/10
SPK-RPD	Tetrachloro-m-xylene	877-09-8	94.300		RPD			2.616	20.000		01/04/10
BATCH QC											
BLANK	Aroclor-1016	12674-11-2	< 10	n/a	UGKG					U	01/04/10
BLANK	Aroclor-1221	11104-28-2	< 20	n/a	ug/Kg					U	01/04/10
BLANK	Aroclor-1232	11141-16-5	< 10	n/a	ug/Kg					U	01/04/10
BLANK	Aroclor-1242	53469-21-9	< 10	n/a	ug/Kg					U	01/04/10
BLANK	Aroclor-1248	12672-29-6	< 10	n/a	ug/Kg					U	01/04/10
BLANK	Aroclor-1254	11097-69-1	< 10	n/a	ug/Kg					U	01/04/10
BLANK	Aroclor-1260	11096-82-5	< 10	n/a	ug/Kg					U	01/04/10
BLANK	Aroclor-1262	37324-23-5	< 10	n/a	ug/Kg					U	01/04/10
BLANK	Aroclor-1268	11100-14-4	< 10	n/a	ug/Kg					U	01/04/10
BLANK	Decachlorobiphenyl	2051-24-3	207.17	104.000	% Recov	50.000	150.000				01/04/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: PCBs complete list

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Tetrachloro-m-xylene	877-09-8	182.34	91.200	% Recov	50.000	150.000				01/04/10
LCS	Aroclor-1254	11097-69-1	218.67	109.000	% Recov	70.000	130.000				01/04/10
LCS	Decachlorobiphenyl	2051-24-3	206.21	103.000	% Recov	50.000	150.000				01/04/10
LCS	Tetrachloro-m-xylene	877-09-8	185.61	92.800	% Recov	50.000	150.000				01/04/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

Sample Date: 12/17/09
Receive Date:12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	1,2,4-Trichlorobenzene	120-82-1	7202.0	116.000	% Recov	75.000	121.000				12/29/09
MS	1,4-Dichlorobenzene	106-46-7	6939.5	112.000	% Recov	68.000	121.000				12/29/09
MS	2,4-Dinitrotoluene	121-14-2	6892.5	111.000	% Recov	66.000	113.000				12/29/09
MS	2-Fluorophenol(Surr)	367-12-4	4479.1	108.000	% Recov	72.000	120.000				12/29/09
MS	Acenaphthene	83-32-9	6989.5	112.000	% Recov	69.000	125.000				12/29/09
MS	4-Chloro-3-methylphenol	59-50-7	7264.0	117.000	% Recov	68.000	116.000				12/29/09
MS	2-Chlorophenol	95-57-8	7037.2	113.000	% Recov	65.000	124.000				12/29/09
MS	N-Nitrosodi-n-dipropylamine	621-64-7	7184.8	116.000	% Recov	69.000	127.000				12/29/09
MS	2-Fluorobiphenyl(Surr)	321-60-8	4384.6	106.000	% Recov	66.000	122.000				12/29/09
MS	Phenol	108-95-2	7158.4	115.000	% Recov	71.000	122.000				12/29/09
MS	Nitrobenzene-d5(Surr)	4165-60-0	4482.5	108.000	% Recov	63.000	125.000				12/29/09
MS	4-Nitrophenol	100-02-7	6380.4	103.000	% Recov	55.000	113.000				12/29/09
MS	Pentachlorophenol	87-86-5	6636.4	107.000	% Recov	50.000	113.000				12/29/09
MS	Phenol-d5(Surr)	4165-62-2	4446.2	107.000	% Recov	66.000	124.000				12/29/09
MS	Pyrene	129-00-0	7620.0	123.000	% Recov	67.000	125.000				12/29/09
MS	2,4,6-Tribromophenol(Surr)	118-79-6	4179.1	101.000	% Recov	49.000	120.000				12/29/09
MS	Terphenyl-d14(Surr)	98904-43-9	4709.1	114.000	% Recov	58.000	128.000				12/29/09
MSD	1,2,4-Trichlorobenzene	120-82-1	6514.4	105.000	% Recov	75.000	121.000				12/29/09
MSD	1,4-Dichlorobenzene	106-46-7	6402.6	103.000	% Recov	68.000	121.000				12/29/09
MSD	2,4-Dinitrotoluene	121-14-2	6393.8	103.000	% Recov	66.000	113.000				12/29/09
MSD	2-Fluorophenol(Surr)	367-12-4	4235.0	102.000	% Recov	72.000	120.000				12/29/09
MSD	Acenaphthene	83-32-9	6481.8	104.000	% Recov	69.000	125.000				12/29/09
MSD	4-Chloro-3-methylphenol	59-50-7	6581.0	106.000	% Recov	68.000	116.000				12/29/09
MSD	2-Chlorophenol	95-57-8	6419.1	103.000	% Recov	65.000	124.000				12/29/09
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	6569.9	106.000	% Recov	69.000	127.000				12/29/09
MSD	2-Fluorobiphenyl(Surr)	321-60-8	4081.8	98.700	% Recov	66.000	122.000				12/29/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

