0079783

RECEIVED JULY 18, 2008

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

FLUOR

Memorandum

M4W41-SLF-08-716

To:	H. Hampt	E6-35	Date:	July 18, 2008
From:	S. L. Fitzgerald, Manager WSCF Analytical Lab	Marlene Stanfill for SLF		

cc: w/Attachments

T. F. Dale	S3-30	P. D. Mix	S3-30
D. Felmy (PNNL)	K6-75	J. E. Trechter	S3-30
A. J. Kopriva	S3-30	S. J. Trent	E6-35
H. K. Meznarich	S3-30	File/LB	

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20081110

Reference:
1) Letter of Instruction for Analytical Services for the Groundwater Performance Assessment Project and Analytical Laboratory Transition Plan, FH-0602422, September 19, 2006
2) HNF-SD-CD-QAPP-017, Rev. 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This transmittal contains the following information for sample delivery group WSCF20081110:

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

SLF/grf

Attachments 4

RECEIVED
JAN 13 2009
EDMC

M4W41-SLF-08-716

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081110
Data Deliverable Date: 17-jul-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-038	B1V6F7	W08P002658	WATER
	B1V6F8	W08P002659	WATER
	B1V6M2	W08P002657	WATER
S08-005	B1V7J6	W08P002653	WATER
	B1V7J8	W08P002654	WATER
	B1V7Y9	W08P002655	WATER
W08-004	B1V383	W08P002656	WATER
W08-005	B1V817	W08P002662	WATER
	B1V818	W08P002663	WATER
	B1V938	W08P002660	WATER
	B1V939	W08P002661	WATER

M4W41-SLF-08-716

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Eleven (11) groundwater samples were received at the WSCF Laboratory on June 2, 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

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 28 through 29 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- 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-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 30 through 33 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1V9P4 (SDG# 20081079).
- Calcium, Magnesium, Manganese and Sodium – Sample results exceeded spiking levels by a factor of 4. Spike recoveries are not valid. Check standard was analyzed to ensure linearity, because sample results were greater than the calibration standard.

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 34 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1V654 and B1V662 (SDG# 20081134).

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 35 for QC details. Analytical Note(s):

- Duplicates were analyzed on samples B1TT54 (SDG# 20081085, SAF# F08-076) and B1TH60 (SDG# 20081067).

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 45 through 48 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1V6B4 (SDG# 20081067).

- 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 55 through 56 for QC details.

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.

for SLF

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Pauline D. Mix
WSCF Client Services

M4W41-SLF-08-716

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 50 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical: Markus Stauffer 7/18/08

Client Services: P.D. Mio 7/17/2008

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.

Report#: WSCF20081110
Report Date: 17-jul-2008
Report WGPP/ver. 5.2
GPAP

w13qlog v4.2 17-jul-2008 11:51:31

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081110

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36523	2	36937	41287	BLANK		Anions by Ion Chromatography
36523	13	36937	41287	BLANK		Anions by Ion Chromatography
36523	3	36937	41287	LCS		Anions by Ion Chromatography
36523	8	36937	41287	SAMPLE	W08P002654	Anions by Ion Chromatography
36523	9	36937	41287	SAMPLE	W08P002657	Anions by Ion Chromatography
36523	10	36937	41287	SAMPLE	W08P002658	Anions by Ion Chromatography
36523	11	36937	41287	SAMPLE	W08P002659	Anions by Ion Chromatography
36523	5	36937	41287	DUP	W08P002661	Anions by Ion Chromatography
36523	6	36937	41287	MS	W08P002661	Anions by Ion Chromatography
36523	7	36937	41287	MSD	W08P002661	Anions by Ion Chromatography
36523	4	36937	41287	SAMPLE	W08P002661	Anions by Ion Chromatography
36523	7	36937	41287	SPK-RPD	W08P002661	Anions by Ion Chromatography
36523	12	36937	41287	SAMPLE	W08P002663	Anions by Ion Chromatography
36589	1	37006	41351	LCS		Total Alkalinity as mg/L CaCO3
36589	14	37006	41351	LCS		Total Alkalinity as mg/L CaCO3
36589	22	37006	41351	LCS		Total Alkalinity as mg/L CaCO3
36589	3	37006	41351	DUP	W08GR01411	Total Alkalinity as mg/L CaCO3
36589	6	37006	41351	DUP	W08P002581	Total Alkalinity as mg/L CaCO3
36589	16	37006	41351	SAMPLE	W08P002654	Total Alkalinity as mg/L CaCO3
36589	17	37006	41351	SAMPLE	W08P002661	Total Alkalinity as mg/L CaCO3
36589	18	37006	41351	SAMPLE	W08P002663	Total Alkalinity as mg/L CaCO3
36820	1	37242	41582	BLANK		ICP-200.8 MS All possible meta
36820	2	37242	41582	LCS		ICP-200.8 MS All possible meta
36820	9	37242	41582	SAMPLE	W08P002653	ICP-200.8 MS All possible meta
36820	10	37242	41582	SAMPLE	W08P002654	ICP-200.8 MS All possible meta
36820	11	37242	41582	SAMPLE	W08P002658	ICP-200.8 MS All possible meta
36820	12	37242	41582	SAMPLE	W08P002659	ICP-200.8 MS All possible meta
36820	4	37242	41582	MS	W08P002695	ICP-200.8 MS All possible meta
36820	5	37242	41582	MSD	W08P002695	ICP-200.8 MS All possible meta
36820	5	37242	41582	SPK-RPD	W08P002695	ICP-200.8 MS All possible meta
36820	7	37242	41582	MS	W08P002697	ICP-200.8 MS All possible meta
36820	8	37242	41582	MSD	W08P002697	ICP-200.8 MS All possible meta
36820	8	37242	41582	SPK-RPD	W08P002697	ICP-200.8 MS All possible meta
36995	1	37415	41885	BLANK		ICP Metals Analysis, Grd H20 P
36995	2	37415	41885	LCS		ICP Metals Analysis, Grd H20 P
36995	4	37415	41885	MS	W08P002617	ICP Metals Analysis, Grd H20 P
36995	5	37415	41885	MSD	W08P002617	ICP Metals Analysis, Grd H20 P
36995	5	37415	41885	SPK-RPD	W08P002617	ICP Metals Analysis, Grd H20 P
36995	10	37415	41885	SAMPLE	W08P002654	ICP Metals Analysis, Grd H20 P
36995	11	37415	41885	SAMPLE	W08P002655	ICP Metals Analysis, Grd H20 P
36995	12	37415	41885	SAMPLE	W08P002660	ICP Metals Analysis, Grd H20 P
36995	13	37415	41885	SAMPLE	W08P002661	ICP Metals Analysis, Grd H20 P
36995	14	37415	41885	SAMPLE	W08P002662	ICP Metals Analysis, Grd H20 P
36995	15	37415	41885	SAMPLE	W08P002663	ICP Metals Analysis, Grd H20 P

