RECEIVED JUNE 10, 2010 REVISION 1
0096937

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

42100-SLF-10-233

June 9, 2010

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

Dear Mike,

P&D & RESUBMITTAL OF SAMPLE DELIVERY GROUP WSCF20091176 – SAF NUMBER F10-025

Reference(s):
1) Letter, SL Fitzgerald (RJLG) to MA Neely (CH2MHill), Final Results for SDG WSCF20091176 (M4W41-SLF-10-008), dated January 12, 2010
2) Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, 'FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER'
3) HNF-SD-CP-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Program Plan

On February 11, 2010, the subject P&D was received by the WSCF Laboratory. This letter replaces Reference 1 submittal in its entirety together with the P&D data for sample delivery group WSCF20091176.

Please accept our apology for any inconvenience this may have created. If you have any questions, don't hesitate to call on Marisol Avila, telephone 373-1613, for assistance.

Very truly yours,

for William H Baird
S. L. Fitzgerald
WSCF Analytical Lab

SLF/grf

Attachments 4

cc: w/Attachments

M. Avila	S3-30
H. K. Meznarich	S3-30
J. E. Trechter	S3-30
S. J. Trent	R3-50
File/LB	

42100-SLF-10-233

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20091176
Data Deliverable Date: 28-dec-2009
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
F10-025	B22V35	W09GR01007	SOIL
	B22V37	W09GR01005	SOIL

42100-SLF-10-233

ATTACHMENT 2

CORRECTED NARRATIVE & P&D

Consisting of 9 pages
Including cover page

P&D Correction – Case Narrative Replaces the Prior Submittal in its Entirety

Introduction

Three (3) S&GRP samples were received at the WSCF Laboratory on November 13, 2009. Two of the samples, B22V35 and B22V37 were analyzed; the methanol blank sample B22V36 was not analyzed. 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. Additionally, a copy of the completed P&D # WSCF20091176 is included with this case narrative.

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

The following generic data qualifiers (i.e., B, D, and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wetchem analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 18 through 20, 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 23 for QC details. Analytical Note(s):

- Batch QC 45262 analyzed on sample# W09GR01033 (B22V40 from work group # 20091211).

- MS/MSD outside normal laboratory limits. Sample results were "N" Flagged.

All other 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 24 through 25 for QC details. Analytical Note(s):

- Batch QC 45264 analyzed on sample# W09GR01033 (B22V40 from work group # 20091211).
  - Phosphate – Matrix Spike Duplicate slightly outside of laboratory limits. 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 26 for QC details. Analytical Note(s):

- Batch QC 45370 analyzed on sample# W09GR00956 (B22VR4 from work group # 20091137).

All 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 27 for QC details. Analytical Note(s):

- Batch QC 45259 analyzed on sample# W09GR00974 (B22X25 from work group # 20091153).

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 page 28 for QC details. Analytical Note(s):

- Batch QC 45296 analyzed on sample# W09GR01072 (B22RJ9 from work group # 20091234).
  - 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 29 through 32 for QC details. Analytical Note(s):

- Batch QC 45260 analyzed on sample# W09GR00956 (B22VR4 from work group # 20091137).
    - Vanadium, Cobalt, Beryllium, Uranium and Thorium - contamination was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.
    - Aluminum and Manganese MSD recoveries below 70%. Sample results were "N" flagged. RPD on recoveries over 20%.

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 41 for QC details. Analytical Note(s):

- Batch QC 45366 analyzed on sample# W09GR00956 (B22VR4 from work group # 20091137).

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 45267 analyzed on sample# W09GR01005 (B22V37 from work group # 20091176).
    - 2-Fluorophenol LCS is a little high at 114% recovery. No system problems and all MS/MSD recoveries were good.

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 42 for QC details. Analytical Note(s):

- Batch QC 45256 analyzed on sample# W09GR00994 (B22V34 from work group # 20091170).

All 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):

- B22V36 – Analyses of this Methanol Blank sample and its associated high concentration VOA samples was not required.

- Batch QC 45358 analyzed on sample# W09GR00957 (B22VR2 from work group # 20091138).

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 LSC.

- Americium-241:

    - Batch QC 45309 analyzed on sample# W09GR00994 (B22V34 from work group # 20091170).

    All QC controls are within the established limits.

- Gamma Energy Analysis:

    - Batch QC 45349 analyzed on sample# W09GR00994 (B22V34 from work group # 20091170).

    All QC controls are within the established limits.

- Gross Alpha / Gross Beta:
    - Batch QC 45453 analyzed on sample# W09GR00994 (B22V34 from work group # 20091170).
    - 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 applied.

  All other QC controls are within the established limits.

- Isotopic Plutonium analysis:
    - Batch QC 45311 analyzed on sample# W09GR00994 (B22V34 from work group # 20091170).
    - The Pu-239 LCS recovery is high at 126.12 but within the statement of work range of 70-130%.

  All other QC controls are within the established limits.

- Isotopic Uranium analysis:
    - Batch QC 45297 analyzed on sample# W09GR00994 (B22V34 from work group # 20091170).
    - U-233/234 and U-235 Blanks are less than two times the MDC. B Flag not applied.

  All other QC controls are within the established limits.

- Strontium-89/90:
    - Batch QC 45359 analyzed on sample# W09GR00994 (B22V34 from work group # 20091170).
    - 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 applied.

  All other QC controls are within the established limits.

- Technetium-99:
    - Batch QC 45360 analyzed on sample# W09GR00956 (B22VR4 from work group # 20091137).

  All 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 D Baird
Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Marisol Avila
Marisol Avila
WSCF Client Services

2/11/2010

Problem and Discrepancy Report
WSCF
SDG WSCF20091176

---

1. **The data package has the following issues:**

a) Case Narrative, **Introduction**, first paragraph, page 5 of 69 – Please include an analytical comment that only two samples were analyzed for the analytes indicated on the COC.

Resolution: *Provide discussion.*

Lab Response: **Discussion provided indicating only two samples analyzed.**

b) Case narrative, When the Batch QC (Matrix Spike, Matrix Spike Duplicate, and Duplicate) was analyzed on a sample not part of the SDG. Please identify the HEIS# and SDG# in the case narrative.

Resolution: *Provide correction.*

Lab Response: **HEIS# and SDG# for all QC samples added to the case narrative.**

c) Case Narrative, Inorganic Comments, **Ammonia,** first bullet – TYPO – the WSCF sample number reference is not correct.

Resolution: *Provide correction.*

Lab Response: **QC sample number corrected to W09GR01033 (B22V40).**

d) Case Narrative, Inorganic Comments, **Anions,** first bullet – TYPO – the WSCF sample number reference is not correct.

Resolution: *Provide correction.*

Lab Response: **QC sample number corrected to W09GR01033 (B22V40).**

e) Case Narrative, Inorganic Comments, **ICP-AES Metals,** first bullet – TYPO – the WSCF sample number reference is not correct.

Resolution: *Provide correction.*

Lab Response: **QC sample number corrected to W09GR01072 (B22RJ9).**

f) Analytical results, **ICP-MS Metals,** Review of the data showed that the Be result was not C flagged.

Resolution: *Apply appropriate qualifiers.*

Lab Response: **ICP-MS beryllium results now C qualified.**

g) Case Narrative, Organic Comments, **Semi-VOA,** first bullet – TYPO – the WSCF sample number reference is not correct.

Resolution: *Provide correction.*

Lab Response: **QC sample number corrected to W09GR01005 (B22V37).**

h) Case Narrative, Radiochemistry Comments, page 8 of 69 – Please include an analytical comment about the U-233/234 and U-235 Blank results being > MDA. Identify if there were any impacts on sample data.

Resolution: *Provide discussion and apply appropriate qualifiers.*

Lab Response: **Bullet added to uranium isotopic discussion: "U-233/234 and U-235 Blanks are less than two times the MDC. B Flag not applied."**

i) Case Narrative, Inorganic Comments, **ICP-MS Metals,** first bullet – TYPO – the WSCF sample number reference is not correct.

Resolution: *Provide correction.*

Lab Response: **QC sample number corrected to W09GR00956 (B22VR4).**

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

42100-SLF-10-233

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 54 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: W W Baird 6/9/10

Client Services: Marisol Avila Marisol Avila 06/09/10

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

Contract#: MOA-FH-CHPRC-2008
Report#: WSCF20091176
Report Date: 20-may-2010
Report WGPP/ver. 5.2
Groundwater Remediation Program

REVISION 1

w13qlog v4.2 20-may-2010 08:04:58

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20091176

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
				SAMPLE	W09GR01005	Percent Solids
40240	2	40669	45259	BLNK-PREP		Hexavalent chromium
40240	3	40669	45259	LCS		Hexavalent chromium
40240	5	40669	45259	DUP	W09GR00974	Hexavalent chromium
40240	6	40669	45259	MS	W09GR00974	Hexavalent chromium
40240	7	40669	45259	MSD	W09GR00974	Hexavalent chromium
40240	9	40669	45259	SPK-POST	W09GR00974	Hexavalent chromium
40240	7	40669	45259	SPK-RPD	W09GR00974	Hexavalent chromium
40240	15	40669	45259	SAMPLE	W09GR01005	Hexavalent chromium
40242	1	40671	45260	BLANK		ICP-200.8 MS All possible meta
40242	2	40671	45260	LCS		ICP-200.8 MS All possible meta
40242	4	40671	45260	MS	W09GR00956	ICP-200.8 MS All possible meta
40242	5	40671	45260	MSD	W09GR00956	ICP-200.8 MS All possible meta
40242	5	40671	45260	SPK-RPD	W09GR00956	ICP-200.8 MS All possible meta
40242	12	40671	45260	SAMPLE	W09GR01005	ICP-200.8 MS All possible meta
40245	1	40674	45262	BLANK		Ammonia (N) by IC
40245	15	40674	45262	BLANK		Ammonia (N) by IC
40245	3	40674	45262	LCS		Ammonia (N) by IC
40245	12	40674	45262	SAMPLE	W09GR01005	Ammonia (N) by IC
40245	5	40674	45262	DUP	W09GR01033	Ammonia (N) by IC
40245	6	40674	45262	MS	W09GR01033	Ammonia (N) by IC
40245	7	40674	45262	MSD	W09GR01033	Ammonia (N) by IC
40245	7	40674	45262	SPK-RPD	W09GR01033	Ammonia (N) by IC
40250	2	40679	45264	BLANK		Anions by Ion Chromatography
40250	15	40679	45264	BLANK		Anions by Ion Chromatography
40250	3	40679	45264	LCS		Anions by Ion Chromatography
40250	12	40679	45264	SAMPLE	W09GR01005	Anions by Ion Chromatography
40250	5	40679	45264	DUP	W09GR01033	Anions by Ion Chromatography
40250	6	40679	45264	MS	W09GR01033	Anions by Ion Chromatography
40250	7	40679	45264	MSD	W09GR01033	Anions by Ion Chromatography
40250	7	40679	45264	SPK-RPD	W09GR01033	Anions by Ion Chromatography
40295	1	40728	45296	BLANK		ICP Metals Analysis, Grd H20 P
40295	2	40728	45296	LCS		ICP Metals Analysis, Grd H20 P
40295	10	40728	45296	SAMPLE	W09GR01005	ICP Metals Analysis, Grd H20 P
40295	4	40728	45296	MS	W09GR01072	ICP Metals Analysis, Grd H20 P
40295	5	40728	45296	MSD	W09GR01072	ICP Metals Analysis, Grd H20 P
40295	5	40728	45296	SPK-RPD	W09GR01072	ICP Metals Analysis, Grd H20 P
40377	1	40810	45370	BLANK		Cyanide by Midi/Spectrophotom
40377	2	40810	45370	LCS		Cyanide by Midi/Spectrophotom
40377	4	40810	45370	MS	W09GR00956	Cyanide by Midi/Spectrophotom
40377	5	40810	45370	MSD	W09GR00956	Cyanide by Midi/Spectrophotom
40377	5	40810	45370	SPK-RPD	W09GR00956	Cyanide by Midi/Spectrophotom
40377	9	40810	45370	SAMPLE	W09GR01005	Cyanide by Midi/Spectrophotom