Sample Date: 12/17/09
Receive Date:12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Phenol	108-95-2	6477.2	104.000	% Recov	71.000	122.000				12/29/09
MSD	Nitrobenzene-d5(Surr)	4165-60-0	4128.0	99.800	% Recov	63.000	125.000				12/29/09
MSD	4-Nitrophenol	100-02-7	6098.7	98.300	% Recov	55.000	113.000				12/29/09
MSD	Pentachlorophenol	87-86-5	5996.7	96.600	% Recov	50.000	113.000				12/29/09
MSD	Phenol-d5(Surr)	4165-62-2	4044.6	97.800	% Recov	66.000	124.000				12/29/09
MSD	Pyrene	129-00-0	7010.0	113.000	% Recov	67.000	125.000				12/29/09
MSD	2,4,6-Tribromophenol(Surr)	118-79-6	3929.2	95.000	% Recov	49.000	120.000				12/29/09
MSD	Terphenyl-d14(Surr)	98904-43-9	4354.5	105.000	% Recov	58.000	128.000				12/29/09
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	105.000		RPD			9.955	20.000		12/29/09
SPK-RPD	1,4-Dichlorobenzene	106-46-7	103.000		RPD			8.372	20.000		12/29/09
SPK-RPD	2,4-Dinitrotoluene	121-14-2	103.000		RPD			7.477	20.000		12/29/09
SPK-RPD	2-Fluorophenol(Surr)	367-12-4	102.000		RPD			5.714	20.000		12/29/09
SPK-RPD	Acenaphthene	83-32-9	104.000		RPD			7.407	20.000		12/29/09
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	106.000		RPD			9.865	20.000		12/29/09
SPK-RPD	2-Chlorophenol	95-57-8	103.000		RPD			9.259	20.000		12/29/09
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	106.000		RPD			9.009	20.000		12/29/09
SPK-RPD	2-Fluorobiphenyl(Surr)	321-60-8	98.700		RPD			7.132	20.000		12/29/09
SPK-RPD	Phenol	108-95-2	104.000		RPD			10.046	20.000		12/29/09
SPK-RPD	Nitrobenzene-d5(Surr)	4165-60-0	99.800		RPD			7.892	20.000		12/29/09
SPK-RPD	4-Nitrophenol	100-02-7	98.300		RPD			4.670	20.000		12/29/09
SPK-RPD	Pentachlorophenol	87-86-5	96.600		RPD			10.216	20.000		12/29/09
SPK-RPD	Phenol-d5(Surr)	4165-62-2	97.800		RPD			8.984	20.000		12/29/09
SPK-RPD	Pyrene	129-00-0	113.000		RPD			8.475	20.000		12/29/09
SPK-RPD	2,4,6-Tribromophenol(Surr)	118-79-6	95.000		RPD			6.122	20.000		12/29/09
SPK-RPD	Terphenyl-d14(Surr)	98904-43-9	105.000		RPD			8.219	20.000		12/29/09
SURR	2-Fluorophenol(Surr)	367-12-4	3774.7	91.400	% Recov	72.000	120.000				12/29/09
SURR	2-Fluorobiphenyl(Surr)	321-60-8	3651.2	88.400	% Recov	66.000	122.000				12/29/09
SURR	Nitrobenzene-d5(Surr)	4165-60-0	3646.3	88.300	% Recov	63.000	125.000				12/29/09
SURR	Phenol-d5(Surr)	4165-62-2	3765.2	91.200	% Recov	66.000	124.000				12/29/09
SURR	2,4,6-Tribromophenol(Surr)	118-79-6	3296.4	79.800	% Recov	49.000	120.000				12/29/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

