RECEIVED OCTOBER 13, 2008

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

FLUOR

Memorandum

M4W41-SLF-08-1144

To: H. Hampt E6-35 Date: October 13, 2008

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

cc: w/Attachments

T. F. Dale	S3-30	J. E. Trechter	S3-30
A. J. Kopriva	S3-30	S. J. Trent	E6-35
H. K. Meznarich	S3-30	File/LB	
P. D. Mix	S3-30		

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20081857 – SAF NUMBER F08-127

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

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

This letter contains the following attachments for sample delivery group WSCF20081857:

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

SLF/cmj

Attachments 4

RECEIVED
FEB 03 2009
EDMC

M4W41-SLF-08-1144

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081857
Data Deliverable Date: 13-oct-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
F08-127	B1VJ53	W08GR03511	WATER

M4W41-SLF-08-1144

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

One S&GRP sample was received at the WSCF Laboratory on August 27, 2008. With the exception of one SVOC analysis, 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. Sample bottle# B1VJ53 was shipped to an offsite laboratory for SVOC analysis.

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4. Also included in Attachment 4, is a copy of the COC used for offsite shipment of the SVOC sample.

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

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 12-14, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 16-17 for QC details. Analytical Note(s):

- Sample results that were less than the reportable limit, however greater than the method detection limit, were B flagged.

All QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 18-20 for QC details. Analytical Note(s):

- Selenium contamination detected in the Blank was evaluated and there was no affect on sample result.

All other QC controls are within the established limits.

Organic Comments

Semi-VOA – Sample bottle# B1VJ53 was shipped to an offsite laboratory for SVOC analysis.

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 23-25 for QC details. Analytical Note(s):

- Sample results that were less than the lowest calibration standard, however greater than the method detection limit, were J flagged.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 28 for QC details. Analytical Note(s):

- Radium-226 – Duplicate Relative Percent Difference (RPD) exceeded established laboratory limits. No flag issued.

All other QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Pauline D. Mix
WSCF Client Services

M4W41-SLF-08-1144

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 23 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: S. Fitzgerald 10/13/08

Client Services: P.D. Mi 10/9/2008

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

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Contract#: FH-EIS-2003-MEM-001
Report#: WSCF20081857
Report Date: 8-oct-2008
Report WGPP/ver. 5.2
Groundwater Remediation Program

w13qlog v4.2 08-oct-2008 11:11:41

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081857

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37812	2	38235	42607	BLANK		Anions by Ion Chromatography
37812	9	38235	42607	BLANK		Anions by Ion Chromatography
37812	3	38235	42607	LCS		Anions by Ion Chromatography
37812	5	38235	42607	DUP	W08GR03511	Anions by Ion Chromatography
37812	6	38235	42607	MS	W08GR03511	Anions by Ion Chromatography
37812	7	38235	42607	MSD	W08GR03511	Anions by Ion Chromatography
37812	4	38235	42607	SAMPLE	W08GR03511	Anions by Ion Chromatography
37812	7	38235	42607	SPK-RPD	W08GR03511	Anions by Ion Chromatography
37928	1	38355	42768	BLANK		ICP-200.8 MS All possible meta
37928	2	38355	42768	LCS		ICP-200.8 MS All possible meta
37928	4	38355	42768	MS	W08GR03509	ICP-200.8 MS All possible meta
37928	5	38355	42768	MSD	W08GR03509	ICP-200.8 MS All possible meta
37928	5	38355	42768	SPK-RPD	W08GR03509	ICP-200.8 MS All possible meta
37928	7	38355	42768	MS	W08GR03511	ICP-200.8 MS All possible meta
37928	8	38355	42768	MSD	W08GR03511	ICP-200.8 MS All possible meta
37928	6	38355	42768	SAMPLE	W08GR03511	ICP-200.8 MS All possible meta
37928	8	38355	42768	SPK-RPD	W08GR03511	ICP-200.8 MS All possible meta

