Fluor Hanford, Inc.
Post Office Box 1000
Richland, Washington 99352

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FLUOR

Memorandum

T4180-03-SLF-008

To: S. J. Trent

Date: June 13, 2003

From: S. L. Fitzgerald, Manager
WSCF Analytical Services

Telephone: 373-7495

cc:

W/Attachments		W/O Attachments	
T. F. Dale	S3-28	C. M. Caprio	S3-30
S. L. Fitzgerald	S3-30	D. L. Renberger	S3-30
H. K. Meznarich	S3-30	L. C. Swanson	E6-35
J. E. Trechter	S3-30	File/LB	
M. Neely	S3-30		

Subject: FINAL RESULTS FOR 200-PW-2/200-PW-4 OU- BOREHOLE SOIL SAMPLING-SAMPLE DELIVERY GROUP WSCF20030613 SAF NUMBER F03-006

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

(2) HNF-SD-CD-QAPP-017, Rev. 5, Waste Sampling and Characterization Facility Quality Assurance Plan

This letter contains a narrative (Attachment 1) for the sample delivery group (WSCF20030613), the analytical results (Attachment 2) and the sample receipt information (Attachment 3).

slf/ddw

Attachments 3

JUN 2003 RECEIVED

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T4180-03-SLF-008

ATTACHMENT 1

NARRATIVE

Consisting of 2 pages
Cover page not included

Sample Delivery Group	**WSCF20030613**
Sample Matrix	**Soil**
Sample Visual	**Brown**
SAF Number	**F03-006**
Data Deliverable	**Summary Report**

Introduction

Two (2) soil samples (B16W99 and B16WB0) from the GPP were received at the WSCF Laboratory on April 30, 2003. The samples were analyzed for those analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Protection Program- Letter of Instruction*, referenced in the cover letter and additional guidance provided by the customer (see page 3-4).

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 Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

- ICP-MS Metals by EPA Method 200.8 and ICP-AES Metals by EPA SW-846 Method 6010A. Analytical work was performed with no deviations to the approved procedure.
- IC Anions and Ammonium by EPA SW-846 Method 300.0 and 300.7. Analytical work was performed with no deviations to the approved procedure for Ammonium, but a deviation was required for the Anions (see comments below).
- The pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved procedure.
- All RadChem analyses (AEA's, GEA) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved procedures.

Comments

ICP-AES and ICP-MS Metals – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-14, 2-18 and 2-19 for QC details.

IC Anions – The client requested hold time(s) for this analysis was not met. The client was notified and requested WSCF to continue with this analysis. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-21 and 2-22 for QC details.

NH4 – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-20 for QC details.

RadChem – There are no hold times associated with these WDOE accredited methods. Except for GEA, a Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-15, 2-16, and 2-17 for QC details.

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.

_____
Troy Dale
WSCF Production Control

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

T4180-03-SLF-008

ATTACHMENT 2

ANALYTICAL RESULTS

Consisting of 22 pages
Cover page not included

WSCF
ANALYTICAL RESULTS REPORT

for

Ground Water Protection Program

Richland, WA 99352

Attention: Steve Trent

Analytical: _____

Client Services: _____

Contract#: F03-006
Report#: WSCF20030613
Report Date: 5-jun-2003
Report W004/ver. 5.1
Ground Water Protection Program

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-006: 200-PW-2/PW-4

Group #: WSCF20030613

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W030000265	B16W99	TRENT	7664-41-7	Ammonia (N) by IC	SOLID	LA-503-401	U	< 0.200	ug/g	50.00	0.20	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	PH	pH Soil and Waste Measurement	SOLID	LA-212-411		8.59	pH		0.010	05/22/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14596-10-2	Am-241 by AEA	SOLID	LA-508-471	U	0.0370	pCi/g		0.039	05/27/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOLID	LA-508-471		73.0	%		0.0	05/27/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	24959-67-9	Bromide (Br) by IC	SOLID	LA-533-410	U	< 2.25	ug/g	50.00	2.2	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	16887-00-6	Chloride (Cl) by IC	SOLID	LA-533-410	U	< 0.700	ug/g	50.00	0.70	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	16984-48-8	Fluoride (F) by IC	SOLID	LA-533-410		1.69	ug/g	50.00	0.35	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	NO3-N	Nitrate (N) by IC	SOLID	LA-533-410		33.0	ug/g	50.00	0.25	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	NO2-N	Nitrite (N) by IC	SOLID	LA-533-410	U	< 0.450	ug/g	50.00	0.45	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14265-44-2	Phosphate (P) by IC	SOLID	LA-533-410	U	< 0.650	ug/g	50.00	0.65	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14808-79-8	Sulfate (SO4) by IC	SOLID	LA-533-410		5.79	ug/g	50.00	1.2	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Ac-228 Rel.% Count Error (GEA)	SOLID	LA-508-462		16.4	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14331-83-0	Ac-228 by GEA	SOLID	LA-508-462		0.497	pCi/g		0.029	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Am-241 Rel.% Count Error (GEA)	SOLID	LA-508-462		96.3	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14596-10-2	Am-241 by GEA	SOLID	LA-508-462	U	0.0549	pCi/g		0.078	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Bi-212 Rel.% Count Error (GEA)	SOLID	LA-508-462		26.9	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14913-49-6	Bi-212 by GEA	SOLID	LA-508-462		0.338	pCi/g		0.068	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Bi-214 Rel.% Count Error (GEA)	SOLID	LA-508-462		13.9	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14733-03-0	Bi-214 by GEA	SOLID	LA-508-462		0.423	pCi/g		0.018	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Ce-144 Rel.% Count Error (GEA)	SOLID	LA-508-462		214	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14762-78-8	Ce-144 by GEA	SOLID	LA-508-462	U	-0.0241	pCi/g		0.076	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Co-60 Rel.% Count Error (GEA)	SOLID	LA-508-462		480	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	10198-40-0	Co-60 by GEA	SOLID	LA-508-462	U	1.04e-03	pCi/g		8.8e-03	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Cs-134 Rel.% Count Error (GEA)	SOLID	LA-508-462		40.7	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	13967-70-9	Cs-134 by GEA	SOLID	LA-508-462		0.0273	pCi/g		0.012	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Cs-137 Rel.% Count Error (GEA)	SOLID	LA-508-462		325	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	10045-97-3	Cs-137 by GEA	SOLID	LA-508-462	U	-1.92e-03	pCi/g		9.2e-03	06/02/03	04/30/03	04/30/03

MDL=Minimum Detection Limit E - Analyte is an estimate, has potentially larger errors 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: F03-006: 200-PW-2/PW-4
Group #: WSCF20030613