Sample Date: 12/17/09
Receive Date:12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SURR	Terphenyl-d14(Surr)	98904-43-9	4386.6	106.000	% Recov	58.000	128.000				12/29/09
BATCH QC											
BLANK	1,2-Dichlorobenzene	95-50-1	< 220	n/a	ug/Kg					U	12/29/09
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 150	n/a	ug/Kg					U	12/29/09
BLANK	1,3-Dichlorobenzene	541-73-1	< 270	n/a	ug/Kg					U	12/29/09
BLANK	1,4-Dichlorobenzene	106-46-7	< 250	n/a	ug/Kg					U	12/29/09
BLANK	2,4-Dichlorophenol	120-83-2	< 170	n/a	ug/Kg					U	12/29/09
BLANK	2,4-Dinitrotoluene	121-14-2	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2,4,5-Trichlorophenol	95-95-4	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2,4,6-Trichlorophenol	88-06-2	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2,4-Dimethylphenol	105-67-9	< 230	n/a	ug/Kg					U	12/29/09
BLANK	2,6-Dinitrotoluene	606-20-2	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2-Chloronaphthalene	91-58-7	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2-Fluorophenol(Surr)	367-12-4	3193.7	79.800	% Recov	72.000	120.000				12/29/09
BLANK	2-Methylnaphthalene	91-57-6	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2-Methylphenol (cresol, o-)	95-48-7	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2-Nitroaniline	88-74-4	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2-Nitrophenol	88-75-5	< 170	n/a	ug/Kg					U	12/29/09
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 150	n/a	ug/Kg					U	12/29/09
BLANK	3-Nitroaniline	99-09-2	< 190	n/a	ug/Kg					U	12/29/09
BLANK	4,6-Dinitro-2-methylphenol	534-52-1	< 330	n/a	ug/Kg					U	12/29/09
BLANK	4-Bromophenylphenyl ether	101-55-3	< 150	n/a	ug/Kg					U	12/29/09
BLANK	4-Chlorophenylphenyl ether	7005-72-3	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Acenaphthene	83-32-9	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Acenaphthylene	208-96-8	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Anthracene	120-12-7	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Bis(2-chloroethyl) ether	111-44-4	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Benzo(a)anthracene	56-55-3	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Benzo(b)fluoranthene	205-99-2	< 200	n/a	ug/Kg					U	12/29/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Benzo(ghi)perylene	191-24-2	< 320	n/a	ug/Kg					U	12/29/09
BLANK	Benzo(a)pyrene	50-32-8	< 230	n/a	ug/Kg					U	12/29/09
BLANK	Bis(2-Chloroethoxy)methane	111-91-1	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Bis(2-ethylhexyl) phthalate	117-81-7	< 400	n/a	ug/Kg					U	12/29/09
BLANK	Bis(2-chloro-1-methylethyl)eth	108-60-1	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Benzo(k)fluoranthene	207-08-9	< 200	n/a	ug/Kg					U	12/29/09
BLANK	Butylbenzylphthalate	85-68-7	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Carbazole	86-74-8	< 150	n/a	ug/Kg					U	12/29/09
BLANK	4-Chloroaniline	106-47-8	< 280	n/a	ug/Kg					U	12/29/09
BLANK	4-Chloro-3-methylphenol	59-50-7	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2-Chlorophenol	95-57-8	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Chrysene	218-01-9	< 150	n/a	ug/Kg					U	12/29/09
BLANK	3,3'-Dichlorobenzidine	91-94-1	< 330	n/a	ug/Kg					U	12/29/09
BLANK	Dibenz[a,h]anthracene	53-70-3	< 330	n/a	ug/Kg					U	12/29/09
BLANK	Dibenzofuran	132-64-9	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Di-n-butylphthalate	84-74-2	< 400	n/a	ug/Kg					U	12/29/09
BLANK	Diethylphthalate	84-66-2	< 400	n/a	ug/Kg					U	12/29/09
BLANK	Dimethyl phthalate	131-11-3	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2,4-Dinitrophenol	51-28-5	< 620	n/a	ug/Kg					U	12/29/09
BLANK	Di-n-octylphthalate	117-84-0	< 400	n/a	ug/Kg					U	12/29/09
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2-Fluorobiphenyl(Surr)	321-60-8	3122.4	78.100	% Recov	66.000	122.000				12/29/09
BLANK	Fluorene	86-73-7	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Fluoranthene	206-44-0	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Hexachlorobenzene	118-74-1	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Hexachlorobutadiene	87-68-3	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Hexachlorocyclopentadiene	77-47-4	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Hexachloroethane	67-72-1	< 250	n/a	ug/Kg					U	12/29/09
BLANK	Indeno(1,2,3-cd)pyrene	193-39-5	< 330	n/a	ug/Kg					U	12/29/09
BLANK	Isophorone	78-59-1	< 150	n/a	ug/Kg					U	12/29/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Phenol	108-95-2	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Naphthalene	91-20-3	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Nitrobenzene-d5(Surr)	4165-60-0	3119.9	78.000	% Recov	63.000	125.000				12/29/09
BLANK	Nitrobenzene	98-95-3	< 150	n/a	ug/Kg					U	12/29/09
BLANK	4-Nitrophenol	100-02-7	< 330	n/a	ug/Kg					U	12/29/09
BLANK	4-Nitroaniline	100-01-6	< 280	n/a	ug/Kg					U	12/29/09
BLANK	N-Nitrosodiphenylamine	86-30-6	< 170	n/a	ug/Kg					U	12/29/09
BLANK	Pentachlorophenol	87-86-5	< 400	n/a	ug/Kg					U	12/29/09
BLANK	Phenanthrene	85-01-8	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Phenol-d5(Surr)	4165-62-2	3113.0	77.800	% Recov	66.000	124.000				12/29/09
BLANK	Pyrene	129-00-0	< 150	n/a	ug/Kg					U	12/29/09
BLANK	Tributyl phosphate	126-73-8	< 150	n/a	ug/Kg					U	12/29/09
BLANK	2,4,6-Tribromophenol(Surr)	118-79-6	2722.2	68.100	% Recov	49.000	120.000				12/29/09
BLANK	Terphenyl-d14(Surr)	98904-43-9	3826.4	95.700	% Recov	58.000	128.000				12/29/09
LCS	1,2,4-Trichlorobenzene	120-82-1	6318.6	105.000	% Recov	76.000	118.000				12/29/09
LCS	1,4-Dichlorobenzene	106-46-7	6318.4	105.000	% Recov	68.000	121.000				12/29/09
LCS	2,4-Dinitrotoluene	121-14-2	5958.1	99.300	% Recov	68.000	112.000				12/29/09
LCS	2-Fluorophenol(Surr)	367-12-4	4092.7	102.000	% Recov	50.000	110.000				12/29/09
LCS	Acenaphthene	83-32-9	6041.2	101.000	% Recov	75.000	121.000				12/29/09
LCS	4-Chloro-3-methylphenol	59-50-7	6356.6	106.000	% Recov	68.000	117.000				12/29/09
LCS	2-Chlorophenol	95-57-8	6265.5	104.000	% Recov	84.000	114.000				12/29/09
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	6339.1	106.000	% Recov	76.000	119.000				12/29/09
LCS	2-Fluorobiphenyl(Surr)	321-60-8	3872.8	96.800	% Recov	58.000	109.000				12/29/09
LCS	Phenol	108-95-2	6451.8	108.000	% Recov	80.000	113.000				12/29/09
LCS	Nitrobenzene-d5(Surr)	4165-60-0	3948.6	98.700	% Recov	60.000	118.000				12/29/09
LCS	4-Nitrophenol	100-02-7	5897.6	98.300	% Recov	42.000	123.000				12/29/09
LCS	Pentachlorophenol	87-86-5	5347.0	89.100	% Recov	55.000	120.000				12/29/09
LCS	Phenol-d5(Surr)	4165-62-2	3984.4	99.600	% Recov	59.000	116.000				12/29/09
LCS	Pyrene	129-00-0	6591.0	110.000	% Recov	67.000	122.000				12/29/09
LCS	2,4,6-Tribromophenol(Surr)	118-79-6	3881.8	97.000	% Recov	60.000	120.000				12/29/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Terphenyl-d14(Surr)	98904-43-9	4118.1	103.000	% Recov	60.000	120.000				12/29/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: VOA Ground Water Protection

