0066732

Fluor Hanford
WSCF Analytical Chemistry
P.O. Box 1000
Richland, WA 99352
Telephone 373-7495
Telefax 372-0456

FLUOR

Memorandum

M8141-SLF-05-153

To: S. J. Trent A0-21 Date: March 28, 2005

From: S. L. Fitzgerald, Manager FOR
WSCF Analytical Chemistry

cc:	w/Attachments		w/o Attachments	
	T. F. Dale	S3-28	D. J. Hart	S3-30
	H. K. Meznarich	S3-30	M. A. Neely	S3-30
	P. D. Mix	S3-30	H. S. Rich	S3-28
	J. E. Trechter	S3-30	L. C. Swanson	E6-35
			File/LB	

Subject: FINAL RESULTS FOR 200-LW-1/LW-2 CHARACTERIZATION - SOIL – SAMPLE DELIVERY GROUP WSCF20050388 SAF NUMBER F03-025

Reference: (1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEM-001, October 31, 2002

(2) HNF-SD-CD-QAPP-017, Rev. 6, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains a narrative (Attachment 1) for sample delivery group WSCF20050388, the analytical results (Attachment 2), and the sample receipt information (Attachment 3).

SLF/grf

Attachments 3

MAR 2005
RECEIVED

RECEIVED
SEP 21 2005
EDMC

M8141-SLF-05-153

ATTACHMENT 1

NARRATIVE

Consisting of 9 pages
Including cover page

Sample Delivery Group	**WSCF20050388**
Sample Matrix	**Soil**
Sample Visual	**N/A**
SAF Number	**F03-025**
Data Deliverable	**Summary Report**

Introduction

One (1) 200-LW-1/LW-2 Characterization (Soil), 216-Z-7, 40' – 42.5', sample (B19407) was received at the WSCF Laboratory on February 16, 2005. The sample was analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.
- Percent Solids by EPA Method 160.3. Analytical work was performed with no deviations to the approved method.
- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Alcohols/Glycols by EPA Method 8015. Analytical work was performed with no deviations to the approved method.
- PCBs by EPA Method 8082B. Analytical work was performed with no deviations to the approved method.
- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.
- TPH Gas Range by WDOE Method NWTPH-Gx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Plutonium, Americium, Uranium and Neptunium) and GEA) were run by internal WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 14 for QC details. Analytical Note:

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19402 (SDG# 20050329, SAF# F03-025).

All QC controls are within the established limits.

Anions - The hold times for Nitrite and Nitrate analysis were not met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 07-mar-2005.
- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19402 (SDG# 20050329, SAF# F03-025).

- Nitrate and Chloride - Sample B19407 results were B-flagged; the analytes were less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrate – The Duplicate Relative Percent Difference exceeded established laboratory limits. The RPD criterion does not apply to low level samples.

All other QC controls are within the established limits.

Cyanide - The hold time for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 17 for QC details.

All QC controls are within the established limits.

ICP-AES Metals (Bismuth only) – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 18 for QC details. Analytical Notes:

- Preparation Date: 02-mar-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19402 (SDG# 20050329, SAF# F03-025).

- Boron: Although not included in the Data Summary Report (not requested per chain of custody), the sample result was less than the minimum detection limit (MDL = 2.2 ppm).

All QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 19 through 21 for QC details. Analytical Notes:

- Preparation Date: 28-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1CD96 (SDG# 20050458, SAF# F05-009).

- Silver, Barium, Beryllium, Cadmium, Copper, Mercury, Nickel, Lead and Uranium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant effect on the sample result.

- Beryllium – The Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1CD96 (SDG# 20050458, SAF# F05-009). Although there are no Beryllium results in LABCORE, Beryllium was analyzed on sample# B1CD96. The following QC results were obtained from the WSCF analytical data file (ICP-MS):

- Matrix Spike Recovery 94.74%

- Matrix Spike Duplicate 95.39%

- Duplicate Relative Percent Difference (RPD) 0.684

- Antimony and Mercury – The Laboratory Control Sample recoveries exceeded established laboratory limits, but were within manufacturer's specifications.

All other QC controls are within the established limits.

Percent Solids – analyzed for organic moisture correction.

pH - The hold time for this analysis was met. A Laboratory Control Sample and Duplicate sample was not analyzed as per the GRP Letter of Instruction. All internal laboratory QC controls for the method were within the established limits.

Organic Comments

- Sample results are moisture corrected and reported on dry weight basis.

Alcohol/Glycols - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 25 for QC details. Analytical Notes:

- Preparation Date: 22-feb-2005.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19402 (SDG# 20050329, SAF# F03-025).

- 2-Bromoethanol - Spike Relative Percent Difference exceeded the established laboratory limits. Sample result was below the detection limit and U-flagged.

All QC other controls are within the established limits.

PCBs – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 26 through 27 for QC details. Analytical Notes:

- Preparation Date: 17-feb-2005.

All other QC controls are within the established limits.

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 28 through 31 for QC details. Analytical Notes:

- Preparation Date: 17-feb-2005.

- 2-Methylphenol: Although not included in the Data Summary Report, (not requested on chain of custody), the sample result was less than the detection limit of 170 ug/Kg.

- 3 & 4-Methylphenol: Although not included in the Data Summary Report, (not requested on chain of custody), the sample result was less than the detection limit of 222.2 ug/Kg.

All QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 32 for QC details. Analytical Notes:

- Preparation Date: 17-feb-2005.

All QC controls are within the established limits.

TPHG-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Duplicate, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 33 for QC details. Analytical Notes:

- Preparation Date: 02-mar-2005.

All other QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 34 through 36 for QC details. Analytical Note:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19402 (SDG# 20050329, SAF# F03-025).

- N-Butylbenzene: Although not included in the Data Summary Report, (not requested on chain of custody), the sample result was less than the detection limit of 2.1 ug/Kg.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF's radiochemical methods. A Blank, Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 38 through 42 for QC details. Analytical Note:

- Americium-241, Plutonium-239/240 and Uranium-238 - Duplicate QC samples were analyzed on sample# B19402 (SDG# 20050329, SAF# F03-025).

- Neptunium-237 - Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Neptunium-237 –Laboratory control sample (LCS) recovery was below established limits and may be attributed to a slight excess of ascorbic acid which occurs due to low iron levels in the matrix and causes retention of the Neptunium during separation. The solid matrix sample spike recoveries however, were within established laboratory limits. Sample result is considered to be an estimate. Radiochemical Matrix Spike Recovery Data are summarized below.

Radiochemical Matrix Spike Recovery			
Sample Number	Lab Sample ID	Isotope	Matrix Spike Recovery (Percent)
Neptunium-237			
LCS DUPLICATE		Np-237	44.30
B19407	W050000556	Np-237	67.80
B1B3R1	W050000288	Np-237	65.10
DUPLICATE	W050000288	Np-237	86.70

- Uranium-234, Urananium-235 and Plutonium-238 - Additional Batch QC Data are summarized below:

Additional Batch QC Data (Results)			
Sample Number	Lab Sample ID	Isotope	QC Results (pCi/gram)
Uranium-234/ Uranium-235			
BLANK		U-234	2.135E-02
BLANK		U-235	2.119E-03
B19402	W050000473	U-234	1.530E-01
DUPLICATE	W050000473	U-234	1.839E-01 (RPD 18.34%)
B19402	W050000473	U-235	7.424E-03
DUPLICATE	W050000473	U-235	1.126E-02 (RPD 41.06%)

Additional Batch QC Data (Results)			
Sample Number	Lab Sample ID	Isotope	QC Results (pCi/gram)
Plutonium-238			
BLANK		Pu-238	-2.518E-02
B19402	W050000473	Pu-238	1.225E-02
DUPLICATE	W050000473	Pu-238	2.164-02 (RPD 55.41%)

- Plutonium-242, Americium-243 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Plutonium-242			
BLANK		Pu-242	84.07
LCS		Pu-242	92.83
B19407	W050000556	Pu-242	83.97
B19402	W050000473	Pu-242	76.45
DUPLICATE	W050000473	Pu-242	88.32
Americium-243			
BLANK		Am-243	78.46
LCS		Am-243	80.20
B19407	W050000556	Am-243	88.06
B19402	W050000473	Am-243	84.81
DUPLICATE	W050000473	Am-243	85.01

Radiochemical Tracer Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Uranium-232			
BLANK		U-232	80.89
LCS		U-232	73.45
B19407	W050000556	U-232	80.12
B19402	W050000473	U-232	79.27
DUPLICATE	W050000473	U-232	88.70

This Summary Report is in compliance with the SOW, both technically and for completeness. Release of the data contained in this hard copy report has been authorized by the WSCF Laboratory Analytical Manager and Client Services, as verified by the following signature.