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W030000265	B16W99	TRENT	E,T,C	Eu-152 Rel.% Count Error (GEA)	SOLID	LA-508-462		130	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14683-23-9	Eu-152 by GEA	SOLID	LA-508-462	U	-0.0137	pCi/g		0.028	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Eu-154 Rel.% Count Error (GEA)	SOLID	LA-508-462		302	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	15585-10-1	Eu-154 by GEA	SOLID	LA-508-462	U	-5.91e-03	pCi/g		0.026	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Eu-155 Rel.% Count Error (GEA)	SOLID	LA-508-462		101	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14391-16-3	Eu-155 by GEA	SOLID	LA-508-462	U	0.0244	pCi/g		0.042	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Nb-94 Rel.% Count Error (GEA)	SOLID	LA-508-462		250	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14681-63-1	Nb-94 by GEA	SOLID	LA-508-462	U	2.28e-03	pCi/g		8.6e-03	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Pb-212 Rel.% Count Error (GEA)	SOLID	LA-508-462		12.6	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	15092-94-1	Pb-212 by GEA	SOLID	LA-508-462		0.490	pCi/g		0.019	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Pb-214 Rel.% Count Error (GEA)	SOLID	LA-508-462		15.2	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	15067-28-4	Pb-214 by GEA	SOLID	LA-508-462		0.423	pCi/g		0.020	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Ra-226 Rel.% Count Error (GEA)	SOLID	LA-508-462		13.9	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	13982-63-3	Ra-226 by GEA	SOLID	LA-508-462		0.423	pCi/g		0.018	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Ra-228 Rel.% Count Error (GEA)	SOLID	LA-508-462		16.4	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	15262-20-1	Ra-228 by GEA	SOLID	LA-508-462		0.497	pCi/g		0.029	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Ru-103 Rel.% Count Error (GEA)	SOLID	LA-508-462		214	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	13968-53-1	Ru-103 by GEA	SOLID	LA-508-462	U	2.39e-03	pCi/g		9.0e-03	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Ru-106 Rel.% Count Error (GEA)	SOLID	LA-508-462		100	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	13967-48-1	Ru-106 by GEA	SOLID	LA-508-462	U	-0.0570	pCi/g		0.077	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Sb-125 Rel.% Count Error (GEA)	SOLID	LA-508-462		256	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14234-35-6	Sb-125 by GEA	SOLID	LA-508-462	U	5.82e-03	pCi/g		0.025	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Sn-113 Rel.% Count Error (GEA)	SOLID	LA-508-462		618	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	13966-06-8	Sn-113 by GEA	SOLID	LA-508-462	U	-1.16e-03	pCi/g		0.012	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Sn-126 Rel.% Count Error (GEA)	SOLID	LA-508-462		27.5	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	15832-50-5	Sn-126 by GEA	SOLID	LA-508-462	U	0.123	pCi/g		0.12	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Th-234 Rel.% Count Error (GEA)	SOLID	LA-508-462		79.8	%		0.0	06/02/03	04/30/03	04/30/03

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-006: 200-PW-2/PW-4

Group #: WSCF20030613

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W030000265	B16W99	TRENT	15065-10-8	Th-234 by GEA	SOLID	LA-508-462	U	0.590	pCi/g		0.60	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Tl-208 Rel.% Count Error (GEA)	SOLID	LA-508-462		15.0	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	14913-50-9	Tl-208 by GEA	SOLID	LA-508-462		0.146	pCi/g		8.7e-03	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	U-235 Rel.% Count Error (GEA)	SOLID	LA-508-462		30.4	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	15117-96-1	U-235 by GEA	SOLID	LA-508-462	U	0.0535	pCi/g		0.080	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Zn-65 Rel.% Count Error (GEA)	SOLID	LA-508-462		313	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	13982-39-3	Zn-65 by GEA	SOLID	LA-508-462	U	4.17e-03	pCi/g		0.019	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	U	< 9.66	ug/g	96.60	9.7	05/28/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-50-8	Boron by ICP	SOLID	LA-505-411	U	< 9.850	ug/g	96.60	9.853	05/28/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7429-90-5	Aluminum by ICP-MS	SOLID	LA-505-412	E	1.50e+04	ug/g	4.81	53	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	U	< 2.40	ug/g	4.81	2.4	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-38-2	Arsenic by ICP-MS	SOLID	LA-505-412	E	3.06	ug/g	4.81	1.4	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412		141	ug/g	4.81	0.96	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-41-7	Beryllium by ICP-MS	SOLID	LA-505-412	U	< 1.44	ug/g	4.81	1.4	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-43-9	Cadmium by ICP-MS	SOLID	LA-505-412	U	< 0.481	ug/g	4.81	0.48	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-47-3	Chromium by ICP-MS	SOLID	LA-505-412		7.90	ug/g	4.81	1.4	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-48-4	Cobalt by ICP-MS	SOLID	LA-505-412		15.9	ug/g	4.81	0.96	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-50-8	Copper by ICP-MS	SOLID	LA-505-412		19.7	ug/g	4.81	2.4	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7439-92-1	Lead by ICP-MS	SOLID	LA-505-412	U	< 5.77	ug/g	4.81	5.8	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412		652	ug/g	4.81	1.4	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7439-97-6	Mercury by ICP-MS	SOLID	LA-505-412	U	< 0.481	ug/g	4.81	0.48	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7439-98-7	Molybdenum by ICP-MS	SOLID	LA-505-412	U	< 1.44	ug/g	4.81	1.4	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412	E	11.3	ug/g	4.81	2.4	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7782-49-2	Selenium by ICP-MS	SOLID	LA-505-412	U	< 1.44	ug/g	4.81	1.4	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412		2.13	ug/g	4.81	0.96	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-28-0	Thallium by ICP-MS	SOLID	LA-505-412		0.582	ug/g	4.81	0.48	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-29-1	Thorium by ICP-MS	SOLID	LA-505-412		5.06	ug/g	4.81	0.96	06/03/03	04/30/03	04/30/03

MDL=Minimum Detection Limit
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DF=Dilution Factor

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

Report W004/ver. 5.1
Ground Water Protection Program

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-006: 200-PW-2/PW-4

Group #: WSCF20030613

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W030000265	B16W99	TRENT	7440-61-1	Uranium by ICP-MS	SOLID	LA-505-412		0.666	ug/g	4.81	0.48	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-62-2	Vanadium by ICP-MS	SOLID	LA-505-412		122	ug/g	4.81	1.9	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	7440-66-6	Zinc by ICP-MS	SOLID	LA-505-412	E	58.4	ug/g	4.81	19	06/03/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	13981-16-3	Pu-238 by AEA	SOLID	LA-508-471	U	0.0240	pCi/g		0.055	05/27/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOLID	LA-508-471		140	%		0.0	05/27/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOLID	LA-508-471		280	%		0.0	05/27/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	PU-239/240	Pu-239/240 by AEA	SOLID	LA-508-471	U	4.00e-03	pCi/g		0.022	05/27/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	13966-29-5	U-234 by AEA	SOLID	LA-508-471		0.190	pCi/g		0.012	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	U-234 by AEA Total Cntg Error	SOLID	LA-508-471		26.0	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	15117-96-1	U-235 by AEA	SOLID	LA-508-471		0.0140	pCi/g		0.013	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOLID	LA-508-471		81.0	%		0.0	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	24678-82-8	U-238 by AEA	SOLID	LA-508-471		0.170	pCi/g		0.012	06/02/03	04/30/03	04/30/03
W030000265	B16W99	TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOLID	LA-508-471		27.0	%		0.10	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	7664-41-7	Ammonia (N) by IC	SOLID	LA-503-401	U	< 0.200	ug/g	50.00	0.20	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	PH	pH Soil and Waste Measurement	SOLID	LA-212-411		8.78	pH		0.010	05/22/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14596-10-2	Am-241 by AEA	SOLID	LA-508-471	U	1.80e-03	pCi/g		0.052	05/27/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOLID	LA-508-471		1.00e+03	%		0.0	05/27/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	24959-67-9	Bromide (Br) by IC	SOLID	LA-533-410	U	< 0.225	ug/g	50.00	2.2	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	16887-00-6	Chloride (Cl) by IC	SOLID	LA-533-410	U	< 0.0700	ug/g	50.00	0.70	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	16984-48-8	Fluoride (F) by IC	SOLID	LA-533-410		1.06	ug/g	50.00	0.35	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	NO3-N	Nitrate (N) by IC	SOLID	LA-533-410		5.11	ug/g	50.00	0.25	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	NO2-N	Nitrite (N) by IC	SOLID	LA-533-410	U	< 0.0450	ug/g	50.00	0.45	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14265-44-2	Phosphate (P) by IC	SOLID	LA-533-410	U	< 0.0650	ug/g	50.00	0.65	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14808-79-8	Sulfate (SO4) by IC	SOLID	LA-533-410		2.08	ug/g	50.00	1.2	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Ac-228 Rel.% Count Error (GEA)	SOLID	LA-508-462		17.1	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14331-83-0	Ac-228 by GEA	SOLID	LA-508-462		0.473	pCi/g		0.031	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Am-241 Rel.% Count Error (GEA)	SOLID	LA-508-462		100	%		0.0	06/02/03	04/30/03	04/30/03