w13qlog v4.2 20-may-2010 08:04:58

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20091176

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			45256	BLANK		NWTPH-D TPH Diesel Range (Wa)
			45256	LCS		NWTPH-D TPH Diesel Range (Wa)
			45256	MS	W09GR00994	NWTPH-D TPH Diesel Range (Wa)
			45256	MSD	W09GR00994	NWTPH-D TPH Diesel Range (Wa)
			45256	SPK-RPD	W09GR00994	NWTPH-D TPH Diesel Range (Wa)
			45256	SAMPLE	W09GR01005	NWTPH-D TPH Diesel Range (Wa)
			45256	SURR	W09GR01005	NWTPH-D TPH Diesel Range (Wa)
			45267	BLANK		SW-846 8270C Semi-Vols
			45267	LCS		SW-846 8270C Semi-Vols
			45267	MS	W09GR01005	SW-846 8270C Semi-Vols
			45267	MSD	W09GR01005	SW-846 8270C Semi-Vols
			45267	SAMPLE	W09GR01005	SW-846 8270C Semi-Vols
			45267	SPK-RPD	W09GR01005	SW-846 8270C Semi-Vols
			45267	SURR	W09GR01005	SW-846 8270C Semi-Vols
			45358	BLANK		VOA Ground Water Protection
			45358	LCS		VOA Ground Water Protection
			45358	MS	W09GR00957	VOA Ground Water Protection
			45358	MSD	W09GR00957	VOA Ground Water Protection
			45358	SPK-RPD	W09GR00957	VOA Ground Water Protection
			45358	SAMPLE	W09GR01007	VOA Ground Water Protection
			45358	SURR	W09GR01007	VOA Ground Water Protection
40373	1	40812	45366	BLANK		Alcohols, Glycols - 8015
40373	2	40812	45366	LCS		Alcohols, Glycols - 8015
40373	4	40812	45366	DUP	W09GR00956	Alcohols, Glycols - 8015
40373	5	40812	45366	MS	W09GR00956	Alcohols, Glycols - 8015
40373	6	40812	45366	MSD	W09GR00956	Alcohols, Glycols - 8015
40373	6	40812	45366	SPK-RPD	W09GR00956	Alcohols, Glycols - 8015
40373	9	40812	45366	SAMPLE	W09GR01005	Alcohols, Glycols - 8015

w13qlog v4.2 20-may-2010 08:04:58

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20091176

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
40246	1	40675	45297	BLANK		Uranium Isotopics by AEA
40246	2	40675	45297	LCS		Uranium Isotopics by AEA
40246	3	40675	45297	DUP	W09GR00994	Uranium Isotopics by AEA
40246	6	40675	45297	SAMPLE	W09GR01005	Uranium Isotopics by AEA
40246	7	40675	45297	SURR	W09GR01005	Uranium Isotopics by AEA
40272	1	40702	45304	BLANK		Gross Alpha on Alpha Plateau
40272	2	40702	45304	LCS		Gross Alpha on Alpha Plateau
40272	3	40702	45304	DUP	W09GR00994	Gross Alpha on Alpha Plateau
40272	5	40702	45304	SAMPLE	W09GR01005	Gross Alpha on Alpha Plateau
40248	1	40677	45309	BLANK		Americium by AEA
40248	2	40677	45309	LCS		Americium by AEA
40248	3	40677	45309	DUP	W09GR00994	Americium by AEA
40248	6	40677	45309	SAMPLE	W09GR01005	Americium by AEA
40248	7	40677	45309	SURR	W09GR01005	Americium by AEA
40247	1	40676	45311	BLANK		Plutonium Isotopics by AEA
40247	2	40676	45311	LCS		Plutonium Isotopics by AEA
40247	3	40676	45311	DUP	W09GR00994	Plutonium Isotopics by AEA
40247	6	40676	45311	SAMPLE	W09GR01005	Plutonium Isotopics by AEA
40247	7	40676	45311	SURR	W09GR01005	Plutonium Isotopics by AEA
40231	1	40660	45349	BLANK		Gamma Energy Analysis-grd H2O
40231	2	40660	45349	LCS		Gamma Energy Analysis-grd H2O
40231	3	40660	45349	DUP	W09GR00994	Gamma Energy Analysis-grd H2O
40231	5	40660	45349	SAMPLE	W09GR01005	Gamma Energy Analysis-grd H2O
40356	1	40795	45359	BLANK		Strontium 89/90
40356	2	40795	45359	LCS		Strontium 89/90
40356	3	40795	45359	DUP	W09GR00994	Strontium 89/90
40356	6	40795	45359	SAMPLE	W09GR01005	Strontium 89/90
40356	7	40795	45359	SURR	W09GR01005	Strontium 89/90
40234	1	40663	45360	BLANK		TC99 by Liquid Scin.
40234	2	40663	45360	LCS		TC99 by Liquid Scin.
40234	4	40663	45360	DUP	W09GR00956	TC99 by Liquid Scin.
40234	3	40663	45360	MS	W09GR00956	TC99 by Liquid Scin.
40234	9	40663	45360	SAMPLE	W09GR01005	TC99 by Liquid Scin.
40441	1	40880	45453	BLANK		Gross Alpha/Gross Beta (AB32)
40441	2	40880	45453	LCS		Gross Alpha/Gross Beta (AB32)
40441	3	40880	45453	DUP	W09GR00994	Gross Alpha/Gross Beta (AB32)
40441	5	40880	45453	SAMPLE	W09GR01005	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-523-455	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	
	None	No reference to any industry method.
LA-508-471	LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP	
	None	No reference to any industry method.
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: F10-025
Sample # W09GR01005
Client ID: B22V37 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Inorganic
Sampled: 11/13/09
Received: 11/13/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography Prep											**11/24/09**
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	DU	< 1.50	mg/kg			49.93	1.5		11/24/09
Chloride	16887-00-6	LA-533-410	BD	2.98	mg/kg			49.93	2.1		11/24/09
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.899	mg/kg			49.93	0.90		11/24/09
Nitrogen in Nitrate	NO3-N	LA-533-410	DU	< 1.55	mg/kg			49.93	1.5		11/24/09
Phosphate (P) by IC	PO4-P	LA-533-410	DNU	< 3.50	mg/kg			49.93	3.5		11/24/09
Sulfate	14808-79-8	LA-533-410	BD	5.81	mg/kg			49.93	3.3		11/24/09
Cyanide											
Cyanide	57-12-5	LA-695-402	U	< 0.200	mg/kg			1.00	0.20		12/01/09
Hexavalent Chromium Prep											**11/23/09**
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 0.100	mg/kg			1.00	0.10		11/24/09
ICP Metals Analysis, Grd H20 P Prep											**12/04/09**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		1.62e+04	mg/kg			99.96	1.8		12/06/09
Lithium	7439-93-2	LA-505-411		12.0	mg/kg			99.96	0.40		12/06/09
Boron	7440-42-8	LA-505-411	E	9.61	mg/kg			99.96	1.9		12/06/09
ICP-200.8 MS All possible meta Prep											**11/23/09**
ICP-200.8 MS All possible meta											
Aluminum	7429-90-5	LA-505-412	N	4.48e+03	mg/kg			0.96	4.81		11/24/09
Manganese	7439-96-5	LA-505-412	N	208	mg/kg			0.96	0.0961		11/24/09
Nickel	7440-02-0	LA-505-412		9.74	mg/kg			0.96	0.192		11/24/09
Silver	7440-22-4	LA-505-412	U	< 0.0961	mg/kg			0.96	0.0961		11/24/09
Antimony	7440-36-0	LA-505-412	U	< 0.288	mg/kg			0.96	0.288		11/24/09

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

REVISION 1

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-025
Sample # W09GR01005
Client ID: B22V37 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Inorganic
Sampled: 11/13/09
Received: 11/13/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Barium	7440-39-3	LA-505-412		48.3	mg/kg			0.96	0.192		11/24/09
Beryllium	7440-41-7	LA-505-412	C	0.200	mg/kg			0.96	0.0481		11/24/09
Cadmium	7440-43-9	LA-505-412	U	< 0.0961	mg/kg			0.96	0.0961		11/24/09
Chromium	7440-47-3	LA-505-412		8.34	mg/kg			0.96	0.481		11/24/09
Cobalt	7440-48-4	LA-505-412		4.14	mg/kg			0.96	0.0481		11/24/09
Copper	7440-50-8	LA-505-412		7.90	mg/kg			0.96	0.0961		11/24/09
Vanadium	7440-62-2	LA-505-412		19.0	mg/kg			0.96	0.192		11/24/09
Zinc	7440-66-6	LA-505-412		19.9	mg/kg			0.96	0.769		11/24/09
Lead	7439-92-1	LA-505-412		2.32	mg/kg			0.96	0.0961		11/24/09
Mercury	7439-97-6	LA-505-412	U	< 0.0481	mg/kg			0.96	0.0481		11/24/09
Thorium	7440-29-1	LA-505-412		2.35	mg/kg			0.96	0.0961		11/24/09
Uranium	7440-61-1	LA-505-412	C	0.355	mg/kg			0.96	0.0481		11/24/09
Arsenic	7440-38-2	LA-505-412		3.19	mg/kg			0.96	0.384		11/24/09
Selenium	7782-49-2	LA-505-412		0.670	mg/kg			0.96	0.288		11/24/09
Thallium	7440-28-0	LA-505-412	U	< 0.0961	mg/kg			0.96	0.0961		11/24/09
Strontium	7440-24-6	LA-505-412		21.9	mg/kg			0.96	0.0961		11/24/09
Nitrogen in ammonium Prep											**11/24/09**
Nitrogen in ammonium											
Nitrogen in ammonium	NH4-N	LA-503-401	DNU	< 8.59	mg/kg			49.93	8.59		11/24/09
Total solids											
Total solids	TS	LA-519-412		97.7	Percent			1.00	0.0		11/17/09

REVISION 1

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
Matrix: SOLID
Test: Ammonia (N) by IC

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	Ammonia (N) by IC	7664-41-7	<8.561042		RPD			n/a	20.000	U	11/24/09
MS	Ammonia (N) by IC	7664-41-7	0.364718	72.944	% Recov	80.000	120.000		*		11/24/09
MSD	Ammonia (N) by IC	7664-41-7	0.37304	74.608	% Recov	80.000	120.000		*		11/24/09
SPK-RPD	Ammonia (N) by IC	7664-41-7	74.608		RPD			2.255	20.000		11/24/09
BATCH QC											
BLANK	Ammonia (N) by IC	7664-41-7	<0.172	n/a	mg/L	0.000	0.002			U	11/24/09
BLANK	Ammonia (N) by IC	7664-41-7	<0.172	n/a	mg/L	0.000	0.002			U	11/24/09
LCS	Ammonia (N) by IC	7664-41-7	102.364	102.364	% Recov	80.000	120.000				11/24/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
Matrix: SOLID
Test: Anions by Ion Chromatography