w13qlog v4.2 08-oct-2008 11:11:41

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20081857

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			43201	BLANK		VOA Ground Water Protection
			43201	LCS		VOA Ground Water Protection
			43201	MS	W08GR03511	VOA Ground Water Protection
			43201	MSD	W08GR03511	VOA Ground Water Protection
			43201	SAMPLE	W08GR03511	VOA Ground Water Protection
			43201	SPK-RPD	W08GR03511	VOA Ground Water Protection
			43201	SURR	W08GR03511	VOA Ground Water Protection

w13qlog v4.2 08-oct-2008 11:11:41

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20081857

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37834	1	38261	42847	BLANK		Gamma Energy Analysis-grd H2O
37834	2	38261	42847	LCS		Gamma Energy Analysis-grd H2O
37834	3	38261	42847	DUP	W08GR03511	Gamma Energy Analysis-grd H2O
37834	4	38261	42847	SAMPLE	W08GR03511	Gamma Energy Analysis-grd H2O

WSCF
METHOD REFERENCES REPORT

Department: Inorganic

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

LA-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
HEIS 200.8_METALS_ICPMS	Inductively Coupled Plasma - Mass Spectrometry
HEIS RADISOTOPES_ICPMS	Radioisotopes by ICP/MS

LA-533-410 LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY

EPA-600/R-94-111 300.0	DETERMINATION OF INORGANIC ANIONS BY ION CHROMATOGRAPHY
HEIS 300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

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

WSCF
METHOD REFERENCES REPORT

Department: Organic

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

LA-523-455	LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846	
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
	EPA SW-846 8260B	VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)
	HEIS 8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

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

WSCF
METHOD REFERENCES REPORT

Department: Radiochemistry

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

LA-508-481 LA-508-481: GAMMA ENERGY ANALYSIS USING PROCOUNT SOFTWARE
HEIS GAMMA_GS Gamma Emmision Spectrometry

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-127
Sample # W08GR03511
Client ID: B1VJ53 TRENT WSCF
Matrix: WATER

Group #: WSCF20081857
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	U	< 0.0232	mg/L			1.00	0.023		08/27/08
Chloride	16887-00-6	LA-533-410	B	0.379	mg/L			1.00	0.047		08/27/08
Nitrogen in Nitrite	NO2-N	LA-533-410	U	< 0.0128	mg/L			1.00	0.013		08/27/08
Nitrogen in Nitrate	NO3-N	LA-533-410	U	< 0.0121	mg/L			1.00	0.012		08/27/08
Phosphate (P) by IC	PO4-P	LA-533-410	U	< 0.0606	mg/L			1.00	0.061		08/27/08
Sulfate	14808-79-8	LA-533-410	U	< 0.132	mg/L			1.00	0.13		08/27/08
ICP-200.8 MS All possible meta Prep											**09/09/08**
ICP-200.8 MS All possible meta											
Nickel	7440-02-0	LA-505-412		1.08	ug/L			1.00	0.200		09/09/08
Silver	7440-22-4	LA-505-412	U	< 0.100	ug/L			1.00	0.100		09/09/08
Antimony	7440-36-0	LA-505-412	U	< 0.300	ug/L			1.00	0.300		09/09/08
Barium	7440-39-3	LA-505-412	U	< 0.200	ug/L			1.00	0.200		09/09/08
Beryllium	7440-41-7	LA-505-412	U	< 0.0500	ug/L			1.00	0.0500		09/09/08
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100		09/09/08
Chromium	7440-47-3	LA-505-412	U	< 0.500	ug/L			1.00	0.500		09/09/08
Copper	7440-50-8	LA-505-412		0.350	ug/L			1.00	0.100		09/09/08
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L			1.00	0.100		09/09/08
Mercury	7439-97-6	LA-505-412	U	< 0.0500	ug/L			1.00	0.0500		09/09/08
Arsenic	7440-38-2	LA-505-412	U	< 0.400	ug/L			1.00	0.400		09/09/08
Selenium	7782-49-2	LA-505-412	U	< 0.300	ug/L			1.00	0.300		09/09/08

