RECEIVED JUNE 19, 2008

0079554

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FLUOR

Memorandum

M4W41-SLF-08-626

To:	H. Hampt	E6-35	Date:	June 19, 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 WSCF20080846 – SAF NUMBER F08-098

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

(2) HNF-SD-CD-QAPP-017, Rev. 8, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF20080846:

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

SLF/grf

Attachments 4

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ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#:	WSCF20080846	
Data Deliverable Date:	12-jun-2008	
Data Deliverable:	Cover Sheet	

SAF#	Sample ID	WSCF#	Matrix
F08-098	B1V351	W08GR01074	WATER
	B1V352	W08GR01073	WATER

M4W41-SLF-08-626

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Two S&GRP samples were received at the WSCF Laboratory on April 28, 2008. Samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

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

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

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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

All QC controls are within the established limits.

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

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1TPK5 (SDG# 20080896, SAF# F08-085) and B1V352 of this SDG.
- Calcium and Sodium – Check standard was analyzed to ensure linearity because the sample results were greater than the calibration standard.
- Vanadium (B1TPK5) contamination detected in the Blank was evaluated and affected sample result was C flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 21 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1TT63 (SDG# 20081042, SAF# F08-077).

All QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 22 for QC details. Analytical Note(s):

- Duplicates were analyzed on samples B1THC2 (SDG# 20080863) and B1V352 of this SDG.

All QC controls are within the established limits.

Organic Comments

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 27 through 29 for QC details.

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, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 32 through 37 for QC details. Analytical Note(s):

- Technetium-99 (Liquid Scintillation Counting) – Duplicate and Matrix Spike were analyzed on sample# B1P0T8 (SDG# 20080704, SAF# F07-052).

- Tritium – Duplicate and Matrix Spike were analyzed on B1TVK4 (SDG# 20080841, SAF# F08-052.

All 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-08-626

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 31 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: ADRICS 6-18-08

Client Services: P.D. Miy 6/19/2008

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#: WSCF20080846
Report Date: 18-jun-2008
Report WGPP/ver. 5.2
Groundwater Remediation Program

w13qlog v4.2 18-jun-2008 11:42:23

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20080846

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36154	1	36571	40897	LCS		Total Alkalinity as mg/L CaCO3
36154	14	36571	40897	LCS		Total Alkalinity as mg/L CaCO3
36154	4	36571	40897	DUP	W08GR01073	Total Alkalinity as mg/L CaCO3
36154	3	36571	40897	SAMPLE	W08GR01073	Total Alkalinity as mg/L CaCO3
36154	5	36571	40897	SAMPLE	W08GR01074	Total Alkalinity as mg/L CaCO3
36154	7	36571	40897	DUP	W08P002118	Total Alkalinity as mg/L CaCO3
36191	3	36609	40934	BLANK		Ammonia (N) by IC
36191	9	36609	40934	BLANK		Ammonia (N) by IC
36191	1	36609	40934	LCS		Ammonia (N) by IC
36191	5	36609	40934	DUP	W08GR01073	Ammonia (N) by IC
36191	6	36609	40934	MS	W08GR01073	Ammonia (N) by IC
36191	7	36609	40934	MSD	W08GR01073	Ammonia (N) by IC
36191	4	36609	40934	SAMPLE	W08GR01073	Ammonia (N) by IC
36191	7	36609	40934	SPK-RPD	W08GR01073	Ammonia (N) by IC
36191	8	36609	40934	SAMPLE	W08GR01074	Ammonia (N) by IC
36274	1	36689	41132	BLANK		ICP Metals Analysis, Grd H20 P
36274	2	36689	41132	LCS		ICP Metals Analysis, Grd H20 P
36274	7	36689	41132	MS	W08GR01073	ICP Metals Analysis, Grd H20 P
36274	8	36689	41132	MSD	W08GR01073	ICP Metals Analysis, Grd H20 P
36274	6	36689	41132	SAMPLE	W08GR01073	ICP Metals Analysis, Grd H20 P
36274	8	36689	41132	SPK-RPD	W08GR01073	ICP Metals Analysis, Grd H20 P
36274	9	36689	41132	SAMPLE	W08GR01074	ICP Metals Analysis, Grd H20 P
36274	11	36689	41132	MS	W08GR01144	ICP Metals Analysis, Grd H20 P
36274	12	36689	41132	MSD	W08GR01144	ICP Metals Analysis, Grd H20 P
36274	12	36689	41132	SPK-RPD	W08GR01144	ICP Metals Analysis, Grd H20 P
36721	1	37138	41476	BLANK		ICP-200.8 MS All possible meta
36721	2	37138	41476	LCS		ICP-200.8 MS All possible meta
36721	6	37138	41476	SAMPLE	W08GR01073	ICP-200.8 MS All possible meta
36721	7	37138	41476	SAMPLE	W08GR01074	ICP-200.8 MS All possible meta
36721	4	37138	41476	MS	W08GR01319	ICP-200.8 MS All possible meta
36721	5	37138	41476	MSD	W08GR01319	ICP-200.8 MS All possible meta
36721	5	37138	41476	SPK-RPD	W08GR01319	ICP-200.8 MS All possible meta

w13qlog v4.2 18-jun-2008 11:42:23

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20080846

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			41181	BLANK		VOA Ground Water Protection
			41181	LCS		VOA Ground Water Protection
			41181	MS	W08GR01073	VOA Ground Water Protection
			41181	MSD	W08GR01073	VOA Ground Water Protection
			41181	SAMPLE	W08GR01073	VOA Ground Water Protection
			41181	SPK-RPD	W08GR01073	VOA Ground Water Protection
			41181	SURR	W08GR01073	VOA Ground Water Protection
			41181	SAMPLE	W08GR01074	VOA Ground Water Protection
			41181	SURR	W08GR01074	VOA Ground Water Protection