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-006: 200-PW-2/PW-4

Group #: WSCF20030613

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W030000266	B16WB0	TRENT	14596-10-2	Am-241 by GEA	SOLID	LA-508-462	U	-0.0773	pCi/g		0.076	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Bi-212 Rel.% Count Error (GEA)	SOLID	LA-508-462		27.0	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14913-49-6	Bi-212 by GEA	SOLID	LA-508-462		0.345	pCi/g		0.072	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Bi-214 Rel.% Count Error (GEA)	SOLID	LA-508-462		14.2	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14733-03-0	Bi-214 by GEA	SOLID	LA-508-462		0.400	pCi/g		0.018	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Ce-144 Rel.% Count Error (GEA)	SOLID	LA-508-462		166	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14762-78-8	Ce-144 by GEA	SOLID	LA-508-462	U	-0.0321	pCi/g		0.078	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Co-60 Rel.% Count Error (GEA)	SOLID	LA-508-462		425	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	10198-40-0	Co-60 by GEA	SOLID	LA-508-462	U	1.27e-03	pCi/g		9.6e-03	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Cs-134 Rel.% Count Error (GEA)	SOLID	LA-508-462		33.4	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	13967-70-9	Cs-134 by GEA	SOLID	LA-508-462		0.0214	pCi/g		0.012	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Cs-137 Rel.% Count Error (GEA)	SOLID	LA-508-462		165	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	10045-97-3	Cs-137 by GEA	SOLID	LA-508-462	U	-3.51e-03	pCi/g		9.7e-03	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Eu-152 Rel.% Count Error (GEA)	SOLID	LA-508-462		127	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14683-23-9	Eu-152 by GEA	SOLID	LA-508-462	U	0.0157	pCi/g		0.030	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Eu-154 Rel.% Count Error (GEA)	SOLID	LA-508-462		1.00e+03	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	15585-10-1	Eu-154 by GEA	SOLID	LA-508-462	U	-1.60e-03	pCi/g		0.030	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Eu-155 Rel.% Count Error (GEA)	SOLID	LA-508-462		80.6	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14391-16-3	Eu-155 by GEA	SOLID	LA-508-462	U	0.0313	pCi/g		0.044	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Nb-94 Rel.% Count Error (GEA)	SOLID	LA-508-462		202	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14681-63-1	Nb-94 by GEA	SOLID	LA-508-462	U	2.61e-03	pCi/g		9.1e-03	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Pb-212 Rel.% Count Error (GEA)	SOLID	LA-508-462		12.7	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	15092-94-1	Pb-212 by GEA	SOLID	LA-508-462		0.514	pCi/g		0.019	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Pb-214 Rel.% Count Error (GEA)	SOLID	LA-508-462		15.3	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	15067-28-4	Pb-214 by GEA	SOLID	LA-508-462		0.446	pCi/g		0.020	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Ra-226 Rel.% Count Error (GEA)	SOLID	LA-508-462		14.2	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	13982-63-3	Ra-226 by GEA	SOLID	LA-508-462		0.400	pCi/g		0.018	06/02/03	04/30/03	04/30/03

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-006: 200-PW-2/PW-4

Group #: WSCF20030613

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W030000266	B16WB0	TRENT	E,T,C	Ra-228 Rel.% Count Error (GEA)	SOLID	LA-508-462		17.1	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	15262-20-1	Ra-228 by GEA	SOLID	LA-508-462		0.473	pCi/g		0.031	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Ru-103 Rel.% Count Error (GEA)	SOLID	LA-508-462		334	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	13968-53-1	Ru-103 by GEA	SOLID	LA-508-462	U	-1.57e-03	pCi/g		9.0e-03	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Ru-106 Rel.% Count Error (GEA)	SOLID	LA-508-462		442	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	13967-48-1	Ru-106 by GEA	SOLID	LA-508-462	U	0.0111	pCi/g		0.085	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Sb-125 Rel.% Count Error (GEA)	SOLID	LA-508-462		650	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14234-35-6	Sb-125 by GEA	SOLID	LA-508-462	U	-2.41e-03	pCi/g		0.026	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Sn-113 Rel.% Count Error (GEA)	SOLID	LA-508-462		255	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	13966-06-8	Sn-113 by GEA	SOLID	LA-508-462	U	-2.85e-03	pCi/g		0.012	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Sn-126 Rel.% Count Error (GEA)	SOLID	LA-508-462		30.2	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	15832-50-5	Sn-126 by GEA	SOLID	LA-508-462	U	0.110	pCi/g		0.11	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Th-234 Rel.% Count Error (GEA)	SOLID	LA-508-462		28.0	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	15065-10-8	Th-234 by GEA	SOLID	LA-508-462		0.731	pCi/g		0.65	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Tl-208 Rel.% Count Error (GEA)	SOLID	LA-508-462		14.8	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	14913-50-9	Tl-208 by GEA	SOLID	LA-508-462		0.154	pCi/g		9.3e-03	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	U-235 Rel.% Count Error (GEA)	SOLID	LA-508-462		86.4	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	15117-96-1	U-235 by GEA	SOLID	LA-508-462	U	0.0704	pCi/g		0.082	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	E,T,C	Zn-65 Rel.% Count Error (GEA)	SOLID	LA-508-462		232	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	13982-39-3	Zn-65 by GEA	SOLID	LA-508-462	U	-6.25e-03	pCi/g		0.020	06/02/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	7440-69-9	Bismuth by ICP	SOLID	LA-505-411	U	< 9.33	ug/g	93.30	9.3	05/28/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	7440-50-8	Boron by ICP	SOLID	LA-505-411	U	< 9.520	ug/g	93.30	9.517	05/28/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	7429-90-5	Aluminum by ICP-MS	SOLID	LA-505-412	E	1.23e+04	ug/g	4.90	54	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	7440-36-0	Antimony by ICP-MS	SOLID	LA-505-412	U	< 2.45	ug/g	4.90	2.4	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	7440-38-2	Arsenic by ICP-MS	SOLID	LA-505-412	E	3.46	ug/g	4.90	1.5	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	7440-39-3	Barium by ICP-MS	SOLID	LA-505-412		193	ug/g	4.90	0.98	06/03/03	04/30/03	04/30/03
W030000266	B16WB0	TRENT	7440-41-7	Beryllium by ICP-MS	SOLID	LA-505-412	U	< 1.47	ug/g	4.90	1.5	06/03/03	04/30/03	04/30/03