Sample Date: 12/09/09
Receive Date:12/09/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01159											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	1,1-Dichloroethene	75-35-4	22.370	85.000	% Recov	63.000	117.000				12/18/09
MS	Benzene	71-43-2	28.370	108.000	% Recov	75.000	129.000				12/18/09
MS	4-Bromofluorobenzene(Surr)	460-00-4	55.720	106.000	% Recov	75.000	125.000				12/18/09
MS	Chlorobenzene	108-90-7	29.110	111.000	% Recov	79.000	119.000				12/18/09
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.760	110.000	% Recov	75.000	125.000				12/18/09
MS	Toluene-d8(Surr)	2037-26-5	52.800	100.000	% Recov	75.000	125.000				12/18/09
MS	Toluene	108-88-3	29.080	111.000	% Recov	76.000	120.000				12/18/09
MS	Trichloroethene	79-01-6	26.300	99.900	% Recov	73.000	123.000				12/18/09
MSD	1,1-Dichloroethene	75-35-4	24.730	78.900	% Recov	63.000	117.000				12/18/09
MSD	Benzene	71-43-2	34.280	109.000	% Recov	75.000	129.000				12/18/09
MSD	4-Bromofluorobenzene(Surr)	460-00-4	65.040	104.000	% Recov	75.000	125.000				12/18/09
MSD	Chlorobenzene	108-90-7	35.090	112.000	% Recov	79.000	119.000				12/18/09
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	67.360	108.000	% Recov	75.000	125.000				12/18/09
MSD	Toluene-d8(Surr)	2037-26-5	62.850	100.000	% Recov	75.000	125.000				12/18/09
MSD	Toluene	108-88-3	34.430	110.000	% Recov	76.000	120.000				12/18/09
MSD	Trichloroethene	79-01-6	31.360	100.000	% Recov	73.000	123.000				12/18/09
SPK-RPD	1,1-Dichloroethene	75-35-4	78.900		RPD			7.444	20.000		12/18/09
SPK-RPD	Benzene	71-43-2	109.000		RPD			0.922	20.000		12/18/09
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	104.000		RPD			1.905	20.000		12/18/09
SPK-RPD	Chlorobenzene	108-90-7	112.000		RPD			0.897	20.000		12/18/09
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	108.000		RPD			1.835	20.000		12/18/09
SPK-RPD	Toluene-d8(Surr)	2037-26-5	100.000		RPD			0.000	20.000		12/18/09
SPK-RPD	Toluene	108-88-3	110.000		RPD			0.905	20.000		12/18/09
SPK-RPD	Trichloroethene	79-01-6	100.000		RPD			0.100	20.000		12/18/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: VOA Ground Water Protection

Sample Date: 12/17/09
Receive Date:12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01205											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	52.070	103.000	% Recov	75.000	125.000				12/18/09
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	54.870	108.000	% Recov	75.000	125.000				12/18/09
SURR	Toluene-d8(Surr)	2037-26-5	51.110	101.000	% Recov	80.000	126.000				12/18/09
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/Kg					U	12/18/09
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	51.660	103.000	% Recov	75.000	125.000				12/18/09
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/Kg					U	12/18/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091313
Matrix: SOLID
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.290	103.000	% Recov	75.000	125.000				12/18/09
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Toluene-d8(Surr)	2037-26-5	49.310	98.600	% Recov	80.000	126.000				12/18/09
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/Kg					U	12/18/09
BLANK	Trichloromonofluoromethane	75-69-4	< 1.0	n/a	ug/Kg	0.000	5.000			U	12/18/09
BLANK	Trichloroethene	79-01-6	< 0.20	n/a	ug/Kg					U	12/18/09
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/Kg					U	12/18/09
LCS	1,1-Dichloroethene	75-35-4	21.520	86.100	% Recov	75.000	125.000				12/18/09
LCS	Benzene	71-43-2	24.430	97.700	% Recov	75.000	125.000				12/18/09
LCS	4-Bromofluorobenzene(Surr)	460-00-4	51.060	102.000	% Recov	75.000	125.000				12/18/09
LCS	Chlorobenzene	108-90-7	25.420	102.000	% Recov	75.000	125.000				12/18/09
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.680	105.000	% Recov	75.000	125.000				12/18/09
LCS	Toluene-d8(Surr)	2037-26-5	49.700	99.400	% Recov	80.000	126.000				12/18/09
LCS	Toluene	108-88-3	24.990	100.000	% Recov	75.000	125.000				12/18/09
LCS	Trichloroethene	79-01-6	23.680	94.700	% Recov	75.000	125.000				12/18/09

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-011

Group #: WSCF20091313
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-MS: Aluminum MSD recovery 175%. "N" flag Cyanide LCS: Mfc. acceptable range is 38%-162%;X-flag ICP-AES: High iron preparation blank result; "C" flag if applicable. Soil LCS has no certified lithium and bismuth results. The missing elements were spiked into the LCS, digested, analyzed, and reported. Iron sample result exceeds spiking level by a factor of 4 so spike recoveries are not valid. Sample results less than 5 times the MDL; "B" flag. Estimated boron result due to iron interference; "E" flag. Organics: Sample concentrations corrected for moisture and reported dry weight basis. gar SVOA: 4-Chloro-3-methylphenol exceeded the UCL of 116 %R with 118 %R but the MSD and LCS were good. gar/ms Tc-99 matrix spike and RPD are flagged but the scientist has reviewed and approved the batch. lmh

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-011

Group #: WSCF20091313
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
				IC Anion - MS/MSD recoveries out of limits for all analytes except NO3 due to matrix interference in sample. Data N-flagged. DTS
				Gross alpha RPD is n/a due to low activity.

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01203
Client ID: B22RR3 TRENT WSCF
Matrix: SOIL