w13qlog v4.2 18-jun-2008 11:42:23

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20080846

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36172	1	36589	40929	BLANK		TC99 by Liquid Scin.
36172	2	36589	40929	LCS		TC99 by Liquid Scin.
36172	4	36589	40929	DUP	W08GR00896	TC99 by Liquid Scin.
36172	3	36589	40929	MS	W08GR00896	TC99 by Liquid Scin.
36172	10	36589	40929	SAMPLE	W08GR01073	TC99 by Liquid Scin.
36172	11	36589	40929	SAMPLE	W08GR01074	TC99 by Liquid Scin.
36158	1	36575	40938	BLANK		Gross Alpha/Gross Beta (AB32)
36158	2	36575	40938	LCS		Gross Alpha/Gross Beta (AB32)
36158	3	36575	40938	DUP	W08GR01073	Gross Alpha/Gross Beta (AB32)
36158	4	36575	40938	SAMPLE	W08GR01073	Gross Alpha/Gross Beta (AB32)
36158	5	36575	40938	SAMPLE	W08GR01074	Gross Alpha/Gross Beta (AB32)
36161	1	36578	40952	BLANK		Strontium 89/90
36161	2	36578	40952	LCS		Strontium 89/90
36161	3	36578	40952	DUP	W08GR01073	Strontium 89/90
36161	4	36578	40952	SAMPLE	W08GR01073	Strontium 89/90
36161	5	36578	40952	SURR	W08GR01073	Strontium 89/90
36161	6	36578	40952	SAMPLE	W08GR01074	Strontium 89/90
36161	7	36578	40952	SURR	W08GR01074	Strontium 89/90
36348	1	36763	41100	BLANK		Tritium by Liq Sct column prep
36348	2	36763	41100	LCS		Tritium by Liq Sct column prep
36348	4	36763	41100	DUP	W08GR01072	Tritium by Liq Sct column prep
36348	3	36763	41100	MS	W08GR01072	Tritium by Liq Sct column prep
36348	6	36763	41100	SAMPLE	W08GR01073	Tritium by Liq Sct column prep
36348	7	36763	41100	SAMPLE	W08GR01074	Tritium by Liq Sct column prep
36500	1	36914	41298	BLANK		Uranium Isotopics by AEA
36500	2	36914	41298	LCS		Uranium Isotopics by AEA
36500	3	36914	41298	DUP	W08GR01073	Uranium Isotopics by AEA
36500	4	36914	41298	SAMPLE	W08GR01073	Uranium Isotopics by AEA
36500	5	36914	41298	SURR	W08GR01073	Uranium Isotopics by AEA
36500	6	36914	41298	SAMPLE	W08GR01074	Uranium Isotopics by AEA
36500	7	36914	41298	SURR	W08GR01074	Uranium Isotopics by AEA
36472	1	36886	41308	BLANK		Neptunium by AEA
36472	2	36886	41308	LCS		Neptunium by AEA
36472	3	36886	41308	DUP	W08GR01073	Neptunium by AEA
36472	5	36886	41308	MS	W08GR01073	Neptunium by AEA
36472	6	36886	41308	MSD	W08GR01073	Neptunium by AEA
36472	4	36886	41308	SAMPLE	W08GR01073	Neptunium by AEA
36472	6	36886	41308	SPK-RPD	W08GR01073	Neptunium by AEA
36472	8	36886	41308	MS	W08GR01074	Neptunium by AEA
36472	7	36886	41308	SAMPLE	W08GR01074	Neptunium by AEA

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-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
	HEIS 300.7_CATIONS_IC	Determination of Ammonium by Ion Chromatography
LA-505-411	LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE	
	HEIS 6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision 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
	HEIS 200.8_METALS_ICPMS	Inductively Coupled Plasma - Mass Spectrometry
	HEIS RADISOTOPES_ICPMS	Radioisotopes by ICP/MS
LA-531-411	LA-531-411: ALKALINITY (TITRIMETRIC)	
	HEIS 2320B	Alkalinity
	Standard Methods 2320B	Alkalinity

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-508-415 LA-508-415: OPERATION OF THE PROTEAN 2-INCH ALPHA/BETA COUNTING SYSTEM FOR GROSS

HEIS	**ALPHA_GPC**	GROSS ALPHA GPC
HEIS	**BETA_GPC**	GROSS BETA GPC
HEIS	**SRTOT_SEP_PRECIP_GE**	Strontium 89/90

LA-508-421 LA-508-421: OPERATION OF THE TRI-CARB MODEL 2500TR LIQUID SCINTILLATION ANALYZER

HEIS	**ALPHA_LSC**	A/B Liquid Scintilillation
HEIS	**BETA_LSC**	A/B Liquid Scintilallation
HEIS	**TC99_3MDSK_LSC**	TC99 by Liquid Scintillation
HEIS	**TRITIUM_EIE_LSC**	Tritium Liquid Scintillation

LA-508-471 LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP

HEIS	**PUISO_IE_PRECIP_AEA**	Plutonium by Alpha Energy Analysis
HEIS	**RAISO_AEA**	Radium-226

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: F08-098
Sample # W08GR01073
Client ID: B1V352 TRENT WSCF

Matrix: WATER

Group #: WSCF20080846
Department: Inorganic
Sampled: 04/23/08
Received: 04/28/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**05/12/08**
ICP Metals Analysis, Grd H20 P											
Manganese	7439-96-5	LA-505-411		88.6	ug/L			1.00	4.0		05/19/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		05/19/08
Antimony	7440-36-0	LA-505-411	U	< 32.0	ug/L			1.00	32		05/19/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		05/19/08
Chromium	7440-47-3	LA-505-411		5.20	ug/L			1.00	4.0		05/19/08
Vanadium	7440-62-2	LA-505-411	U	< 7.00	ug/L			1.00	7.0		05/19/08
Zinc	7440-66-6	LA-505-411	U	< 4.00	ug/L			1.00	4.0		05/19/08
Lead	7439-92-1	LA-505-411	U	< 27.0	ug/L			1.00	27		05/19/08
Thallium	7440-28-0	LA-505-411	U	< 32.0	ug/L			1.00	32		05/19/08
Arsenic	7440-38-2	LA-505-411	U	< 50.0	ug/L			1.00	50		05/19/08
ICP-200.8 MS All possible meta Prep											**06/16/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		0.830	ug/L			1.00	0.0500		06/16/08
Nitrogen in ammonium											
Nitrogen in ammonium	NH4-N	LA-503-401		0.0614	mg/L			1.00	9.3e-03		05/05/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		92.0	mg/L			1.00	1.0		04/30/08

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

C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria.