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F03-006: 200-PW-2/PW-4

Group #: WSCF20030613

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W030000266	B16WB0 TRENT	7440-43-9	Cadmium by ICP-MS	SOLID	LA-505-412	U	< 0.490	ug/g	4.90	0.49	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-47-3	Chromium by ICP-MS	SOLID	LA-505-412		6.21	ug/g	4.90	1.5	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-48-4	Cobalt by ICP-MS	SOLID	LA-505-412		12.8	ug/g	4.90	0.98	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-50-8	Copper by ICP-MS	SOLID	LA-505-412		17.4	ug/g	4.90	2.4	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7439-92-1	Lead by ICP-MS	SOLID	LA-505-412	U	< 5.88	ug/g	4.90	5.9	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7439-96-5	Manganese by ICP-MS	SOLID	LA-505-412		557	ug/g	4.90	1.5	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7439-97-6	Mercury by ICP-MS	SOLID	LA-505-412	U	< 0.490	ug/g	4.90	0.49	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7439-98-7	Molybdenum by ICP-MS	SOLID	LA-505-412		1.68	ug/g	4.90	1.5	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-02-0	Nickel by ICP-MS	SOLID	LA-505-412	E	10.2	ug/g	4.90	2.4	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7782-49-2	Selenium by ICP-MS	SOLID	LA-505-412	U	< 1.47	ug/g	4.90	1.5	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-22-4	Silver by ICP-MS	SOLID	LA-505-412		4.14	ug/g	4.90	0.98	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-28-0	Thallium by ICP-MS	SOLID	LA-505-412		1.54	ug/g	4.90	0.49	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-29-1	Thorium by ICP-MS	SOLID	LA-505-412		3.38	ug/g	4.90	0.98	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-61-1	Uranium by ICP-MS	SOLID	LA-505-412		0.583	ug/g	4.90	0.49	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-62-2	Vanadium by ICP-MS	SOLID	LA-505-412		88.8	ug/g	4.90	2.0	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	7440-66-6	Zinc by ICP-MS	SOLID	LA-505-412	E	52.0	ug/g	4.90	20	06/03/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	13981-16-3	Pu-238 by AEA	SOLID	LA-508-471	U	0.0150	pCi/g		0.042	05/27/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOLID	LA-508-471		160	%		0.0	05/27/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOLID	LA-508-471		120	%		0.0	05/27/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	PU-239/240	Pu-239/240 by AEA	SOLID	LA-508-471		5.80e-03	pCi/g		5.2e-03	05/27/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	13966-29-5	U-234 by AEA	SOLID	LA-508-471		0.160	pCi/g		4.5e-03	06/02/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	E,T,C	U-234 by AEA Total Cntg Error	SOLID	LA-508-471		28.0	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	15117-96-1	U-235 by AEA	SOLID	LA-508-471		0.0180	pCi/g		4.9e-03	06/02/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOLID	LA-508-471		66.0	%		0.0	06/02/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	24678-82-8	U-238 by AEA	SOLID	LA-508-471		0.140	pCi/g		4.5e-03	06/02/03	04/30/03	04/30/03
W030000266	B16WB0 TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOLID	LA-508-471		29.0	%		0.10	06/02/03	04/30/03	04/30/03

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

WSCF
ANALYTICAL COMMENT REPORT

2 - 9

Attention: Steve Trent
Project Number F03-006

Group #: WSCF20030613

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-MS: Estimated aluminum results due to they being out of linear range. High LCS recoveries for the following elements: beryllium, aluminum, vanadium, chromium, manganese, nickel, copper, zinc, arsenic, selenium, silver, cadmium, antimony, and lead. Nickel, zinc, and arsenic are the only flags issued because they are not within the manufacturer's performance acceptance limits. No flags issued for beryllium because the sample results are below detection. Manganese failed low on the MS but no flag given because MSD was acceptable. MS result is considered to be an anomaly. Comment for W030000265-266: The presence of Sn-126 could not be determined due to the peak interferences from the daughter nuclides of naturally occurring radioactive Uranium and Thorium that were present in the samples.lmh ICP-AES: High LCS recovery for Bismuth (126%). All samples were less than, no qualifiers will be assigned. Boron was within the Performance Acceptance Limits for the ERA soil standard. ldl Sample W030000265 for Pu/Am test had poor RPD. RPD is not applicable to low level samples.

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

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WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

2 - 10

Attention: Steve Trent
Project Number F03-006 :200-PW-2/PW-4

Group #: WSCF20030613

Sample #	Client ID		Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W030000265	B16W99	TRENT	Gamma Energy Analysis-grd H2O	K-40				10.2	pCi/g
W030000265	B16W99	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				11.591	%
W030000266	B16WB0	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				11.529	%
W030000266	B16WB0	TRENT	Gamma Energy Analysis-grd H2O	K-40				12.2	pCi/g

RQ=Result Qualifier

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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-508-462	Gamma Energy Analysis -- the Genie System -- WSCF	
	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-533-410	LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY	
	EPA-600/R-94-111 300	DETERMINATION OF INORGANIC ANIONS BY ION CHROMATOGRAPHY

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://apweb02/asponlinedocs/wscf/sample%20mgmt/ProcedureMethodCrossReference.pdf. This document includes on-line links to full-text versions of the procedures and methods, where available.

w13qlog v1 05-jun-2003 14:46:40

W13q Worklist/Batch/QC Report for Group# WSCF20030613

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
				SAMPLE	W030000265	pH Soil and Waste Measurement
				SAMPLE	W030000266	pH Soil and Waste Measurement
19498	1	19882	22610	BLANK		ICP Metals Analysis, Grd H20 P
19498	2	19882	22610	LCS		ICP Metals Analysis, Grd H20 P
19498	4	19882	22610	MS	W030000236	ICP Metals Analysis, Grd H20 P
19498	5	19882	22610	MSD	W030000236	ICP Metals Analysis, Grd H20 P
19498	9	19882	22610	MS	W030000246	ICP Metals Analysis, Grd H20 P
19498	10	19882	22610	MSD	W030000246	ICP Metals Analysis, Grd H20 P
19498	14	19882	22610	MS	W030000265	ICP Metals Analysis, Grd H20 P
19498	15	19882	22610	MSD	W030000265	ICP Metals Analysis, Grd H20 P
19498	13	19882	22610	SAMPLE	W030000265	ICP Metals Analysis, Grd H20 P
19498	0	19882	22610	SPK-RPD	W030000265	ICP Metals Analysis, Grd H20 P
19498	16	19882	22610	SAMPLE	W030000266	ICP Metals Analysis, Grd H20 P
19503	1	19891	22616	SAMPLE	W030000265	Gamma Energy Analysis-grd H2O
19503	2	19891	22616	SAMPLE	W030000266	Gamma Energy Analysis-grd H2O
19502	1	19890	22629	BLANK		Uranium Isotopics by AEA
19502	2	19890	22629	LCS		Uranium Isotopics by AEA
19502	3	19890	22629	DUP	W030000265	Uranium Isotopics by AEA
19502	4	19890	22629	SAMPLE	W030000265	Uranium Isotopics by AEA
19502	5	19890	22629	SAMPLE	W030000266	Uranium Isotopics by AEA
19479	1	19873	22631	BLANK		Americium by AEA
19479	2	19873	22631	LCS		Americium by AEA
19479	3	19873	22631	DUP	W030000265	Americium by AEA
19479	4	19873	22631	SAMPLE	W030000265	Americium by AEA
19479	5	19873	22631	SAMPLE	W030000266	Americium by AEA
19480	1	19872	22632	BLANK		Plutonium Isotopics by AEA
19480	2	19872	22632	LCS		Plutonium Isotopics by AEA
19480	3	19872	22632	DUP	W030000265	Plutonium Isotopics by AEA
19480	4	19872	22632	SAMPLE	W030000265	Plutonium Isotopics by AEA
19480	5	19872	22632	SAMPLE	W030000266	Plutonium Isotopics by AEA
19536	9	19925	22641	BLANK		ICP-2008 MS All possible metal
19536	11	19925	22641	LCS		ICP-2008 MS All possible metal
19536	12	19925	22641	MS	W030000265	ICP-2008 MS All possible metal
19536	13	19925	22641	MSD	W030000265	ICP-2008 MS All possible metal
19536	10	19925	22641	SAMPLE	W030000265	ICP-2008 MS All possible metal
19536	14	19925	22641	SAMPLE	W030000266	ICP-2008 MS All possible metal
19540	3	19928	22644	BLNK-PREP		Ammonia (N) by IC
19540	9	19928	22644	BLNK-PREP		Ammonia (N) by IC
19540	1	19928	22644	LCS		Ammonia (N) by IC
19540	5	19928	22644	DUP	W030000265	Ammonia (N) by IC
19540	6	19928	22644	MS	W030000265	Ammonia (N) by IC
19540	7	19928	22644	MSD	W030000265	Ammonia (N) by IC
19540	4	19928	22644	SAMPLE	W030000265	Ammonia (N) by IC
19540	8	19928	22644	SAMPLE	W030000266	Ammonia (N) by IC
19543	2	19931	22648	BLANK		Anions by Ion Chromatography
19543	9	19931	22648	BLANK		Anions by Ion Chromatography