w13qlog v4.2 17-jul-2008 11:51:31

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20081110

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			41756	BLANK		VOA Ground Water Protection
			41756	LCS		VOA Ground Water Protection
			41756	MS	W08P002583	VOA Ground Water Protection
			41756	MSD	W08P002583	VOA Ground Water Protection
			41756	SPK-RPD	W08P002583	VOA Ground Water Protection
			41756	SAMPLE	W08P002656	VOA Ground Water Protection
			41756	SURR	W08P002656	VOA Ground Water Protection
			41756	SAMPLE	W08P002657	VOA Ground Water Protection
			41756	SURR	W08P002657	VOA Ground Water Protection
			41756	SAMPLE	W08P002658	VOA Ground Water Protection
			41756	SURR	W08P002658	VOA Ground Water Protection
			41756	SAMPLE	W08P002659	VOA Ground Water Protection
			41756	SURR	W08P002659	VOA Ground Water Protection

w13qlog v4.2 17-jul-2008 11:51:31

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20081110

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36695	1	37112	41480	BLANK		Tritium by Liq Sct column prep
36695	2	37112	41480	LCS		Tritium by Liq Sct column prep
36695	4	37112	41480	DUP	W08P002658	Tritium by Liq Sct column prep
36695	3	37112	41480	MS	W08P002658	Tritium by Liq Sct column prep
36695	5	37112	41480	SAMPLE	W08P002658	Tritium by Liq Sct column prep
36695	6	37112	41480	SAMPLE	W08P002659	Tritium by Liq Sct column prep
36695	7	37112	41480	SAMPLE	W08P002661	Tritium by Liq Sct column prep
36695	8	37112	41480	SAMPLE	W08P002663	Tritium by Liq Sct column prep
36601	1	37018	41598	BLANK		TC99 by Liquid Scin.
36601	4	37018	41598	LCS		TC99 by Liquid Scin.
36601	3	37018	41598	DUP	W08P002653	TC99 by Liquid Scin.
36601	2	37018	41598	MS	W08P002653	TC99 by Liquid Scin.
36601	7	37018	41598	SAMPLE	W08P002653	TC99 by Liquid Scin.
36601	8	37018	41598	SAMPLE	W08P002654	TC99 by Liquid Scin.
36601	9	37018	41598	SAMPLE	W08P002658	TC99 by Liquid Scin.
36601	10	37018	41598	SAMPLE	W08P002659	TC99 by Liquid Scin.
36601	11	37018	41598	SAMPLE	W08P002661	TC99 by Liquid Scin.
36601	12	37018	41598	SAMPLE	W08P002663	TC99 by Liquid Scin.