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	Chloride	16887-00-6	2.765		RPD			n/a	20.000		11/24/09
DUP	Fluoride	16984-48-8	<1.493949		RPD			n/a	20.000	U	11/24/09
DUP	Nitrogen in Nitrite	NO2-N	<0.896369		RPD			n/a	20.000	U	11/24/09
DUP	Nitrogen in Nitrate	NO3-N	3.595		RPD			6.877	20.000		11/24/09
DUP	Phosphate (P) by IC	PO4-P	<3.485881		RPD			n/a	20.000	U	11/24/09
DUP	Sulfate	14808-79-8	13.228		RPD			9.353	20.000		11/24/09
MS	Chloride	16887-00-6	0.976696	98.160	% Recov	80.000	120.000				11/24/09
MS	Fluoride	16984-48-8	0.442211	86.708	% Recov	80.000	120.000				11/24/09
MS	Nitrogen in Nitrite	NO2-N	0.487091	98.006	% Recov	80.000	120.000				11/24/09
MS	Nitrogen in Nitrate	NO3-N	0.452712	100.603	% Recov	80.000	120.000				11/24/09
MS	Phosphate (P) by IC	PO4-P	0.781406	80.807	% Recov	80.000	120.000				11/24/09
MS	Sulfate	14808-79-8	1.78187	89.094	% Recov	80.000	120.000				11/24/09
MSD	Chloride	16887-00-6	0.941899	94.663	% Recov	80.000	120.000				11/24/09
MSD	Fluoride	16984-48-8	0.44163	86.594	% Recov	80.000	120.000				11/24/09
MSD	Nitrogen in Nitrite	NO2-N	0.4658	93.722	% Recov	80.000	120.000				11/24/09
MSD	Nitrogen in Nitrate	NO3-N	0.453115	100.692	% Recov	80.000	120.000				11/24/09
MSD	Phosphate (P) by IC	PO4-P	0.764356	79.044	% Recov	80.000	120.000				11/24/09
MSD	Sulfate	14808-79-8	1.789937	89.497	% Recov	80.000	120.000				11/24/09
SPK-RPD	Chloride	16887-00-6	94.663		RPD			3.627	20.000		11/24/09
SPK-RPD	Fluoride	16984-48-8	86.594		RPD			0.132	20.000		11/24/09
SPK-RPD	Nitrogen in Nitrite	NO2-N	93.722		RPD			4.469	20.000		11/24/09
SPK-RPD	Nitrogen in Nitrate	NO3-N	100.692		RPD			0.088	20.000		11/24/09
SPK-RPD	Phosphate (P) by IC	PO4-P	79.044		RPD			2.206	20.000		11/24/09
SPK-RPD	Sulfate	14808-79-8	89.497		RPD			0.451	20.000		11/24/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
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	11/24/09
BLANK	Chloride	16887-00-6	<4.3e-2	n/a	mg/L	0.000	0.030			U	11/24/09
BLANK	Fluoride	16984-48-8	<3e-2	n/a	mg/L	0.000	0.030			U	11/24/09
BLANK	Fluoride	16984-48-8	<3e-2	n/a	mg/L	0.000	0.030			U	11/24/09
BLANK	Nitrogen in Nitrite	NO2-N	<1.8e-2	n/a	mg/L	0.000	0.020			U	11/24/09
BLANK	Nitrogen in Nitrite	NO2-N	<1.8e-2	n/a	mg/L	0.000	0.020			U	11/24/09
BLANK	Nitrogen in Nitrate	NO3-N	<3.1e-2	n/a	mg/L	0.000	0.040			U	11/24/09
BLANK	Nitrogen in Nitrate	NO3-N	<3.1e-2	n/a	mg/L	0.000	0.040			U	11/24/09
BLANK	Phosphate (P) by IC	PO4-P	<7e-2	n/a	mg/L	0.000	0.200			U	11/24/09
BLANK	Phosphate (P) by IC	PO4-P	<7e-2	n/a	mg/L	0.000	0.200			U	11/24/09
BLANK	Sulfate	14808-79-8	<6.6e-2	n/a	mg/L	0.000	0.200			U	11/24/09
BLANK	Sulfate	14808-79-8	<6.6e-2	n/a	mg/L	0.000	0.200			U	11/24/09
LCS	Chloride	16887-00-6	187.99	94.467	% Recov	80.000	120.000				11/24/09
LCS	Fluoride	16984-48-8	96.659	94.764	% Recov	80.000	120.000				11/24/09
LCS	Nitrogen in Nitrite	NO2-N	97.846	98.437	% Recov	80.000	120.000				11/24/09
LCS	Nitrogen in Nitrate	NO3-N	90.779	100.978	% Recov	80.000	120.000				11/24/09
LCS	Phosphate (P) by IC	PO4-P	184.536	95.417	% Recov	80.000	120.000				11/24/09
LCS	Sulfate	14808-79-8	371.191	92.798	% Recov	80.000	120.000				11/24/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
Matrix: SOLID
Test: Cyanide by Midi/Spectrophotom

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00956											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cyanide by Midi/Spectrophotom	57-12-5	1.8	90.000	% Recov	75.000	125.000				12/01/09
MSD	Cyanide by Midi/Spectrophotom	57-12-5	1.82	91.000	% Recov	75.000	125.000				12/01/09
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	91.000		RPD			1.105	20.000		12/01/09
BATCH QC											
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	< 0.2	n/a	ug/L	-4.000	4.000			U	12/01/09
LCS	Cyanide by Midi/Spectrophotom	57-12-5	53.2	97.258	% Recov	85.000	115.000				12/01/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
Matrix: SOLID
Test: Hexavalent chromium

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00974											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	0.10		RPD			n/a	15.000		11/24/09
MS	Hexavalent chromium	18540-29-9	17.8	92.228	% Recov	75.000	125.000				11/24/09
MS	Hexavalent chromium	18540-29-9	471	85.018	% Recov	75.000	125.000				11/24/09
MSD	Hexavalent chromium	18540-29-9	16.4	93.182	% Recov	75.000	125.000				11/24/09
SPK-POST	Hexavalent chromium	18540-29-9	0.0583	109.176	% Recov	75.000	125.000				11/24/09
SPK-RPD	Hexavalent chromium	18540-29-9	93.182		RPD			1.029	20.000		11/24/09
BATCH QC											
BLNK-PREP	Hexavalent chromium	18540-29-9	< 0.10	n/a	ug/g	0.000	2.000			U	11/24/09
LCS	Hexavalent chromium	18540-29-9	18.2	91.919	% Recov	80.000	120.000				11/24/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 11/30/09
Receive Date: 11/30/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01072											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Boron	7440-42-8	94.18	95.131	% Recov	75.000	125.000				12/06/09
MS	Iron	7439-89-6	-790	-797.980	% Recov	75.000	125.000			•	12/06/09
MS	Lithium	7439-93-2	52.71	105.420	% Recov	70.000	130.000				12/06/09
MSD	Boron	7440-42-8	93.68	94.626	% Recov	75.000	125.000				12/06/09
MSD	Iron	7439-89-6	-730	-737.374	% Recov	75.000	125.000			•	12/06/09
MSD	Lithium	7439-93-2	50.39	100.780	% Recov	75.000	125.000				12/06/09
SPK-RPD	Boron	7440-42-8	94.626		RPD			0.532	20.000		12/06/09
SPK-RPD	Iron	7439-89-6	-737.374		RPD			-7.895	20.000 •		12/06/09
SPK-RPD	Lithium	7439-93-2	100.780		RPD			4.500	20.000		12/06/09
BATCH QC											
BLANK	Boron	7440-42-8	<1.9e-2	n/a	ug/mL					U	12/06/09
BLANK	Iron	7439-89-6	<1.8e-2	n/a	ug/mL					U	12/06/09
BLANK	Lithium	7439-93-2	<4e-3	n/a	ug/mL					U	12/06/09
LCS	Boron	7440-42-8	128.5	111.739	% Recov	45.000	156.000				12/06/09
LCS	Iron	7439-89-6	18570	138.582	% Recov	47.000	152.000				12/06/09
LCS	Lithium	7439-93-2	115.3	115.531	% Recov	80.000	120.000				12/06/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
Matrix: SOLID
Test: ICP-200.8 MS All possible meta

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00956											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Silver	7440-22-4	176.3	88.150	% Recov	70.000	130.000				11/24/09
MS	Aluminum	7429-90-5	2057	102.850	% Recov	70.000	130.000				11/24/09
MS	Arsenic	7440-38-2	189.85	94.925	% Recov	70.000	130.000				11/24/09
MS	Barium	7440-39-3	180.02	90.010	% Recov	70.000	130.000				11/24/09
MS	Beryllium	7440-41-7	173	87.400	% Recov	70.000	130.000				11/24/09
MS	Cadmium	7440-43-9	181.1	90.550	% Recov	70.000	130.000				11/24/09
MS	Cobalt	7440-48-4	176.11	88.055	% Recov	70.000	130.000				11/24/09
MS	Chromium	7440-47-3	176.62	88.310	% Recov	70.000	130.000				11/24/09
MS	Copper	7440-50-8	163.18	81.590	% Recov	70.000	130.000				11/24/09
MS	Mercury	7439-97-6	1.76	88.000	% Recov	70.000	130.000				11/24/09
MS	Manganese	7439-96-5	171	85.500	% Recov	70.000	130.000				11/24/09
MS	Nickel	7440-02-0	165.45	82.725	% Recov	70.000	130.000				11/24/09
MS	Lead	7439-92-1	181.86	90.930	% Recov	70.000	130.000				11/24/09
MS	Antimony	7440-36-0	183.25	91.625	% Recov	70.000	130.000				11/24/09
MS	Selenium	7782-49-2	185.34	92.670	% Recov	70.000	130.000				11/24/09
MS	Strontium	7440-24-6	188.98	94.490	% Recov	70.000	130.000				11/24/09
MS	Thorium	7440-29-1	195	97.500	% Recov	70.000	130.000				11/24/09
MS	Thallium	7440-28-0	182.5	91.250	% Recov	70.000	130.000				11/24/09
MS	Uranium	7440-61-1	192	96.000	% Recov	70.000	130.000				11/24/09
MS	Vanadium	7440-62-2	175.65	87.825	% Recov	70.000	130.000				11/24/09
MS	Zinc	7440-66-6	177.74	88.870	% Recov	70.000	130.000				11/24/09
MSD	Silver	7440-22-4	166.2	83.100	% Recov	70.000	130.000				11/24/09
MSD	Aluminum	7429-90-5	1399	69.950	% Recov	70.000	130.000				11/24/09
MSD	Arsenic	7440-38-2	171.25	85.625	% Recov	70.000	130.000				11/24/09
MSD	Barium	7440-39-3	167.02	83.510	% Recov	70.000	130.000				11/24/09
MSD	Beryllium	7440-41-7	172	87.300	% Recov	70.000	130.000				11/24/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
Matrix: SOLID
Test: ICP-200.8 MS All possible meta

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Cadmium	7440-43-9	171.6	85.800	% Recov	70.000	130.000				11/24/09
MSD	Cobalt	7440-48-4	166.81	83.405	% Recov	70.000	130.000				11/24/09
MSD	Chromium	7440-47-3	165.02	82.510	% Recov	70.000	130.000				11/24/09
MSD	Copper	7440-50-8	152.18	76.090	% Recov	70.000	130.000				11/24/09
MSD	Mercury	7439-97-6	1.75	87.500	% Recov	70.000	130.000				11/24/09
MSD	Manganese	7439-96-5	137.9	68.950	% Recov	70.000	130.000			•	11/24/09
MSD	Nickel	7440-02-0	155.35	77.675	% Recov	70.000	130.000				11/24/09
MSD	Lead	7439-92-1	174.36	87.180	% Recov	70.000	130.000				11/24/09
MSD	Antimony	7440-36-0	172.45	86.225	% Recov	70.000	130.000				11/24/09
MSD	Selenium	7782-49-2	172.74	86.370	% Recov	70.000	130.000				11/24/09
MSD	Strontium	7440-24-6	180.18	90.090	% Recov	70.000	130.000				11/24/09
MSD	Thorium	7440-29-1	194	97.000	% Recov	70.000	130.000				11/24/09
MSD	Thallium	7440-28-0	173.7	86.850	% Recov	70.000	130.000				11/24/09
MSD	Uranium	7440-61-1	190	95.000	% Recov	70.000	130.000				11/24/09
MSD	Vanadium	7440-62-2	157.05	78.525	% Recov	70.000	130.000				11/24/09
MSD	Zinc	7440-66-6	163.94	81.970	% Recov	70.000	130.000				11/24/09
SPK-RPD	Silver	7440-22-4	83.100		RPD			5.898	20.000		11/24/09
SPK-RPD	Aluminum	7429-90-5	69.950		RPD			38.079	20.000 •		11/24/09
SPK-RPD	Arsenic	7440-38-2	85.625		RPD			10.302	20.000		11/24/09
SPK-RPD	Barium	7440-39-3	83.510		RPD			7.492	20.000		11/24/09
SPK-RPD	Beryllium	7440-41-7	87.300		RPD			0.115	20.000		11/24/09
SPK-RPD	Cadmium	7440-43-9	85.800		RPD			5.387	20.000		11/24/09
SPK-RPD	Cobalt	7440-48-4	83.405		RPD			5.424	20.000		11/24/09
SPK-RPD	Chromium	7440-47-3	82.510		RPD			6.791	20.000		11/24/09
SPK-RPD	Copper	7440-50-8	76.090		RPD			6.976	20.000		11/24/09
SPK-RPD	Mercury	7439-97-6	87.500		RPD			0.570	20.000		11/24/09
SPK-RPD	Manganese	7439-96-5	68.950		RPD			21.431	20.000 •		11/24/09
SPK-RPD	Nickel	7440-02-0	77.675		RPD			6.297	20.000		11/24/09
SPK-RPD	Lead	7439-92-1	87.180		RPD			4.211	20.000		11/24/09
SPK-RPD	Antimony	7440-36-0	86.225		RPD			6.073	20.000		11/24/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
Matrix: SOLID
Test: ICP-200.8 MS All possible meta