19543	3	19931	22648	LCS		Anions by Ion Chromatography
19543	5	19931	22648	DUP	W030000265	Anions by Ion Chromatography
19543	6	19931	22648	MS	W030000265	Anions by Ion Chromatography
19543	7	19931	22648	MSD	W030000265	Anions by Ion Chromatography
19543	4	19931	22648	SAMPLE	W030000265	Anions by Ion Chromatography
19543	8	19931	22648	SAMPLE	W030000266	Anions by Ion Chromatography

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030613
Matrix: SOLID
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F03-006
Sample Date: 04/28/03
Receive Date: 04/28/03

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit	
Lab ID: W030000236								
BATCH QC ASSOCIATED WITH SAMPLE								
MS	Boron by ICP	7440-50-8	100.610	% Recov	05/28/03	75.000	125.000	
MS	Bismuth by ICP	7440-69-9	96.120	% Recov	05/28/03	75.000	125.000	
MSD	Boron by ICP	7440-50-8	88.490	% Recov	05/28/03	75.000	125.000	
MSD	Bismuth by ICP	7440-69-9	77.600	% Recov	05/28/03	75.000	125.000	
Lab ID: W030000246								
BATCH QC ASSOCIATED WITH SAMPLE								
MS	Boron by ICP	7440-50-8	100.968	% Recov	05/28/03	75.000	125.000	
MS	Bismuth by ICP	7440-69-9	98.780	% Recov	05/28/03	75.000	125.000	
MSD	Boron by ICP	7440-50-8	88.968	% Recov	05/28/03	75.000	125.000	
MSD	Bismuth by ICP	7440-69-9	81.520	% Recov	05/28/03	75.000	125.000	
Lab ID: W030000265								
BATCH QC ASSOCIATED WITH SAMPLE								
MS	Boron by ICP	7440-50-8	104.160	% Recov	05/28/03	75.000	125.000	
MS	Bismuth by ICP	7440-69-9	95.580	% Recov	05/28/03	75.000	125.000	
MSD	Boron by ICP	7440-50-8	104.560	% Recov	05/28/03	75.000	125.000	
MSD	Bismuth by ICP	7440-69-9	95.720	% Recov	05/28/03	75.000	125.000	
SPK-RPD	Boron by ICP	7440-50-8	0.383	RPD	05/28/03	0.000	20.000	
SPK-RPD	Bismuth by ICP	7440-69-9	0.146	RPD	05/28/03	0.000	20.000	
BATCH QC								
BLANK	Boron by ICP	7440-50-8	<0.102	ug/L	05/28/03	-10.000	10.000	
BLANK	Bismuth by ICP	7440-69-9	<0.1	ug/L	05/28/03	-1.000	0.068	
LCS	Boron by ICP	7440-50-8	112.487	% Recov	05/28/03	52.000	84.200	*
LCS	Bismuth by ICP	7440-69-9	126.400	% Recov	05/28/03	80.000	120.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030613
Matrix: SOLID
Test: Uranium Isotopics by AEA

SAF Number: F03-006
Sample Date: 04/30/03
Receive Date: 04/30/03

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit
Lab ID: W030000265							
BATCH QC ASSOCIATED WITH SAMPLE							
DUP	U-238 by AEA	24678-82-8	16.216	RPD	06/02/03	0.000	20.000
BATCH QC							
BLANK	U-238 by AEA	24678-82-8	6.4e-03	PCG	06/02/03	0.000	1000.000
LCS	U-238 by AEA	24678-82-8	108.300	% Recov	06/02/03	75.000	125.000

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030613
Matrix: SOLID
Test: Americium by AEA

SAF Number: F03-006
Sample Date: 04/30/03
Receive Date: 04/30/03

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit
Lab ID: W030000265							
BATCH QC ASSOCIATED WITH SAMPLE							
DUP	Am-241 by AEA	14596-10-2	180.463	RPD	05/27/03	0.000	20.000 *
BATCH QC							
BLANK	Am-241 by AEA	14596-10-2	3.2e-01	PCG	05/29/03	0.000	1000.000
LCS	Am-241 by AEA	14596-10-2	97.000	% Recov	05/27/03	75.000	125.000

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030613
Matrix: SOLID
Test: Plutonium Isotopics by AEA

SAF Number: F03-006
Sample Date: 04/30/03
Receive Date: 04/30/03

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit	
Lab ID: W030000265								
BATCH QC ASSOCIATED WITH SAMPLE								
DUP	Pu-239/240 by AEA	PU-239/240	642.105	RPD	05/27/03	0.000	20.000	*
BATCH QC								
BLANK	Pu-239/240 by AEA	PU-239/240	5.5e-02	PCG	05/27/03	0.000	1000.000	
LCS	Pu-239/240 by AEA	PU-239/240	97.000	% Recov	05/27/03	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030613
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: F03-006
Sample Date: 04/30/03
Receive Date: 04/30/03

Lab ID: W030000265
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit
MS	Silver by ICP-MS	7440-22-4	104.167	% Recov	06/03/03	70.000	130.000
MS	Aluminum by ICP-MS	7429-90-5	n/a	% Recov	06/03/03	70.000	130.000
MS	Arsenic by ICP-MS	7440-38-2	105.208	% Recov	06/03/03	70.000	130.000
MS	Barium by ICP-MS	7440-39-3	100.000	% Recov	06/03/03	70.000	130.000
MS	Beryllium by ICP-MS	7440-41-7	110.938	% Recov	06/03/03	70.000	130.000
MS	Cadmium by ICP-MS	7440-43-9	105.208	% Recov	06/03/03	70.000	130.000
MS	Cobalt by ICP-MS	7440-48-4	104.688	% Recov	06/03/03	70.000	130.000
MS	Chromium by ICP-MS	7440-47-3	103.646	% Recov	06/03/03	70.000	130.000
MS	Copper by ICP-MS	7440-50-8	105.208	% Recov	06/03/03	70.000	130.000
MS	Mercury by ICP-MS	7439-97-6	110.187	% Recov	06/03/03	70.000	130.000
MS	Manganese by ICP-MS	7439-96-5	66.146	% Recov	06/03/03	70.000	130.000
MS	Molybdenum by ICP-MS	7439-98-7	94.271	% Recov	06/03/03	70.000	130.000
MS	Nickel by ICP-MS	7440-02-0	105.729	% Recov	06/03/03	70.000	130.000
MS	Lead by ICP-MS	7439-92-1	109.896	% Recov	06/03/03	70.000	130.000
MS	Antimony by ICP-MS	7440-36-0	81.771	% Recov	06/03/03	70.000	130.000
MS	Selenium by ICP-MS	7782-49-2	102.604	% Recov	06/03/03	70.000	130.000
MS	Thorium by ICP-MS	7440-29-1	104.688	% Recov	06/03/03	70.000	130.000
MS	Thallium by ICP-MS	7440-28-0	105.208	% Recov	06/03/03	70.000	130.000
MS	Uranium by ICP-MS	7440-61-1	97.396	% Recov	06/03/03	70.000	130.000
MS	Vanadium by ICP-MS	7440-62-2	98.958	% Recov	06/03/03	70.000	130.000
MS	Zinc by ICP-MS	7440-66-6	106.771	% Recov	06/03/03	70.000	130.000
MSD	Silver by ICP-MS	7440-22-4	104.167	% Recov	06/03/03	70.000	130.000
MSD	Aluminum by ICP-MS	7429-90-5	n/a	% Recov	06/03/03	70.000	130.000
MSD	Arsenic by ICP-MS	7440-38-2	104.688	% Recov	06/03/03	70.000	130.000
MSD	Barium by ICP-MS	7440-39-3	97.917	% Recov	06/03/03	70.000	130.000
MSD	Beryllium by ICP-MS	7440-41-7	108.333	% Recov	06/03/03	70.000	130.000
MSD	Cadmium by ICP-MS	7440-43-9	104.688	% Recov	06/03/03	70.000	130.000
MSD	Cobalt by ICP-MS	7440-48-4	104.688	% Recov	06/03/03	70.000	130.000
MSD	Chromium by ICP-MS	7440-47-3	102.083	% Recov	06/03/03	70.000	130.000
MSD	Copper by ICP-MS	7440-50-8	106.771	% Recov	06/03/03	70.000	130.000
MSD	Mercury by ICP-MS	7439-97-6	107.069	% Recov	06/03/03	70.000	130.000
MSD	Manganese by ICP-MS	7439-96-5	110.417	% Recov	06/03/03	70.000	130.000
MSD	Molybdenum by ICP-MS	7439-98-7	92.188	% Recov	06/03/03	70.000	130.000
MSD	Nickel by ICP-MS	7440-02-0	104.688	% Recov	06/03/03	70.000	130.000
MSD	Lead by ICP-MS	7439-92-1	107.812	% Recov	06/03/03	70.000	130.000
MSD	Antimony by ICP-MS	7440-36-0	78.125	% Recov	06/03/03	70.000	130.000
MSD	Selenium by ICP-MS	7782-49-2	101.042	% Recov	06/03/03	70.000	130.000
MSD	Thorium by ICP-MS	7440-29-1	103.646	% Recov	06/03/03	70.000	130.000
MSD	Thallium by ICP-MS	7440-28-0	103.646	% Recov	06/03/03	70.000	130.000
MSD	Uranium by ICP-MS	7440-61-1	95.312	% Recov	06/03/03	70.000	130.000
MSD	Vanadium by ICP-MS	7440-62-2	95.833	% Recov	06/03/03	70.000	130.000
MSD	Zinc by ICP-MS	7440-66-6	106.250	% Recov	06/03/03	70.000	130.000