Group #: WSCF20091313
Department: Radiochemistry
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471		0.0270	pCi/g	+-0.0170	pCi/g	1.00	0.019		01/05/10
Am-243 tracer by AEA	AM243	LA-508-471		4.10	pCi/g			1.00	0.017		01/05/10
Gamma Energy Analysis-grd H2O											
Antimony-125	14234-35-6	LA-508-481	U	9.32e-03	pCi/g	+-0.0454	pCi/g	1.00	0.082		12/29/09
Cobalt-60	10198-40-0	LA-508-481	U	3.76e-03	pCi/g	+-0.0197	pCi/g	1.00	0.035		12/29/09
Cesium-137	10045-97-3	LA-508-481	U	-5.05e-03	pCi/g	+-0.0187	pCi/g	1.00	0.032		12/29/09
Europium-152	14683-23-9	LA-508-481	U	-0.0112	pCi/g	+-0.0714	pCi/g	1.00	0.097		12/29/09
Europium-154	15585-10-1	LA-508-481	U	-0.0326	pCi/g	+-0.0614	pCi/g	1.00	0.10		12/29/09
Europium-155	14391-16-3	LA-508-481	U	-4.34e-03	pCi/g	+-0.0434	pCi/g	1.00	0.14		12/29/09
Gross Alpha on Alpha Plateau											
Gross alpha on alpha plateau	12587-46-1	LA-508-415		1.50	pCi/g	+-0.420	pCi/g	1.00	0.36		02/01/10
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415		1.40	pCi/g	+-0.420	pCi/g	1.00	0.45		01/29/10
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0300	pCi/g	+-0.0309	pCi/g	1.00	0.048		01/06/10
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0320	pCi/g	+-0.0192	pCi/g	1.00	0.018		01/06/10
Pu-242	13982-10-0	LA-508-471		6.10	pCi/g			1.00	0.018		01/06/10
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	-0.860	pCi/g	+-0.860	pCi/g	1.00	0.34		01/13/10
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		93.3	Percent			1.00	0.0		01/13/10
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	-0.0200	pCi/g	+-0.158	pCi/g	1.00	0.30		12/29/09
Uranium Isotopics by AEA											
Uranium-233/234	U-233/234	LA-508-471		0.140	pCi/g	+-0.0490	pCi/g	1.00	0.013		01/05/10

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-011
Sample # W09GR01203
Client ID: B22RR3 TRENT WSCF
Matrix: SOIL

Group #: WSCF20091313
Department: Radiochemistry
Sampled: 12/17/09
Received: 12/17/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Uranium-235	15117-96-1	LA-508-471	U	4.00e-03	pCi/g	+-5.76e-03	pCi/g	1.00	5.4e-03		01/05/10
Uranium-238	U-238	LA-508-471		0.150	pCi/g	+-0.0510	pCi/g	1.00	4.9e-03		01/05/10
U-232 tracer by AEA	U232	LA-508-471		3.90	pCi/g			1.00	0.026		01/05/10

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

- Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091313
Matrix: SOLID
Test: Americium by AEA

Sample Date: 11/20/09
Receive Date:11/20/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01033											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Americium-241	14596-10-2	U1.4e-2		RPD			n/a	20.000		01/05/10
DUP	Am-243 tracer by AEA	AM243	4.117	90.680	% Recov	30.000	105.000				01/05/10
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	4.093	91.370	% Recov	30.000	105.000				01/05/10
BATCH QC											
BLANK	Americium-241	14596-10-2	2.9e-2	0.029	pCi/g	-10.000	1000.000				01/05/10
BLANK	Am-243 tracer by AEA	AM243	4.216	83.870	% Recov	30.000	105.000				01/05/10
LCS	Americium-241	14596-10-2	11.76	99.241	% Recov	80.000	120.000				01/05/10
LCS	Am-243 tracer by AEA	AM243	11.7	96.820	% Recov	30.000	105.000				01/05/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091313
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

Sample Date: 12/17/09
Receive Date:12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Cobalt-60	10198-40-0	U1.419e-2		RPD			n/a	20.000		12/29/09
DUP	Cesium-137	10045-97-3	U6.431e-3		RPD			n/a	20.000		12/29/09
DUP	Europium-152	14683-23-9	U-3.564e-2		RPD			n/a	20.000		12/29/09
DUP	Europium-154	15585-10-1	U1.709e-2		RPD			n/a	20.000		12/29/09
DUP	Europium-155	14391-16-3	U1.277e-2		RPD			n/a	20.000		12/29/09
DUP	Antimony-125	14234-35-6	U-3.199e-3		RPD			n/a	20.000		12/29/09
BATCH QC											
BLANK	Cobalt-60	10198-40-0	U-2.118e-3	n/a	pCi/g	-10.000	1000.000				12/23/09
BLANK	Cesium-137	10045-97-3	U2.419e-4	n/a	pCi/g	-10.000	1000.000				12/23/09
BLANK	Europium-152	14683-23-9	U1.654e-2	n/a	pCi/g	-10.000	1000.000				12/23/09
BLANK	Europium-154	15585-10-1	U-1.136e-3	n/a	pCi/g	-10.000	1000.000				12/23/09
BLANK	Europium-155	14391-16-3	U6.719e-3	n/a	pCi/g	-10.000	1000.000				12/23/09
BLANK	Antimony-125	14234-35-6	U-1.219e-3	n/a	pCi/g	-10.000	1000.000				12/23/09
LCS	Cobalt-60	10198-40-0	10410	104.728	% Recov	80.000	120.000				12/29/09
LCS	Cesium-137	10045-97-3	6303	104.354	% Recov	80.000	120.000				12/29/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091313
Matrix: SOLID
Test: Gross Alpha on Alpha Plateau

Sample Date: 12/17/09
Receive Date: 12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross alpha on alpha plateau	12587-46-1	9.8e-01		RPD			41.935	20.000 *		02/01/10
BATCH QC											
BLANK	Gross alpha on alpha plateeu	12587-46-1-ap	U4.6e-02	n/a	pCi/g	-2.000	2.000				02/01/10
LCS	Gross alpha on alpha plateau	12587-46-1-ap	5.45	83.975	% Recov	80.000	120.000				02/01/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091313
Matrix: SOLID
Test: Gross Alpha/Gross Beta (AB32)

Sample Date: 12/17/09
Receive Date:12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross beta	12587-47-2	1.3		RPD			7.407	20.000		01/29/10
BATCH QC											
BLANK	Gross beta	12587-47-2	U-5.5E-02	n/a	pCi/g	-10.000	10.000				01/29/10
LCS	Gross beta	12587-47-2	22.9	102.415	% Recov	80.000	120.000				01/29/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091313
Matrix: SOLID
Test: Plutonium Isotopics by AEA