U - Analyzed for but not detected above limiting criteria(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-098
Sample # W08GR01074
Client ID: B1V35I TRENT WSCF

Matrix: WATER

Group #: WSCF20080846
Department: Inorganic
Sampled: 04/23/08
Received: 04/28/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**05/12/08**
ICP Metals Analysis, Grd H20 P											
Manganese	7439-96-5	LA-505-411		75.2	ug/L			1.00	4.0		05/19/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		05/19/08
Antimony	7440-36-0	LA-505-411	U	< 32.0	ug/L			1.00	32		05/19/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		05/19/08
Chromium	7440-47-3	LA-505-411	U	< 4.00	ug/L			1.00	4.0		05/19/08
Vanadium	7440-62-2	LA-505-411	C	7.30	ug/L			1.00	7.0		05/19/08
Zinc	7440-66-6	LA-505-411		7.40	ug/L			1.00	4.0		05/19/08
Lead	7439-92-1	LA-505-411	U	< 27.0	ug/L			1.00	27		05/19/08
Thallium	7440-28-0	LA-505-411		52.9	ug/L			1.00	32		05/19/08
Arsenic	7440-38-2	LA-505-411	U	< 50.0	ug/L			1.00	50		05/19/08
ICP-200.8 MS All possible meta Prep											**06/16/08**
ICP-200.8 MS All possible meta											
Uranium	7440 61-1	LA-505-412		0.750	ug/L			1.00	0.0500		06/16/08
Nitrogen in ammonium											
Nitrogen in ammonium	NH4-N	LA-503-401		0.109	mg/L			1.00	9.3e-03		05/05/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		91.0	mg/L			1.00	1.0		04/30/08

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

C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria.

U - Analyzed for but not detected above limiting criteria(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20080846
Matrix: WATER
Test: Ammonia (N) by IC

Sample Date: 04/23/08
Receive Date:04/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01073											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Ammonia (N) by IC	7664-41-7	6.69e-2		RPD			8.574	20.000		05/05/08
MS	Ammonia (N) by IC	7664-41-7	0.5068	101.767	% Recov	75.000	125.000				05/05/08
MSD	Ammonia (N) by IC	7664-41-7	0.5019	100.783	% Recov	75.000	125.000				05/05/08
SPK-RPD	Ammonia (N) by IC	7664-41-7	100.783		RPD			0.972	20.000		05/05/08
BATCH QC											
BLANK	Ammonia (N) by IC	7664-41-7	<9.32e-3	n/a	mg/L	0.000	0.002			U	05/05/08
BLANK	Ammonia (N) by IC	7664-41-7	<9.32e-3	n/a	mg/L	0.000	0.002			U	05/05/08
LCS	Ammonia (N) by IC	7664-41-7	90.9119	90.912	% Recov	80.000	120.000				05/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20080846
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 04/23/08
Receive Date:04/28/08

Lab ID: W08GR01073
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	Arsenic	7440-38-2	1030	103.000	% Recov	75.000	125.000				05/19/08
MS	Cadmium	7440-43-9	1015	101.500	% Recov	75.000	125.000				05/19/08
MS	Chromium	7440-47-3	1000.8	100.080	% Recov	75.000	125.000				05/19/08
MS	Manganese	7439-96-5	1009.4	100.940	% Recov	75.000	125.000				05/19/08
MS	Nickel	7440-02-0	1008	100.800	% Recov	75.000	125.000				05/19/08
MS	Lead	7439-92-1	1031	103.100	% Recov	75.000	125.000				05/19/08
MS	Antimony	7440-36-0	935.9	93.590	% Recov	75.000	125.000				05/19/08
MS	Thallium	7440-28-0	1028	102.800	% Recov	75.000	125.000				05/19/08
MS	Vanadium	7440-62-2	1002	100.200	% Recov	75.000	125.000				05/19/08
MS	Zinc	7440-66-6	1022	102.200	% Recov	75.000	125.000				05/19/08
MSD	Arsenic	7440-38-2	1031	103.100	% Recov	75.000	125.000				05/19/08
MSD	Cadmium	7440-43-9	1017	101.700	% Recov	75.000	125.000				05/19/08
MSD	Chromium	7440-47-3	1004.8	100.480	% Recov	75.000	125.000				05/19/08
MSD	Manganese	7439-96-5	1009.4	100.940	% Recov	75.000	125.000				05/19/08
MSD	Nickel	7440-02-0	1015	101.500	% Recov	75.000	125.000				05/19/08
MSD	Lead	7439-92-1	1041	104.100	% Recov	75.000	125.000				05/19/08
MSD	Antimony	7440-36-0	1003	100.300	% Recov	75.000	125.000				05/19/08
MSD	Thallium	7440-28-0	999.5	99.950	% Recov	75.000	125.000				05/19/08
MSD	Vanadium	7440-62-2	999.2	99.920	% Recov	75.000	125.000				05/19/08
MSD	Zinc	7440-66-6	1023	102.300	% Recov	75.000	125.000				05/19/08
SPK-RPD	Arsenic	7440-38-2	103.100		RPD			0.097	20.000		05/19/08
SPK-RPD	Cadmium	7440-43-9	101.700		RPD			0.197	20.000		05/19/08
SPK-RPD	Chromium	7440-47-3	100.480		RPD			0.399	20.000		05/19/08
SPK-RPD	Manganese	7439-96-5	100.940		RPD			0.000	20.000		05/19/08
SPK-RPD	Nickel	7440-02-0	101.500		RPD			0.692	20.000		05/19/08
SPK-RPD	Lead	7439-92-1	104.100		RPD			0.965	20.000		05/19/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20080846
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 04/23/08
Receive Date:04/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Antimony	7440-36-0	100.300		RPD			6.921	20.000		05/19/08
SPK-RPD	Thallium	7440-28-0	99.950		RPD			2.811	20.000		05/19/08
SPK-RPD	Vanadium	7440-62-2	99.920		RPD			0.280	20.000		05/19/08
SPK-RPD	Zinc	7440-66-6	102.300		RPD			0.098	20.000		05/19/08