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-505-411	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
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-508-421 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

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 E6-35
SAF Number: S08-005
Sample # W08P002653
Client ID: B1V7J6 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP-200.8 MS All possible meta Prep											**06/24/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		1.43	ug/L			1.00	0.0500		06/24/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002654
Client ID: B1V7J8 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

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	BD	0.111	mg/L			2.00	0.042		06/02/08
Chloride	16887-00-6	LA-533-410	D	30.9	mg/L			2.00	0.22		06/02/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/02/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	6.71	mg/L			2.00	0.072		06/02/08
Sulfate	14808-79-8	LA-533-410	D	60.6	mg/L			2.00	0.15		06/02/08
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		323	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		1.12e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411		16.8	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411		11.8	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		4.64e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		1.33e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		43.4	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411		22.2	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		6.12e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		318	ug/L			1.00	4.0		07/16/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002654
Client ID: B1V7J8 GPP-PNNL TRENT WSCF
Matrix: WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
ICP-200.8 MS All possible meta Prep											**06/24/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		0.840	ug/L			1.00	0.0500		06/24/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		98.0	mg/L			1.00	1.0		06/05/08

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002655
Client ID: B1V7Y9 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		1.15e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411		14.8	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		4.71e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		1.38e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		42.3	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411		7.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		6.29e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		326	ug/L			1.00	4.0		07/16/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002657
Client ID: B1V6M2 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

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	D	0.299	mg/L			2.00	0.042		06/02/08
Chloride	16887-00-6	LA-533-410	D	16.1	mg/L			2.00	0.22		06/02/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/02/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	24.9	mg/L			10.00	0.36		06/02/08
Sulfate	14808-79-8	LA-533-410	D	32.9	mg/L			2.00	0.15		06/02/08

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)
J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002658
Client ID: B1V6F7 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

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	D	0.224	mg/L			2.00	0.042		06/02/08
Chloride	16887-00-6	LA-533-410	D	55.0	mg/L			10.00	1.1		06/02/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/02/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	15.2	mg/L			10.00	0.36		06/02/08
Sulfate	14808-79-8	LA-533-410	D	52.9	mg/L			2.00	0.15		06/02/08
ICP-200.8 MS All possible meta Prep											**06/24/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		1.17	ug/L			1.00	0.0500		06/24/08

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002659
Client ID: B1V6F8 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

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	DU	< 0.0420	mg/L			2.00	0.042		06/02/08
Chloride	16887-00-6	LA-533-410	DU	< 0.220	mg/L			2.00	0.22		06/02/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/02/08
Nitrogen in Nitrate	NO3-N	LA-533-410	DU	< 0.0720	mg/L			2.00	0.072		06/02/08
Sulfate	14808-79-8	LA-533-410	DU	< 0.154	mg/L			2.00	0.15		06/02/08
ICP-200.8 MS All possible meta Prep											**06/24/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412	U	< 0.0500	ug/L			1.00	0.0500		06/24/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P002660
Client ID: B1V938 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		68.8	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		1.42e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411		136	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		5.10e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		1.97e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		63.7	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411		23.7	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		3.27e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		207	ug/L			1.00	4.0		07/16/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P002661
Client ID: B1V939 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

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	BD	0.188	mg/L			2.00	0.042		06/02/08
Chloride	16887-00-6	LA-533-410	D	8.22	mg/L			2.00	0.22		06/02/08
Nitrogen in Nitrite	NO2-N	LA-533-410	BD	0.0996	mg/L			2.00	0.020		06/02/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	3.65	mg/L			2.00	0.072		06/02/08
Sulfate	14808-79-8	LA-533-410	D	27.3	mg/L			2.00	0.15		06/02/08
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		108	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		1.42e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411		133	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		5.16e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		1.96e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		64.1	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411		24.0	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		3.27e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		206	ug/L			1.00	4.0		07/16/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P002661
Client ID: B1V939 GPP-PNNL TRENT WSCF
Matrix: WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		130	mg/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P002662
Client ID: B1V817 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		1.91e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411		5.00	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		5.30e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		1.71e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		61.4	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411		13.8	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411		22.9	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411		14.2	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		5.79e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		250	ug/L			1.00	4.0		07/16/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P002663
Client ID: B1V818 GPP-PNNL TRENT WSCF
Matrix: WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

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	D	0.258	mg/L			2.00	0.042		06/02/08
Chloride	16887-00-6	LA-533-410	D	14.1	mg/L			2.00	0.22		06/02/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/02/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	23.5	mg/L			10.00	0.36		06/02/08
Sulfate	14808-79-8	LA-533-410	D	37.1	mg/L			2.00	0.15		06/02/08
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		544	ug/L			1.00	25		07/16/08
Magnesium	7439-95-4	LA-505-411		1.93e+04	ug/L			1.00	50		07/16/08
Manganese	7439-96-5	LA-505-411		11.0	ug/L			1.00	4.0		07/16/08
Nickel	7440-02-0	LA-505-411		11.3	ug/L			1.00	4.0		07/16/08
Potassium	7440-09-7	LA-505-411		5.34e+03	ug/L			1.00	1.7e+02		07/16/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/16/08
Sodium	7440-23-5	LA-505-411		1.70e+04	ug/L			1.00	51		07/16/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/16/08
Barium	7440-39-3	LA-505-411		63.7	ug/L			1.00	4.0		07/16/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Chromium	7440-47-3	LA-505-411		33.4	ug/L			1.00	13		07/16/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/16/08
Vanadium	7440-62-2	LA-505-411		23.6	ug/L			1.00	12		07/16/08
Zinc	7440-66-6	LA-505-411		76.9	ug/L			1.00	9.0		07/16/08
Calcium	7440-70-2	LA-505-411		5.84e+04	ug/L			1.00	73		07/16/08
Strontium	7440-24-6	LA-505-411		252	ug/L			1.00	4.0		07/16/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P002663
Client ID: B1V818 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081110
Department: Inorganic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/16/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		120	mg/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081110
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 06/02/08
Receive Date:06/02/08