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

B - The analyte < the RDL but > = the IDL/MDL (inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081857
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/27/08
Receive Date:08/27/08

Lab ID: W08GR03511
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
DUP	Chloride	16887-00-6	0.3783		RPD			0.132	20.000		08/27/08
DUP	Fluoride	16984-48-8	<2.32e-2		RPD			n/a	20.000	U	08/27/08
DUP	Nitrogen in Nitrite	NO2-N	<1.28e-2		RPD			n/a	20.000	U	08/27/08
DUP	Nitrogen in Nitrate	NO3-N	<1.21e-2		RPD			n/a	20.000	U	08/27/08
DUP	Phosphate (P) by IC	PO4-P	<6.06e-2		RPD			n/a	20.000	U	08/27/08
DUP	Sulfate	14808-79-8	<0.132		RPD			n/a	20.000	U	08/27/08
MS	Chloride	16887-00-6	0.9548	95.960	% Recov	80.000	120.000				08/27/08
MS	Fluoride	16984-48-8	0.438	88.844	% Recov	80.000	120.000				08/27/08
MS	Nitrogen in Nitrite	NO2-N	0.476	96.748	% Recov	80.000	120.000				08/27/08
MS	Nitrogen in Nitrate	NO3-N	0.4413	98.946	% Recov	80.000	120.000				08/27/08
MS	Phosphate (P) by IC	PO4-P	0.864	90.282	% Recov	80.000	120.000				08/27/08
MS	Sulfate	14808-79-8	1.9173	97.821	% Recov	80.000	120.000				08/27/08
MSD	Chloride	16887-00-6	0.9605	96.533	% Recov	80.000	120.000				08/27/08
MSD	Fluoride	16984-48-8	0.4367	88.580	% Recov	80.000	120.000				08/27/08
MSD	Nitrogen in Nitrite	NO2-N	0.4617	93.841	% Recov	80.000	120.000				08/27/08
MSD	Nitrogen in Nitrate	NO3-N	0.4513	101.188	% Recov	80.000	120.000				08/27/08
MSD	Phosphate (P) by IC	PO4-P	0.8899	92.989	% Recov	80.000	120.000				08/27/08
MSD	Sulfate	14808-79-8	1.903	97.092	% Recov	80.000	120.000				08/27/08
SPK-RPD	Chloride	16887-00-6	96.533		RPD			0.595	20.000		08/27/08
SPK-RPD	Fluoride	16984-48-8	88.580		RPD			0.298	20.000		08/27/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	93.841		RPD			3.051	20.000		08/27/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	101.188		RPD			2.240	20.000		08/27/08
SPK-RPD	Phosphate (P) by IC	PO4-P	92.989		RPD			2.954	20.000		08/27/08
SPK-RPD	Sulfate	14808-79-8	97.092		RPD			0.748	20.000		08/27/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081857
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/27/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/27/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/27/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/27/08
BLANK	Phosphate (P) by IC	PO4-P	<6.06e-2	n/a	mg/L	0.000	0.200			U	08/27/08
BLANK	Phosphate (P) by IC	PO4-P	<6.06e-2	n/a	mg/L	0.000	0.200			U	08/27/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/27/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/27/08
LCS	Chloride	16887-00-6	197.7163	98.366	% Recov	80.000	120.000				08/27/08
LCS	Fluoride	16984-48-8	102.418	102.829	% Recov	80.000	120.000				08/27/08
LCS	Nitrogen in Nitrite	NO2-N	96.4356	97.018	% Recov	80.000	120.000				08/27/08
LCS	Nitrogen in Nitrate	NO3-N	91.4511	101.500	% Recov	80.000	120.000				08/27/08
LCS	Phosphate (P) by IC	PO4-P	198.1965	102.480	% Recov	80.000	120.000				08/27/08
LCS	Sulfate	14808-79-8	386.0681	97.492	% Recov	80.000	120.000				08/27/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081857
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 08/26/08