Lab ID: W08GR01144
BATCH QC ASSOCIATED WITH SAMPLE

MS	Arsenic	7440-38-2	1040	104.000	% Recov	75.000	125.000				05/19/08
MS	Cadmium	7440-43-9	1011	101.100	% Recov	75.000	125.000				05/19/08
MS	Chromium	7440-47-3	1021.4	102.140	% Recov	75.000	125.000				05/19/08
MS	Manganese	7439-96-5	1007.7	100.770	% Recov	75.000	125.000				05/19/08
MS	Nickel	7440-02-0	1015	101.500	% Recov	75.000	125.000				05/19/08
MS	Antimony	7440-36-0	993.4	99.340	% Recov	75.000	125.000				05/19/08
MS	Vanadium	7440-62-2	1006	100.600	% Recov	75.000	125.000				05/19/08
MS	Zinc	7440-66-6	1016.6	101.660	% Recov	75.000	125.000				05/19/08
MSD	Arsenic	7440-38-2	1046	104.600	% Recov	75.000	125.000				05/19/08
MSD	Cadmium	7440-43-9	1027	102.700	% Recov	75.000	125.000				05/19/08
MSD	Chromium	7440-47-3	1033.4	103.340	% Recov	75.000	125.000				05/19/08
MSD	Manganese	7439-96-5	1023.7	102.370	% Recov	75.000	125.000				05/19/08
MSD	Nickel	7440-02-0	1026	102.600	% Recov	75.000	125.000				05/19/08
MSD	Antimony	7440-36-0	986.7	98.670	% Recov	75.000	125.000				05/19/08
MSD	Vanadium	7440-62-2	1015	101.500	% Recov	75.000	125.000				05/19/08
MSD	Zinc	7440-66-6	1039.6	103.960	% Recov	75.000	125.000				05/19/08
SPK-RPD	Arsenic	7440-38-2	104.600		RPD			0.575	20.000		05/19/08
SPK-RPD	Cadmium	7440-43-9	102.700		RPD			1.570	20.000		05/19/08
SPK-RPD	Chromium	7440-47-3	103.340		RPD			1.168	20.000		05/19/08
SPK-RPD	Manganese	7439-96-5	102.370		RPD			1.575	20.000		05/19/08
SPK-RPD	Nickel	7440-02-0	102.600		RPD			1.078	20.000		05/19/08
SPK-RPD	Antimony	7440-36-0	98.670		RPD			0.677	20.000		05/19/08
SPK-RPD	Vanadium	7440-62-2	101.500		RPD			0.891	20.000		05/19/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20080846
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 05/05/08
Receive Date:05/05/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Zinc	7440-66-6	103.960		RPD			2.237	20.000		05/19/08
BATCH QC											
BLANK	Arsenic	7440-38-2	<50	n/a	ug/L					U	05/19/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	05/19/08
BLANK	Chromium	7440-47-3	<4	n/a	ug/L					U	05/19/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	05/19/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	05/19/08
BLANK	Lead	7439-92-1	<27	n/a	ug/L					U	05/19/08
BLANK	Antimony	7440-36-0	<32	n/a	ug/L					U	05/19/08
BLANK	Thallium	7440-28-0	<32	n/a	ug/L					U	05/19/08
BLANK	Vanadium	7440-62-2	8.7	8.700	ug/L						05/19/08
BLANK	Zinc	7440-66-6	<4	n/a	ug/L					U	05/19/08
LCS	Arsenic	7440-38-2	1016	101.600	% Recov	80.000	120.000				05/19/08
LCS	Cadmium	7440-43-9	1006	100.600	% Recov	80.000	120.000				05/19/08
LCS	Chromium	7440-47-3	1018	101.800	% Recov	80.000	120.000				05/19/08
LCS	Manganese	7439-96-5	1006	100.600	% Recov	80.000	120.000				05/19/08
LCS	Nickel	7440-02-0	1009	100.900	% Recov	80.000	120.000				05/19/08
LCS	Lead	7439-92-1	1047	104.700	% Recov	80.000	120.000				05/19/08
LCS	Antimony	7440-36-0	977.1	97.710	% Recov	80.000	120.000				05/19/08
LCS	Thallium	7440-28-0	986.9	98.690	% Recov	80.000	120.000				05/19/08
LCS	Vanadium	7440-62-2	1011	101.100	% Recov	80.000	120.000				05/19/08
LCS	Zinc	7440-66-6	1016	101.600	% Recov	80.000	120.000				05/19/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20080846
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 05/22/08
Receive Date:05/22/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01319											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	37.73	94.325	% Recov	70.000	130.000				06/16/08
MSD	Uranium	7440-61-1	38.31	95.775	% Recov	70.000	130.000				06/16/08
SPK-RPD	Uranium	7440-61-1	95.775		RPD			1.526	20.000		06/16/08
BATCH QC											
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	06/16/08
LCS	Uranium	7440-61-1	43	107.500	% Recov	85.000	115.000				06/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20080846
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 04/23/08
Receive Date:04/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01073											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	94.2		RPD			2.254	20.000		04/30/08
Lab ID: W08P002118											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	78.1		RPD			0.765	20.000		04/30/08
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	115.4	100.348	%Recove	80.000	120.000				04/30/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	112.9	98.174	%Recove	80.000	120.000				04/30/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F08-098

Group #: WSCF20080846
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-AES: High vanadium preparation blank result; "C" flag if applicable. No zirconium present in the LCS standard. Check standard used to ensure calcium and sodium linearity because sample results are greater than the calibration standard.