Lab ID: W08P002661

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	8.2329		RPD			0.130	20.000		06/02/08
DUP	Fluoride	16984-48-8	0.2043		RPD			8.576	20.000		06/02/08
DUP	Nitrogen in Nitrite	NO2-N	0.1028		RPD			3.162	20.000		06/02/08
DUP	Nitrogen in Nitrate	NO3-N	3.6822		RPD			0.782	20.000		06/02/08
DUP	Sulfate	14808-79-8	27.2744		RPD			0.254	20.000		06/02/08
MS	Chloride	16887-00-6	1.0361	104.131	% Recov	80.000	120.000				06/02/08
MS	Fluoride	16984-48-8	0.49535	100.477	% Recov	80.000	120.000				06/02/08
MS	Nitrogen in Nitrite	NO2-N	0.45405	92.287	% Recov	80.000	120.000				06/02/08
MS	Nitrogen in Nitrate	NO3-N	0.4709	105.583	% Recov	80.000	120.000				06/02/08
MS	Sulfate	14808-79-8	1.84655	94.212	% Recov	80.000	120.000				06/02/08
MSD	Chloride	16887-00-6	1.05515	106.045	% Recov	80.000	120.000				06/02/08
MSD	Fluoride	16984-48-8	0.5106	103.570	% Recov	80.000	120.000				06/02/08
MSD	Nitrogen in Nitrite	NO2-N	0.4558	92.642	% Recov	80.000	120.000				06/02/08
MSD	Nitrogen in Nitrate	NO3-N	0.4538	101.749	% Recov	80.000	120.000				06/02/08
MSD	Sulfate	14808-79-8	1.86415	95.110	% Recov	80.000	120.000				06/02/08
SPK-RPD	Chloride	16887-00-6	106.045		RPD			1.821	20.000		06/02/08
SPK-RPD	Fluoride	16984-48-8	103.570		RPD			3.032	20.000		06/02/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	92.642		RPD			0.384	20.000		06/02/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	101.749		RPD			3.698	20.000		06/02/08
SPK-RPD	Sulfate	14808-79-8	95.110		RPD			0.949	20.000		06/02/08

BATCH QC

BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	06/02/08
BLANK	Chloride	16887-00-6	<0.22	n/a	mg/L	0.000	0.030			U	06/02/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	06/02/08
BLANK	Fluoride	16984-48-8	<4.2e-2	n/a	mg/L	0.000	0.030			U	06/02/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081110
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
BLANK	Nitrogen in Nitrite	NO2-N	<1.98e-2	n/a	mg/L	0.000	0.020			U	06/02/08
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	06/02/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	06/02/08
BLANK	Nitrogen in Nitrate	NO3-N	<7.2e-2	n/a	mg/L	0.000	0.040			U	06/02/08
BLANK	Sulfate	14808-79-8	<0.154	n/a	mg/L	0.000	0.200			U	06/02/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	06/02/08
LCS	Chloride	16887-00-6	200.1052	99.555	% Recov	80.000	120.000				06/02/08
LCS	Fluoride	16984-48-8	104.6559	105.076	% Recov	80.000	120.000				06/02/08
LCS	Nitrogen in Nitrite	NO2-N	102.3547	102.973	% Recov	80.000	120.000				06/02/08
LCS	Nitrogen in Nitrate	NO3-N	92.3623	102.511	% Recov	80.000	120.000				06/02/08
LCS	Sulfate	14808-79-8	401.2382	101.323	% Recov	80.000	120.000				06/02/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081110
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 05/28/08
Receive Date:05/28/08