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030613
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: F03-006
Sample Date: 04/30/03
Receive Date: 04/30/03

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit	
BATCH QC								
BLANK	Silver by ICP-MS	7440-22-4	<0.200	ug/L	06/03/03	-0.440	0.440	
BLANK	Aluminum by ICP-MS	7429-90-5	<11.0	ug/L	06/03/03	-24.200	24.200	
BLANK	Arsenic by ICP-MS	7440-38-2	<0.300	ug/L	06/03/03	-0.660	0.660	
BLANK	Barium by ICP-MS	7440-39-3	<0.200	ug/L	06/03/03	-0.440	0.440	
BLANK	Beryllium by ICP-MS	7440-41-7	<0.300	ug/L	06/03/03	-0.660	0.660	
BLANK	Cadmium by ICP-MS	7440-43-9	<0.100	ug/L	06/03/03	-0.220	0.220	
BLANK	Cobalt by ICP-MS	7440-48-4	<0.200	ug/L	06/03/03	-0.440	0.440	
BLANK	Chromium by ICP-MS	7440-47-3	<0.300	ug/L	06/03/03	-0.660	0.660	
BLANK	Copper by ICP-MS	7440-50-8	<0.500	ug/L	06/03/03	-1.100	1.100	
BLANK	Mercury by ICP-MS	7439-97-6	<0.100	ug/L	06/03/03	-0.220	0.220	
BLANK	Manganese by ICP-MS	7439-96-5	<0.300	ug/L	06/03/03	-0.660	0.660	
BLANK	Molybdenum by ICP-MS	7439-98-7	<0.300	ug/L	06/03/03	-0.660	0.660	
BLANK	Nickel by ICP-MS	7440-02-0	<0.500	ug/L	06/03/03	-1.100	1.100	
BLANK	Lead by ICP-MS	7439-92-1	<1.20	ug/L	06/03/03	-2.640	2.640	
BLANK	Antimony by ICP-MS	7440-36-0	<0.500	ug/L	06/03/03	-1.100	1.100	
BLANK	Selenium by ICP-MS	7782-49-2	<0.300	ug/L	06/03/03	-0.660	0.660	
BLANK	Thorium by ICP-MS	7440-29-1	<0.200	ug/L	06/03/03	-0.440	0.440	
BLANK	Thallium by ICP-MS	7440-28-0	<0.100	ug/L	06/03/03	-0.220	0.220	
BLANK	Uranium by ICP-MS	7440-61-1	<0.100	ug/L	06/03/03	-0.220	0.220	
BLANK	Vanadium by ICP-MS	7440-62-2	<0.400	ug/L	06/03/03	-0.880	0.880	
BLANK	Zinc by ICP-MS	7440-66-6	<4.00	ug/L	06/03/03	-8.800	8.800	
LCS	Silver by ICP-MS	7440-22-4	156.303	% Recov	06/03/03	85.000	115.000	*
LCS	Aluminum by ICP-MS	7429-90-5	143.262	% Recov	06/03/03	85.000	115.000	*
LCS	Arsenic by ICP-MS	7440-38-2	121.026	% Recov	06/03/03	85.000	115.000	*
LCS	Barium by ICP-MS	7440-39-3	113.010	% Recov	06/03/03	85.000	115.000	
LCS	Beryllium by ICP-MS	7440-41-7	127.357	% Recov	06/03/03	85.000	115.000	*
LCS	Cadmium by ICP-MS	7440-43-9	118.950	% Recov	06/03/03	85.000	115.000	*
LCS	Cobalt by ICP-MS	7440-48-4	114.220	% Recov	06/03/03	85.000	115.000	
LCS	Chromium by ICP-MS	7440-47-3	110.636	% Recov	06/03/03	85.000	115.000	
LCS	Copper by ICP-MS	7440-50-8	121.260	% Recov	06/03/03	85.000	115.000	*
LCS	Mercury by ICP-MS	7439-97-6	111.583	% Recov	06/03/03	85.000	115.000	
LCS	Manganese by ICP-MS	7439-96-5	118.710	% Recov	06/03/03	85.000	115.000	*
LCS	Molybdenum by ICP-MS	7439-98-7	113.091	% Recov	06/03/03	85.000	115.000	
LCS	Nickel by ICP-MS	7440-02-0	126.794	% Recov	06/03/03	85.000	115.000	*
LCS	Lead by ICP-MS	7439-92-1	117.460	% Recov	06/03/03	85.000	115.000	*
LCS	Antimony by ICP-MS	7440-36-0	150.725	% Recov	06/03/03	85.000	115.000	*
LCS	Selenium by ICP-MS	7782-49-2	126.316	% Recov	06/03/03	85.000	115.000	*
LCS	Thorium by ICP-MS	7440-29-1	103.046	% Recov	06/03/03	85.000	115.000	
LCS	Thallium by ICP-MS	7440-28-0	107.430	% Recov	06/03/03	85.000	115.000	
LCS	Uranium by ICP-MS	7440-61-1	98.477	% Recov	06/03/03	85.000	115.000	
LCS	Vanadium by ICP-MS	7440-62-2	115.244	% Recov	06/03/03	85.000	115.000	*
LCS	Zinc by ICP-MS	7440-66-6	126.415	% Recov	06/03/03	85.000	115.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030613
Matrix: SOLID
Test: Ammonia (N) by IC

SAF Number: F03-006
Sample Date: 04/30/03
Receive Date: 04/30/03

Lab ID: W030000265

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit
DUP	Ammonia (N) by IC	7664-41-7	n/a	RPD	06/02/03	0.000	20.000
MS	Ammonia (N) by IC	7664-41-7	102.424	% Recov	06/02/03	75.000	125.000
MSD	Ammonia (N) by IC	7664-41-7	100.606	% Recov	06/02/03	75.000	125.000