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
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-098
Sample # W08GR01073
Client ID: B1V352 TRENT WSCF

Matrix: WATER

Group #: WSCF20080846
Department: Organic
Sampled: 04/23/08
Received: 04/28/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Dibromochloromethane	124 48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Bromodichloromethane	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Hexane	110-54-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08

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

C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria.
U - Analyzed for but not detected above limiting criteria(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-098
Sample # W08GR01074
Client ID: B1V351 TRENT WSCF

Matrix: WATER

Group #: WSCF20080846
Department: Organic
Sampled: 04/23/08
Received: 04/28/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Dibromochloromethane	124-48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Bromodichloromethane	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08
Hexane	110-54-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		05/06/08

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

C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria.

U - Analyzed for but not detected above limiting criteria(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention: Steve Trent
Project Number F08-098 :F08-098

Group #: WSCF20080846
Department: Organic

Sample #	Client ID		Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W08GR01073	B1V352	TRENT	VOA Ground Water Protection	SMP 8.957 Acetone	67-64-1	8.957		12	ug/L

RQ=Result Qualifier

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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20080846
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 04/23/08
Receive Date:04/28/08

Lab ID: W08GR01073
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	24.170	96.700	% Recov	63.000	117.000				05/06/08
MS	Benzene	71-43-2	23.570	94.300	% Recov	75.000	129.000				05/06/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	53.470	107.000	% Recov	75.000	125.000				05/06/08
MS	Chlorobenzene	108-90-7	25.250	101.000	% Recov	79.000	119.000				05/06/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.470	107.000	% Recov	75.000	125.000				05/06/08
MS	Toluene-d8(Surr)	2037-26-5	51.460	103.000	% Recov	75.000	125.000				05/06/08
MS	Toluene	108-88-3	24.990	100.000	% Recov	76.000	120.000				05/06/08
MS	Trichloroethene	79-01-6	22.000	88.000	% Recov	73.000	123.000				05/06/08
MSD	1,1-Dichloroethene	75-35-4	24.320	97.300	% Recov	63.000	117.000				05/06/08
MSD	Benzene	71-43-2	24.320	97.300	% Recov	75.000	129.000				05/06/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	52.850	106.000	% Recov	75.000	125.000				05/06/08
MSD	Chlorobenzene	108-90-7	25.970	104.000	% Recov	79.000	119.000				05/06/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.750	106.000	% Recov	75.000	125.000				05/06/08
MSD	Toluene-d8(Surr)	2037-26-5	51.350	103.000	% Recov	75.000	125.000				05/06/08
MSD	Toluene	108-88-3	25.520	102.000	% Recov	76.000	120.000				05/06/08
MSD	Trichloroethene	79-01-6	22.080	88.300	% Recov	73.000	123.000				05/06/08
SPK-RPD	1,1-Dichloroethene	75-35-4	97.300		RPD			0.619	20.000		05/06/08
SPK-RPD	Benzene	71-43-2	97.300		RPD			3.132	20.000		05/06/08
SPK-RPD	Chlorobenzene	108-90-7	104.000		RPD			2.927	20.000		05/06/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	106.000		RPD			0.939	20.000		05/06/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	103.000		RPD			0.000	20.000		05/06/08
SPK-RPD	Toluene	108-88-3	102.000		RPD			1.980	20.000		05/06/08
SPK-RPD	Trichloroethene	79-01-6	88.300		RPD			0.340	20.000		05/06/08
SURR	4-Bromofluorobenzene(Surr)	460-00-4	52.360	105.000	% Recov	75.000	125.000				05/06/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.650	103.000	% Recov	75.000	125.000				05/06/08
SURR	Toluene-d8(Surr)	2037-26-5	51.200	102.000	% Recov	75.000	125.000				05/06/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20080846
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 04/23/08
Receive Date:04/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01074											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	52.100	104.000	% Recov	75.000	125.000				05/06/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.530	105.000	% Recov	75.000	125.000				05/06/08
SURR	Toluene-d8(Surr)	2037-26-5	51.810	104.000	% Recov	75.000	125.000				05/06/08
BATCH QC											
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	0.000	5.000			U	05/06/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	05/06/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	05/06/08
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L					U	05/06/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	05/06/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	53.520	107.000	% Recov	75.000	125.000				05/06/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	05/06/08
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L					U	05/06/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	05/06/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.400	103.000	% Recov	75.000	125.000				05/06/08
BLANK	Hexane	110-54-3	< 1.0	n/a	ug/L					U	05/06/08
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	05/06/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	05/06/08
BLANK	Toluene-d8(Surr)	2037-26-5	50.990	102.000	% Recov	75.000	125.000				05/06/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	05/06/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	05/06/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	05/06/08
LCS	1,1-Dichloroethene	75-35-4	23.990	96.000	% Recov	75.000	125.000				05/06/08
LCS	Benzene	71-43-2	24.510	98.000	% Recov	75.000	125.000				05/06/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	51.410	103.000	% Recov	75.000	125.000				05/06/08
LCS	Chlorobenzene	108-90-7	26.070	104.000	% Recov	75.000	125.000				05/06/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.830	106.000	% Recov	75.000	125.000				05/06/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20080846
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
LCS	Toluene-d8(Surr)	2037-26-5	51.320	103.000	% Recov	75.000	125.000				05/06/08
LCS	Toluene	108-88-3	25.780	103.000	% Recov	75.000	125.000				05/06/08
LCS	Trichloroethene	79-01-6	21.720	86.900	% Recov	75.000	125.000				05/06/08