Pauline D. Mix
WSCF Client Services

Abbreviations
Hg – mercury
IC – ion chromatography
ICP – inductively coupled plasma
ICP/AES – ICP/atomic emission spectroscopy
ICP/MS – ICP/mass spectrometry
Total U – total uranium
AT/TB – total alpha/total beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline
Am – americium
Cm - curium
Pu – plutonium
Np – neptunium
GEA – gamma energy analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
TSS – Total Suspended Solids

M8141-SLF-05-153

ATTACHMENT 2

ANALYTICAL RESULTS

Consisting of 39 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: S. Fitzgerald

Client Services: P.O. Mix 3/28/2005

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

Confidentiality Notice: The information contained in this report is privileged and confidential information intended only for the use of the addressee. If the reader of this report is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone at (509) 373-7020.

Contract#: FH-EIS-2003-MEM-001
Report#: WSCF20050388
Report Date: 24-mar-2005
Report WGPP/ver. 1.1

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-025: F03-025

Group #: WSCF20050388

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic															
W050000556	B19407	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U	< 0.200	mg/kg	1.00	0.20	02/28/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	NH4-N	Nitrogen in ammonium	SOIL	LA-503-401		0.261	mg/kg	50.00	0.20	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		95.2	%	1.00	0.0	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411		8.98	pH	1.00	0.010	02/17/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 1.15	mg/kg	50.00	1.2	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	16887-00-6	Chloride	SOIL	LA-533-410	B	3.42	mg/kg	50.00	2.6	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410	B	4.46	mg/kg	50.00	0.65	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U	< 2.70	mg/kg	50.00	2.7	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410	U	< 5.00	mg/kg	50.00	5.0	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-69-9	Bismuth	SOIL	LA-505-411	U	< 2.16	mg/kg	98.12	2.2	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-02-0	Nickel	SOIL	LA-505-412		10.4	mg/kg	9.95	0.21	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412		0.249	mg/kg	9.95	0.010	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-36-0	Antimony	SOIL	LA-505-412	U	< 7.10	mg/kg	9.95	7.1	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-39-3	Barium	SOIL	LA-505-412		53.0	mg/kg	9.95	0.92	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-41-7	Beryllium	SOIL	LA-505-412		0.380	mg/kg	9.95	0.020	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.321	mg/kg	9.95	0.020	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		12.0	mg/kg	9.95	3.3	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		17.0	mg/kg	9.95	0.64	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		3.04	mg/kg	9.95	0.28	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		1.35	mg/kg	9.95	0.010	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		2.67	mg/kg	9.95	0.16	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7440-38-2	Arsenic	SOIL	LA-505-412	U	< 2.39	mg/kg	9.95	2.4	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	7782-49-2	Selenium	SOIL	LA-505-412	U	< 0.726	mg/kg	9.95	0.73	03/02/05	02/16/05	02/16/05

MDL = Minimum Detection Limit B - The analyte < the RDL but > = the IDL/MDL (inorganic) U - Analyzed for but not detected above limiting criteria.
RQ = Result Qualifier

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

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Ammonia (N) by IC

SAF Number: F03-025
Sample Date: 02/08/05
Receive Date:02/08/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000473									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Ammonia (N) by IC	7664-41-7	2.40e-01	1.681	RPD	03/04/05	0.000	20.000	
MS	Ammonia (N) by IC	7664-41-7	3.60e-01	87.379	% Recov	03/04/05	75.000	125.000	
MSD	Ammonia (N) by IC	7664-41-7	3.42e-01	83.010	% Recov	03/04/05	75.000	125.000	
BATCH QC									
BLANK	Ammonia (N) by IC	7664-41-7	<4.00e-3	n/a	mg/L	03/04/05	0.000	30.000	U
BLANK	Ammonia (N) by IC	7664-41-7	<4.00e-3	n/a	mg/L	03/04/05	0.000	30.000	U
LCS	Ammonia (N) by IC	7664-41-7	7.88e+01	95.631	% Recov	03/04/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Anions by Ion Chromatography

SAF Number: F03-025
Sample Date: 02/08/05
Receive Date:02/08/05

Lab ID: W050000473

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Chloride	16887-00-6	<2.60e0	n/a	RPD	03/07/05	0.000	20.000	U
DUP	Fluoride	16984-48-8	2.11e+00	n/a	RPD	03/07/05	0.000	20.000	
DUP	Nitrogen in Nitrite	NO2-N	<9.50e-1	n/a	RPD	03/07/05	0.000	20.000	U
DUP	Nitrogen in Nitrate	NO3-N	3.38e+00	31.904	RPD	03/07/05	0.000	20.000	
DUP	Phosphate (P) by IC	PO4-P	<2.70e0	n/a	RPD	03/07/05	0.000	20.000	U
DUP	Sulfate	14808-79-8	<5.00e0	n/a	RPD	03/07/05	0.000	20.000	U
MS	Chloride	16887-00-6	9.90e-01	99.000	% Recov	03/07/05	75.000	125.000	
MS	Fluoride	16984-48-8	4.49e-01	90.891	% Recov	03/07/05	75.000	125.000	
MS	Nitrogen in Nitrite	NO2-N	4.60e-01	92.000	% Recov	03/07/05	75.000	125.000	
MS	Nitrogen in Nitrate	NO3-N	4.28e-01	94.900	% Recov	03/07/05	75.000	125.000	
MS	Phosphate (P) by IC	PO4-P	7.63e-01	78.741	% Recov	03/07/05	75.000	125.000	
MS	Sulfate	14808-79-8	1.97e+00	98.500	% Recov	03/07/05	75.000	125.000	
MSD	Chloride	16887-00-6	9.89e-01	98.900	% Recov	03/07/05	75.000	125.000	
MSD	Fluoride	16984-48-8	4.43e-01	89.676	% Recov	03/07/05	75.000	125.000	
MSD	Nitrogen in Nitrite	NO2-N	4.93e-01	98.600	% Recov	03/07/05	75.000	125.000	
MSD	Nitrogen in Nitrate	NO3-N	4.55e-01	100.887	% Recov	03/07/05	75.000	125.000	
MSD	Phosphate (P) by IC	PO4-P	8.34e-01	119.828	% Recov	03/07/05	75.000	125.000	
MSD	Sulfate	14808-79-8	1.97e+00	98.500	% Recov	03/07/05	75.000	125.000	

BATCH QC

BLANK	Chloride	16887-00-6	<5.20e-2	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Chloride	16887-00-6	<5.20e-2	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<2.30e-2	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<2.30e-2	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<1.90e-2	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<1.90e-2	n/a	mg/L	03/07/05	0.000	300.000	U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Anions by Ion Chromatography

SAF Number: F03-025
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Nitrogen in Nitrate	NO3-N	<1.30e-2	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<1.30e-2	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<5.40e-2	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<5.40e-2	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.00e-1	n/a	mg/L	03/07/05	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.00e-1	n/a	mg/L	03/07/05	0.000	300.000	U
LCS	Chloride	16887-00-6	2.02e+02	101.000	% Recov	03/07/05	80.000	120.000	
LCS	Fluoride	16984-48-8	1.00e+02	101.317	% Recov	03/07/05	80.000	120.000	
LCS	Nitrogen in Nitrite	NO2-N	9.81e+01	98.100	% Recov	03/07/05	80.000	120.000	
LCS	Nitrogen in Nitrate	NO3-N	8.24e+01	91.454	% Recov	03/07/05	80.000	120.000	
LCS	Phosphate (P) by IC	PO4-P	1.79e+02	92.363	% Recov	03/07/05	80.000	120.000	
LCS	Sulfate	14808-79-8	3.71e+02	92.982	% Recov	03/07/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Cyanide by Midi/Spectrophotom

SAF Number: F03-025
Sample Date: 02/16/05
Receive Date:02/16/05

Lab ID: W050000556

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Cyanide by Midi/Spectrophotom	57-12-5	83.7	83.700	% Recov	02/28/05	75.000	125.000	
MSD	Cyanide by Midi/Spectrophotom	57-12-5	93.9	93.900	% Recov	02/28/05	75.000	125.000	
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	93.900	11.486	RPD	02/28/05	0.000	20.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	<1	n/a	ug/L	02/28/05	-4.000	4.000	U
BLNK-PREP	Cyanide by Midi/Spectrophotom	57-12-5	<1	n/a	ug/L	02/28/05	-4.000	4.000	U
LCS	Cyanide by Midi/Spectrophotom	57-12-5	94.1	94.100	% Recov	02/28/05	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F03-025
Sample Date: 02/08/05
Receive Date:02/08/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000473									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Bismuth	7440-69-9	170	86.735	% Recov	03/02/05	75.000	125.000	
MSD	Bismuth	7440-69-9	168	84.848	% Recov	03/02/05	75.000	125.000	
SPK-RPD	Bismuth	7440-69-9	84.848	2.200	RPD	03/02/05	0.000	20.000	
BATCH QC									
BLANK	Bismuth	7440-69-9	<2.2e-2	n/a	ug/L	03/02/05			U
LCS	Bismuth	7440-69-9	190	95.477	% Recov	03/02/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: F03-025
Sample Date: 02/24/05
Receive Date:02/24/05