Receive Date:08/26/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR03509											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	39.41	98.525	% Recov	70.000	130.000				09/09/08
MS	Chromium	7440-47-3	39.07	97.675	% Recov	70.000	130.000				09/09/08
MSD	Arsenic	7440-38-2	39.94	99.850	% Recov	70.000	130.000				09/09/08
MSD	Chromium	7440-47-3	39.4	98.500	% Recov	70.000	130.000				09/09/08
SPK-RPD	Arsenic	7440-38-2	99.850		RPD			1.336	20.000		09/09/08
SPK-RPD	Chromium	7440-47-3	98.500		RPD			0.841	20.000		09/09/08
Lab ID: W08GR03511											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Silver	7440-22-4	39.01	97.525	% Recov	70.000	130.000				09/09/08
MS	Arsenic	7440-38-2	39.04	97.600	% Recov	70.000	130.000				09/09/08
MS	Barium	7440-39-3	40.26	100.650	% Recov	70.000	130.000				09/09/08
MS	Beryllium	7440-41-7	41.73	104.325	% Recov	70.000	130.000				09/09/08
MS	Cadmium	7440-43-9	39.41	98.525	% Recov	70.000	130.000				09/09/08
MS	Chromium	7440-47-3	39.26	98.150	% Recov	70.000	130.000				09/09/08
MS	Copper	7440-50-8	39.03	97.575	% Recov	70.000	130.000				09/09/08
MS	Mercury	7439-97-6	2.09	104.500	% Recov	70.000	130.000				09/09/08
MS	Nickel	7440-02-0	38.79	96.975	% Recov	70.000	130.000				09/09/08
MS	Lead	7439-92-1	40.51	101.275	% Recov	70.000	130.000				09/09/08
MS	Antimony	7440-36-0	39.43	98.575	% Recov	70.000	130.000				09/09/08
MS	Selenium	7782-49-2	36.86	92.150	% Recov	70.000	130.000				09/09/08
MSD	Silver	7440-22-4	39.16	97.900	% Recov	70.000	130.000				09/09/08
MSD	Arsenic	7440-38-2	39.61	99.025	% Recov	70.000	130.000				09/09/08
MSD	Barium	7440-39-3	40.44	101.100	% Recov	70.000	130.000				09/09/08
MSD	Beryllium	7440-41-7	41.32	103.300	% Recov	70.000	130.000				09/09/08
MSD	Cadmium	7440-43-9	39.7	99.250	% Recov	70.000	130.000				09/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081857
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Chromium	7440-47-3	39.97	99.925	% Recov	70.000	130.000				09/09/08
MSD	Copper	7440-50-8	39.45	98.625	% Recov	70.000	130.000				09/09/08
MSD	Mercury	7439-97-6	2.09	104.500	% Recov	70.000	130.000				09/09/08
MSD	Nickel	7440-02-0	39.62	99.050	% Recov	70.000	130.000				09/09/08
MSD	Lead	7439-92-1	40.7	101.750	% Recov	70.000	130.000				09/09/08
MSD	Antimony	7440-36-0	39.82	99.550	% Recov	70.000	130.000				09/09/08
MSD	Selenium	7782-49-2	36.94	92.350	% Recov	70.000	130.000				09/09/08
SPK-RPD	Silver	7440-22-4	97.900		RPD			0.384	20.000		09/09/08
SPK-RPD	Arsenic	7440-38-2	99.025		RPD			1.449	20.000		09/09/08
SPK-RPD	Barium	7440-39-3	101.100		RPD			0.446	20.000		09/09/08
SPK-RPD	Beryllium	7440-41-7	103.300		RPD			0.987	20.000		09/09/08
SPK-RPD	Cadmium	7440-43-9	99.250		RPD			0.733	20.000		09/09/08
SPK-RPD	Chromium	7440-47-3	99.925		RPD			1.792	20.000		09/09/08
SPK-RPD	Copper	7440-50-8	98.625		RPD			1.070	20.000		09/09/08
SPK-RPD	Mercury	7439-97-6	104.500		RPD			0.000	20.000		09/09/08
SPK-RPD	Nickel	7440-02-0	99.050		RPD			2.117	20.000		09/09/08
SPK-RPD	Lead	7439-92-1	101.750		RPD			0.468	20.000		09/09/08
SPK-RPD	Antimony	7440-36-0	99.550		RPD			0.984	20.000		09/09/08
SPK-RPD	Selenium	7782-49-2	92.350		RPD			0.217	20.000		09/09/08