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-098
Sample # W08GR01073
Client ID: B1V352 TRENT WSCF

Matrix: WATER

Group #: WSCF20080846
Department: Radiochemistry
Sampled: 04/23/08
Received: 04/28/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gross Alpha/Gross Beta (AB32)											
Gross alpha	12587-46-1	LA-508-415	U	0.580	pCi/L	+-0.650	pCi/L	1.00	1.0		05/01/08
Gross beta	12587-47-2	LA-508-415		6.90	pCi/L	+-1.52	pCi/L	1.00	1.8		05/01/08
Neptunium by AEA											
Neptunium-237	13994-20-2	LA-508-471	U	0.0820	pCi/L	+-0.232	pCi/L	1.00	0.44		05/30/08
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		2.70	pCi/L	+-2.43	pCi/L	1.00	1.2		05/01/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		85.4	Percent			1.00	0.0		05/01/08
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	4.80	pCi/L	+-3.65	pCi/L	1.00	5.7		05/02/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		4.70e+04	pCi/L	+-9.40e+03	pCi/L	1.00	2.1e+02		05/16/08
Uranium Isotopics by AEA											
Uranium-233/234	U-233/234	LA-508-471		0.400	pCi/L	+-0.132	pCi/L	1.00	0.042		05/30/08
Uranium-235	15117-96-1	LA-508-471	U	0.0210	pCi/L	+-0.0229	pCi/L	1.00	0.031		05/30/08
Uranium-238	U-238	LA-508-471		0.240	pCi/L	+-0.0864	pCi/L	1.00	0.011		05/30/08
U-232 tracer by AEA	U232	LA-508-471		10.0	pCi/L			1.00	0.065		05/30/08

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

C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria.
U - Analyzed for but not detected above limiting criteria(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F08-098
Sample # W08GR01074
Client ID: B1V351 TRENT WSCF

Matrix: WATER

Group #: WSCF20080846
Department: Radiochemistry
Sampled: 04/23/08
Received: 04/28/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gross Alpha/Gross Beta (AB32)											
Gross alpha	12587-46-1	LA-508-415	U	0.600	pCi/L	+-0.666	pCi/L	1.00	1.1		05/01/08
Gross beta	12587-47-2	LA-508-415		9.70	pCi/L	+-1.84	pCi/L	1.00	1.9		05/01/08
Neptunium by AEA											
Neptunium-237	13994-20-2	LA-508-471	U	-0.0390	pCi/L	+-0.174	pCi/L	1.00	0.42		05/30/08
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	0.0670	pCi/L	+-0.670	pCi/L	1.00	1.2		05/01/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		84.7	Percent			1.00	0.0		05/01/08
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	4.10	pCi/L	+-3.57	pCi/L	1.00	5.7		05/02/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		4.70e+04	pCi/L	+-9.40e+03	pCi/L	1.00	2.1e+02		05/16/08
Uranium Isotopics by AEA											
Uranium-233/234	U-233/234	LA-508-471		0.370	pCi/L	+-0.126	pCi/L	1.00	0.040		06/02/08
Uranium-235	15117-96-1	LA-508-471		0.0380	pCi/L	+-0.0285	pCi/L	1.00	0.013		06/02/08
Uranium 238	U-238	LA-508-471		0.260	pCi/L	+-0.0936	pCi/L	1.00	0.012		06/02/08
U-232 tracer by AEA	U232	LA-508-471		10.0	pCi/L			1.00	0.040		06/02/08

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

C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria.
U - Analyzed for but not detected above limiting criteria(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20080846
Matrix: WATER
Test: Gross Alpha/Gross Beta (AB32)

Sample Date: 04/23/08
Receive Date:04/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01073											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross alpha	12587-46-1	U2.0E-01		RPD			n/a	20.000		05/01/08
DUP	Gross beta	12587-47-2	6.6		RPD			4.444	20.000		05/01/08
BATCH QC											
BLANK	Gross alpha	12587-46-1	U2.0E-03	n/a	pCi/L	-10.000	10.000				05/01/08
BLANK	Gross beta	12587-47-2	U-5.6E-01	n/a	pCi/L	-10.000	10.000				05/01/08
LCS	Gross alpha	12587-46-1	41.5	107.124	% Recov	80.000	120.000				05/01/08
LCS	Gross beta	12587-47-2	125.0	111.408	% Recov	80.000	120.000				05/01/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20080846
Matrix: WATER
Test: Neptunium by AEA

Sample Date: 04/23/08
Receive Date:04/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01073											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Neptunium-237	13994-20-2	U9.1e-2		RPD			n/a	20.000		05/30/08
MS	Neptunium-237	13994-20-2	104	104.000	% Recov	75.000	125.000				05/30/08
MSD	Neptunium-237	13994-20-2	96.9	96.900	% Recov	75.000	125.000				05/30/08
SPK-RPD	Neptunium-237	13994-20-2	96.900		% RPD			7.068	20.000		05/30/08
Lab ID: W08GR01074											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Neptunium-237	13994-20-2	109	109.000	% Recov	75.000	125.000				05/30/08
BATCH QC											
BLANK	Neptunium-237	13994-20-2	U-4.1e-2	n/a	pCi/L	-10.000	1000.000				05/30/08
LCS	Neptunium-237	13994-20-2	12.78	100.275	% Recov	80.000	120.000				05/30/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20080846
Matrix: WATER
Test: Strontium 89/90