Sample Date: 11/20/09
Receive Date: 11/20/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01033											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Plutonium-238	13981-16-3	U2.9e-2		RPD			n/a	20.000		01/06/10
DUP	Pu-239/240 by AEA	PU-239/240	U9.2e-3		RPD			n/a	20.000		01/06/10
DUP	Pu-242	13982-10-0	6.088	88.080	% Recov	30.000	105.000				01/06/10
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	6.052	83.170	% Recov	30.000	105.000				01/06/10
BATCH QC											
BLANK	Plutonium-238	13981-16-3	U-3.6e-2	n/a	pCi/g	-10.000	1000.000				01/06/10
BLANK	Pu-239/240 by AEA	PU-239/240	U5.6e-3	n/a	pCi/g	-10.000	1000.000				01/06/10
BLANK	Pu-242	PU242	6.234	86.700	% Recov	30.000	105.000				01/06/10
LCS	Pu-239/240 by AEA	PU-239/240	12.98	101.051	% Recov	80.000	120.000				01/06/10
LCS	Pu-242	PU242	17.3	83.310	% Recov	30.000	105.000				01/06/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091313
Matrix: SOLID
Test: Strontium 89/90

Sample Date: 12/17/09
Receive Date:12/17/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	93.3	93.300	% Recov	30.000	105.000				01/13/10
Lab ID: W10GR00081											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	77.3	77.300	% Recov	30.000	105.000				01/13/10
DUP	Strontium-89/90	SR-RAD	U-3.9e-01		RPD			n/a	20.000		01/13/10
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	87.8	87.800	% Recov	30.000	105.000				01/13/10
BLANK	Strontium-89/90	10098-97-2	U-1.3	n/a	pCi/g	-10.000	300.000				01/13/10
LCS	Sr-85 Tracer by Beta Counting	SR85	76	76.000	% Recov	30.000	105.000				01/13/10
LCS	Strontium-89/90	10098-97-2	29.6	106.475	% Recov	80.000	120.000				01/13/10

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091313
Matrix: SOLID
Test: TC99 by Liquid Scin.

Sample Date: 12/18/09
Receive Date:12/18/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01213											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	0.4		RPD			93.333	20.000	*	12/29/09
MS	Tc-99 by Liquid Scin.	14133-76-7	47.8	47.800	% Recov	75.000	125.000			*	12/29/09
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U-0.1	n/a	pCi/g	-10.000	1000.000				12/29/09
LCS	Tc-99 by Liquid Scin.	14133-76-7	9.0	104.651	% Recov	80.000	120.000				12/29/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091313
Matrix: SOLID
Test: Uranium Isotopics by AEA

Sample Date: 11/20/09
Receive Date:11/20/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01033											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	U-232 tracer by AEA	U232	3.963	83.710	% Recov	30.000	105.000				01/05/10
DUP	Uranium-233/234	U-233/234	0.13		RPD			8.000	20.000		01/05/10
DUP	Uranium-235	15117-96-1	1.9e-2		RPD			n/a	20.000		01/05/10
DUP	Uranium-238	U-238	0.14		RPD			0.000	20.000		01/05/10
Lab ID: W09GR01203											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	U-232 tracer by AEA	U232	3.94	90.590	% Recov	30.000	105.000				01/05/10
BATCH QC											
BLANK	U-232 tracer by AEA	U232	4.058	61.493	% Recov	30.000	105.000				01/05/10
BLANK	Uranium-233/234	13966-29-5	U3e-03	n/a	pCi/g	-10.000	1000.000				01/05/10
BLANK	Uranium-235	15117-96-1	U-3.17e-3	n/a	pCi/g	-10.000	1000.000				01/05/10
BLANK	Uranium-238	24678-82-8	U5.8e-3	n/a	pCi/g	-10.000	1000.000				01/05/10
LCS	U-232 tracer by AEA	U232	11.26	85.990	% Recov	30.000	105.000				01/05/10
LCS	Uranium-238	24678-82-8	18.43	115.274	% Recov	80.000	120.000				01/05/10

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-011

Group #: WSCF20091313
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-MS: Aluminum MSD recovery 175%. "N" flag Cyanide LCS: Mfc. acceptable range is 38%-162%;X-flag ICP-AES: High iron preparation blank result; "C" flag if applicable. Soil LCS has no certified lithium and bismuth results. The missing elements were spiked into the LCS, digested, analyzed, and reported. Iron sample result exceeds spiking level by a factor of 4 so spike recoveries are not valid. Sample results less than 5 times the MDL; "B" flag. Estimated boron result due to iron interference; "E" flag. Organics: Sample concentrations corrected for moisture and reported dry weight basis. gar SVOA: 4-Chloro-3-methylphenol exceeded the UCL of 116 %R with 118 %R but the MSD and LCS were good. gar/ms Tc-99 matrix spike and RPD are flagged but the scientist has reviewed and approved the batch. lmh

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-011

Group #: WSCF20091313
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
				IC Anion - MS/MSD recoveries out of limits for all analytes except NO3 due to matrix interference in sample. Data N-flagged. DTS
				Gross alpha RPD is n/a due to low activity.

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention: Steve Trent
Project Number F10-011 :F10-011

Group #: WSCF20091313
Department: Radiochemistry

Sample #	Client ID		Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	AC-228				0.55	pCi/g
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	AC-228 Count Error				38	%
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	BI-214				0.66	pCi/g
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error				23	%
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	K-40				15	pCi/g
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				13	%
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	PB-212				0.67	pCi/g
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	PB-212 Count Error				14	%
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	PB-214				0.79	pCi/g
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	PB-214 Count Error				49	%
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	RA-226				0.55	pCi/g
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	RA-226 Count Error				20	%
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	RA-228				0.48	pCi/g
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	RA-228 Count Error				29	%
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	TL-208				0.20	pCi/g
W09GR01203	B22RR3	TRENT	Gamma Energy Analysis-grd H2O	TL-208 Count Error				20	%

RQ=Result Qualifier

M4W41-SLF-10-046

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION w/SAMPLE RECORD SHEET

Consisting of 8 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

File
1/29/10

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program
Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 30214ES10
Group#: 20091313
Project#: F10-011
Proj Mgr: Steve Trent
Phone: 373-5869