BATCH QC

BLANK	Silver	7440-22-4	<0.1	n/a	ug/L					U	09/09/08
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	09/09/08
BLANK	Barium	7440-39-3	<0.2	n/a	ug/L					U	09/09/08
BLANK	Beryllium	7440-41-7	<5e-2	n/a	ug/L					U	09/09/08
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L					U	09/09/08
BLANK	Chromium	7440-47-3	<0.5	n/a	ug/L					U	09/09/08
BLANK	Copper	7440-50-8	<0.1	n/a	ug/L					U	09/09/08
BLANK	Mercury	7439-97-6	<5e-2	n/a	ug/L					U	09/09/08
BLANK	Nickel	7440-02-0	<0.2	n/a	ug/L					U	09/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081857
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L					U	09/09/08
BLANK	Antimony	7440-36-0	<0.3	n/a	ug/L					U	09/09/08
BLANK	Selenium	7782-49-2	3.7	3.700	ug/L						09/09/08
LCS	Silver	7440-22-4	38.56	96.400	% Recov	85.000	115.000				09/09/08
LCS	Arsenic	7440-38-2	37.7	94.250	% Recov	85.000	115.000				09/09/08
LCS	Barium	7440-39-3	38.05	95.125	% Recov	85.000	115.000				09/09/08
LCS	Beryllium	7440-41-7	38.15	95.375	% Recov	85.000	115.000				09/09/08
LCS	Cadmium	7440-43-9	37.51	93.775	% Recov	85.000	115.000				09/09/08
LCS	Chromium	7440-47-3	35.12	87.800	% Recov	85.000	115.000				09/09/08
LCS	Copper	7440-50-8	34.87	87.175	% Recov	85.000	115.000				09/09/08
LCS	Mercury	7439-97-6	1.89	94.500	% Recov	85.000	115.000				09/09/08
LCS	Nickel	7440-02-0	35.09	87.725	% Recov	85.000	115.000				09/09/08
LCS	Lead	7439-92-1	38.59	96.475	% Recov	85.000	115.000				09/09/08
LCS	Antimony	7440-36-0	37.56	93.900	% Recov	85.000	115.000				09/09/08
LCS	Selenium	7782-49-2	40.94	102.350	% Recov	85.000	115.000				09/09/08

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-127
Sample # W08GR03511
Client ID: B1VJ53 TRENT
Matrix: WATER

Group #: WSCF20081857
Department: Organic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	WSCF Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Styrene	100-42-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Dibromochloromethane	124-48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
1,2-Dichloroethene(Total)	540-59-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
2-Hexanone	591-78-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Bromomethane	74-83-9	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Chloromethane	74-87-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08

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

B - The analyte < the RDL but > = the IDL/MDL (inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-127
Sample # W08GR03511
Client ID: B1VJ53 TRENT WSCF
Matrix: WATER

Group #: WSCF20081857
Department: Organic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Chloroethane	75-00-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Methylenechloride	75-09-2	LA-523-455	J	2.70	ug/L			1.00	1.0		09/09/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Bromoform	75-25-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
Bromodichloromethane	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
1,2-Dichloropropane	78-87-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
n-Butylbenzene	104-51-8	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/09/08

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

B - The analyte < the RDL but >= the IDL/MDL (inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081857
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/27/08
Receive Date:08/27/08