Sample Date: 04/23/08
Receive Date:04/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01073											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	87.8	87.800	% Recov	30.000	105.000				05/01/08
DUP	Strontium-89/90	SR-RAD	U-1.7E-01		RPD			n/a	20.000		05/01/08
SURR	Sr-85 Tracer by Beta Counting	SR85	85.4	85.400	% Recov	30.000	105.000				05/01/08
Lab ID: W08GR01074											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	84.7	84.700	% Recov	30.000	105.000				05/01/08
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	99.6	99.600	% Recov	30.000	105.000				05/01/08
BLANK	Strontium-89/90	10098-97-2	U-1.3	n/a	pCi/L	-10.000	100.000				05/01/08
LCS	Sr-85 Tracer by Beta Counting	SR85	83.8	83.800	% Recov	30.000	105.000				05/01/08
LCS	Strontium-89/90	10098-97-2	151	107.640	% Recov	80.000	120.000				05/01/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20080846
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 04/02/08
Receive Date:04/02/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR00896											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	U4.1		RPD			n/a	20.000		05/02/08
MS	Tc-99 by Liquid Scin.	14133-76-7	761.56	101.238	% Recov	75.000	125.000				05/02/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U3.5	n/a	pCi/L	-10.000	10.000				05/02/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	189.8	100.904	% Recov	80.000	120.000				05/02/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20080846
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 04/22/08
Receive Date:04/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01072											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	U2.2		RPD			n/a	20.000		05/16/08
MS	Tritium	10028-17-8	23228.8	89.198	% Recov	75.000	125.000				05/16/08
BATCH QC											
BLANK	Tritium	10028-17-8	U2.7E+01	n/a	pCi/L	-10.000	1000.000				05/16/08
LCS	Tritium	10028-17-8	2750.0	92.912	% Recov	80.000	120.000				05/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20080846
Matrix: WATER
Test: Uranium Isotopics by AEA

Sample Date: 04/23/08
Receive Date:04/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01073											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	U-232 tracer by AEA	U232	10.34	97.160	% Recov	30.000	105.000				05/30/08
DUP	Uranium-233/234	U-233/234	0.45		RPD			11.765	20.000		05/30/08
DUP	Uranium-235	15117-96-1	5.6e-2		RPD			n/a	20.000		05/30/08
DUP	Uranium-238	U-238	0.29		RPD			18.868	20.000		05/30/08
SURR	U-232 tracer by AEA	U232	10.34	104.860	% Recov	30.000	105.000				05/30/08
Lab ID: W08GR01074											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	U-232 tracer by AEA	U232	10.34	97.350	% Recov	30.000	105.000				06/02/08
BATCH QC											
BLANK	U-232 tracer by AEA	U232	10.34	92.060	% Recov	30.000	105.000				05/30/08
BLANK	Uranium-233/234	13966-29-5	7.2e-2	0.072	pCi/L	-10.000	1000.000				05/30/08
BLANK	Uranium-235	15117-96-1	U1.9e-2	n/a	pCi/L	-10.000	1000.000				05/30/08
BLANK	Uranium-238	24678-82-8	1.7e-2	0.017	pCi/L	-10.000	1000.000				05/30/08
LCS	U-232 tracer by AEA	U232	11.48	78.790	% Recov	30.000	105.000				05/30/08
LCS	Uranium-233/234	13966-29-5	N/A	n/a	% Recov	75.000	125.000				05/30/08
LCS	Uranium-238	24678-82-8	20	107.533	% Recov	80.000	120.000				05/30/08

M4W41-SLF-08-626

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 6 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#: 122588/ES10
Group#: 20080846
Project#: F08-098
Proj Mgr: Steve Trent E6-35
Phone: 373-5869

The following samples were received from you on 04/28/08. 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	Tests Scheduled	Matrix				Sample Date
W08GR01073	B1V352	TRENT	Water				04/23/08
		@2008	@AB-32	@AEA-32	@AEA-33	@GPP6010	
		@H3-33	@SR89_90	@TC99-30	@VOA-GPP	ALKALI	NH4-I
W08GR01074	B1V351	TRENT	Water				04/23/08
		@2008	@AB-32	@AEA-32	@AEA-33	@GPP6010	
		@H3-33	@SR89_90	@TC99-30	@VOA-GPP	ALKALI	NH4-I

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@AB-32	Gross Alpha/Gross Beta (AB32)
@AEA-32	Uranium Isotopics by AEA
@AEA-33	Neptunium by AEA
@GPP6010	ICP Metals Analysis, Grd H20 P
@H3-33	Tritium by Liq Sct column prep
@SR89_90	Strontium 89/90
@TC99-30	TC99 by Liquid Scin.
@VOA-GPP	VOA Ground Water Protection
ALKALI	Total Alkalinity as mg/L CaCO3
NH4-IC	Ammonia (N) by IC

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
NCO Sampler	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5941, I-111-D	200-PO-1 Sampling and Analysis - Groundwater		F08-098		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
	HNF-N-5852	296.5'	122588ES10	GOVERNMENT VEHICLE	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization 20080846	N/A		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)

SPECIAL HANDLING AND/OR STORAGE
Radioactive tie to B1V350

PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	HNO3 to pH <2	Cool~4C	Cool~4C	H2SO4 to pH <2	HNO3 to pH <2	HNO3 to pH<2	HNO3 to pH <2	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	G/P	P	G/P	G/P	G/P	G/P	G/P	G/P	G
NO. OF CONTAINER(S)	4	1	1	1	1	1	1	1	1	1
VOLUME	40mL	500mL	500mL	500mL	500mL	500mL	1000mL	1000mL	1L	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	2320_ALKALINITY (Alkalinity)	Cations (IC) - 300.7 (Nitrogen in ammonium)	Gross Alpha (Gross alpha) Gross Beta (Gross beta)	Isotopic Uranium (Uranium-233/234, Uranium-238)	[illegible]	[illegible] 89,90 – Total Sr	Tritium - Ion Exc