Lab ID: W050000765
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Silver	7440-22-4	372.7495	93.187	% Recov	03/02/05	70.000	130.000	
MS	Arsenic	7440-38-2	398.939	99.735	% Recov	03/02/05	70.000	130.000	
MS	Barium	7440-39-3	414.13	103.532	% Recov	03/02/05	70.000	130.000	
MS	Cadmium	7440-43-9	390.7023	97.676	% Recov	03/02/05	70.000	130.000	
MS	Chromium	7440-47-3	392.273	98.068	% Recov	03/02/05	70.000	130.000	
MS	Copper	7440-50-8	386.26	96.565	% Recov	03/02/05	70.000	130.000	
MS	Mercury	7439-97-6	19.8831	99.415	% Recov	03/02/05	70.000	130.000	
MS	Nickel	7440-02-0	387.314	96.829	% Recov	03/02/05	70.000	130.000	
MS	Lead	7439-92-1	384.874	96.219	% Recov	03/02/05	70.000	130.000	
MS	Antimony	7440-36-0	416.8	104.200	% Recov	03/02/05	70.000	130.000	
MS	Selenium	7782-49-2	409	102.250	% Recov	03/02/05	70.000	130.000	
MS	Uranium	7440-61-1	383.902	95.975	% Recov	03/02/05	70.000	130.000	
MSD	Silver	7440-22-4	373.3495	93.337	% Recov	03/02/05	70.000	130.000	
MSD	Arsenic	7440-38-2	397.539	99.385	% Recov	03/02/05	70.000	130.000	
MSD	Barium	7440-39-3	410.93	102.733	% Recov	03/02/05	70.000	130.000	
MSD	Cadmium	7440-43-9	390.2023	97.551	% Recov	03/02/05	70.000	130.000	
MSD	Chromium	7440-47-3	380.873	95.218	% Recov	03/02/05	70.000	130.000	
MSD	Copper	7440-50-8	375.66	93.915	% Recov	03/02/05	70.000	130.000	
MSD	Mercury	7439-97-6	20.0731	100.365	% Recov	03/02/05	70.000	130.000	
MSD	Nickel	7440-02-0	379.414	94.853	% Recov	03/02/05	70.000	130.000	
MSD	Lead	7439-92-1	377.374	94.344	% Recov	03/02/05	70.000	130.000	
MSD	Antimony	7440-36-0	418.4	104.600	% Recov	03/02/05	70.000	130.000	
MSD	Selenium	7782-49-2	407.6	101.900	% Recov	03/02/05	70.000	130.000	
MSD	Uranium	7440-61-1	374.602	93.650	% Recov	03/02/05	70.000	130.000	
SPK-RPD	Silver	7440-22-4	93.337	0.161	RPD	03/02/05	0.000	20.000	
SPK-RPD	Arsenic	7440-38-2	99.385	0.352	RPD	03/02/05	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: F03-025
Sample Date: 02/24/05
Receive Date:02/24/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Barium	7440-39-3	102.733	0.775	RPD	03/02/05	0.000	20.000	
SPK-RPD	Cadmium	7440-43-9	97.551	0.128	RPD	03/02/05	0.000	20.000	
SPK-RPD	Chromium	7440-47-3	95.218	2.949	RPD	03/02/05	0.000	20.000	
SPK-RPD	Copper	7440-50-8	93.915	2.782	RPD	03/02/05	0.000	20.000	
SPK-RPD	Mercury	7439-97-6	100.365	0.951	RPD	03/02/05	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	94.853	2.062	RPD	03/02/05	0.000	20.000	
SPK-RPD	Lead	7439-92-1	94.344	1.968	RPD	03/02/05	0.000	20.000	
SPK-RPD	Antimony	7440-36-0	104.600	0.383	RPD	03/02/05	0.000	20.000	
SPK-RPD	Selenium	7782-49-2	101.900	0.343	RPD	03/02/05	0.000	20.000	
SPK-RPD	Uranium	7440-61-1	93.650	2.452	RPD	03/02/05	0.000	20.000	
BATCH QC									
BLANK	Silver	7440-22-4	1.923e-2	0.019	ug/L	03/02/05			
BLANK	Arsenic	7440-38-2	<0.24	n/a	ug/L	03/02/05			U
BLANK	Barium	7440-39-3	0.1128	0.113	ug/L	03/02/05			
BLANK	Beryllium	7440-41-7	1.306e-2	0.013	ug/L	03/02/05			
BLANK	Cadmium	7440-43-9	1.645e-2	0.016	ug/L	03/02/05			
BLANK	Chromium	7440-47-3	<0.336	n/a	ug/L	03/02/05			U
BLANK	Copper	7440-50-8	0.2687	0.269	ug/L	03/02/05			
BLANK	Mercury	7439-97-6	0.2332	0.233	ug/L	03/02/05			
BLANK	Nickel	7440-02-0	0.1727	0.173	ug/L	03/02/05			
BLANK	Lead	7439-92-1	4.803e-2	0.048	ug/L	03/02/05			
BLANK	Antimony	7440-36-0	<0.714	n/a	ug/L	03/02/05			U
BLANK	Selenium	7782-49-2	<7.3e-2	n/a	ug/L	03/02/05			U
BLANK	Uranium	7440-61-1	3.578e-2	0.036	ug/L	03/02/05			
LCS	Silver	7440-22-4	156.5	120.385	% Recov	03/02/05	110.000	170.000	
LCS	Arsenic	7440-38-2	188.2	116.894	% Recov	03/02/05	82.000	142.000	
LCS	Barium	7440-39-3	279.5	110.913	% Recov	03/02/05	79.000	123.000	
LCS	Beryllium	7440-41-7	103	109.110	% Recov	03/02/05	82.000	128.000	
LCS	Cadmium	7440-43-9	145.7	113.828	% Recov	03/02/05	88.000	127.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: F03-025
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Chromium	7440-47-3	81.34	117.036	% Recov	03/02/05	50.000	126.000	
LCS	Copper	7440-50-8	164.8	111.351	% Recov	03/02/05	61.000	134.000	
LCS	Mercury	7439-97-6	20.94	123.905	% Recov	03/02/05	75.000	114.000	*
LCS	Nickel	7440-02-0	165.5	112.585	% Recov	03/02/05	84.000	125.000	
LCS	Lead	7439-92-1	157.3	110.775	% Recov	03/02/05	87.000	120.000	
LCS	Antimony	7440-36-0	126	206.897	% Recov	03/02/05	61.000	135.000	*
LCS	Selenium	7782-49-2	77.58	120.841	% Recov	03/02/05	83.000	145.000	
LCS	Uranium	7440-61-1	396	99.000	% Recov	03/02/05	89.000	107.000	

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-025: F03-025

Group #: WSCF20050388

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic															
W050000556	B19407	GRP	TRENT	107-21-1	Ethylene glycol	SOIL	Organics	U	< 5.00e+03	ug/kg	1.00	5.0e+03	02/22/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 100	ug/kg	1.00	1.0e+02	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 180	ug/kg	2.00	1.8e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 280	ug/kg	2.00	2.8e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 140	ug/kg	2.00	1.4e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 190	ug/kg	2.00	1.9e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 110	ug/kg	2.00	1.1e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 160	ug/kg	2.00	1.6e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 98.0	ug/kg	2.00	98	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 160	ug/kg	2.00	1.6e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 140	ug/kg	2.00	1.4e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	2.00	1.5e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 160	ug/kg	2.00	1.6e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 150	ug/kg	2.00	1.5e+02	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05

MDL=Minimum Detection Limit B - The analyte < the RDL but > = the IDL/MDL (inorganic) U - Analyzed for but not detected above limiting criteria.
RQ=Result Qualifier

DF=Dilution Factor
* - indicates results that have NOT been validated; + - indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-025: F03-025

Group #: WSCF20050388

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000556	B19407	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	100-42-5	Styrene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	67-66-3	Chloroform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05

MDL = Minimum Detection Limit B - The analyte < the RDL but > = the IDL/MDL (inorganic) U - Analyzed for but not detected above limiting criteria.
RQ = Result Qualifier

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-025: F03-025

Group #: WSCF20050388

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000556	B19407	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	03/03/05	02/16/05	02/16/05

MDL = Minimum Detection Limit B - The analyte < the RDL but > = the IDL/MDL (inorganic) U - Analyzed for but not detected above limiting criteria.
RQ = Result Qualifier