Lab ID: W08GR03511
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	1,1-Dichloroethene	75-35-4	24.570	98.300	% Recov	63.000	117.000				09/09/08
MS	Benzene	71-43-2	23.540	94.200	% Recov	75.000	129.000				09/09/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	46.820	93.600	% Recov	75.000	125.000				09/09/08
MS	Chlorobenzene	108-90-7	24.540	98.200	% Recov	79.000	119.000				09/09/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.170	106.000	% Recov	75.000	125.000				09/09/08
MS	Toluene-d8(Surr)	2037-26-5	47.030	94.100	% Recov	75.000	125.000				09/09/08
MS	Toluene	108-88-3	24.280	97.100	% Recov	76.000	120.000				09/09/08
MS	Trichloroethene	79-01-6	20.520	82.100	% Recov	73.000	123.000				09/09/08
MSD	1,1-Dichloroethene	75-35-4	25.690	103.000	% Recov	63.000	117.000				09/09/08
MSD	Benzene	71-43-2	24.090	96.400	% Recov	75.000	129.000				09/09/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	46.460	92.900	% Recov	75.000	125.000				09/09/08
MSD	Chlorobenzene	108-90-7	25.280	101.000	% Recov	79.000	119.000				09/09/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.600	107.000	% Recov	75.000	125.000				09/09/08
MSD	Toluene-d8(Surr)	2037-26-5	47.050	94.100	% Recov	75.000	125.000				09/09/08
MSD	Toluene	108-88-3	25.010	100.000	% Recov	76.000	120.000				09/09/08
MSD	Trichloroethene	79-01-6	20.190	80.800	% Recov	73.000	123.000				09/09/08
SPK-RPD	1,1-Dichloroethene	75-35-4	103.000		RPD			4.670	20.000		09/09/08
SPK-RPD	Benzene	71-43-2	96.400		RPD			2.308	20.000		09/09/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	92.900		RPD			0.751	20.000		09/09/08
SPK-RPD	Chlorobenzene	108-90-7	101.000		RPD			2.811	20.000		09/09/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	107.000		RPD			0.939	20.000		09/09/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	94.100		RPD			0.000	20.000		09/09/08
SPK-RPD	Toluene	108-88-3	100.000		RPD			2.943	20.000		09/09/08
SPK-RPD	Trichloroethene	79-01-6	80.800		RPD			1.596	20.000		09/09/08
SURR	4-Bromofluorobenzene(Surr)	460-00-4	46.390	92.800	% Recov	75.000	125.000				09/09/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.330	107.000	% Recov	75.000	125.000				09/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081857
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SURR	Toluene-d8(Surr)	2037-26-5	47.390	94.800	% Recov	75.000	125.000				09/09/08
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	09/09/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	09/09/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	09/09/08
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	0.000	5.000			U	09/09/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	09/09/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	09/09/08
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L					U	09/09/08
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L					U	09/09/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	09/09/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	46.200	92.400	% Recov	75.000	125.000				09/09/08
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L					U	09/09/08
BLANK	n-Butylbenzene	104-51-8	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	09/09/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	09/09/08
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L					U	09/09/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.340	107.000	% Recov	75.000	125.000				09/09/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	09/09/08
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	09/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081857
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L					U	09/09/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	09/09/08
BLANK	Toluene-d8(Surr)	2037-26-5	47.330	94.700	% Recov	75.000	125.000				09/09/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	09/09/08
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	09/09/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	09/09/08
LCS	1,1-Dichloroethene	75-35-4	23.670	94.700	% Recov	75.000	125.000				09/09/08
LCS	Benzene	71-43-2	24.130	96.500	% Recov	75.000	125.000				09/09/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	46.980	94.000	% Recov	75.000	125.000				09/09/08
LCS	Chlorobenzene	108-90-7	25.040	100.000	% Recov	75.000	125.000				09/09/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.420	105.000	% Recov	75.000	125.000				09/09/08
LCS	Toluene-d8(Surr)	2037-26-5	47.320	94.600	% Recov	75.000	125.000				09/09/08
LCS	Toluene	108-88-3	24.560	98.200	% Recov	75.000	125.000				09/09/08
LCS	Trichloroethene	79-01-6	21.130	84.500	% Recov	75.000	125.000				09/09/08