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SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1V352 ~~W08GR01073~~	WATER	4-23-08	0936	X ✓	X ✓	X 222-S	X ✓	X ✓	X ✓	X ✓	X	X
			Lots	803901	028864	028864	N/A	028864	028864	028688	028688	028688	029623

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
DW Wells/DW Wells	4-23-08 / 0911 30	MO 509 FRIDGE #1	4-23-08 / 1130
MO 509, FRIDGE #1	4-23-08 / 1132	DW Wells/DW Well	4-23-08 / 1132
DW Wells/DW Well	4-23-08 / 1145	MO 509 FRIDGE #1	4-23-08 / 1145
MO 509 Fridge	4-28-08 / 1330	Chris Fulton/Chris	4-28-08 / 1330
Chris Fulton/Chris	4-28-08 / 14:00	Victor Sims	4/28/08 / 14:00

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOA - 8260B (TCL) {1,1,2,2-Tetrachloroethane, 1,2-Dichloroethane, Benzene, Bromodichloromethane, Carbon tetrachloride, Dibromochloromethane, Methylene chloride, Tetrachloroethene, Trichloroethene, Vinyl chloride} VOA - 8260B (Add-On) {Hexane}
(2)ICP Metals - 6010B (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium, Zinc} ICP Metals - 6010B (Add-On) {Arsenic, Lead, Thallium} ICP/MS - 200.8 (Add-on) {Uranium}
(3)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite}
ANIONS SENT TO 222-S PER STEVE TRENT

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
NCO Sampler	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5941, I-111-P	200-PO-1 Sampling and Analysis - Groundwater		F08-098		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
	HNF N-5852	296.5'	122588ES10	GOVERNMENT VEHICLE	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		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)

SPECIAL HANDLING AND/OR STORAGE
Radioactive tie to B1V350

PRESERVATION	HCl to pH <2
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	2
VOLUME	1L
SAMPLE ANALYSIS	Technetium-99;

ICED

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]
B1V352	WATER	4-23-08	0936	X
			Lot #	028688

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
DW WEBB/DW WEBB	4-23-08 / 1130	M0509 FRIDGE #1	4-23-08 / 1130
Chris Fulton	1330	M0509 Fridge 4-28-08 / Chris Fulton	4-28-08 1330
Chris Fulton	4-28-08 1400	Victor Sims	4/28/08 1400

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

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
NCO Sampler	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5941, I-111	200-PO-1 Sampling and Analysis - Groundwater		F08-098		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
	HNF-N-5852	296.5'	122588ES10	GOVERNMENT VEHICLE	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		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)

SPECIAL HANDLING AND/OR STORAGE
Radioactive tie to B1V350

PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	HNO3 to pH <2	Cool~4C	Cool~4C	H2SO4 to pH <2	HNO3 to pH <2	HNO3 to pH<2	HNO3 to pH <2	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	G/P	P	G/P	G/P	G/P	G/P	G/P	G/P	G
NO. OF CONTAINER(S)	4	1	1	1	1	1	1	1	1	1
VOLUME	40mL	500mL	500mL	500mL	500mL	500mL	1000mL	1000mL	1L	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	2320_ALKALINITY (Alkalinity)	Cations (IC) - 300.7 (Nitrogen in ammonium)	Gross Alpha (Gross alpha) Gross Beta (Gross beta)	Isotopic Uranium (Uranium-233/234, Uranium-238)	Nep[redacted]-237; [redacted]	[redacted] Sr;	[redacted] on Ex;

ICED

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]									
B1V351 1074	WATER	4-23-08	0936	X ✓	X ✓	X 222-S	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓	X ✓
			Lot #s	803901	028946	028864	028864	028864	028864	028688	028688	028688	029623

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
DW WEBB / DW WEBB	4-23-08 / 1130	M0509 FRIDGE #1	4-23-08 / 1130
M0509 FRIDGE #1	4-23-08 / 1132	DW WEBB / DW WEBB	4-23-08 / 1132
DW WEBB / DW WEBB	4-23-08 / 1145	M0509 FRIDGE #1	4-23-08 / 1145
M0509 Fridge #1	4-28-08 / 1330	Chris Fulton / [signature]	4-28-08 / 1330
Chris Fulton / [signature]	4-28-08 / 14:00	Victor Sisui / [signature]	4/28/08 / 14:00
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) {1,1,2,2-Tetrachloroethane, 1,2-Dichloroethane, Benzene, Bromodichloromethane, Carbon tetrachloride, Dibromochloromethane, Methylene chloride, Tetrachloroethene, Trichloroethene, Vinyl chloride} VOA - 8260B (Add-On) {Hexane}
(2)ICP Metals - 6010B (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium, Zinc} ICP Metals - 6010B (Add-On) {Arsenic, Lead, Thallium} ICP/MS - 200.8 (Add-on) {Uranium}
(3)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite}
ANIONS SENT TO 222-S PER STEVE TRENT

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
NCO Sampler	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5941, I-111	200-PO-1 Sampling and Analysis - Groundwater		F08-098		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
	HNF-N-5852	296.5'	122588ES10	GOVERNMENT VEHICLE	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
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O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
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WI=Wipe
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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)

SPECIAL HANDLING AND/OR STORAGE
Radioactive tie to B1V350

PRESERVATION	HCl to pH <2
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	2
VOLUME	1L
SAMPLE ANALYSIS	Technetium-99;

ICED

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	[redacted]
B1V351	WATER	4-23-08	0936	X
			not #	628688

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature]	4-23-08 / 1130	M0509 FRIDGE #1 [signature]	4-23-08 / 1130
M0509 fridge #	4-28-08 1330	Christutton [signature]	4-28-08 1330
Christutton [signature]	4-28-08 14:00	Victor Sims [signature]	4/28/08 14:00

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

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

A-6003-618(01/06)