Lab ID: W08P002617
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	Silver	7440-22-4	1009	100.900	% Recov	75.000	125.000				07/16/08
MS	Barium	7440-39-3	513.7	102.740	% Recov	75.000	125.000				07/16/08
MS	Beryllium	7440-41-7	537.8	107.560	% Recov	75.000	125.000				07/16/08
MS	Calcium	7440-70-2	-700	-70.000	% Recov	75.000	125.000			*	07/16/08
MS	Cadmium	7440-43-9	1001	100.100	% Recov	75.000	125.000				07/16/08
MS	Cobalt	7440-48-4	942	94.200	% Recov	75.000	125.000				07/16/08
MS	Chromium	7440-47-3	992	99.200	% Recov	75.000	125.000				07/16/08
MS	Copper	7440-50-8	1040	104.000	% Recov	75.000	125.000				07/16/08
MS	Iron	7439-89-6	975	97.500	% Recov	75.000	125.000				07/16/08
MS	Potassium	7440-09-7	9449	94.490	% Recov	75.000	125.000				07/16/08
MS	Magnesium	7439-95-4	490	49.000	% Recov	75.000	125.000			*	07/16/08
MS	Manganese	7439-96-5	892	89.200	% Recov	75.000	125.000				07/16/08
MS	Sodium	7440-23-5	750	75.000	% Recov	75.000	125.000				07/16/08
MS	Nickel	7440-02-0	964.4	96.440	% Recov	75.000	125.000				07/16/08
MS	Antimony	7440-36-0	1013	101.300	% Recov	75.000	125.000				07/16/08
MS	Strontium	7440-24-6	503.1	100.620	% Recov	75.000	125.000				07/16/08
MS	Vanadium	7440-62-2	991.4	99.140	% Recov	75.000	125.000				07/16/08
MS	Zinc	7440-66-6	1058	105.800	% Recov	75.000	125.000				07/16/08
MSD	Silver	7440-22-4	1021	102.100	% Recov	75.000	125.000				07/16/08
MSD	Barium	7440-39-3	520.6	104.120	% Recov	75.000	125.000				07/16/08
MSD	Beryllium	7440-41-7	544.7	108.940	% Recov	75.000	125.000				07/16/08
MSD	Calcium	7440-70-2	2300	230.000	% Recov	75.000	125.000			*	07/16/08
MSD	Cadmium	7440-43-9	1007	100.700	% Recov	75.000	125.000				07/16/08
MSD	Cobalt	7440-48-4	946.7	94.670	% Recov	75.000	125.000				07/16/08
MSD	Chromium	7440-47-3	1003	100.300	% Recov	75.000	125.000				07/16/08
MSD	Copper	7440-50-8	1045	104.500	% Recov	75.000	125.000				07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081110
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 05/28/08
Receive Date:05/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Iron	7439-89-6	1010	101.000	% Recov	75.000	125.000				07/16/08
MSD	Potassium	7440-09-7	9259	92.590	% Recov	75.000	125.000				07/16/08
MSD	Magnesium	7439-95-4	840	84.000	% Recov	75.000	125.000				07/16/08
MSD	Manganese	7439-96-5	1043	104.300	% Recov	75.000	125.000				07/16/08
MSD	Sodium	7440-23-5	660	66.000	% Recov	75.000	125.000			•	07/16/08
MSD	Nickel	7440-02-0	978.3	97.830	% Recov	75.000	125.000				07/16/08
MSD	Antimony	7440-36-0	1022	102.200	% Recov	75.000	125.000				07/16/08
MSD	Strontium	7440-24-6	518.1	103.620	% Recov	75.000	125.000				07/16/08
MSD	Vanadium	7440-62-2	1001	100.100	% Recov	75.000	125.000				07/16/08
MSD	Zinc	7440-66-6	1066	106.600	% Recov	75.000	125.000				07/16/08
SPK-RPD	Silver	7440-22-4	102.100		RPD			1.182	20.000		07/16/08
SPK-RPD	Barium	7440-39-3	104.120		RPD			1.334	20.000		07/16/08
SPK-RPD	Beryllium	7440-41-7	108.940		RPD			1.275	20.000		07/16/08
SPK-RPD	Calcium	7440-70-2	230.000		RPD			375.000	20.000	•	07/16/08
SPK-RPD	Cadmium	7440-43-9	100.700		RPD			0.598	20.000		07/16/08
SPK-RPD	Cobalt	7440-48-4	94.670		RPD			0.498	20.000		07/16/08
SPK-RPD	Chromium	7440-47-3	100.300		RPD			1.103	20.000		07/16/08
SPK-RPD	Copper	7440-50-8	104.500		RPD			0.480	20.000		07/16/08
SPK-RPD	Iron	7439-89-6	101.000		RPD			3.526	20.000		07/16/08
SPK-RPD	Potassium	7440-09-7	92.590		RPD			2.031	20.000		07/16/08
SPK-RPD	Magnesium	7439-95-4	84.000		RPD			52.632	20.000	•	07/16/08
SPK-RPD	Manganese	7439-96-5	104.300		RPD			15.607	20.000		07/16/08
SPK-RPD	Sodium	7440-23-5	66.000		RPD			12.766	20.000		07/16/08
SPK-RPD	Nickel	7440-02-0	97.830		RPD			1.431	20.000		07/16/08
SPK-RPD	Antimony	7440-36-0	102.200		RPD			0.885	20.000		07/16/08
SPK-RPD	Strontium	7440-24-6	103.620		RPD			2.938	20.000		07/16/08
SPK-RPD	Vanadium	7440-62-2	100.100		RPD			0.964	20.000		07/16/08
SPK-RPD	Zinc	7440-66-6	106.600		RPD			0.753	20.000		07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081110
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