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-127
Sample # W08GR03511
Client ID: B1VJ53 TRENT

Matrix: WATER

Group #: WSCF20081857
Department: Radiochemistry
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	WSCF Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gamma Energy Analysis-grd H2O											
Cobalt-60	10198-40-0	LA-508-481	U	1.10	pCi/L	+-4.25	pCi/L	1.00	7.8		09/09/08
Cesium-137	10045-97-3	LA-508-481	U	-4.92	pCi/L	+-4.92	pCi/L	1.00	7.8		09/09/08
Europium-152	14683-23-9	LA-508-481	U	3.87	pCi/L	+-13.9	pCi/L	1.00	24		09/09/08
Europium-154	15585-10-1	LA-508-481	U	-3.14	pCi/L	+-12.6	pCi/L	1.00	22		09/09/08
Europium-155	14391-16-3	LA-508-481	U	-5.60	pCi/L	+-15.4	pCi/L	1.00	25		09/09/08
Niobium-94	14681-63-1	LA-508-481	U	-0.386	pCi/L	+-3.86	pCi/L	1.00	7.4		09/09/08
Radium-226	13982-63-3	LA-508-481		275	pCi/L	+-42.0	pCi/L	1.00	17		09/09/08
Radium-228	15262-20-1	LA-508-481	U	6.12	pCi/L	+-14.9	pCi/L	1.00	26		09/09/08

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

B - The analyte < the RDL but > = the IDL/MDL (inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention: Steve Trent
Project Number F08-127 :F08-127

Group #: WSCF20081857
Department: Radiochemistry

Sample #	Client ID		Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W08GR03511	B1VJ53	TRENT	Gamma Energy Analysis-grd H2O	BI-214				2.8e+02	pCi/L
W08GR03511	B1VJ53	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error				17	%

RQ=Result Qualifier

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081857
Matrix: WATER
Test: Gamma Energy Analysis-grd H2O

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR03511											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Cobalt-60	10198-40-0	U0.9142		RPD			n/a	20.000		09/10/08
DUP	Cesium-137	10045-97-3	U-3.537		RPD			n/a	20.000		09/10/08
DUP	Europium-152	14683-23-9	U-4.426		RPD			n/a	20.000		09/10/08
DUP	Europium-154	15585-10-1	U-14.42		RPD			n/a	20.000		09/10/08
DUP	Europium-155	14391-16-3	U5.627		RPD			n/a	20.000		09/10/08
DUP	Niobium-94	14681-63-1	U-4.368		RPD			n/a	20.000		09/10/08
DUP	Radium-226	13982-63-3	55.67		RPD			132.658	20.000 •		09/10/08
DUP	Radium-228	15262-20-1	U-0.1798		RPD			n/a	20.000		09/10/08
BATCH QC											
BLANK	Cobalt-60	10198-40-0	U0.4455	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Cesium-137	10045-97-3	U0.3374	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Europium-152	14683-23-9	U2.73	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Europium-154	15585-10-1	U-3.15	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Europium-155	14391-16-3	U-1.067	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Niobium-94	14681-63-1	U-3.421	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Radium-226	13982-63-3	U-16.09	n/a	pCi/L	-10.000	1000.000				09/10/08
BLANK	Radium-228	15262-20-1	U-6.105	n/a	pCi/L	-10.000	1000.000				09/10/08
LCS	Cobalt-60	10198-40-0	10090	101.509	% Recov	80.000	120.000				09/12/08
LCS	Cesium-137	10045-97-3	6326	104.735	% Recov	80.000	120.000				09/12/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F08-127

Group #: WSCF20081857
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		RPD high for Ra-228. This is due to variations in the NSL background.

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.