The following samples were received from you on 12/17/09. 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	Tests Scheduled	Matrix	Sample Date
W09GR01203	B22RR3	TRENT	Solid, or handle as if solid	12/17/09
		@2008 @8015GPP @AB-32 @AEA-30 @AEA-31		
		@AEA-32 @ALPHA @GEA-GPP @GPP6010 @IC-30 @PCBG		
		@SR89_90 @SVOCGPP @TC99-30 @TPHD-WA CN-02 CR+6		
		NH4-IC PERSOLID		
W09GR01204	B22RR5	TRENT	Solid, or handle as if solid	12/17/09
		@VOA-GPP		
W09GR01205	B22RR4	TRENT	Solid, or handle as if solid	12/17/09
		@VOA-GPP		

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@8015GPP	Alcohols, Glycols - 8015
@AB-32	Gross Alpha/Gross Beta (AB32)
@AEA-30	Plutonium Isotopics by AEA
@AEA-31	Americium by AEA
@AEA-32	Uranium Isotopics by AEA
@ALPHA	Gross Alpha on Alpha Plateau
@GEA-GPP	Gamma Energy Analysis-grd H2O
@GPP6010	ICP Metals Analysis, Grd H20 P
@IC-30	Anions by Ion Chromatography
@PCBGPP	PCBs complete list
@SR89_90	Strontium 89/90
@SVOCGPP	SW-846 8270C Semi-Vols
@TC99-30	TC99 by Liquid Scin.
@TPHD-WA	NWTPH-D TPH Diesel Range (Wa)
@VOA-GPP	VOA Ground Water Protection
CN-02	Cyanide by Midi/Spectrophotom
CR+6	Hexavalent chromium
NH4-IC	Ammonia (N) by IC
PERSOLID	Percent Solids

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** 1/29/10 — F10-011-111 — PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
Rosanne Rust Turner Chamberlain	DYEKMAN, DL	373-2530	DYEKMAN, DL	8N	45 Days / 45 Days

SAMPLING LOCATION: C5860 (299-E29-54); I-083

PROJECT DESIGNATION: ARRA 200-LW-2 OU Characterization Vadose Zone - Soil ("K" Well)

SAF NO.: F10-011

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-576-3 p 96

ACTUAL SAMPLE DEPTH: 212.5'-220.0'

COA: 302143ES10

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, 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 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B22T53
20091313

PRESERVATION	Cool~4C	Cool~4C	None	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None	None
TYPE OF CONTAINER	aG/S	aG	G/P	G/P	G/P	G	aG	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	3	1	1	1	1	1	1	1	1
VOLUME	40mL	250mL	120mL	120mL	120mL	60mL	250mL	500mL	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS ✓	SEE ITEM (2) IN SPECIAL INSTRUCTIONS ✓	SEE ITEM (3) IN SPECIAL INSTRUCTIONS ✓	Chromium Hex - 7196; ✓	SEE ITEM (4) IN SPECIAL INSTRUCTIONS ✓	Total Cyanide - 9014; ✓	SEE ITEM (5) IN SPECIAL INSTRUCTIONS ✓	SEE ITEM (6) IN SPECIAL INSTRUCTIONS ✓	SEE ITEM (7) IN SPECIAL INSTRUCTIONS ✓

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B22RR3 WD9612 C1203	SOIL	12-17-09	1220	✓	✓	✓	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Larry Rosane Larry Rosane 12-17-09	1505	T A Frazler Teresa Frazler	12/17/09 1505

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

ICED

ORIGINAL

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

69 of 74

A-6003-618(01/06)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F10-011-111	PAGE 2 OF 2
COLLECTOR Rosario, Rust, Turner, Chamberlain	**COMPANY CONTACT** DYEKMAN, DL	**TELEPHONE NO.** 373-2530	**PROJECT COORDINATOR** DYEKMAN, DL	**PRICE CODE** 8N	**DATA TURNAROUND** 45 Days / 45 Days
SAMPLING LOCATION C5860 (299-E29-54); I-083	**PROJECT DESIGNATION** ARRA 200-LW-2 OU Characterization Vadose Zone - Soil ("K" Well)		**SAF NO.** F10-011.	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-576-3p 96	**ACTUAL SAMPLE DEPTH** 217.5-220.0	**COA** 302143ES10	**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

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.☐
(1)Alcohols, Glycols, & Ketones - 8015 {Ethylene glycol, Diethyl ether}
(2)Semi-VOA - 8270B (TCL); Semi-VOA - 8270B (Add-On) {Tributyl phosphate, 3+4 Methylphenol (cresol, m+p)} TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(3)ICP/MS - 200.8 (TAL) {Aluminum, Antimony, Barium, Chromium, Cobalt, Cadmium, Copper, Zinc, Manganese, Nickel, Vanadium, Silver} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Thallium, Beryllium, Thorium, Uranium, Selenium} ICP Metals - 6010B (TAL) {Iron} ICP Metals - 6010B (Add-On) {Boron, Bismuth, Lithium} 200.8_HG - ICPMS {Mercury}
(4)IC Anions - 300.0 {Phosphorus in phosphate, Chloride, Nitrogen in Nitrite, Fluoride, Nitrogen in Nitrate, Sulfate} Cations (IC) - 300.7 {Nitrogen in ammonium}
(5)PCBs - 8082 {Aroclor-1262, Aroclor-1260, Aroclor-1254, Aroclor-1242, Aroclor-1232, Aroclor-1268, Aroclor-1221, Aroclor-1016, Aroclor-1248}
(6)Gamma Spectroscopy {Europium-155, Cesium-137, Europium-154, Europium-152, Cobalt-60} Gamma Spec - Add-on {Antimony-125}
(7)Gross Alpha {Gross alpha} Gross Beta {Gross beta} Americium-241; Technetium-99 {Technetium-99} Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238} Isotopic Plutonium; Strontium-89,90 -- Total Sr;