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

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	86.370		RPD			7.038	20.000		11/24/09
SPK-RPD	Strontium	7440-24-6	90.090		RPD			4.768	20.000		11/24/09
SPK-RPD	Thorium	7440-29-1	97.000		RPD			0.514	20.000		11/24/09
SPK-RPD	Thallium	7440-28-0	86.850		RPD			4.941	20.000		11/24/09
SPK-RPD	Uranium	7440-61-1	95.000		RPD			1.047	20.000		11/24/09
SPK-RPD	Vanadium	7440-62-2	78.525		RPD			11.181	20.000		11/24/09
SPK-RPD	Zinc	7440-66-6	81.970		RPD			8.078	20.000		11/24/09
BATCH QC											
BLANK	Silver	7440-22-4	<0.1	n/a	ug/L					U	11/24/09
BLANK	Aluminum	7429-90-5	<5	n/a	ug/L					U	11/24/09
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	11/24/09
BLANK	Barium	7440-39-3	<0.2	n/a	ug/L					U	11/24/09
BLANK	Beryllium	7440-41-7	.05921	0.059	ug/L	0.000					11/24/09
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L					U	11/24/09
BLANK	Cobalt	7440-48-4	5e-2	0.050	ug/L						11/24/09
BLANK	Chromium	7440-47-3	<0.5	n/a	ug/L					U	11/24/09
BLANK	Copper	7440-50-8	<0.1	n/a	ug/L					U	11/24/09
BLANK	Mercury	7439-97-6	<5e-2	n/a	ug/L					U	11/24/09
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L					U	11/24/09
BLANK	Nickel	7440-02-0	<0.2	n/a	ug/L					U	11/24/09
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L					U	11/24/09
BLANK	Antimony	7440-36-0	<0.3	n/a	ug/L					U	11/24/09
BLANK	Selenium	7782-49-2	<0.3	n/a	ug/L					U	11/24/09
BLANK	Strontium	7440-24-6	<0.1	n/a	ug/L					U	11/24/09
BLANK	Thorium	7440-29-1	0.1105	0.111	ug/L						11/24/09
BLANK	Thallium	7440-28-0	<0.1	n/a	ug/L					U	11/24/09
BLANK	Uranium	7440-61-1	0.108	0.108	ug/L						11/24/09
BLANK	Vanadium	7440-62-2	0.23	0.230	ug/L						11/24/09
BLANK	Zinc	7440-66-6	<0.8	n/a	ug/L					U	11/24/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20091176
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	89.45	88.564	% Recov	81.000	128.000				11/24/09
LCS	Aluminum	7429-90-5	6082	73.632	% Recov	47.000	122.000				11/24/09
LCS	Arsenic	7440-38-2	112.6	85.303	% Recov	78.000	124.000				11/24/09
LCS	Barium	7440-39-3	255.4	80.063	% Recov	77.000	119.000				11/24/09
LCS	Beryllium	7440-41-7	89.5	89.300	% Recov	78.000	118.000				11/24/09
LCS	Cadmium	7440-43-9	59.18	88.992	% Recov	75.000	127.000				11/24/09
LCS	Cobalt	7440-48-4	61.08	83.557	% Recov	75.000	124.000				11/24/09
LCS	Chromium	7440-47-3	57.41	78.752	% Recov	67.000	119.000				11/24/09
LCS	Copper	7440-50-8	53.21	77.679	% Recov	68.000	122.000				11/24/09
LCS	Mercury	7439-97-6	6.69	80.797	% Recov	72.000	117.000				11/24/09
LCS	Manganese	7439-96-5	374.1	82.583	% Recov	72.000	123.000				11/24/09
LCS	Nickel	7440-02-0	45.99	82.716	% Recov	73.000	123.000				11/24/09
LCS	Lead	7439-92-1	111.1	85.462	% Recov	77.000	125.000				11/24/09
LCS	Antimony	7440-36-0	112.9	125.166	% Recov	65.000	203.000				11/24/09
LCS	Selenium	7782-49-2	144.6	89.814	% Recov	82.000	129.000				11/24/09
LCS	Strontium	7440-24-6	47.89	88.033	% Recov	77.000	118.000				11/24/09
LCS	Thorium	7440-29-1	362	96.277	% Recov	79.000	108.000				11/24/09
LCS	Thallium	7440-28-0	118.5	89.098	% Recov	55.000	130.000				11/24/09
LCS	Uranium	7440-61-1	360	95.745	% Recov	84.000	110.000				11/24/09
LCS	Vanadium	7440-62-2	66.31	79.892	% Recov	65.000	122.000				11/24/09
LCS	Zinc	7440-66-6	147.8	83.503	% Recov	75.000	130.000				11/24/09

REVISION 1

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-025

Group #: WSCF20091176
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Organics: Results are moisture corrected and reported on a dry weight basis. cgc
				SVOA: One surrogate marked as a little high in the LCS at 114% Recovery for 2-Fluorophenol. No system problems, and all MS/MSD spike recoveries were good. gar
				ICP-MS: Uranium and Thorium prep blank results above MDL. "C" flag where applicable Aluminum and Manganese MSD recoveries below 70% "N" flag RPD on recoveries on Aluminum and Manganese over 20%
				ICP-AES: Sample W09GR1005 Estimated boron result due to iron interference; "E" flag. Iron sample result exceeds spiking level by a factor of 4 so spike recoveries are not valid.
				Alpha batch dup is flagged but the activity is near the MDA. RPD doesn't apply. lmh
				IC Anion N-flag:Phosphate-P MS and MSD recoveries are at 80.8% and 79.0% respectively (acceptable is 80% - 120%)

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

REVISION 1

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-025

Group #: WSCF20091176
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
				IC Ammonium-N N-flag: low MS and MSD recoveries of 72.9% and 74.6% respecitively.
				The Pu-239 LCS recovery is high however, it is still within the statement of work range that allows for 70-130%.
				Sr89/90 duplicate is flagged for poor RPD however, the sample activity is low level. RPD does not apply. lmh

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: F10-025
Sample # W09GR01005
Client ID: B22V37 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Organic
Sampled: 11/13/09
Received: 11/13/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Alcohols, Glycols - 8015 Prep											**11/16/09**
Alcohols, Glycols - 8015											
Diethyl ether	60-29-7	Organics	U	< 5.00e+03	ug/kg			1.00	5.0e+03		11/16/09
Ethylene glycol	107-21-1	Organics	U	< 5.00e+03	ug/kg			1.00	5.0e+03		11/16/09
NWTPH-D TPH Diesel Range (Wa) Prep											**11/17/09**
NWTPH-D TPH Diesel Range (Wa)											
Total Pet. Hydrocarbons Diesel	TPHDIESEL	LA-523-493	U	< 5.10	mg/kg			1.00	5.1		11/19/09
Kerosene	TPHKEROSENE	LA-523-493	U	< 5.10	mg/kg			1.00	5.1		11/19/09
SW-846 8270C Semi-Vols Prep											**11/17/09**
SW-846 8270C Semi-Vols											
4-Nitrophenol	100-02-7	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		11/18/09
1,4-Dichlorobenzene	106-46-7	LA-523-456	U	< 260	ug/kg			1.00	2.6e+02		11/18/09
Phenol	108-95-2	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
1,2,4-Trichlorobenzene	120-82-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
2,4-Dinitrotoluene	121-14-2	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Pyrene	129-00-0	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
4-Chloro-3-methylphenol	59-50-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
N-Nitrosodi-n-dipropylamine	621-64-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Acenaphthene	83-32-9	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Pentachlorophenol	87-86-5	LA-523-456	U	< 410	ug/kg			1.00	4.1e+02		11/18/09
2-Chlorophenol	95-57-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
4-Nitroaniline	100-01-6	LA-523-456	U	< 280	ug/kg			1.00	2.8e+02		11/18/09
4-Bromophenylphenyl ether	101-55-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
2,4-Dimethylphenol	105-67-9	LA-523-456	U	< 230	ug/kg			1.00	2.3e+02		11/18/09
4-Chloroaniline	106-47-8	LA-523-456	U	< 290	ug/kg			1.00	2.9e+02		11/18/09

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

REVISION 1

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-025
Sample # W09GR01005
Client ID: B22V37 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Organic
Sampled: 11/13/09
Received: 11/13/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Bis(2-chloro-1-methylethyl)eth	108-60-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Bis(2-chloroethyl) ether	111-44-4	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Bis(2-Chloroethoxy)methane	111-91-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Bis(2-ethylhexyl) phthalate	117-81-7	LA-523-456	U	< 410	ug/kg			1.00	4.1e+02		11/18/09
Di-n-octylphthalate	117-84-0	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Hexachlorobenzene	118-74-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Anthracene	120-12-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
2,4-Dichlorophenol	120-83-2	LA-523-456	U	< 170	ug/kg			1.00	1.7e+02		11/18/09
Dimethyl phthalate	131-11-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Dibenzofuran	132-64-9	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Benzo(ghi)perylene	191-24-2	LA-523-456	U	< 330	ug/kg			1.00	3.3e+02		11/18/09
Indeno(1,2,3-cd)pyrene	193-39-5	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		11/18/09
Benzo(b)fluoranthene	205-99-2	LA-523-456	U	< 200	ug/kg			1.00	2.0e+02		11/18/09
Fluoranthene	206-44-0	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Benzo(k)fluoranthene	207-08-9	LA-523-456	U	< 210	ug/kg			1.00	2.1e+02		11/18/09
Acenaphthylene	208-96-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Chrysene	218-01-9	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Benzo(e)pyrene	50-32-8	LA-523-456	U	< 230	ug/kg			1.00	2.3e+02		11/18/09
2,4-Dinitrophenol	51-28-5	LA-523-456	U	< 640	ug/kg			1.00	6.4e+02		11/18/09
Dibenz(a,h)anthracene	53-70-3	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		11/18/09
4,6-Dinitro-2-methylphenol	534-52-1	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		11/18/09
1,3-Dichlorobenzene	541-73-1	LA-523-456	U	< 280	ug/kg			1.00	2.8e+02		11/18/09
Benzo(a)anthracene	56-55-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
2,6-Dinitrotoluene	606-20-2	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
4-Chlorophenylphenyl ether	7005-72-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