M4W41-SLF-08-1144

ATTACHMENT 4

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

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program
Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 123124/ ES10
Group#: 20081857
Project#: F08-127
Proj Mgr: Steve Trent E6-35
Phone: 373-5869

The following samples were received from you on 08/27/08. 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	Tests Scheduled	Sample Date
W08GR03511	B1VJ53	TRENT Water	@2008 @GEA-GPP @IC-30 @VOA-GPP	08/27/08

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@GEA-GPP	Gamma Energy Analysis-grd H2O
@IC-30	Anions by Ion Chromatography
@VOA-GPP	VOA Ground Water Protection

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F08-127-001	PAGE 1 OF 1
COLLECTOR: Fulton	COMPANY CONTACT: TRENT, SJ	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: 7N	DATA TURNAROUND
SAMPLING LOCATION: C6552, EB-I-067 JCF 8-27-08 I-074	PROJECT DESIGNATION: 216-A-5 Crib Characterization Sampling and Analysis - QC Sampling		SAF NO.: F08-127	AIR QUALITY: ☐	45 Days / 45 Days
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-585-2	ACTUAL SAMPLE DEPTH: N/A	COA: 123124ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993) JCF 8-27-08

SPECIAL HANDLING AND/OR STORAGE: 20081857

PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	Cool~4C	HNO3 to pH <2	Cool~4C	HNO3 to pH <2					
TYPE OF CONTAINER	aGs*	aG	G/P	P	G/P					
NO. OF CONTAINER(S)	4	4	1	1	1					
VOLUME	40mL	1000mL	500mL	500mL	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	SEE ITEM (5) IN SPECIAL INSTRUCTIONS					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1VJ53 1108GR0811	WATER	8-27-08	1300	✓	✓	✓	✓	✓					
				803901	MS924	031628	03081	03050					

ICED

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: CFulton	DATE/TIME: 8-27-08	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 8/27/08 1330
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270B (TCL); Semi-VOA - 8270B (Add-On) {Tributyl phosphate}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Nickel, Silver} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Selenium} 200.8_HG-ICPMS;
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorus in phosphate, Sulfate}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Gamma Spec - Add-on {Niobium-94, Radium-226, Radium-228}

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

A-6003-618(01/06)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F08-127-001	PAGE 1 OF 1

COLLECTOR: Fulton	COMPANY CONTACT: TRENT, SJ	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: 7N
SAMPLING LOCATION: C6552, EB-1 JCF 8-27-08 I-074	PROJECT DESIGNATION: 216-A-5 Crib Charactertzation Sampling and Analysis - QC Sampling		SAF NO.: F08-127	AIR QUALITY: ☐
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-585-2	ACTUAL SAMPLE DEPTH: N/A	COA: 123124ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE
SHIPPED TO: ~~Waste Sampling & Characterization~~ TASL	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	

DATA TURNAROUND: 45 Days / 45 Days

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993) JCF 8-27-08

SPECIAL HANDLING AND/OR STORAGE: 20081857

PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	Cool~4C	HNO3 to pH <2	Cool~4C	HNO3 to pH <2					
TYPE OF CONTAINER	aGs*	aG	G/P	P	G/P					
NO. OF CONTAINER(S)	4	4	1	1	1					
VOLUME	40mL	1000mL	500mL	500mL	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	SEE ITEM (5) IN SPECIAL INSTRUCTIONS					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1VJ53 W0847R0811	WATER	8-27-08	1300	✓	✓	✓	✓	✓					
				Shipped off site ICED									
				803901	045924	031628	03080	03050					

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CFulton	8-27-08	[illegible]	8/27/08 1330
[illegible]	9/2/08 1435	DL Sa[illegible]	9/2/08 1435

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

~~(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}~~

(2)Semi-VOA - 8270B (TCL); Semi-VOA - 8270B (Add-On) {Tributyl phosphate}

(3)~~ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Nickel, Silver} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Selenium}~~ 200.8 HG-ICPMS;

~~(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorus in phosphate, Sulfate}~~

~~(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Gamma Spec - Add-on {Niobium-94, Radium-226, Radium-228}~~

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