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

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Alcohols, Glycols - 8015

SAF Number: F03-025
Sample Date: 02/08/05
Receive Date:02/08/05

Lab ID: W050000473

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	2-Bromoethanol	540-51-2	11100	10.427	rpd	02/22/05	0.000	25.000	
DUP	Ethylene glycol	107-21-1	<5000	n/a	RPD	02/22/05	0.000	25.000	U
MS	2-Bromoethanol	540-51-2	9760	97.600	% Recov	02/22/05	70.000	125.000	
MS	Ethylene glycol	107-21-1	9710	97.100	% Recov	02/22/05	75.000	125.000	
MSD	2-Bromoethanol	540-51-2	10500	105.000	% Recov	02/22/05	70.000	125.000	
MSD	Ethylene glycol	107-21-1	9350	93.500	% Recov	02/22/05	75.000	125.000	
SPK-RPD	2-Bromoethanol	540-51-2	105.000	161.147	RPD	02/22/05	0.000	20.000	*
SPK-RPD	Ethylene glycol	107-21-1	93.500	3.778	RPD	02/22/05	0.000	20.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	2-Bromoethanol	540-51-2	10200	1.020	ug/Kg	02/22/05	0.000	10.000	
BLANK	Ethylene glycol	107-21-1	<5000	n/a	ug/Kg	02/22/05	0.000	5.000	U
LCS	2-Bromoethanol	540-51-2	10600	106.000	% Recov	02/22/05	70.000	130.000	
LCS	Ethylene glycol	107-21-1	7980	79.800	% Recov	02/22/05	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: PCBs complete list

SAF Number: F03-025
Sample Date: 02/16/05
Receive Date:02/16/05

Lab ID: W050000556

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Aroclor-1260	11096-82-5	1035.7	100.000	% Recov	03/04/05	75.000	125.000	
MS	Decachlorobiphenyl	2051-24-3	1108.3	107.000	% Recov	03/04/05	50.000	150.000	
MS	Tetrachloro-m-xylene	877-09-8	1045.0	101.000	% Recov	03/04/05	50.000	150.000	
MSD	Aroclor-1260	11096-82-5	884.85	87.200	% Recov	03/04/05	75.000	125.000	
MSD	Decachlorobiphenyl	2051-24-3	980.20	96.600	% Recov	03/04/05	50.000	150.000	
MSD	Tetrachloro-m-xylene	877-09-8	1051.9	104.000	% Recov	03/04/05	50.000	150.000	
SPK-RPD	Aroclor-1260	11096-82-5	87.200	13.675	RPD	03/04/05	0.000	25.000	
SPK-RPD	Decachlorobiphenyl	2051-24-3	96.600	10.216	RPD	03/04/05	0.000	20.000	
SPK-RPD	Tetrachloro-m-xylene	877-09-8	104.000	2.927	RPD	03/04/05	0.000	20.000	
SURR	Decachlorobiphenyl	2051-24-3	1094.2	106.000	% Recov	03/04/05	50.000	150.000	
SURR	Tetrachloro-m-xylene	877-09-8	1061.0	103.000	% Recov	03/04/05	50.000	150.000	

BATCH QC

BLANK	Aroclor-1016	12674-11-2	< 50	n/a	UGKG	03/04/05			U
BLANK	Aroclor-1221	11104-28-2	< 100	n/a	ug/Kg	03/04/05			U
BLANK	Aroclor-1232	11141-16-5	< 50	n/a	ug/Kg	03/04/05			U
BLANK	Aroclor-1242	53469-21-9	< 50	n/a	ug/Kg	03/04/05			U
BLANK	Aroclor-1248	12672-29-6	< 50	n/a	ug/Kg	03/04/05			U
BLANK	Aroclor-1254	11097-69-1	< 50	n/a	ug/Kg	03/04/05			U
BLANK	Aroclor-1260	11096-82-5	< 50	n/a	ug/Kg	03/04/05			U
BLANK	Aroclor-1262	37324-23-5	< 50	n/a	ug/Kg	03/04/05			U
BLANK	Aroclor-1268	11100-14-4	< 50	n/a	ug/Kg	03/04/05			U
BLANK	Decachlorobiphenyl	2051-24-3	976.95	97.700	% Recov	03/04/05	50.000	150.000	
BLANK	Tetrachloro-m-xylene	877-09-8	986.73	98.700	% Recov	03/04/05	50.000	150.000	
LCS	Aroclor-1260	11096-82-5	975.87	97.600	% Recov	03/04/05	70.000	130.000	
LCS	Decachlorobiphenyl	2051-24-3	1022.9	102.000	% Recov	03/04/05	50.000	150.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: PCBs complete list

SAF Number: F03-025
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Tetrachloro-m-xylene	877-09-8	1017.6	102.000	% Recov	03/04/05	50.000	150.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F03-025
Sample Date: 02/16/05
Receive Date:02/16/05