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	Silver	7440-22-4	<5	n/a	ug/L					U	07/16/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	07/16/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	07/16/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	07/16/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	07/16/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	07/16/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	07/16/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	07/16/08
BLANK	Iron	7439-89-6	<25	n/a	ug/L					U	07/16/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	07/16/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	07/16/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	07/16/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	07/16/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	07/16/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	07/16/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	07/16/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	07/16/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	07/16/08
LCS	Silver	7440-22-4	1025	102.500	% Recov	80.000	120.000				07/16/08
LCS	Barium	7440-39-3	534.9	106.980	% Recov	80.000	120.000				07/16/08
LCS	Beryllium	7440-41-7	575.6	115.120	% Recov	80.000	120.000				07/16/08
LCS	Calcium	7440-70-2	1017	101.700	% Recov	80.000	120.000				07/16/08
LCS	Cadmium	7440-43-9	1036	103.600	% Recov	80.000	120.000				07/16/08
LCS	Cobalt	7440-48-4	1004	100.400	% Recov	80.000	120.000				07/16/08
LCS	Chromium	7440-47-3	1034	103.400	% Recov	80.000	120.000				07/16/08
LCS	Copper	7440-50-8	1068	106.800	% Recov	80.000	120.000				07/16/08
LCS	Iron	7439-89-6	1021	102.100	% Recov	80.000	120.000				07/16/08
LCS	Potassium	7440-09-7	10750	107.500	% Recov	80.000	120.000				07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081110
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Magnesium	7439-95-4	1074	107.400	% Recov	80.000	120.000				07/16/08
LCS	Manganese	7439-96-5	1046	104.600	% Recov	80.000	120.000				07/16/08
LCS	Sodium	7440-23-5	1188	118.800	% Recov	80.000	120.000				07/16/08
LCS	Nickel	7440-02-0	1026	102.600	% Recov	80.000	120.000				07/16/08
LCS	Antimony	7440-36-0	1065	106.500	% Recov	80.000	120.000				07/16/08
LCS	Strontium	7440-24-6	551.8	110.360	% Recov	80.000	120.000				07/16/08
LCS	Vanadium	7440-62-2	1038	103.800	% Recov	80.000	120.000				07/16/08
LCS	Zinc	7440-66-6	1103	110.300	% Recov	80.000	120.000				07/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081110
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 06/04/08
Receive Date:06/04/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002695											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	38.48	96.200	% Recov	70.000	130.000				06/24/08
MSD	Uranium	7440-61-1	38.56	96.400	% Recov	70.000	130.000				06/24/08
SPK-RPD	Uranium	7440-61-1	96.400		RPD			0.208	20.000		06/25/08
Lab ID: W08P002697											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	44.87	112.175	% Recov	70.000	130.000				06/24/08
MSD	Uranium	7440-61-1	40.54	101.350	% Recov	70.000	130.000				06/24/08
SPK-RPD	Uranium	7440-61-1	101.350		RPD			10.139	20.000		06/25/08
BATCH QC											
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	06/24/08
LCS	Uranium	7440-61-1	39.18	97.950	% Recov	85.000	115.000				06/24/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081110
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 05/28/08
Receive Date:05/28/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01411											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	84.6		RPD			0.000	20.000		06/05/08
Lab ID: W08P002581											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	54.8		RPD			0.182	20.000		06/05/08
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	114.3	99.391	%Recove	80.000	120.000				06/05/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	114.5	99.565	%Recove	80.000	120.000				06/05/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	117.3	102.000	%Recove	80.000	120.000				06/05/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081110
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-AES: No zirconium present in the LCS. Manganese, sodium, magnesium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard is used to ensure calcium, sodium, and magnesium 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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-004
Sample # W08P002656
Client ID: B1V383 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Organic
Sampled: 06/02/08
Received: 06/02/08

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		06/05/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Methylenechloride	75-09-2	LA-523-455		9.90	ug/L			1.00	1.0		06/05/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/05/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/05/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-004
Sample # W08P002656
Client ID: B1V383 GPP-PNNL TRENT WSCF
Matrix: WATER

Group #: WSCF20081110
Department: Organic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/05/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002657
Client ID: B1V6M2 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Organic
Sampled: 06/02/08
Received: 06/02/08

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		06/05/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Carbon tetrachloride	56-23-5	LA-523-455		180	ug/L			1.00	1.0		06/05/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Chloroform	67-66-3	LA-523-455	J	1.00	ug/L			1.00	1.0		06/05/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/05/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/05/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002657
Client ID: B1V6M2 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Organic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/05/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002658
Client ID: B1V6F7 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Organic
Sampled: 06/02/08
Received: 06/02/08

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		06/05/08
Trichloroethene	79-01-6	LA-523-455	J	3.20	ug/L			1.00	1.0		06/05/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Carbon tetrachloride	56-23-5	LA-523-455		2.80e+03	ug/L			1.00	25		06/09/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Chloroform	67-66-3	LA-523-455		9.60	ug/L			1.00	1.0		06/05/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/05/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/05/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002658
Client ID: B1V6F7 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081110
Department: Organic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/05/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002659
Client ID: B1V6F8 GPP-PNNL TRENT WSCF
Matrix: WATER