BATCH QC

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit
BLNK-PREP	Ammonia (N) by IC	7664-41-7	<4.00e-3	Ratio	06/02/03		
BLNK-PREP	Ammonia (N) by IC	7664-41-7	<4.00e-3	Ratio	06/02/03		
LCS	Ammonia (N) by IC	7664-41-7	104.704	% Recov	06/02/03	80.000	120.000

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030613
Matrix: SOLID
Test: Anions by Ion Chromatography

SAF Number: F03-006
Sample Date: 04/30/03
Receive Date: 04/30/03

Lab ID: W030000265

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit
DUP	Bromide (Br) by IC	24959-67-9	n/a	RPD	06/03/03	0.000	20.000
DUP	Chloride (Cl) by IC	16887-00-6	n/a	RPD	06/03/03	0.000	20.000
DUP	Fluoride (F) by IC	16984-48-8	11.699	RPD	06/03/03	0.000	20.000
DUP	Nitrite (N) by IC	NO2-N	n/a	RPD	06/03/03	0.000	20.000
DUP	Nitrate (N) by IC	NO3-N	1.504	RPD	06/03/03	0.000	20.000
DUP	Phosphate (P) by IC	14265-44-2	n/a	RPD	06/03/03	0.000	20.000
DUP	Sulfate (SO4) by IC	14808-79-8	15.242	RPD	06/03/03	0.000	20.000
MS	Bromide (Br) by IC	24959-67-9	96.985	% Recov	06/03/03	75.000	125.000
MS	Chloride (Cl) by IC	16887-00-6	100.808	% Recov	06/03/03	75.000	125.000
MS	Fluoride (F) by IC	16984-48-8	107.157	% Recov	06/03/03	75.000	125.000
MS	Nitrite (N) by IC	NO2-N	99.405	% Recov	06/03/03	75.000	125.000
MS	Nitrate (N) by IC	NO3-N	82.511	% Recov	06/03/03	75.000	125.000
MS	Phosphate (P) by IC	14265-44-2	94.891	% Recov	06/03/03	75.000	125.000
MS	Sulfate (SO4) by IC	14808-79-8	100.508	% Recov	06/03/03	75.000	125.000
MSD	Bromide (Br) by IC	24959-67-9	97.990	% Recov	06/03/03	75.000	125.000
MSD	Chloride (Cl) by IC	16887-00-6	98.485	% Recov	06/03/03	75.000	125.000
MSD	Fluoride (F) by IC	16984-48-8	106.953	% Recov	06/03/03	75.000	125.000
MSD	Nitrite (N) by IC	NO2-N	99.008	% Recov	06/03/03	75.000	125.000
MSD	Nitrate (N) by IC	NO3-N	85.650	% Recov	06/03/03	75.000	125.000
MSD	Phosphate (P) by IC	14265-44-2	97.185	% Recov	06/03/03	75.000	125.000
MSD	Sulfate (SO4) by IC	14808-79-8	101.523	% Recov	06/03/03	75.000	125.000

BATCH QC

BLANK	Bromide (Br) by IC	24959-67-9	<4.50e-2	mg/L	06/03/03	0.000	300.000
BLANK	Bromide (Br) by IC	24959-67-9	<4.50e-2	mg/L	06/03/03	0.000	300.000
BLANK	Chloride (Cl) by IC	16887-00-6	<1.40e-2	mg/L	06/03/03	0.000	300.000
BLANK	Chloride (Cl) by IC	16887-00-6	<1.40e-2	mg/L	06/03/03	0.000	300.000
BLANK	Fluoride (F) by IC	16984-48-8	<7.00e-3	mg/L	06/03/03	0.000	300.000
BLANK	Fluoride (F) by IC	16984-48-8	<7.00e-3	mg/L	06/03/03	0.000	300.000
BLANK	Nitrite (N) by IC	NO2-N	<9.00e-3	mg/L	06/03/03	0.000	300.000
BLANK	Nitrite (N) by IC	NO2-N	<9.00e-3	mg/L	06/03/03	0.000	300.000
BLANK	Nitrate (N) by IC	NO3-N	<5.00e-3	mg/L	06/03/03	0.000	300.000
BLANK	Nitrate (N) by IC	NO3-N	<5.00e-3	mg/L	06/03/03	0.000	300.000
BLANK	Phosphate (P) by IC	14265-44-2	<1.30e-2	mg/L	06/03/03	0.000	300.000
BLANK	Phosphate (P) by IC	14265-44-2	<1.30e-2	mg/L	06/03/03	0.000	300.000
BLANK	Sulfate (SO4) by IC	14808-79-8	<2.40e-2	mg/L	06/03/03	0.000	300.000
BLANK	Sulfate (SO4) by IC	14808-79-8	<2.40e-2	mg/L	06/03/03	0.000	300.000
LCS	Bromide (Br) by IC	24959-67-9	98.254	% Recov	06/03/03	80.000	120.000
LCS	Chloride (Cl) by IC	16887-00-6	98.500	% Recov	06/03/03	80.000	120.000
LCS	Fluoride (F) by IC	16984-48-8	108.409	% Recov	06/03/03	80.000	120.000
LCS	Nitrite (N) by IC	NO2-N	100.000	% Recov	06/03/03	80.000	120.000
LCS	Nitrate (N) by IC	NO3-N	99.889	% Recov	06/03/03	80.000	120.000

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030613
Matrix: SOLID
Test: Anions by Ion Chromatography

SAF Number: F03-006
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	Results	Units	Analysis Date	Lower Limit	Upper Limit
LCS	Phosphate (P) by IC	14265-44-2	101.135	% Recov	06/03/03	80.000	120.000
LCS	Sulfate (SO4) by IC	14808-79-8	102.005	% Recov	06/03/03	80.000	120.000

T4180-03-SLF-008

ATTACHMENT 3

SAMPLE RECEIPT INFORMATION

Consisting of 4 pages
Cover page not included

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

+ 16
V1
Revised on
5/21/03

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Ground Water Protection Program

Richland, WA 99352
Attn: Steve Trent

Customer Code: GPP
PO#: 117504/ES10
Group#: 20030613
Project#: F03-006
Proj Mgr: STEVE TRENT A0-21
Phone: 373-5869

The following samples were received from you on 04/30/03. 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
W030000265	B16W99	TRENT	Solid, or handle as if solid	04/30/03
		@2008 @AEA-30 @AEA-31 @AEA-32 @GEA-GPP		
		@IC-30 @ICP-GPP NH4-IC PH-30		
W030000266	B16WB0	TRENT	Solid, or handle as if solid	04/30/03
		@2008 @AEA-30 @AEA-31 @AEA-32 @GEA-GPP		
		@IC-30 @ICP-GPP NH4-IC PH-30		

Test Acronym Description

Test Acronym	Description
@2008	ICP-2008 MS All possible metal
@AEA-30	Plutonium Isotopics by AEA
@AEA-31	Americium by AEA
@AEA-32	Uranium Isotopics by AEA
@GEA-GPP	Gamma Energy Analysis-grd H2O
@IC-30	Anions by Ion Chromatography
@ICP-GPP	ICP Metals Analysis, Grd H20 P
NH4-IC	Ammonia (N) by IC
PH-30	pH Soil and Waste Measurement

COPY

MAN

3-1

6/2

3-2

FH-Central Plateau Project	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F03-006-82	Page 1 of 1
Collector Johansen/Pope/Pfister	Company Contact LC Hulstrom	Telephone No. 373-3928	Project Coordinator TRENT, SJ	Price Code 8N Air Quality ☐
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling	Sampling Location 216-A-37 (C4106); (72.5'-75')		SAF No. F03-006	Data Turnaround 30 Days
Ice Chest No. EBC-01-011	Field Logbook No. HNF-N-3361	COA 117504ES10	Method of Shipment Government Vehicle	
Shipped To Waste Sampling & Characterization	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

20030613

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C								
Type of Container	Gs*	aG	Gs*	P								
No. of Container(s)	3	1	3	1								
Volume	40mL	250mL	40mL	500mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	See item (4) in Special Instructions.								