REVISION 1

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-025
Sample # W09GR01005
Client ID: B22V37 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Organic
Sampled: 11/13/09
Received: 11/13/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexachlorocyclopentadiene	77-47-4	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Isophorone	78-59-1	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Diethylphthalate	84-66-2	LA-523-456	U	< 220	ug/kg			1.00	2.2e+02		11/18/09
Di-n-butylphthalate	84-74-2	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Phenanthrene	85-01-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Butylbenzylphthalate	85-68-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
N-Nitrosodiphenylamine	86-30-6	LA-523-456	U	< 170	ug/kg			1.00	1.7e+02		11/18/09
Fluorene	86-73-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Carbazole	86-74-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Hexachlorobutadiene	87-68-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
2-Nitroaniline	88-74-4	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
2-Nitrophenol	88-75-5	LA-523-456	U	< 170	ug/kg			1.00	1.7e+02		11/18/09
Naphthalene	91-20-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
2-Methylnaphthalene	91-57-6	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
2-Chloronaphthalene	91-58-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
3,3'-Dichlorobenzidine	91-94-1	LA-523-456	U	< 340	ug/kg			1.00	3.4e+02		11/18/09
2-Methylphenol (cresol, o-)	95-48-7	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
1,2-Dichlorobenzene	95-50-1	LA-523-456	U	< 230	ug/kg			1.00	2.3e+02		11/18/09
2,4,5-Trichlorophenol	95-95-4	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Nitrobenzene	98-95-3	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
3-Nitroaniline	99-09-2	LA-523-456	U	< 190	ug/kg			1.00	1.9e+02		11/18/09
3 & 4 Methylphenol Total	65794-96-9	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Hexachloroethane	67-72-1	LA-523-456	U	< 260	ug/kg			1.00	2.6e+02		11/18/09
2,4,6-Trichlorophenol	88-06-2	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09
Tributyl phosphate	126-73-8	LA-523-456	U	< 150	ug/kg			1.00	1.5e+02		11/18/09

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

REVISION 1

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-025
Sample # W09GR01005
Client ID: B22V37 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Organic
Sampled: 11/13/09
Received: 11/13/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

REVISION 1

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-025
Sample # W09GR01007
Client ID: B22V35 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Organic
Sampled: 11/13/09
Received: 11/13/09

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	< 0.980	ug/kg			1.00	0.98		11/17/09
Trichloroethene	79-01-6	LA-523-455	U	< 0.200	ug/kg			1.00	0.20		11/17/09
Benzene	71-43-2	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Toluene	108-88-3	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Chlorobenzene	108-90-7	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Ethylbenzene	100-41-4	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Styrene	100-42-5	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Dibromochloromethane	124-48-1	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Tetrachloroethene	127-18-4	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Xylenes (total)	1330-20-7	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
1,2-Dichloroethene(Total)	540-59-0	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Carbon tetrachloride	56-23-5	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
2-Hexanone	591-78-6	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Acetone	67-64-1	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Chloroform	67-66-3	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Bromomethane	74-83-9	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Chloromethane	74-87-3	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Chloroethane	75-00-3	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

REVISION 1

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-025
Sample # W09GR01007
Client ID: B22V35 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Organic
Sampled: 11/13/09
Received: 11/13/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Vinyl chloride	75-01-4	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Methylenechloride	75-09-2	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Carbon disulfide	75-15-0	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Bromoform	75-25-2	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Bromodichloromethane	75-27-4	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
1,2-Dichloropropane	78-87-5	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
2-Butanone	78-93-3	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
Trichloromonofluoromethane	75-69-4	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 0.980	ug/kg			1.00	0.98		11/17/09

REVISION 1

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
Matrix: SOLID
Test: Alcohols, Glycols - 8015

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00956											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	2-Bromoethanol	540-51-2	14400		RPD			20.000	25.000		11/16/09
DUP	Diethyl ether	60-29-7	<5000		RPD			n/a	25.000	U	11/16/09
DUP	Ethylene glycol	107-21-1	<5000		RPD			n/a	25.000	U	11/16/09
MS	2-Bromoethanol	540-51-2	13900	78.977	% Recov	70.000	125.000				11/16/09
MS	Diethyl ether	60-29-7	3200	89.762	% Recov	75.000	125.000				11/16/09
MS	Ethylene glycol	107-21-1	6100	109.515	% Recov	75.000	125.000				11/16/09
MSD	2-Bromoethanol	540-51-2	13600	77.273	% Recov	70.000	125.000				11/16/09
MSD	Diethyl ether	60-29-7	3230	90.603	% Recov	75.000	125.000				11/16/09
MSD	Ethylene glycol	107-21-1	6200	111.311	% Recov	75.000	125.000				11/16/09
SPK-RPD	2-Bromoethanol	540-51-2	77.273		RPD			2.181	20.000		11/16/09
SPK-RPD	Diethyl ether	60-29-7	90.603		RPD			0.933	20.000		11/16/09
SPK-RPD	Ethylene glycol	107-21-1	111.311		RPD			1.627	20.000		11/16/09
BATCH QC											
BLANK	2-Bromoethanol	540-51-2	18100	102.841	% Recov	75.000	125.000				11/16/09
BLANK	Diethyl ether	60-29-7	<5000	n/a	ug/Kg	0.000	10.000			U	11/16/09
BLANK	Ethylene glycol	107-21-1	<5000	n/a	ug/Kg	0.000	5.000			U	11/16/09
LCS	2-Bromoethanol	540-51-2	18500	105.114	% Recov	70.000	130.000				11/16/09
LCS	Diethyl ether	60-29-7	2940	82.468	% Recov	70.000	130.000				11/16/09
LCS	Ethylene glycol	107-21-1	5600	100.539	% Recov	70.000	130.000				11/16/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
Matrix: SOLID
Test: NWTPH-D TPH Diesel Range (Wa)

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00994											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	ortho-Terphenyl Surr	84-15-1	21.662	105.000	% Recov	70.000	130.000				11/19/09
MS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	103.85	101.000	% Recov	75.000	125.000				11/19/09
MSD	ortho-Terphenyl Surr	84-15-1	19.210	93.500	% Recov	70.000	130.000				11/19/09
MSD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	98.304	95.700	% Recov	75.000	125.000				11/19/09
SPK-RPD	ortho-Terphenyl Surr	84-15-1	93.500		RPD			11.587	20.000		11/19/09
SPK-RPD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	95.700		RPD			5.389	20.000		11/19/09
Lab ID: W09GR01005											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	ortho-Terphenyl Surr	84-15-1	20.918	102.000	% Recov	70.000	130.000				11/19/09
BATCH QC											
BLANK	Kerosene	TPHKEROSENE	< 5.0	n/a	ug/Kg					U	11/19/09
BLANK	ortho-Terphenyl Surr	84-15-1	17.441	87.200	% Recov	70.000	130.000				11/19/09
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 5.0	n/a	ug/Kg					U	11/19/09
LCS	ortho-Terphenyl Surr	84-15-1	20.770	104.000	% Recov	70.000	130.000				11/19/09
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	106.26	106.000	% Recov	80.000	120.000				11/19/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

Sample Date: 11/13/09
Receive Date:11/13/09

Lab ID: W09GR01005
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	1,2,4-Trichlorobenzene	120-82-1	5866.6	95.500	% Recov	75.000	121.000				11/18/09
MS	1,4-Dichlorobenzene	106-46-7	5694.2	92.700	% Recov	68.000	121.000				11/18/09
MS	2,4-Dinitrotoluene	121-14-2	5808.6	94.600	% Recov	66.000	113.000				11/18/09
MS	2-Fluorophenol(Surr)	367-12-4	3946.9	96.400	% Recov	72.000	120.000				11/18/09
MS	Acenaphthene	83-32-9	5980.2	97.400	% Recov	69.000	125.000				11/18/09
MS	4-Chloro-3-methylphenol	59-50-7	5885.6	95.800	% Recov	68.000	116.000				11/18/09
MS	2-Chlorophenol	95-57-8	6051.5	98.500	% Recov	65.000	124.000				11/18/09
MS	N-Nitrosodi-n-dipropylamine	621-64-7	5949.6	96.900	% Recov	69.000	127.000				11/18/09
MS	2-Fluorobiphenyl(Surr)	321-60-8	3973.7	97.000	% Recov	66.000	122.000				11/18/09
MS	Phenol	108-95-2	6124.1	99.700	% Recov	71.000	122.000				11/18/09
MS	Nitrobenzene-d5(Surr)	4165-60-0	3938.8	96.200	% Recov	63.000	125.000				11/18/09
MS	4-Nitrophenol	100-02-7	5544.6	90.300	% Recov	55.000	113.000				11/18/09
MS	Pentachlorophenol	87-86-5	5207.8	84.800	% Recov	50.000	113.000				11/18/09
MS	Phenol-d5(Surr)	4165-62-2	3902.9	95.300	% Recov	66.000	124.000				11/18/09
MS	Pyrene	129-00-0	6517.3	106.000	% Recov	67.000	125.000				11/18/09
MS	2,4,6-Tribromophenol(Surr)	118-79-6	3791.5	92.600	% Recov	49.000	120.000				11/18/09
MS	Terphenyl-d14(Surr)	98904-43-9	4224.2	103.000	% Recov	58.000	128.000				11/18/09
MSD	1,2,4-Trichlorobenzene	120-82-1	6165.2	101.000	% Recov	75.000	121.000				11/18/09
MSD	1,4-Dichlorobenzene	106-46-7	5972.2	97.400	% Recov	68.000	121.000				11/18/09
MSD	2,4-Dinitrotoluene	121-14-2	6140.8	100.000	% Recov	66.000	113.000				11/18/09
MSD	2-Fluorophenol(Surr)	367-12-4	4272.4	104.000	% Recov	72.000	120.000				11/18/09
MSD	Acenaphthene	83-32-9	6202.7	101.000	% Recov	69.000	125.000				11/18/09
MSD	4-Chloro-3-methylphenol	59-50-7	6312.1	103.000	% Recov	68.000	116.000				11/18/09
MSD	2-Chlorophenol	95-57-8	6341.7	103.000	% Recov	65.000	124.000				11/18/09
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	6308.7	103.000	% Recov	69.000	127.000				11/18/09
MSD	2-Fluorobiphenyl(Surr)	321-60-8	4114.0	101.000	% Recov	66.000	122.000				11/18/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