Group #: WSCF20081110
Department: Organic
Sampled: 06/02/08
Received: 06/02/08

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		06/05/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Carbon tetrachloride	56-23-5	LA-523-455	J	3.30	ug/L			1.00	1.0		06/05/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/05/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/05/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002659
Client ID: B1V6F8 GPP-PNNL TRENT WSCF
Matrix: WATER

Group #: WSCF20081110
Department: Organic
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/05/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Organic**

SDG Number: WSCF20081110
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 05/27/08
Receive Date:05/27/08

Lab ID: W08P002583
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	26.010	104.000	% Recov	63.000	117.000				06/05/08
MS	Benzene	71-43-2	24.180	96.700	% Recov	75.000	129.000				06/05/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	54.860	110.000	% Recov	75.000	125.000				06/05/08
MS	Chlorobenzene	108-90-7	25.930	104.000	% Recov	79.000	119.000				06/05/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.740	117.000	% Recov	75.000	125.000				06/05/08
MS	Toluene-d8(Surr)	2037-26-5	51.300	103.000	% Recov	75.000	125.000				06/05/08
MS	Toluene	108-88-3	24.700	98.800	% Recov	76.000	120.000				06/05/08
MS	Trichloroethene	79-01-6	23.845	95.400	% Recov	73.000	123.000				06/05/08
MSD	1,1-Dichloroethene	75-35-4	24.120	96.500	% Recov	63.000	117.000				06/05/08
MSD	Benzene	71-43-2	23.840	95.400	% Recov	75.000	129.000				06/05/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	54.690	109.000	% Recov	75.000	125.000				06/05/08
MSD	Chlorobenzene	108-90-7	26.130	105.000	% Recov	79.000	119.000				06/05/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	59.280	119.000	% Recov	75.000	125.000				06/05/08
MSD	Toluene-d8(Surr)	2037-26-5	51.860	104.000	% Recov	75.000	125.000				06/05/08
MSD	Toluene	108-88-3	24.960	99.800	% Recov	76.000	120.000				06/05/08
MSD	Trichloroethene	79-01-6	23.255	93.000	% Recov	73.000	123.000				06/05/08
SPK-RPD	1,1-Dichloroethene	75-35-4	96.500		RPD			7.481	20.000		06/05/08
SPK-RPD	Benzene	71-43-2	95.400		RPD			1.353	20.000		06/05/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	109.000		RPD			0.913	20.000		06/05/08
SPK-RPD	Chlorobenzene	108-90-7	105.000		RPD			0.957	20.000		06/05/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	119.000		RPD			1.695	20.000		06/05/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	104.000		RPD			0.966	20.000		06/05/08
SPK-RPD	Toluene	108-88-3	99.800		RPD			1.007	20.000		06/05/08
SPK-RPD	Trichloroethene	79-01-6	93.000		RPD			2.548	20.000		06/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081110
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 06/02/08
Receive Date:06/02/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002656											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	54.520	109.000	% Recov	75.000	125.000				06/05/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	56.880	114.000	% Recov	75.000	125.000				06/05/08
SURR	Toluene-d8(Surr)	2037-26-5	52.430	105.000	% Recov	75.000	125.000				06/05/08
Lab ID: W08P002657											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	55.250	110.000	% Recov	75.000	125.000				06/05/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	59.150	118.000	% Recov	75.000	125.000				06/05/08
SURR	Toluene-d8(Surr)	2037-26-5	52.550	105.000	% Recov	75.000	125.000				06/05/08
Lab ID: W08P002658											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	54.650	109.000	% Recov	75.000	125.000				06/05/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.910	116.000	% Recov	75.000	125.000				06/05/08
SURR	Toluene-d8(Surr)	2037-26-5	51.970	104.000	% Recov	75.000	125.000				06/05/08
Lab ID: W08P002659											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	54.250	108.000	% Recov	75.000	125.000				06/05/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.850	118.000	% Recov	75.000	125.000				06/05/08
SURR	Toluene-d8(Surr)	2037-26-5	52.660	105.000	% Recov	75.000	125.000				06/05/08
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	06/05/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	06/05/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	06/05/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	06/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081110
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	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	06/05/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	06/05/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	06/05/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	06/05/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	55.260	111.000	% Recov	75.000	125.000				06/05/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	06/05/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	06/05/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.750	118.000	% Recov	75.000	125.000				06/05/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	06/05/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	06/05/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	06/05/08
BLANK	Toluene-d8(Surr)	2037-26-5	51.400	103.000	% Recov	75.000	125.000				06/05/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	06/05/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	06/05/08
LCS	1,1-Dichloroethene	75-35-4	21.750	87.000	% Recov	75.000	125.000				06/05/08
LCS	Benzene	71-43-2	24.080	96.300	% Recov	75.000	125.000				06/05/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	55.080	110.000	% Recov	75.000	125.000				06/05/08
LCS	Chlorobenzene	108-90-7	25.940	104.000	% Recov	75.000	125.000				06/05/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.800	118.000	% Recov	75.000	125.000				06/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Organic**