Lab ID: W050000556
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,2,4-Trichlorobenzene	120-82-1	3160.3	90.700	% Recov	03/03/05	46.000	107.000	
MS	1,4-Dichlorobenzene	106-46-7	3039.8	87.300	% Recov	03/03/05	30.000	96.000	
MS	2,4-Dinitrotoluene	121-14-2	2704.8	77.700	% Recov	03/03/05	59.000	106.000	
MS	2-Fluorophenol	367-12-4	3365.0	96.600	% Recov	03/03/05	42.000	105.000	
MS	Acenaphthene	83-32-9	3161.9	90.800	% Recov	03/03/05	61.000	116.000	
MS	4-Chloro-3-methylphenol	59-50-7	4482.6	85.800	% Recov	03/03/05	61.000	106.000	
MS	2-Chlorophenol	95-57-8	4872.2	93.300	% Recov	03/03/05	66.000	106.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	3077.8	88.400	% Recov	03/03/05	71.000	114.000	
MS	2-Fluorobiphenyl	321-60-8	3174.7	91.200	% Recov	03/03/05	56.000	122.000	
MS	Phenol	108-95-2	4675.9	89.500	% Recov	03/03/05	42.000	111.000	
MS	Nitrobenzene-d5	4165-60-0	3092.4	88.800	% Recov	03/03/05	64.000	111.000	
MS	4-Nitrophenol	100-02-7	3886.2	74.400	% Recov	03/03/05	32.000	118.000	
MS	Pentachlorophenol	87-86-5	4226.8	80.900	% Recov	03/03/05	62.000	114.000	
MS	Phenol-d5	4165-62-2	3134.3	90.000	% Recov	03/03/05	54.000	120.000	
MS	Pyrene	129-00-0	2927.1	84.000	% Recov	03/03/05	66.000	118.000	
MS	2,4,6-Tribromophenol	118-79-6	2964.3	85.100	% Recov	03/03/05	24.000	122.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	3108.2	89.200	% Recov	03/03/05	35.000	150.000	
MSD	1,2,4-Trichlorobenzene	120-82-1	3054.4	87.300	% Recov	03/03/05	46.000	107.000	
MSD	1,4-Dichlorobenzene	106-46-7	2877.8	82.200	% Recov	03/03/05	30.000	96.000	
MSD	2,4-Dinitrotoluene	121-14-2	2667.6	76.200	% Recov	03/03/05	59.000	106.000	
MSD	2-Fluorophenol	367-12-4	3237.9	92.500	% Recov	03/03/05	42.000	105.000	
MSD	Acenaphthene	83-32-9	2950.1	84.300	% Recov	03/03/05	61.000	116.000	
MSD	4-Chloro-3-methylphenol	59-50-7	4388.6	83.600	% Recov	03/03/05	61.000	106.000	
MSD	2-Chlorophenol	95-57-8	4609.9	87.800	% Recov	03/03/05	66.000	106.000	
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	2891.4	82.600	% Recov	03/03/05	71.000	114.000	
MSD	2-Fluorobiphenyl	321-60-8	3027.8	86.500	% Recov	03/03/05	56.000	122.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F03-025
Sample Date: 02/16/05
Receive Date:02/16/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Phenol	108-95-2	4421.6	84.200	% Recov	03/03/05	42.000	111.000	
MSD	Nitrobenzene-d5	4165-60-0	2983.2	85.300	% Recov	03/03/05	64.000	111.000	
MSD	4-Nitrophenol	100-02-7	4062.2	77.400	% Recov	03/03/05	32.000	118.000	
MSD	Pentachlorophenol	87-86-5	4236.2	80.700	% Recov	03/03/05	62.000	114.000	
MSD	Phenol-d5	4165-62-2	2999.9	85.700	% Recov	03/03/05	54.000	120.000	
MSD	Pyrene	129-00-0	2856.4	81.600	% Recov	03/03/05	66.000	118.000	
MSD	2,4,6-Tribromophenol	118-79-6	2911.2	83.200	% Recov	03/03/05	24.000	122.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	3054.2	87.300	% Recov	03/03/05	35.000	150.000	
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	87.300	3.820	RPD	03/03/05	0.000	20.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	82.200	6.018	RPD	03/03/05	0.000	20.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	76.200	1.949	RPD	03/03/05	0.000	20.000	
SPK-RPD	2-Fluorophenol	367-12-4	92.500	4.336	RPD	03/03/05	0.000	20.000	
SPK-RPD	Acenaphthene	83-32-9	84.300	7.424	RPD	03/03/05	0.000	20.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	83.600	2.597	RPD	03/03/05	0.000	20.000	
SPK-RPD	2-Chlorophenol	95-57-8	87.800	6.074	RPD	03/03/05	0.000	20.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	82.600	6.784	RPD	03/03/05	0.000	20.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	86.500	5.290	RPD	03/03/05	0.000	20.000	
SPK-RPD	Phenol	108-95-2	84.200	6.102	RPD	03/03/05	0.000	20.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	85.300	4.021	RPD	03/03/05	0.000	20.000	
SPK-RPD	4-Nitrophenol	100-02-7	77.400	3.953	RPD	03/03/05	0.000	20.000	
SPK-RPD	Pentachlorophenol	87-86-5	80.700	0.248	RPD	03/03/05	0.000	20.000	
SPK-RPD	Phenol-d5	4165-62-2	85.700	4.895	RPD	03/03/05	0.000	20.000	
SPK-RPD	Pyrene	129-00-0	81.600	2.899	RPD	03/03/05	0.000	20.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	83.200	2.258	RPD	03/03/05	0.000	20.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	87.300	2.153	RPD	03/03/05	0.000	20.000	
SURR	2-Fluorophenol	367-12-4	3156.2	90.600	% Recov	03/03/05	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	3078.8	88.400	% Recov	03/03/05	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	2963.5	85.000	% Recov	03/03/05	64.000	111.000	
SURR	Phenol-d5	4165-62-2	3017.1	86.600	% Recov	03/03/05	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	2736.5	78.500	% Recov	03/03/05	24.000	122.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F03-025
Sample Date: 02/16/05
Receive Date:02/16/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Terphenyl-d14 (7Cl)	98904-43-9	3089.7	88.700	% Recov	03/03/05	35.000	150.000	
BATCH QC									
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 180	n/a	ug/Kg	03/03/05			U
BLANK	1,4-Dichlorobenzene	106-46-7	< 270	n/a	ug/Kg	03/03/05			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 110	n/a	ug/Kg	03/03/05			U
BLANK	2-Fluorophenol	367-12-4	3171.4	95.100	% Recov	03/03/05	42.000	105.000	
BLANK	Acenaphthene	83-32-9	< 140	n/a	ug/Kg	03/03/05			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 93	n/a	ug/Kg	03/03/05			U
BLANK	2-Chlorophenol	95-57-8	< 150	n/a	ug/Kg	03/03/05			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 150	n/a	ug/Kg	03/03/05			U
BLANK	2-Fluorobiphenyl	321-60-8	3011.6	90.300	% Recov	03/03/05	56.000	122.000	
BLANK	Phenol	108-95-2	< 140	n/a	ug/Kg	03/03/05			U
BLANK	Nitrobenzene-d5	4165-60-0	2945.4	88.400	% Recov	03/03/05	64.000	111.000	
BLANK	4-Nitrophenol	100-02-7	< 170	n/a	ug/Kg	03/03/05			U
BLANK	Pentachlorophenol	87-86-5	< 150	n/a	ug/Kg	03/03/05			U
BLANK	Phenol-d5	4165-62-2	2969.0	89.100	% Recov	03/03/05	54.000	120.000	
BLANK	Pyrene	129-00-0	< 160	n/a	ug/Kg	03/03/05			U
BLANK	Tributyl phosphate	126-73-8	< 140	n/a	ug/Kg	03/03/05			U
BLANK	2,4,6-Tribromophenol	118-79-6	2743.5	82.300	% Recov	03/03/05	24.000	122.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	3047.2	91.400	% Recov	03/03/05	35.000	150.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	2870.2	86.100	% Recov	03/03/05	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	2787.1	83.600	% Recov	03/03/05	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	2545.4	76.400	% Recov	03/03/05	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	3014.3	90.400	% Recov	03/03/05	50.000	110.000	
LCS	Acenaphthene	83-32-9	2823.8	84.700	% Recov	03/03/05	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	4094.2	81.900	% Recov	03/03/05	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	4432.8	88.700	% Recov	03/03/05	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	2762.3	82.900	% Recov	03/03/05	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	2861.1	85.800	% Recov	03/03/05	58.000	109.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F03-025
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Phenol	108-95-2	4265.5	85.300	% Recov	03/03/05	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	2787.8	83.600	% Recov	03/03/05	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	3939.1	78.800	% Recov	03/03/05	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	4038.2	80.800	% Recov	03/03/05	62.000	114.000	
LCS	Phenol-d5	4165-62-2	2832.5	85.000	% Recov	03/03/05	59.000	116.000	
LCS	Pyrene	129-00-0	2662.2	79.900	% Recov	03/03/05	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	2827.6	84.800	% Recov	03/03/05	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	2806.8	84.200	% Recov	03/03/05	60.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F03-025
Sample Date: 02/16/05
Receive Date:02/16/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000556									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Kerosene	TPHKEROSENE	105340	80.300	% Recov	03/03/05	70.000	130.000	
MS	ortho-Terphenyl Surr	84-15-1	21744	82.900	% Recov	03/03/05	70.000	130.000	
MSD	Kerosene	TPHKEROSENE	114090	87.100	% Recov	03/03/05	70.000	130.000	
MSD	ortho-Terphenyl Surr	84-15-1	24324	92.900	% Recov	03/03/05	70.000	130.000	
SPK-RPD	ortho-Terphenyl Surr	84-15-1	92.900	11.377	RPD	03/03/05	0.000	20.000	
SURR	ortho-Terphenyl Surr	84-15-1	25124	95.900	% Recov	03/03/05	70.000	130.000	
BATCH QC									
BLANK	Kerosene	TPHKEROSENE	< 3800	n/a	ug/Kg	03/03/05			U
BLANK	ortho-Terphenyl Surr	84-15-1	23335	93.300	% Recov	03/03/05	70.000	130.000	
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 3800	n/a	ug/Kg	03/03/05			U
LCS	ortho-Terphenyl Surr	84-15-1	24737	98.900	% Recov	03/03/05	70.000	130.000	
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	127210	102.000	% Recov	03/03/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: NWTPH-GX TPH Gasoline Range

SAF Number: F03-025
Sample Date: 02/16/05
Receive Date:02/16/05

Lab ID: W050000556

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Total Pet. Hydrocarbons Gas	TPHGASOLINE	<250	n/a	RPD	03/02/05	0.000	20.000	U
MS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	3800	105.556	% Recov	03/02/05	50.000	150.000	
MSD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	4000	111.111	% Recov	03/02/05	50.000	150.000	
SPK-RPD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	111.111	5.128	RPD	03/02/05	0.000	20.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Total Pet. Hydrocarbons Gas	TPHGASOLINE	<250	n/a	mg/L	03/02/05	0.000	300.000	U
LCS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	1282	100.470	% Recov	03/02/05	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: F03-025
Sample Date: 02/08/05
Receive Date:02/08/05

Lab ID: W050000473
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,1-Dichloroethene	75-35-4	22.700	90.800	% Recov	02/18/05	63.000	117.000	
MS	Benzene	71-43-2	28.610	114.000	% Recov	02/18/05	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	57.910	116.000	% Recov	02/18/05	84.000	116.000	
MS	Chlorobenzene	108-90-7	28.360	113.000	% Recov	02/18/05	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	57.990	116.000	% Recov	02/18/05	82.000	136.000	
MS	Toluene-d8	2037-26-5	52.940	106.000	% Recov	02/18/05	89.000	119.000	
MS	Toluene	108-88-3	28.470	114.000	% Recov	02/18/05	76.000	120.000	
MS	Trichloroethene	79-01-6	27.310	109.000	% Recov	02/18/05	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	51.190	96.000	% Recov	02/18/05	63.000	117.000	
MSD	Benzene	71-43-2	60.660	114.000	% Recov	02/18/05	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	119.50	112.000	% Recov	02/18/05	84.000	116.000	
MSD	Chlorobenzene	108-90-7	60.900	114.000	% Recov	02/18/05	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	120.10	113.000	% Recov	02/18/05	82.000	136.000	
MSD	Toluene-d8	2037-26-5	113.80	107.000	% Recov	02/18/05	89.000	119.000	
MSD	Toluene	108-88-3	60.240	113.000	% Recov	02/18/05	76.000	120.000	
MSD	Trichloroethene	79-01-6	58.570	110.000	% Recov	02/18/05	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	96.000	5.567	RPD	02/18/05	0.000	25.000	
SPK-RPD	Benzene	71-43-2	114.000	0.000	RPD	02/18/05	0.000	25.000	
SPK-RPD	4-Bromofluorobenzene	460-00-4	112.000	3.509	RPD	02/18/05	0.000	25.000	
SPK-RPD	Chlorobenzene	108-90-7	114.000	0.881	RPD	02/18/05	0.000	25.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	113.000	2.620	RPD	02/18/05	0.000	25.000	
SPK-RPD	Toluene-d8	2037-26-5	107.000	0.939	RPD	02/18/05	0.000	25.000	
SPK-RPD	Toluene	108-88-3	113.000	0.881	RPD	02/18/05	0.000	25.000	
SPK-RPD	Trichloroethene	79-01-6	110.000	0.913	RPD	02/18/05	0.000	25.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: F03-025
Sample Date: 02/16/05
Receive Date:02/16/05