Sample Date: 11/13/09
Receive Date:11/13/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Phenol	108-95-2	6590.4	107.000	% Recov	71.000	122.000				11/18/09
MSD	Nitrobenzene-d5(Surr)	4165-60-0	4221.6	103.000	% Recov	63.000	125.000				11/18/09
MSD	4-Nitrophenol	100-02-7	5868.9	95.700	% Recov	55.000	113.000				11/18/09
MSD	Pentachlorophenol	87-86-5	5635.2	91.900	% Recov	50.000	113.000				11/18/09
MSD	Phenol-d5(Surr)	4165-62-2	4174.5	102.000	% Recov	66.000	124.000				11/18/09
MSD	Pyrene	129-00-0	6408.0	104.000	% Recov	67.000	125.000				11/18/09
MSD	2,4,6-Tribromophenol(Surr)	118-79-6	4205.1	103.000	% Recov	49.000	120.000				11/18/09
MSD	Terphenyl-d14(Surr)	98904-43-9	4130.0	101.000	% Recov	58.000	128.000				11/18/09
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	101.000		RPD			5.598	20.000		11/18/09
SPK-RPD	1,4-Dichlorobenzene	106-46-7	97.400		RPD			4.945	20.000		11/18/09
SPK-RPD	2,4-Dinitrotoluene	121-14-2	100.000		RPD			5.550	20.000		11/18/09
SPK-RPD	2-Fluorophenol(Surr)	367-12-4	104.000		RPD			7.585	20.000		11/18/09
SPK-RPD	Acenaphthene	83-32-9	101.000		RPD			3.629	20.000		11/18/09
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	103.000		RPD			7.243	20.000		11/18/09
SPK-RPD	2-Chlorophenol	95-57-8	103.000		RPD			4.467	20.000		11/18/09
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	103.000		RPD			6.103	20.000		11/18/09
SPK-RPD	2-Fluorobiphenyl(Surr)	321-60-8	101.000		RPD			4.040	20.000		11/18/09
SPK-RPD	Phenol	108-95-2	107.000		RPD			7.063	20.000		11/18/09
SPK-RPD	Nitrobenzene-d5(Surr)	4165-60-0	103.000		RPD			6.827	20.000		11/18/09
SPK-RPD	4-Nitrophenol	100-02-7	95.700		RPD			5.806	20.000		11/18/09
SPK-RPD	Pentachlorophenol	87-86-5	91.900		RPD			8.036	20.000		11/18/09
SPK-RPD	Phenol-d5(Surr)	4165-62-2	102.000		RPD			6.792	20.000		11/18/09
SPK-RPD	Pyrene	129-00-0	104.000		RPD			1.905	20.000		11/18/09
SPK-RPD	2,4,6-Tribromophenol(Surr)	118-79-6	103.000		RPD			10.634	20.000		11/18/09
SPK-RPD	Terphenyl-d14(Surr)	98904-43-9	101.000		RPD			1.961	20.000		11/18/09
SURR	2-Fluorophenol(Surr)	367-12-4	3869.5	94.400	% Recov	72.000	120.000				11/18/09
SURR	2-Fluorobiphenyl(Surr)	321-60-8	3821.9	93.300	% Recov	66.000	122.000				11/18/09
SURR	Nitrobenzene-d5(Surr)	4165-60-0	3788.8	92.500	% Recov	63.000	125.000				11/18/09
SURR	Phenol-d5(Surr)	4165-62-2	3667.5	89.500	% Recov	66.000	124.000				11/18/09
SURR	2,4,6-Tribromophenol(Surr)	118-79-6	3428.6	83.700	% Recov	49.000	120.000				11/18/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
Matrix: SOLID
Test: SW-846 8270C Semi-Vols

Sample Date: 11/13/09
Receive Date:11/13/09

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	4173.3	102.000	% Recov	58.000	128.000				11/18/09
BATCH QC											
BLANK	1,2-Dichlorobenzene	95-50-1	< 220	n/a	ug/Kg					U	11/18/09
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 150	n/a	ug/Kg					U	11/18/09
BLANK	1,3-Dichlorobenzene	541-73-1	< 270	n/a	ug/Kg					U	11/18/09
BLANK	1,4-Dichlorobenzene	106-46-7	< 250	n/a	ug/Kg					U	11/18/09
BLANK	2,4-Dichlorophenol	120-83-2	< 170	n/a	ug/Kg					U	11/18/09
BLANK	2,4-Dinitrotoluene	121-14-2	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2,4,5-Trichlorophenol	95-95-4	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2,4,6-Trichlorophenol	88-06-2	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2,4-Dimethylphenol	105-67-9	< 230	n/a	ug/Kg					U	11/18/09
BLANK	2,6-Dinitrotoluene	606-20-2	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2-Chloronaphthalene	91-58-7	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2-Fluorophenol(Surr)	367-12-4	3661.8	91.500	% Recov	72.000	120.000				11/18/09
BLANK	2-Methylnaphthalene	91-57-6	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2-Methylphenol (cresol, o-)	95-48-7	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2-Nitroaniline	88-74-4	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2-Nitrophenol	88-75-5	< 170	n/a	ug/Kg					U	11/18/09
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 150	n/a	ug/Kg					U	11/18/09
BLANK	3-Nitroaniline	99-09-2	< 190	n/a	ug/Kg					U	11/18/09
BLANK	4,6-Dinitro-2-methylphenol	534-52-1	< 330	n/a	ug/Kg					U	11/18/09
BLANK	4-Bromophenylphenyl ether	101-55-3	< 150	n/a	ug/Kg					U	11/18/09
BLANK	4-Chlorophenylphenyl ether	7005-72-3	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Acenaphthene	83-32-9	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Acenaphthylene	208-96-8	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Anthracene	120-12-7	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Bis(2-chloroethyl) ether	111-44-4	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Benzo(a)anthracene	56-55-3	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Benzo(b)fluoranthene	205-99-2	< 200	n/a	ug/Kg					U	11/18/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
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	11/18/09
BLANK	Benzo(a)pyrene	50-32-8	< 230	n/a	ug/Kg					U	11/18/09
BLANK	Bis(2-Chloroethoxy)methane	111-91-1	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Bis(2-ethylhexyl) phthalate	117-81-7	< 400	n/a	ug/Kg					U	11/18/09
BLANK	Bis(2-chloro-1-methylethyl)eth	108-60-1	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Benzo(k)fluoranthene	207-08-9	< 200	n/a	ug/Kg					U	11/18/09
BLANK	Butylbenzylphthalate	85-68-7	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Carbazole	86-74-8	< 150	n/a	ug/Kg					U	11/18/09
BLANK	4-Chloroaniline	106-47-8	< 280	n/a	ug/Kg					U	11/18/09
BLANK	4-Chloro-3-methylphenol	59-50-7	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2-Chlorophenol	95-57-8	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Chrysene	218-01-9	< 150	n/a	ug/Kg					U	11/18/09
BLANK	3,3'-Dichlorobenzidine	91-94-1	< 330	n/a	ug/Kg					U	11/18/09
BLANK	Dibenz[a,h]anthracene	53-70-3	< 330	n/a	ug/Kg					U	11/18/09
BLANK	Dibenzofuran	132-64-9	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Di-n-butylphthalate	84-74-2	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Diethylphthalate	84-66-2	< 210	n/a	ug/Kg					U	11/18/09
BLANK	Dimethyl phthalate	131-11-3	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2,4-Dinitrophenol	51-28-5	< 620	n/a	ug/Kg					U	11/18/09
BLANK	Di-n-octylphthalate	117-84-0	< 150	n/a	ug/Kg					U	11/18/09
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2-Fluorobiphenyl(Surr)	321-60-8	3730.4	93.300	% Recov	66.000	122.000				11/18/09
BLANK	Fluorene	86-73-7	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Fluoranthene	206-44-0	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Hexachlorobenzene	118-74-1	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Hexachlorobutadiene	87-68-3	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Hexachlorocyclopentadiene	77-47-4	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Hexachloroethane	67-72-1	< 250	n/a	ug/Kg					U	11/18/09
BLANK	Indeno(1,2,3-cd)pyrene	193-39-5	< 330	n/a	ug/Kg					U	11/18/09
BLANK	Isophorone	78-59-1	< 150	n/a	ug/Kg					U	11/18/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
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	11/18/09
BLANK	Naphthalene	91-20-3	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Nitrobenzene-d5(Surr)	4165-60-0	3651.8	91.300	% Recov	63.000	125.000				11/18/09
BLANK	Nitrobenzene	98-95-3	< 150	n/a	ug/Kg					U	11/18/09
BLANK	4-Nitrophenol	100-02-7	< 330	n/a	ug/Kg					U	11/18/09
BLANK	4-Nitroaniline	100-01-6	< 280	n/a	ug/Kg					U	11/18/09
BLANK	N-Nitrosodiphenylamine	86-30-6	< 170	n/a	ug/Kg					U	11/18/09
BLANK	Pentachlorophenol	87-86-5	< 400	n/a	ug/Kg					U	11/18/09
BLANK	Phenanthrene	85-01-8	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Phenol-d5(Surr)	4165-62-2	3465.2	86.600	% Recov	66.000	124.000				11/18/09
BLANK	Pyrene	129-00-0	< 150	n/a	ug/Kg					U	11/18/09
BLANK	Tributyl phosphate	126-73-8	< 150	n/a	ug/Kg					U	11/18/09
BLANK	2,4,6-Tribromophenol(Surr)	118-79-6	3238.9	81.000	% Recov	49.000	120.000				11/18/09
BLANK	Terphenyl-d14(Surr)	98904-43-9	3981.6	99.500	% Recov	58.000	128.000				11/18/09
LCS	1,2,4-Trichlorobenzene	120-82-1	6288.5	105.000	% Recov	76.000	118.000				11/18/09
LCS	1,4-Dichlorobenzene	106-46-7	6295.2	105.000	% Recov	68.000	121.000				11/18/09
LCS	2,4-Dinitrotoluene	121-14-2	6302.7	105.000	% Recov	68.000	112.000				11/18/09
LCS	2-Fluorophenol(Surr)	367-12-4	4543.7	114.000	% Recov	50.000	110.000				11/18/09
LCS	Acenaphthene	83-32-9	6451.2	108.000	% Recov	75.000	121.000				11/18/09
LCS	4-Chloro-3-methylphenol	59-50-7	6473.8	108.000	% Recov	68.000	117.000				11/18/09
LCS	2-Chlorophenol	95-57-8	6565.1	109.000	% Recov	84.000	114.000				11/18/09
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	6523.4	109.000	% Recov	76.000	119.000				11/18/09
LCS	2-Fluorobiphenyl(Surr)	321-60-8	4316.2	108.000	% Recov	58.000	109.000				11/18/09
LCS	Phenol	108-95-2	6786.7	113.000	% Recov	80.000	113.000				11/18/09
LCS	Nitrobenzene-d5(Surr)	4165-60-0	4307.5	108.000	% Recov	60.000	118.000				11/18/09
LCS	4-Nitrophenol	100-02-7	6003.6	100.000	% Recov	42.000	123.000				11/18/09
LCS	Pentachlorophenol	87-86-5	6093.6	102.000	% Recov	55.000	120.000				11/18/09
LCS	Phenol-d5(Surr)	4165-62-2	4331.9	108.000	% Recov	59.000	116.000				11/18/09
LCS	Pyrene	129-00-0	6895.2	115.000	% Recov	67.000	122.000				11/18/09
LCS	2,4,6-Tribromophenol(Surr)	118-79-6	4310.9	108.000	% Recov	60.000	120.000				11/18/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
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	4497.4	112.000	% Recov	60.000	120.000				11/18/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
Matrix: SOLID
Test: VOA Ground Water Protection

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00957											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	1,1-Dichloroethene	75-35-4	39.270	116.000	% Recov	63.000	117.000				11/17/09
MS	Benzene	71-43-2	39.930	118.000	% Recov	75.000	129.000				11/17/09
MS	4-Bromofluorobenzene(Surr)	460-00-4	70.520	104.000	% Recov	75.000	125.000				11/17/09
MS	Chlorobenzene	108-90-7	38.700	115.000	% Recov	79.000	119.000				11/17/09
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	80.240	119.000	% Recov	75.000	125.000				11/17/09
MS	Toluene-d8(Surr)	2037-26-5	68.700	102.000	% Recov	75.000	125.000				11/17/09
MS	Toluene	108-88-3	40.180	119.000	% Recov	76.000	120.000				11/17/09
MS	Trichloroethene	79-01-6	38.450	114.000	% Recov	73.000	123.000				11/17/09
MSD	1,1-Dichloroethene	75-35-4	38.460	117.000	% Recov	63.000	117.000				11/17/09
MSD	Benzene	71-43-2	38.270	116.000	% Recov	75.000	129.000				11/17/09
MSD	4-Bromofluorobenzene(Surr)	460-00-4	65.360	99.300	% Recov	75.000	125.000				11/17/09
MSD	Chlorobenzene	108-90-7	38.750	118.000	% Recov	79.000	119.000				11/17/09
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	76.670	117.000	% Recov	75.000	125.000				11/17/09
MSD	Toluene-d8(Surr)	2037-26-5	64.640	98.300	% Recov	75.000	125.000				11/17/09
MSD	Toluene	108-88-3	39.380	120.000	% Recov	76.000	120.000				11/17/09
MSD	Trichloroethene	79-01-6	38.590	117.000	% Recov	73.000	123.000				11/17/09
SPK-RPD	1,1-Dichloroethene	75-35-4	117.000		RPD			0.858	20.000		11/17/09
SPK-RPD	Benzene	71-43-2	116.000		RPD			1.709	20.000		11/17/09
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	99.300		RPD			4.624	20.000		11/17/09
SPK-RPD	Chlorobenzene	108-90-7	118.000		RPD			2.575	20.000		11/17/09
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	117.000		RPD			1.695	20.000		11/17/09
SPK-RPD	Toluene-d8(Surr)	2037-26-5	98.300		RPD			3.694	20.000		11/17/09
SPK-RPD	Toluene	108-88-3	120.000		RPD			0.837	20.000		11/17/09
SPK-RPD	Trichloroethene	79-01-6	117.000		RPD			2.597	20.000		11/17/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
Matrix: SOLID
Test: VOA Ground Water Protection