ORIGINAL

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST — F10-011-113 — PAGE 1 OF 1

COLLECTOR Rosane, Rost, Turner, Chamberlain	**COMPANY CONTACT** DYEKMAN, DL	**TELEPHONE NO.** 373-2530	**PROJECT COORDINATOR** DYEKMAN, DL	**PRICE CODE** 8N / **DATA TURNAROUND** 45 Days / 45 Days
SAMPLING LOCATION C5860 (299-E29-54); I-083	**PROJECT DESIGNATION** ARRA 200-LW-2 OU Characterization Vadose Zone - Soil ("K" Well)		**SAF NO.** F10-011	**AIR QUALITY** ☐
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-576-3P 96	**ACTUAL SAMPLE DEPTH** 217.5-220.0	**COA** 302143ES10	**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, 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 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B22T53

PRESERVATION	Cool~4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	1
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B22RR5 / N 576/20/209	SOIL	12-17-09	1220	✓

ICED

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Larry Rosane Larry Rosane 12-17-09	1505	T A Frazier [signature]	12/17/09 1505
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 3 bottles for high level analysis, 5 bottles for low level analysis, and 1 methanol process control sample.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level and W, X, or Y for high level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1)VOA - 5035/8260 (TCL); VOA - 5035/8260 - (Add-On) {Trichloromonofluoromethane, 1-Butanol, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene}

ORIGINAL

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

1 0 7 4

A-6003-618(01/06)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F10-011-112 | PAGE 1 OF 2

COLLECTOR
Rosawe, Rust, Tenner, Chamberlain

SAMPLING LOCATION
C5860 (299-E29-54); I-083

ICE CHEST NO.

SHIPPED TO
Waste Sampling & Characterization

COMPANY CONTACT
DYEKMAN, DL

TELEPHONE NO.
373-2530

PROJECT DESIGNATION
ARRA 200-LW-2 OU Characterization Vadose Zone - Soil ("K" Well)

FIELD LOGBOOK NO.
HNF-N-576-3p 96

ACTUAL SAMPLE DEPTH
215.5-220.0'

OFFSITE PROPERTY NO.
N/A

PROJECT COORDINATOR
DYEKMAN, DL

SAF NO.
F10-011

COA
302143ES10

BILL OF LADING/AIR BILL NO.
N/A

PRICE CODE 8N

AIR QUALITY ☐

DATA TURNAROUND
45 Days / 45 Days

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

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 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B22T53

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	PRESERVATION	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS
				Cool <-7C and >-20C	MEOH/Cool~4 C			
				aGs*	aGs*			
				5	3			
				40mL	40mL			
				SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS			
B22RR4	SOIL	12-17-09	1220	✓	✓			

CHAIN OF POSSESSION

SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Leroy Rosawe Leroy Rosawe	12-17-09/ 1505	T A Frazier	12/17/09 1505

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

ORIGINAL

ICED

LABORATORY SECTION
RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION
DISPOSAL METHOD | DISPOSED BY | DATE/TIME

12-17-09

A-6003-618(01/06)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F10-011-112	PAGE 2 OF 2
COLLECTOR Rosane, Rust, Turner, Chamberlain	**COMPANY CONTACT** DYEKMAN, DL	**TELEPHONE NO.** 373-2530	**PROJECT COORDINATOR** DYEKMAN, DL	**PRICE CODE** 8N	**DATA TURNAROUND** 45 Days / 45 Days
SAMPLING LOCATION C5860 (299-E29-54); I-083	**PROJECT DESIGNATION** ARRA 200-LW-2 OU Characterization Vadose Zone - Soil ("K" Well)		**SAF NO.** F10-011	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-376-3p 96	**ACTUAL SAMPLE DEPTH** 217.5 - 220.0'	**COA** 302143ES10	**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

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 3 bottles for high level analysis, 5 bottles for low level analysis, and 1 methanol process control sample.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level and W, X, or Y for high level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1)VOA - 5035/8260 (LOW LEVEL); VOA - 5035/8260 (LOW LEVEL) - (Add-On) {Trichloromonofluoromethane, 1-Butanol, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene}
(2)VOA - 5035/8260 (HIGH LEVEL); VOA - 5035/8260 (HIGH LEVEL) - (Add-On) {Trichloromonofluoromethane, 1-Butanol, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene}

ORIGINAL

Attachment 1 - Sample Record Sheet

SAMPLE RECORD SHEET

Location: C S 8 60 I-883 K-well

Sampler Initials and Date: JL 12-17-09

Sample Number	Sample Suffix[1]	Tare Weight provided (grams)	Tare Weight prior to sample[2] (grams)	Initial Weight[3] (grams)	Total Weight[4] (grams)	Soil Weight[5] (grams)	Methanol in sample bottle (ml)
B22RR4	K	No Methanol		32.6	37.8	5.2	No Methanol
B22RR4	L			32.9	38.0	5.1	
B22RR4	M			32.5	37.6	5.1	
B22RR4	N			32.2	37.2	5.0	
B22RR4	P			32.8	37.9	5.1	
B22RR4	W	38.52	38.5	38.9	43.9	5.0	10
B22RR4	X	37.76	37.8	38.1	43.3	5.2	10
B22RR4	Y	38.64	38.7	39.0	44.1	5.1	10
B22RR5	*	37.75	37.8	38.2	38.2	Ø	10

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.

Sample suffix of W, X, and Y relate to methanol preservation for high-level samples.

Sample suffix of "*" relates to methanol blank. Cool these samples to 4°C ± 2°C.

[2]Tare weight prior to sample must be within +/- 0.2 grams of Vendors tare weight or bottle cannot be used. Weigh only the bottle, no labels, stickers or bags.

[3]Initial weight is to include all labels, stickers, bags, methanol (for vendor filled methanol samples with suffix W,X,Y and *) spin bars (for samples with suffix K,L,M,N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[4]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[5]Soil weight is the vial with sample minus Initial Weight.