Lab ID: W050000556

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	4-Bromofluorobenzene	460-00-4	55.570	111.000	% Recov	02/18/05	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	57.820	116.000	% Recov	02/18/05	80.000	134.000	
SURR	Toluene-d8	2037-26-5	53.940	108.000	% Recov	02/18/05	80.000	126.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	1,1-Dichloroethane	75-34-3	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	1,1,1-Trichloroethane	71-55-6	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	1,1,2-Trichloroethane	79-00-5	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	1,1-Dichloroethene	75-35-4	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	1,2-Dichloroethane	107-06-2	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	1-Butanol	71-36-3	< 40	n/a	ug/Kg	02/18/05			U
BLANK	2-Hexanone	591-78-6	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	4-Methyl-2-Pentanone	108-10-1	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Acetone	67-64-1	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Bromodichloromethane	75-27-4	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Benzene	71-43-2	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	4-Bromofluorobenzene	460-00-4	57.020	114.000	% Recov	02/18/05	71.000	125.000	
BLANK	Bromoform	75-25-2	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Carbon disulfide	75-15-0	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Carbon tetrachloride	56-23-5	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Dibromochloromethane	124-48-1	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Chloroform	67-66-3	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Chlorobenzene	108-90-7	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Chloroethane	75-00-3	< 2.0	n/a	ug/Kg	02/18/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: F03-025
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	1,2-Dichloroethane-d4	17060-07-0	56.080	112.000	% Recov	02/18/05	80.000	134.000	
BLANK	1,2-Dichloropropane	78-87-5	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Ethylbenzene	100-41-4	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Bromomethane	74-83-9	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Chloromethane	74-87-3	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	2-Butanone	78-93-3	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Methylenechloride	75-09-2	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Tetrachloroethene	127-18-4	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Styrene	100-42-5	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Xylenes (total)	1330-20-7	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Toluene-d8	2037-26-5	52.700	105.000	% Recov	02/18/05	80.000	126.000	
BLANK	Toluene	108-88-3	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Trichloroethene	79-01-6	< 2.0	n/a	ug/Kg	02/18/05			U
BLANK	Vinyl chloride	75-01-4	< 2.0	n/a	ug/Kg	02/18/05			U
LCS	1,1-Dichloroethene	75-35-4	43.490	87.000	% Recov	02/18/05	70.000	130.000	
LCS	Benzene	71-43-2	55.860	112.000	% Recov	02/18/05	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	113.60	114.000	% Recov	02/18/05	71.000	125.000	
LCS	Chlorobenzene	108-90-7	54.900	110.000	% Recov	02/18/05	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	115.90	116.000	% Recov	02/18/05	80.000	134.000	
LCS	Toluene-d8	2037-26-5	102.70	103.000	% Recov	02/18/05	80.000	126.000	
LCS	Toluene	108-88-3	51.420	103.000	% Recov	02/18/05	70.000	130.000	
LCS	Trichloroethene	79-01-6	50.950	102.000	% Recov	02/18/05	70.000	130.000	

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-025: F03-025

Group #: WSCF20050388

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry															
W050000556	B19407	GRP	TRENT	14596-10-2	Americium-241	SOIL	LA-508-471		3.00	pCi/g	1.00	0.056	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.78	pCi/g	1.00	0.0	03/04/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	10198-40-0	Cobalt-60	SOIL	LA-508-481		0.0443	pCi/g	1.00	9.2e-03	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.012	pCi/g	1.00	0.0	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	10045-97-3	Cesium-137	SOIL	LA-508-481		0.0107	pCi/g	1.00	0.010	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 6.6e-03	pCi/g	1.00	0.0	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	14683-23-9	Europium-152	SOIL	LA-508-481	U	-7.34e-03	pCi/g	1.00	0.027	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.016	pCi/g	1.00	0.0	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	15585-10-1	Europium-154	SOIL	LA-508-481	U	4.62e-03	pCi/g	1.00	0.030	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.017	pCi/g	1.00	0.0	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	14391-16-3	Europium-155	SOIL	LA-508-481	U	6.77e-03	pCi/g	1.00	0.041	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+- 0.025	pCi/g	1.00	0.0	02/18/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	13994-20-2	Neptunium-237	SOIL	LA-508-471	U	2.00e-03	pCi/g	1.00	9.5e-03	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	Np-237 by AEA Total Ctng Error	SOIL	LA-508-471		+- 6.0e-03	pCi/g	1.00	0.0	03/02/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	13981-16-3	Plutonium-238	SOIL	LA-508-471		0.530	pCi/g	1.00	0.048	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.15	pCi/g	1.00	0.0	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471		9.10	pCi/g	1.00	4.9e-03	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+- 2.3	pCi/g	1.00	0.0	03/03/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	U-233/234	Uranium-233/234	SOIL	LA-508-471		0.170	pCi/g	1.00	0.018	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+- 0.056	pCi/g	1.00	0.0	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	15117-96-1	Uranium-235	SOIL	LA-508-471		0.0170	pCi/g	1.00	0.015	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.014	pCi/g	1.00	0.0	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	U-238	Uranium-238	SOIL	LA-508-471		0.160	pCi/g	1.00	0.023	03/07/05	02/16/05	02/16/05
W050000556	B19407	GRP	TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+- 0.054	pCi/g	1.00	0.10	03/07/05	02/16/05	02/16/05

MDL=Minimum Detection Limit B - The analyte < the RDL but >= the IDL/MDL (inorganic) U - Analyzed for but not detected above limiting criteria.
RQ=Result Qualifier

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

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

SAF Number: F03-025
Sample Date: 02/16/05
Receive Date:02/16/05

Lab ID: W050000556

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Cobalt-60	10198-40-0	4.40e-02	0.680	RPD	02/18/05	0.000	20.000	
DUP	Cesium-137	10045-97-3	U8.35e-03	n/a	RPD	02/18/05	0.000	20.000	
DUP	Europium-152	14683-23-9	U-6.65e-3	n/a	RPD	02/18/05	0.000	20.000	
DUP	Europium-154	15585-10-1	U-2.20e-4	n/a	RPD	02/18/05	0.000	20.000	
DUP	Europium-155	14391-16-3	U2.44e-02	n/a	RPD	02/18/05	0.000	20.000	

BATCH QC

BLANK	Cobalt-60	10198-40-0	U3.48e-3	n/a	pCi/g	02/17/05	-10.000	1000.000	
BLANK	Cesium-137	10045-97-3	U-8.1e-3	n/a	pCi/g	02/17/05	-10.000	1000.000	
BLANK	Europium-152	14683-23-9	U8.29e-3	n/a	pCi/g	02/17/05	-10.000	1000.000	
BLANK	Europium-154	15585-10-1	U4.40e-3	n/a	pCi/g	02/17/05	-10.000	1000.000	
BLANK	Europium-155	14391-16-3	U-8.6e-3	n/a	pCi/g	02/17/05	-10.000	1000.000	
LCS	Cobalt-60	10198-40-0	4.43e+03	105.728	% Recov	02/18/05	80.000	120.000	
LCS	Cesium-137	10045-97-3	3.86e+03	107.821	% Recov	02/18/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Neptunium by AEA

SAF Number: F03-025
Sample Date: 02/02/05
Receive Date:02/02/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000288									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Neptunium-237	13994-20-2	U6.5E-03	n/a	RPD	03/02/05	0.000	25.000	
BATCH QC									
BLANK	Neptunium-237	13994-20-2	U-4.0e-03	n/a	pCi/g	03/02/05	-10.000	1000.000	
LCS	Neptunium-237	13994-20-2	44.3	44.300	% Recov	03/02/05	75.000	125.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Americium by AEA

SAF Number: F03-025
Sample Date: 02/08/05
Receive Date:02/08/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000473									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Americium-241	14596-10-2	U3.4e-02	n/a	RPD	03/03/05	0.000	20.000	
BATCH QC									
BLANK	Americium-241	14596-10-2	U-1.6e-02	n/a	pCi/g	03/03/05	-10.000	1000.000	
LCS	Americium-241	14596-10-2	4.6e+01	102.222	% Recov	03/03/05	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Plutonium Isotopics by AEA

SAF Number: F03-025
Sample Date: 02/08/05
Receive Date:02/08/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000473									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Pu-239/240 by AEA	PU-239/240	U1.0e-02	n/a	RPD	03/03/05	0.000	20.000	
BATCH QC									
BLANK	Pu-239/240 by AEA	PU-239/240	U9.0e-03	n/a	pCi/g	03/03/05	-10.000	1000.000	
LCS	Pu-239/240 by AEA	PU-239/240	4.6e+01	98.925	% Recov	03/03/05	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050388
Matrix: SOLID
Test: Uranium Isotopics by AEA

SAF Number: F03-025
Sample Date: 02/08/05
Receive Date:02/08/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000473									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Uranium-238	U-238	1.4e-01	0.000	RPD	03/07/05	0.000	20.000	
BATCH QC									
BLANK	Uranium-238	24678-82-8	U1.4e-02	n/a	pCi/g	03/07/05	-10.000	1000.000	
LCS	Uranium-238	24678-82-8	9.0e+01	118.702	% Recov	03/07/05	75.000	125.000	

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F03-025

Group #: WSCF20050388

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		Am-241 from GEA = 1.5 pCi/gram Np237 LCS recovery is low so the sample result is an estimated value.lmh ICP-MS: Preparation blank units are in ppb (ug/L) and sample units are in ug/g (ppm). Co, Hg, and Sb LCS recoveries are within manufacturers specifications; no flags. Organics: Sample concentrations have been corrected for moisture and are reported on a dry weight basis. den

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

This report may not be reproduced, except in its entirety without the written approval of the WSCF Laboratory.

WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention: Steve Trent
Project Number F03-025 :F03-025

Group #: WSCF20050388

Sample #	Client ID			Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				14	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	PB-212 Count Error				14	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	PB-214 Count Error				14	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	AM-241 Count Error				15	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error				16	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	RA-226 Count Error				16	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	TL-208 Count Error				17	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	AC-228 Count Error				18	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	RA-228 Count Error				18	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	SN-126 Count Error				23	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	BI-212 Count Error				33	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	CS-134 Count Error				47	%
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	CS-134				0.023	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	SN-126				0.11	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	TL-208				0.14	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	BI-212				0.21	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	BI-214				0.43	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	RA-226				0.43	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	AC-228				0.44	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	RA-228				0.44	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	PB-212				0.45	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	PB-214				0.48	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	AM-241				1.5	pCi/g
W050000556	B19407	GRP	TRENT	Gamma Energy Analysis-grd H2O	K-40				10	pCi/g

RQ=Result Qualifier

This report may not be reproduced, except in its entirety without the written approval of the WSCF Laboratory.

WSCF
METHOD REFERENCES REPORT

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-212-411	Determination of Soil pH Measurement	
	EPA SW-846 9045C	SOIL AND WASTE pH
LA-503-401	LA-503-401: ANALYSIS OF CATIONS BY ION CHROMATOGRAPHY	
	EPA-600/4-86-024 300.7	Dissolved Sodium, Ammonium, Potassium, and Calcium in Wet Deposition by Chemical
LA-505-411	LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE	
	EPA SW-846 6010B	INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY
LA-505-412	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY	
	EPA-600/R-94-111 200.8	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS
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.
LA-519-412	LA-519-412: TOTAL RESIDUE/% SOLIDS DRIED AT 103 - 105 C	
	EPA-600/4-79-020 160.3	RESIDUE, TOTAL
	Standard Methods 2540B	Total Solids Dried at 103-105 C
LA-523-427	LA-523-427: POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY	
	EPA SW-846 3510C	SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION
	EPA SW-846 3545	PRESSURIZED FLUID EXTRACTION (PFE)

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at \\ap006\aspdocs\WSCF\Sample Mgmt\ProcedureMethodCrossReference.pdf. This document includes on-line links to full-text versions of the procedures and methods, where available.

WSCF
METHOD REFERENCES REPORT

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.

	EPA SW-846 3665A	SULFURIC ACID/PERMANGANATE CLEANUP
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
	EPA SW-846 8082	POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY
LA-523-443	LA-523-443: GAS CHROMATOGRAPH ANALYSIS OF GASOLINE RANGE TOTAL PETROLEUM HYDROCA	
	WDOE TPH NWTPH-G	Volatile Petroleum Products Method for Soil and Water
LA-523-455	LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846	
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
	EPA SW-846 8260B	VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)
LA-523-456	LA-523-456: SEMIVOLATILE SAMPLE ANALYSIS BY SW-846, METHOD 8270C	
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
	EPA SW-846 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)
LA-533-410	LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY	
	EPA-600/R-94-111 300	DETERMINATION OF INORGANIC ANIONS BY ION CHROMATOGRAPHY
LA-695-402	LA-695-402: DETERMINATION OF CYANIDE BY MIDIDISTILLATION AND SPECTROPHOTOMETRIC	
	EPA-600/4-79-020 335.2	Cyanide, Total
NWTPH	NWTPH-Diesel and/or Gasoline	
	WDOE NWTPH-Dx/Gx	Total Petroleum Hydrocarbons - Diesel/Gasoline
Organics	Organics - Alcohols, Glycols	

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at \\ap006\aspdocs\WSCF\Sample Mgmt\ProcedureMethodCrossReference.pdf. This document includes on-line links to full-text versions of the procedures and methods, where available.

WSCF
METHOD REFERENCES REPORT

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.

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 \\ap006\aspdocs\WSCF\Sample Mgmt\ProcedureMethodCrossReference.pdf. This document includes on-line links to full-text versions of the procedures and methods, where available.

w13qlog v1 24-mar-2005 08:09:25

W13q Worklist/Batch/QC Report for Group# WSCF20050388

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
				SAMPLE	W050000556	Percent Solids
				SAMPLE	W050000556	pH Soil and Waste Measurement
25110	1	25467	28890	BLANK		Gamma Energy Analysis-grd H2O
25110	2	25467	28890	LCS		Gamma Energy Analysis-grd H2O
25110	3	25467	28890	DUP	W050000556	Gamma Energy Analysis-grd H2O
25110	4	25467	28890	SAMPLE	W050000556	Gamma Energy Analysis-grd H2O
			28940	BLANK		Cyanide by Midi/Spectrophotom
			28940	BLNK-PREP		Cyanide by Midi/Spectrophotom
			28940	LCS		Cyanide by Midi/Spectrophotom
			28940	MS	W050000556	Cyanide by Midi/Spectrophotom
			28940	MSD	W050000556	Cyanide by Midi/Spectrophotom
			28940	SAMPLE	W050000556	Cyanide by Midi/Spectrophotom
			28940	SPK-RPD	W050000556	Cyanide by Midi/Spectrophotom
25211	1	25571	28950	BLANK		Neptunium by AEA
25211	2	25571	28950	LCS		Neptunium by AEA
25211	3	25571	28950	DUP	W050000288	Neptunium by AEA
25211	6	25571	28950	SAMPLE	W050000556	Neptunium by AEA
25245	9	25610	28962	BLANK		ICP-2008 MS All possible metal
25245	10	25610	28962	LCS		ICP-2008 MS All possible metal
25245	14	25610	28962	SAMPLE	W050000556	ICP-2008 MS All possible metal
25245	12	25610	28962	MS	W050000765	ICP-2008 MS All possible metal
25245	13	25610	28962	MSD	W050000765	ICP-2008 MS All possible metal
25245	0	25610	28962	SPK-RPD	W050000765	ICP-2008 MS All possible metal
25238	1	25599	28971	BLANK		ICP Metals Analysis, Grd H20 P
25238	2	25599	28971	LCS		ICP Metals Analysis, Grd H20 P
25238	4	25599	28971	MS	W050000473	ICP Metals Analysis, Grd H20 P
25238	5	25599	28971	MSD	W050000473	ICP Metals Analysis, Grd H20 P
25238	0	25599	28971	SPK-RPD	W050000473	ICP Metals Analysis, Grd H20 P
25238	7	25599	28971	SAMPLE	W050000556	ICP Metals Analysis, Grd H20 P
			29004	BLANK		WTPH-D TPH Diesel Range (Wa)
			29004	LCS		WTPH-D TPH Diesel Range (Wa)
			29004	MS	W050000556	WTPH-D TPH Diesel Range (Wa)
			29004	MSD	W050000556	WTPH-D TPH Diesel Range (Wa)
			29004	SAMPLE	W050000556	WTPH-D TPH Diesel Range (Wa)
			29004	SPK-RPD	W050000556	WTPH-D TPH Diesel Range (Wa)
			29004	SURR	W050000556	WTPH-D TPH Diesel Range (Wa)
			29019	BLANK		SW-846 8270B Semi-Vols
			29019	LCS		SW-846 8270B Semi-Vols
			29019	MS	W050000556	SW-846 8270B Semi-Vols
			29019	MSD	W050000556	SW-846 8270B Semi-Vols
			29019	SAMPLE	W050000556	SW-846 8270B Semi-Vols
			29019	SPK-RPD	W050000556	SW-846 8270B Semi-Vols
			29019	SURR	W050000556	SW-846 8270B Semi-Vols
			29023	BLANK		PCBs complete list
			29023	LCS		PCBs complete list
			29023	MS	W050000556	PCBs complete list