Sample Date: 11/13/09
Receive Date:11/13/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR01007											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	49.520	101.000	% Recov	75.000	125.000				11/17/09
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.140	117.000	% Recov	75.000	125.000				11/17/09
SURR	Toluene-d8(Surr)	2037-26-5	50.100	102.000	% Recov	80.000	126.000				11/17/09
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	2-Hexanone	591-78-8	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	52.890	106.000	% Recov	75.000	125.000				11/17/09
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/Kg					U	11/17/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20091176
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	1,2-Dichloroethane-d4(Surr)	17060-07-0	59.180	118.000	% Recov	75.000	125.000				11/17/09
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Toluene-d8(Surr)	2037-26-5	50.920	102.000	% Recov	80.000	126.000				11/17/09
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/Kg					U	11/17/09
BLANK	Trichloromonofluoromethane	75-69-4	< 1.0	n/a	ug/Kg	0.000	5.000			U	11/17/09
BLANK	Trichloroethene	79-01-6	< 0.20	n/a	ug/Kg					U	11/17/09
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/Kg					U	11/17/09
LCS	1,1-Dichloroethene	75-35-4	27.090	108.000	% Recov	75.000	125.000				11/17/09
LCS	Benzene	71-43-2	29.020	116.000	% Recov	75.000	125.000				11/17/09
LCS	4-Bromofluorobenzene(Surr)	460-00-4	53.930	108.000	% Recov	75.000	125.000				11/17/09
LCS	Chlorobenzene	108-90-7	29.600	118.000	% Recov	75.000	125.000				11/17/09
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	59.430	119.000	% Recov	75.000	125.000				11/17/09
LCS	Toluene-d8(Surr)	2037-26-5	49.750	99.500	% Recov	80.000	126.000				11/17/09
LCS	Toluene	108-88-3	29.880	120.000	% Recov	75.000	125.000				11/17/09
LCS	Trichloroethene	79-01-6	27.700	111.000	% Recov	75.000	125.000				11/17/09

REVISION 1

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-025

Group #: WSCF20091176
Department: Organic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Organics: Results are moisture corrected and reported on a dry weight basis. cgc
				SVOA: One surrogate marked as a little high in the LCS at 114% Recovery for 2-Fluorophenol. No system problems, and all MS/MSD spike recoveries were good. gar
				ICP-MS: Uranium and Thorium prep blank results above MDL. "C" flag where applicable Aluminum and Manganese MSD recoveries below 70% "N" flag RPD on recoveries on Aluminum and Manganese over 20%
				ICP-AES: Sample W09GR1005 Estimated boron result due to iron interference; "E" flag. Iron sample result exceeds spiking level by a factor of 4 so spike recoveries are not valid.
				Alpha batch dup is flagged but the activity is near the MDA. RPD doesn't apply. lmh
				IC Anion N-flag:Phosphate-P MS and MSD recoveries are at 80.8% and 79.0% respectively (acceptable is 80% - 120%)

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 F10-025

Group #: WSCF20091176
Department: Organic

Sample #	Client ID	Lab Area	Test	Comment
				IC Ammonium-N N-flag: low MS and MSD recoveries of 72.9% and 74.6% respecitively.
				The Pu-239 LCS recovery is high however, it is still within the statement of work range that allows for 70-130%.
				Sr89/90 duplicate is flagged for poor RPD however, the sample activity is low level. RPD does not apply. lmh

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

REVISION 1

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-025
Sample # W09GR01005
Client ID: B22V37 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Radiochemistry
Sampled: 11/13/09
Received: 11/13/09

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	U	-0.0120	pCi/g	+-0.0278	pCi/g	1.00	0.052		12/03/09
Am-243 tracer by AEA	AM243	LA-508-471		3.90	pCi/g			1.00	0.026		12/03/09
Gamma Energy Analysis-grd H2O											
Antimony-125	14234-35-6	LA-508-481	U	0.0146	pCi/g	+-0.0171	pCi/g	1.00	0.030		11/19/09
Cobalt-60	10198-40-0	LA-508-481	U	-1.68e-03	pCi/g	+-6.05e-03	pCi/g	1.00	0.010		11/19/09
Ceslum-137	10045-97-3	LA-508-481	U	6.62e-04	pCi/g	+-6.62e-03	pCi/g	1.00	0.010		11/19/09
Europium-152	14683-23-9	LA-508-481	U	7.18e-04	pCi/g	+-7.18e-03	pCi/g	1.00	0.032		11/19/09
Europium-154	15585-10-1	LA-508-481	U	-1.53e-03	pCi/g	+-0.0153	pCi/g	1.00	0.034		11/19/09
Europium-155	14391-16-3	LA-508-481	U	0.0521	pCi/g	+-0.0392	pCi/g	1.00	0.053		11/19/09
Gross Alpha on Alpha Plateau											
Gross alpha on alpha plateau	12587-46-1	LA-508-415	U	0.800	pCi/g	+-0.752	pCi/g	1.00	1.2		12/06/09
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415		1.70	pCi/g	+-0.833	pCi/g	1.00	1.3		12/04/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0140	pCi/g	+-0.0251	pCi/g	1.00	0.043		12/03/09
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	1.80e-03	pCi/g	+-6.25e-03	pCi/g	1.00	0.013		12/03/09
Pu-242	13982-10-0	LA-508-471		5.70	pCi/g			1.00	0.013		12/03/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	-1.20	pCi/g	+-1.20	pCi/g	1.00	0.37		12/15/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		85.8	Percent			1.00	0.0		12/15/09
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	0.300	pCi/g	+-0.195	pCi/g	1.00	0.30		12/17/09
Uranium Isotopics by AEA											
Uranium-233/234	U-233/234	LA-508-471		0.160	pCi/g	+-0.0544	pCi/g	1.00	0.019		12/03/09

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

REVISION 1

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F10-025
Sample # W09GR01005
Client ID: B22V37 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091176
Department: Radiochemistry
Sampled: 11/13/09
Received: 11/13/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Uranium-235	15117-96-1	LA-508-471		0.0190	pCi/g	+-0.0129	pCi/g	1.00	5.2e-03		12/03/09
Uranium-238	U-238	LA-508-471		0.130	pCi/g	+-0.0455	pCi/g	1.00	0.013		12/03/09
U-232 tracer by AEA	U232	LA-508-471		3.90	pCi/g			1.00	0.039		12/03/09

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
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

C - The Analyte was found in the Associated Blank.(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.

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091176
Matrix: SOLID
Test: Americium by AEA

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00994											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Americium-241	14596-10-2	U1e-2		RPD			n/a	20.000		12/03/09
DUP	Am-243 tracer by AEA	AM243	3.993	87.210	% Recov	30.000	105.000				12/03/09
Lab ID: W09GR01005											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	3.861	90.930	% Recov	30.000	105.000				12/03/09
BATCH QC											
BLANK	Americium-241	14596-10-2	U1.2e-2	n/a	pCi/g	-10.000	1000.000				12/03/09
BLANK	Am-243 tracer by AEA	AM243	3.993	74.320	% Recov	30.000	105.000				12/03/09
LCS	Americium-241	14596-10-2	12.49	105.401	% Recov	80.000	120.000				12/03/09
LCS	Am-243 tracer by AEA	AM243	11.7	82.120	% Recov	30.000	105.000				12/03/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091176
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00994											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Cobalt-60	10198-40-0	U5.001e-3		RPD			n/a	20.000		12/01/09
DUP	Cesium-137	10045-97-3	U4.696e-3		RPD			n/a	20.000		12/01/09
DUP	Europium-152	14683-23-9	U-3.372e-3		RPD			n/a	20.000		12/01/09
DUP	Europium-154	15585-10-1	U-2.49e-2		RPD			n/a	20.000		12/01/09
DUP	Europium-155	14391-16-3	U6.682e-2		RPD			n/a	20.000		12/01/09
DUP	Antimony-125	14234-35-6	U2.653e-2		RPD			n/a	20.000		12/01/09
BATCH QC											
BLANK	Cobalt-60	10198-40-0	U-8.132e-4	n/a	pCi/g	-10.000	1000.000				11/19/09
BLANK	Cesium-137	10045-97-3	U-3.18e-3	n/a	pCi/g	-10.000	1000.000				11/19/09
BLANK	Europium-152	14683-23-9	U4.183e-3	n/a	pCi/g	-10.000	1000.000				11/19/09
BLANK	Europium-154	15585-10-1	U4.049e-3	n/a	pCi/g	-10.000	1000.000				11/19/09
BLANK	Europium-155	14391-16-3	U6.245e-3	n/a	pCi/g	-10.000	1000.000				11/19/09
BLANK	Antimony-125	14234-35-6	U-1.405e-3	n/a	pCi/g	-10.000	1000.000				11/19/09
LCS	Cobalt-60	10198-40-0	10140	102.012	% Recov	80.000	120.000				11/19/09
LCS	Cesium-137	10045-97-3	6140	101.656	% Recov	80.000	120.000				11/19/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091176
Matrix: SOLID
Test: Gross Alpha on Alpha Plateau

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00994											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross alpha on alpha plateau	12587-46-1	2.1		RPD			47.059	20.000 *		12/06/09
BATCH QC											
BLANK	Gross alpha on alpha plateau	12587-46-1-ap	U-5.4e-01	n/a	pCi/g	-2.000	2.000				12/06/09
LCS	Gross alpha on alpha plateau	12587-46-1-ap	6.42	98.769	% Recov	80.000	120.000				12/06/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091176
Matrix: SOLID
Test: Gross Alpha/Gross Beta (AB32)

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00994											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross beta	12587-47-2	6.8		RPD			2.985	20.000		12/04/09
BATCH QC											
BLANK	Gross beta	12587-47-2	U-4.6E-01	n/a	pCi/g	-10.000	10.000				12/04/09
LCS	Gross beta	12587-47-2	26.6	118.962	% Recov	80.000	120.000				12/04/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091176
Matrix: SOLID
Test: Plutonium Isotopics by AEA

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00994											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Plutonium-238	13981-16-3	U-1.9e-3		RPD			n/a	20.000		12/03/09
DUP	Pu-239/240 by AEA	PU-239/240	U1.9e-3		RPD			n/a	20.000		12/03/09
DUP	Pu-242	13982-10-0	5.9	80.789	% Recov	30.000	105.000				12/03/09
Lab ID: W09GR01005											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	5.709	85.410	% Recov	30.000	105.000				12/03/09
BATCH QC											
BLANK	Plutonium-238	13981-16-3	U2e-2	n/a	pCi/g	-10.000	1000.000				12/03/09
BLANK	Pu-239/240 by AEA	PU-239/240	U4e-3	n/a	pCi/g	-10.000	1000.000				12/03/09
BLANK	Pu-242	PU242	5.903	39.820	% Recov	30.000	105.000				12/03/09
LCS	Pu-239/240 by AEA	PU-239/240	16.2	126.119	% Recov	80.000	120.000				12/03/09
LCS	Pu-242	PU242	17.3	67.530	% Recov	30.000	105.000				12/03/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091176
Matrix: SOLID
Test: Strontium 89/90

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00994											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	69.7	69.700	% Recov	30.000	105.000				12/15/09
DUP	Strontium-89/90	SR-RAD	2.0		RPD			42.424	20.000	*	12/15/09
Lab ID: W09GR01005											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	85.8	85.800	% Recov	30.000	105.000				12/15/09
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	83.3	83.300	% Recov	30.000	105.000				12/15/09
BLANK	Strontium-89/90	10098-97-2	U-1.6	n/a	pCi/g	-10.000	300.000				12/15/09
LCS	Sr-85 Tracer by Beta Counting	SR85	85.9	85.900	% Recov	30.000	105.000				12/15/09
LCS	Strontium-89/90	10098-97-2	70.8	101.871	% Recov	80.000	120.000				12/15/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091176
Matrix: SOLID
Test: TC99 by Liquid Scin.