COPY

Sample No.	Matrix *	Sample Date	Sample Time										
B16W99	SOIL	4-30-03	0900	X	X	X	X						
60030000265													

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From TMJohansen/PMJohansen	Date/Time 4-30-03 1350	Received By/Stored In [signature]	Date/Time 4-30-03 1350
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.

(1) VOA - 8260A (TCL); VOA - 8260A (Add-On) {2-Pentanone, Benzyl alcohol, n-Butylbenzene}
(2) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2-Butoxyethanol, Tributyl phosphate}; TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G; PCBs - 8082
(3) Alcohols, Glycols, & Ketones - 8015 {1-Butanol, Diethyl ether, Ethylene glycol, Methanol}
(4) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Cesium-134, Radium-226, Radium-228, Tin-126}; Isotopic Plutonium; Americium-241; Isotopic Uranium; Trace Elements ICP/MS - 200.8 (Complete) {Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Uranium}; ICP Metals - 6010A (Add-on) {Bismuth, Boron}; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Cyanide (Total) - 335.2; Cations (IC) - 300.7 {Nitrogen in ammonium}; pH (Soil) - 9045

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

EF-011 (03/01/2002)

3-3

FH-Central Plateau Project	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F03-006-83	Page 1 of 1
Collector Johansen/Pope/Pfister	Company Contact LC Hulstrom	Telephone No. 373-3928	Project Coordinator TRENT, SJ	Price Code 8N Air Quality ☐
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling	Sampling Location 216-A-37 (C4106); ~~(147.5-150')~~ MS 4-24-03 97.5'-100'		SAF No. F03-006	Data Turnaround 30 Days
Ice Chest No. ERC-01-011	Field Logbook No. HNF-N-3361	COA 117504ES10	Method of Shipment Government Vehicle	
Shipped To Waste Sampling & Characterization	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C								
Type of Container	Gs*	aG	Gs*	P								
No. of Container(s)	3	1	3	1								
Volume	40mL	250mL	40mL	500mL								
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.	See item (4) in Special Instructions.								

COPY

Sample No.	Matrix *	Sample Date	Sample Time										
B16WB0	SOIL	4-30-03	1238	X	X	X	X						
W030000266													

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	4-30-03 1350	[signature]	4-30-03 1350
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from WTPH-D analysis.

(1) VOA - 8260A (TCL); VOA - 8260A (Add-On) {2-Pentanone, Benzyl alcohol, n-Butylbenzene}
(2) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (Add-On) {2-Butoxyethanol, Tributyl phosphate}; TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G; PCBs - 8082
(3) Alcohols, Glycols, & Ketones - 8015 {1-Butanol, Diethyl ether, Ethylene glycol, Methanol}
(4) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Cesium-134, Radium-226, Radium-228, Tin-126}; Isotopic Plutonium; Americium-241; Isotopic Uranium; Trace Elements ICP/MS - 200.8 (Complete) {Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Uranium}; ICP Metals - 6010A (Add-on) {Bismuth, Boron}; IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Cyanide (Total) - 335.2; Cations (IC) - 300.7 {Nitrogen in ammonium}; pH (Soil) - 9045

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

LEE-011 (03/01/2002)

-----Original Message-----
From: Trent, Stephen J
Sent: Wednesday, May 14, 2003 8:45 AM
To: Trechter, John E Jr.
Cc: Dale, Troy F; Caprio, Christina M; Fitzgerald, Scot L; Swanson, L Craig; Connell, Carl W; Hulstrom, Larry C; Ford, Bruce H; Bradfield, Thomas A (Tom); Thomas, Greg S
Subject: Game Plan for Organics, CN and smear sample
Importance: High

John,

Here's my game plan for the at-risk organics and CN associated with SAF F03-006 and F03-007 (200-PW-2/4 characterization) -

I spoke with Lionville Labs yesterday and they feel that they have retained enough sample material to complete all the organics and CN analyses on samples collected from the same sample intervals as those submitted to WSCF; recall that Lionville was sent material from each sample interval to complete certain analyses that are not available at WSCF. Lionville started these samples this morning and hopes to have them analysed today. As a result, please cancel the 8015, 8260, 8270, PCB, WTPH-D/G, and CN on sample delivery groups 20030588, 20030598, 20030613, 20030630, and 20030642. In addition, please cancel the 8260 analysis on sample delivery group 20030612 as this was a trip blank for VOA soil sample submitted to WSCF.

With respect to the quick-turn smear sample, please cancel all the remaining isotopic analyses. The GEA gave enough information from Am-241 result to help GPP radcon get their RWP in place for the next 200-PW-2 borehole.

If DOE/FH do not secure the mixed waste exemption for laboratory waste by COB today, then we will need to start moving the remaining sample material out of the lab to the commercial providers tomorrow morning. I'll get you a list of what we want to remove later today.

Steve Trent
Sample Management Project Coordinator
Fluor Hanford - Central Plateau Project
Ph: (509) 373-5869
EFax: (866) 252-5816
Site Pager: 85-7344

COPY

Fluor Hanford
P. O. Box 1000
Richland, WA 99352

FLUOR

Memorandum

T4180-SLF-03-022

To:	S. Trent	A0-21	Date:	June 27, 2003
From:	S. L. Fitzgerald	S3-30	Telephone:	373-7495
cc:	T. F. Dale M. Neely LB/ File	S3-28 S3-30		

Subject: BORON CONTROL LIMITS CORRECTION

WSCF recently discovered an error in the control limits establishised in our LIMS database for your project. The analysis in question was Boron by ICP for the solid matrix. The original limits were 52.0 to 84.2%. They have now been corrected to 80 to 120 %. No actual standard recoveries were impacted by this change. The limits in our LIMS database have been updated for all data previously released to your program as well. The following sample delivery groups were updated: 20030459, 20030460, 20030461, 20030470, 20030492, 20030515, 20030524, 20030588, 20030598 and 20030613. This memo provides notice of the change in these batches. The hard copy of these reports will not be reissued.

For your information, a copy of the problem report addressing this issue is attached.

dtb

PROBLEM REPORT	
Initiator/Date **Scot Fitzgerald, 6/18/03**	**Problem Report Number** 2003-005
Problem (Including violated requirements) The @ICP-GPP Boron LCS percent recovery control limits were incorrect (52.0 to 84.2%). Several data reports were issued with the incorrect control limits.	
Probable Cause: The chemist submitted the Boron STD recovery range as a concentration rather than a percent range. The LIMS administrator entered the concentration values as percent recovery values.	
Samples Affected: The actual LCS recoveries were not effected.	**Client Notification Required?** Yes (Completed)
Corrective **Action Plan** (Including schedule for completion) 1. Correct LCS recovery limits in LABCORE and in the LABCORE QC History table (Completed on 6/13/03) 2. Per customer agreement, issue memo outlining the control limit change and listing the effected sample delivery groups (Estimated completion 6/26/03)	
Affected Records Corrected? (logbook, worksheet, etc.) LABCORE corrected.	**Corrected Report Issued?** Per customer agreement, a memo will be issued outlining the corrections.
Manager or Team Leader Concurs (Signature / date) 6/25/03	**QA Coordinator Concurs** (Signature / date) 6/25/03
Progress Report - attach additional pages if necessary	
Completion (Manager or team leader signature/ date)	**PR Closure (QA Coordinator signature date)**