			29023	MSD	W050000556	PCBs complete list
			29023	SAMPLE	W050000556	PCBs complete list
			29023	SPK-RPD	W050000556	PCBs complete list
			29023	SURR	W050000556	PCBs complete list
25251	1	25616	29025	BLANK		Plutonium Isotopics by AEA
25251	2	25616	29025	LCS		Plutonium Isotopics by AEA
25251	3	25616	29025	DUP	W050000473	Plutonium Isotopics by AEA
25251	5	25616	29025	SAMPLE	W050000556	Plutonium Isotopics by AEA
25252	1	25617	29029	BLANK		Americium by AEA
25252	2	25617	29029	LCS		Americium by AEA
25252	3	25617	29029	DUP	W050000473	Americium by AEA
25252	5	25617	29029	SAMPLE	W050000556	Americium by AEA
25250	1	25615	29046	BLANK		Uranium Isotopics by AEA
25250	2	25615	29046	LCS		Uranium Isotopics by AEA
25250	3	25615	29046	DUP	W050000473	Uranium Isotopics by AEA
25250	5	25615	29046	SAMPLE	W050000556	Uranium Isotopics by AEA
25300	2	25668	29051	BLANK		Ammonia (N) by IC
25300	11	25668	29051	BLANK		Ammonia (N) by IC
25300	3	25668	29051	LCS		Ammonia (N) by IC
25300	5	25668	29051	DUP	W050000473	Ammonia (N) by IC
25300	6	25668	29051	MS	W050000473	Ammonia (N) by IC
25300	7	25668	29051	MSD	W050000473	Ammonia (N) by IC
25300	8	25668	29051	SAMPLE	W050000556	Ammonia (N) by IC
25306	2	25673	29060	BLANK		Anions by Ion Chromatography
25306	12	25673	29060	BLANK		Anions by Ion Chromatography
25306	3	25673	29060	LCS		Anions by Ion Chromatography
25306	5	25673	29060	DUP	W050000473	Anions by Ion Chromatography
25306	6	25673	29060	MS	W050000473	Anions by Ion Chromatography
25306	7	25673	29060	MSD	W050000473	Anions by Ion Chromatography
25306	8	25673	29060	SAMPLE	W050000556	Anions by Ion Chromatography
			29093	BLANK		VOA Ground Water Protection
			29093	LCS		VOA Ground Water Protection
			29093	MS	W050000473	VOA Ground Water Protection
			29093	MSD	W050000473	VOA Ground Water Protection
			29093	SPK-RPD	W050000473	VOA Ground Water Protection
			29093	SAMPLE	W050000556	VOA Ground Water Protection
			29093	SURR	W050000556	VOA Ground Water Protection
25341	1	25708	29095	BLANK		Alcohols, Glycols - 8015
25341	2	25708	29095	LCS		Alcohols, Glycols - 8015
25341	4	25708	29095	DUP	W050000473	Alcohols, Glycols - 8015
25341	5	25708	29095	MS	W050000473	Alcohols, Glycols - 8015
25341	6	25708	29095	MSD	W050000473	Alcohols, Glycols - 8015
25341	6	25708	29095	SPK-RPD	W050000473	Alcohols, Glycols - 8015
25341	7	25708	29095	SAMPLE	W050000556	Alcohols, Glycols - 8015
25407	1	25773	29162	BLANK		NWTPH-GX TPH Gasoline Range
25407	2	25773	29162	LCS		NWTPH-GX TPH Gasoline Range
25407	4	25773	29162	DUP	W050000556	NWTPH-GX TPH Gasoline Range
25407	5	25773	29162	MS	W050000556	NWTPH-GX TPH Gasoline Range
25407	6	25773	29162	MSD	W050000556	NWTPH-GX TPH Gasoline Range
25407	3	25773	29162	SAMPLE	W050000556	NWTPH-GX TPH Gasoline Range
25407	6	25773	29162	SPK-RPD	W050000556	NWTPH-GX TPH Gasoline Range

M8141-SLF-05-153

ATTACHMENT 3

SAMPLE RECEIPT INFORMATION

Consisting of 4 pages
Including cover page

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

3/18/05

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program
Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 119143/ES10
Group#: 20050388
Project#: F03-025
Proj Mgr: Steve Trent A0-21
Phone: 373-5869

The following samples were received from you on 02/16/05. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample#	Sample Id	Matrix	Sample Date
		Tests Scheduled	
W050000556	B19407	GRP TRENT Solid, or handle as if solid @2008 @8015GPP @AEA-30 @AEA-31 @AEA-32 @AEA-33 @GEA-GPP @GPP6010 @IC-30 @PCBGPP @SVOC @TPHD-WA @TPHG-WA @VOA-GPP CN-02 NH4-IC PERSO PH-30	02/16/05

Test Acronym Description

Test Acronym	Description
@2008	ICP-2008 MS All possible metal
@8015GPP	Alcohols, Glycols - 8015
@AEA-30	Plutonium Isotopics by AEA
@AEA-31	Americium by AEA
@AEA-32	Uranium Isotopics by AEA
@AEA-33	Neptunium by AEA
@GEA-GPP	Gamma Energy Analysis-grd H2O
@GPP6010	ICP Metals Analysis, Grd H20 P
@IC-30	Anions by Ion Chromatography
@PCBGPP	PCBs complete list
@SVOCGPP	SW-846 8270B Semi-Vols
@TPHD-WA	WTPH-D TPH Diesel Range (Wa)
@TPHG-WA	NWTPH-GX TPH Gasoline Range
@VOA-GPP	VOA Ground Water Protection
CN-02	Cyanide by Midi/Spectrophotom
NH4-IC	Ammonia (N) by IC
PERSOLID	Percent Solids
PH-30	pH Soil and Waste Measurement

3/1/05

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F03-015-130	PAGE 1 OF 4-2

COLLECTOR Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT TRENT, STEVE	TELEPHONE NO. 373-5689	PROJECT COORDINATOR TRENT, SJ
SAMPLING LOCATION 216-Z-7, ~~59-SR-60~~ 40-42.5	PROJECT DESIGNATION 200-LW-1/LW-2 Characterization - Soil		SAF NO. F03-025
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-356 1	COA 119143E510	METHOD OF SHIPMENT Government Vehicle
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. NA		BILL OF LADING/AIR BILL NO. NA

PRICE CODE 8N
AIR QUALITY ☐
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=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

20050385

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B9417

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None			
TYPE OF CONTAINER	Gs*	aG	aG	Gs*	P	aG	aG			
NO. OF CONTAINER(S)	3	1	1	3	1	1	1			
VOLUME	40mL	120mL	120mL	40mL	500mL	250mL	120mL			
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	SEE ITEM (6) IN SPECIAL INSTRUCTIONS			

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B19407 W050020556	SOIL	2/16/05	1115	X	X	X	X	X	X	X		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature] / David Tyra	2/16/05 12:50	Victor [signature]	2/16/05 12:50
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F03-025-130	PAGE 2 OF 2
COLLECTOR Pope/Pfister/Tyra/Wiberg	COMPANY CONTACT TRENT, STEVE	TELEPHONE NO. 373-5689	PROJECT COORDINATOR TRENT, SJ	PRICE CODE BN	DATA TURNAROUND
SAMPLING LOCATION 216-Z-7; ~~52.5-60ft~~ 40-42.5	PROJECT DESIGNATION 200-LW-1/LW-2 Characterization - Soil		SAF NO. F03-025	AIR QUALITY ☐	45 Days
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-356 1	COA 119143E510	METHOD OF SHIPMENT Governement Vehicle		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. NA		BILL OF LADING/AIR BILL NO. NA		

SPECIAL INSTRUCTIONS

The lab is to analyze pH within 24 hours of sample receipt. The lab is to report kerosene range organics from the WTPH-D analysis. FH acknowledges that the analytical holding time for Nitrate, Nitrite and Phosphate by EPA Method 300.0 will not be met.

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Butanol)
(2)Semi-VOA - 8270A (TCL) (Phenol) Semi-VOA – 8270A (Add-On) (Tributyl phosphate) TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range) TPH-Gasoline Range - WTPH-G;
(3)Alcohols, Glycols, & Ketones - 8015 (Ethylene glycol)
(4)Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155) Gamma Spec - ~~Add-on (Antimony-125, Cesium-134)~~ Isotopic Plutonium; Isotopic Uranium; Neptunium-237; Americium-241;
(5)ICP/MS - 200.8 (TAL) (Antimony, Barium, Cadmium, Chromium, Copper, Nickel, Silver) ICP/MS - 200.8 (Add-on) (Arsenic, Beryllium, Lead, Mercury, Selenium, Uranium) ICP Metals - 6010A (Add-on) (Bismuth)
(6)IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate) Cations (IC) - 300.7 (Nitrogen in ammonium) Cyanide (Total) - 335.2; pH (Soil) - 9045;

A-6003-618(03/03)