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00956											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	U0.2		RPD			n/a	20.000		12/17/09
MS	Tc-99 by Liquid Scin.	14133-76-7	100.2	100.200	% Recov	75.000	125.000				12/17/09
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U0.3	n/a	pCi/g	-10.000	1000.000				12/17/09
LCS	Tc-99 by Liquid Scin.	14133-76-7	9.9	100.000	% Recov	80.000	120.000				12/17/09

REVISION 1

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091176
Matrix: SOLID
Test: Uranium Isotopics by AEA

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00994											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	U-232 tracer by AEA	U232	3.847	91.170	% Recov	30.000	105.000				12/03/09
DUP	Uranium-233/234	U-233/234	1		RPD			10.526	20.000		12/03/09
DUP	Uranium-235	15117-96-1	5.7e-2		RPD			7.273	20.000		12/03/09
DUP	Uranium-238	U-238	1		RPD			0.000	20.000		12/03/09
Lab ID: W09GR01005											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	U-232 tracer by AEA	U232	3.937	96.410	% Recov	30.000	105.000				12/03/09
BATCH QC											
BLANK	U-232 tracer by AEA	U232	3.847	58.900	% Recov	30.000	105.000				12/03/09
BLANK	Uranium-233/234	13966-29-5	2.4e-2	0.024	pCi/g	-10.000	1000.000				12/03/09
BLANK	Uranium-235	15117-96-1	1.1e-2	0.011	pCi/g	-10.000	1000.000				12/03/09
BLANK	Uranium-238	24678-82-8	U2.6e-3	n/a	pCi/g	-10.000	1000.000				12/03/09
LCS	U-232 tracer by AEA	U232	11.27	80.460	% Recov	30.000	105.000				12/03/09
LCS	Uranium-238	24678-82-8	18.64	98.338	% Recov	80.000	120.000				12/03/09

REVISION 1

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-025

Group #: WSCF20091176
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Organics: Results are moisture corrected and reported on a dry weight basis. cgc
				SVOA: One surrogate marked as a little high in the LCS at 114% Recovery for 2-Fluorophenol. No system problems, and all MS/MSD spike recoveries were good. gar
				ICP-MS: Uranium and Thorium prep blank results above MDL. "C" flag where applicable Aluminum and Manganese MSD recoveries below 70% "N" flag RPD on recoveries on Aluminum and Manganese over 20%
				ICP-AES: Sample W09GR1005 Estimated boron result due to iron interference; "E" flag. Iron sample result exceeds spiking level by a factor of 4 so spike recoveries are not valid.
				Alpha batch dup is flagged but the activity is near the MDA. RPD doesn't apply. lmh
				IC Anion N-flag:Phosphate-P MS and MSD recoveries are at 80.8% and 79.0% respectively (acceptable is 80% - 120%)

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

REVISION 1

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F10-025

Group #: WSCF20091176
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
				IC Ammonium-N N-flag: low MS and MSD recoveries of 72.9% and 74.6% respecitively.
				The Pu-239 LCS recovery is high however, it is still within the statement of work range that allows for 70-130%.
				Sr89/90 duplicate is flagged for poor RPD however, the sample activity is low level. RPD does not apply. lmh

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

REVISION 1

WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention: Steve Trent
Project Number F10-025 :F10-025

Group #: WSCF20091176
Department: Radiochemistry

Sample #	Client ID			Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	AC-228				0.58	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	AC-228 Count Error				18	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-212				0.41	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-212 Count Error				24	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214				0.51	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error				12	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	CS-134				0.037	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	CS-134 Count Error				33	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40				17	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				12	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-212				0.85	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-212 Count Error				9.7	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-214				0.87	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-214 Count Error				21	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-226				0.42	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-226 Count Error				14	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228				0.53	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228 Count Error				17	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	SN-126				0.14	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	SN-126 Count Error				29	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	TH-234				0.69	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	TH-234 Count Error				37	%
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	TL-208				0.19	pCi/g
W09GR01005	B22V37	GPP	TRENT	Gamma Energy Analysis-grd H2O	TL-208 Count Error				13	%

RQ=Result Qualifier

REVISION 1

42100-SLF-10-233

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 8 pages
Including cover page

REVISION 1

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

12/28/05

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program

Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 302117/ES10
Group#: 20091176
Project#: F10-025
Proj Mgr: Steve Trent
Phone: 373-5886

The following samples were received from you on 11/13/09. 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
W09GR01005	B22V37	GPP @2008 @AEA-32 @SVOCGPP PERSOLID	TRENT Solid, or handle as if solid @8015GPP @AB-32 @AEA-30 @AEA-31 @ALPHA @GEA-GPP @GPP6010 @IC-30 @SR89 @TC99-30 @TPHD-WA CN-02 CR+6 NH4-I	11/13/09
W09GR01006	B22V36	GPP @VOA-GPP	TRENT Solid, or handle as if solid	11/13/09
W09GR01007	B22V35	GPP @VOA-GPP	TRENT Solid, or handle as if solid	11/13/09

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
@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

24671

F10-025-004 | PAGE 1 OF 2

COLLECTOR: Kaill

COMPANY CONTACT: DYEKMAN, DL | TELEPHONE NO.: 373-2530 | PROJECT COORDINATOR: DYEKMAN, DL | PRICE CODE: 8N | DATA TURNAROUND: 45 Days / 45 Days

SAMPLING LOCATION: C7514 (299-E24-25); I-070 | AIR QUALITY: ☐

PROJECT DESIGNATION: 200-PW-2 OU Characterization Vadose Zone - Soil ("L" Well) | SAF NO.: F10-025

ICE CHEST NO.: | FIELD LOGBOOK NO.: HNF-N- 581-5 3/4 | ACTUAL SAMPLE DEPTH: 140.4 to 142.9 | COA: 302117ES10 | 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: B22VD6

2009 1176

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	PRESERVATION	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS
				Cool~4C	aG/S	3	40mL	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
				Cool~4C	aG	1	250mL	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
				None	G/P	1	120mL	SEE ITEM (3) IN SPECIAL INSTRUCTIONS
				Cool~4C	G/P	1	120mL	Chromium Hex - 7196;
				Cool~4C	G/P	1	120mL	SEE ITEM (4) IN SPECIAL INSTRUCTIONS
				Cool~4C	G	1	60mL	Total Cyanide - 9014;
				None	Square Bottle - Poly	1	500mL	SEE ITEM (5) IN SPECIAL INSTRUCTIONS
				None	G/P	1	120mL	SEE ITEM (6) IN SPECIAL INSTRUCTIONS
B22V37	Hazardous SOIL	11-13-09	0950	✓	✓	✓	✓	✓

ICED

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Ed Kaill / [signature]	11-13-09 1500	Victor [signature]	11/13/09 1500

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

☐ ORIGINAL

LABORATORY SECTION | RECEIVED BY | TITLE | DATE/TIME

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

A-6003-618(01/06)

REVISION 1

69 of 73

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F10-025-004 PAGE 2 OF 2

COLLECTOR Kaus	**COMPANY CONTACT** DYEKMAN, DL	**TELEPHONE NO.** 373-2530	**PROJECT COORDINATOR** DYEKMAN, DL
SAMPLING LOCATION C7514 (299-E24-25); I-070	**PROJECT DESIGNATION** 200-PW-2 OU Characterization Vadose Zone - Soil ("L" Well)		**SAF NO.** F10-025
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-451-5	**ACTUAL SAMPLE DEPTH** 140.4 to 142.9	**COA** 302117ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE 8N **DATA TURNAROUND** 45 Days / 45 Days

AIR QUALITY ☐

METHOD OF SHIPMENT GOVERNMENT VEHICLE

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, 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)Gamma Spectroscopy (Europium-155, Cesium-137, Europium-154, Europium-152, Cobalt-60) Gamma Spec - Add-on (Antimony-125)
(6)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;

ICED

☐ ORIGINAL

REVISION 1

A-6003-618(01/06)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F10-025-003

ORIGINAL

COLLECTOR	Ksu GL
SAMPLING LOCATION	C7514 (299-E24-25); I-070
ICE CHEST NO.	
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	DYEKMAN, DL
TELEPHONE NO.	373-2530
PROJECT COORDINATOR	DYEKMAN, DL
PRICE CODE	8N
AIR QUALITY	☐
DATA TURNAROUND	45 Days / 45 Days
PROJECT DESIGNATION	200-PW-2 OU Characterization Vadose Zone - Soil ("L" Well)
SAF NO.	F10-025
FIELD LOGBOOK NO.	HNF-N- 891-5 pg 19
ACTUAL SAMPLE DEPTH	140.4 to 142.9
COA	302117ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
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: B22VD6

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

ICED

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B22V36 W09LE0100L	SOIL	11-13-09	0950	✓

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Ed Kovar / Ed Kovar	11-13-09 1500	Victor Shs	11/13/09 1500

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, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene}

REVISION 1

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

A-6003-618(01/06)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F10-025-002

COLLECTOR: Kaiser	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 8N
SAMPLING LOCATION: C7514 (299-E24-25); I-070	PROJECT DESIGNATION: 200-PW-2 OU Characterization Vadose Zone - Soil ("L" Well)		SAF NO.: F10-025	AIR QUALITY ☐
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-491-5 P.19	ACTUAL SAMPLE DEPTH: 140.4 to 142.9	COA: 302117ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	DATA TURNAROUND: 45 Days / 45 Days

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: B22VD6

PRESERVATION	Cool <-7C and >-20C	MEOH/Cool~4 C
TYPE OF CONTAINER	aGs*	aGs*
NO. OF CONTAINER(S)	5	3
VOLUME	40mL	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

ICED

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B22V35 WC96/201 007	SOIL	11-13-09	0950	✓	✓

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Ed Kaiser [signature]	11-13-09 1500	Victor Sims [signature]	11/13/09 1500

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

ORIGINAL

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

A-6003-618(01/06)

REVISION 1

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F10-025-002	PAGE 2 OF 2
COLLECTOR KAVGZ	COMPANY CONTACT DYEKMAN, DL	TELEPHONE NO. 373-2530	PROJECT COORDINATOR DYEKMAN, DL	PRICE CODE 8N	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION C7514 (Z99-E24-25); 1-070	PROJECT DESIGNATION 200-PW-2 OU Characterization Vadose Zone - Soil ("L" Well)		SAF NO. F10-025	AIR QUALITY ☐	
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-391.5-19 PS	ACTUAL SAMPLE DEPTH 140.4 to 142.9	COA 302117ES10	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, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene}
(2)VOA - 5035/8260 (HIGH LEVEL); VOA - 5035/8260 (HIGH LEVEL) - (Add-On) {Trichloromonofluoromethane, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene}

ICED

☐ ORIGINAL

REVISION 1

Attachment 1 - Sample Record Sheet

SAMPLE RECORD SHEET

Location: C7514 I-070

Sampler Initials and Date: Elk 11-13-09

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)
B22V35	K	No Methanol		31.7	36.8	5.1	No Methanol
	L			31.7	36.7	5	
	M			32.2	37.4	5.2	
	N			31.8	36.9	5.1	
	P			32.0	37.2	5.2	
	W	38.2	38.2	38.6	43.6	5	10
	X	38.2	38.3	38.6	43.6	5	10
	Y	38.4	38.4	38.8	43.8	5	10
B22V36	*	38.3	38.3	38.7	38.7	0	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.