SDG Number: WSCF20081110
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	52.030	104.000	% Recov	75.000	125.000				06/05/08
LCS	Toluene	108-88-3	24.740	99.000	% Recov	75.000	125.000				06/05/08
LCS	Trichloroethene	79-01-6	20.700	82.800	% Recov	75.000	125.000				06/05/08

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002653
Client ID: B1V7J6 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081110
Department: Radiochemistry
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	-4.70	pCi/L	+-4.70	pCi/L	1.00	6.1		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002654
Client ID: B1V7J8 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081110
Department: Radiochemistry
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	-1.80	pCi/L	+-3.67	pCi/L	1.00	6.1		06/05/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002658
Client ID: B1V6F7 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081110
Department: Radiochemistry
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		30.0	pCi/L	+-7.20	pCi/L	1.00	6.1		06/05/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	170	pCi/L	+-136	pCi/L	1.00	2.1e+02		06/14/08

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)
J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-038
Sample # W08P002659
Client ID: B1V6F8 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081110
Department: Radiochemistry
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	-4.40	pCi/L	+-4.40	pCi/L	1.00	6.1		06/05/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	95.0	pCi/L	+-152	pCi/L	1.00	2.1e+02		06/14/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P002661
Client ID: B1V939 GPP-PNNL TRENT WSCF
Matrix: WATER

Group #: WSCF20081110
Department: Radiochemistry
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	-4.10	pCi/L	+-4.10	pCi/L	1.00	6.1		06/05/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	-17.0	pCi/L	+-97.8	pCi/L	1.00	2.1e+02		06/14/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P002663
Client ID: B1V818 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081110
Department: Radiochemistry
Sampled: 06/02/08
Received: 06/02/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		43.0	pCi/L	+-9.46	pCi/L	1.00	6.1		06/05/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		5.80e+03	pCi/L	+-1.16e+03	pCi/L	1.00	2.1e+02		06/14/08

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081110
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 06/02/08
Receive Date:06/02/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002653											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	U-6.9		RPD			n/a	20.000		06/05/08
MS	Tc-99 by Liquid Scin.	14133-76-7	794.0	105.452	% Recov	75.000	125.000				06/05/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U-5.1	n/a	pCi/L	-10.000	10.000				06/05/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	202.3	107.549	% Recov	80.000	120.000				06/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081110
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 06/02/08
Receive Date:06/02/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002658											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	2.0E+02		RPD			16.216	20.000		06/14/08
MS	Tritium	10028-17-8	23632	91.162	% Recov	75.000	125.000				06/14/08
BATCH QC											
BLANK	Tritium	10028-17-8	U-2.2E+01	n/a	pCi/L	-10.000	1000.000				06/14/08
LCS	Tritium	10028-17-8	3180.0	92.547	% Recov	80.000	120.000				06/14/08

M4W41-SLF-08-716

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 10 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

File
VB
7/17/08

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081110

The following samples were received from you on 06/02/08. 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
W08P002653	B1V7J6	GPP-PNNL @2008	TRENT Water @TC99-30	06/02/08
W08P002654	B1V7J8	GPP-PNNL @2008	TRENT Water @GPP6010 @IC-30 @TC99-30 ALKALI	06/02/08
W08P002655	B1V7Y9	GPP-PNNL @GPP6010	TRENT Water	06/02/08
W08P002656	B1V383	GPP-PNNL @VOA-GPP	TRENT Water	06/02/08
W08P002657	B1V6M2	GPP-PNNL @IC-30	TRENT Water @VOA-GPP	06/02/08
W08P002658	B1V6F7	GPP-PNNL @2008	TRENT Water @H3-33 @IC-30 @TC99-30 @VOA-GPP	06/02/08
W08P002659	B1V6F8	GPP-PNNL @2008	TRENT Water @H3-33 @IC-30 @TC99-30 @VOA-GPP	06/02/08
W08P002660	B1V938	GPP-PNNL @GPP6010	TRENT Water	06/02/08
W08P002661	B1V939	GPP-PNNL @GPP6010	TRENT Water @H3-33 @IC-30 @TC99-30 ALKALI	06/02/08
W08P002662	B1V817	GPP-PNNL @GPP6010	TRENT Water	06/02/08
W08P002663	B1V818	GPP-PNNL @GPP6010	TRENT Water @H3-33 @IC-30 @TC99-30 ALKALI	06/02/08

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@GPP6010	ICP Metals Analysis, Grd H20 P
@H3-33	Tritium by Liq Sct column prep
@IC-30	Anions by Ion Chromatography
@TC99-30	TC99 by Liquid Scin.
@VOA-GPP	VOA Ground Water Protection
ALKALI	Total Alkalinity as mg/L CaCO3

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

S08-005-8

Collector: Scott E. Hamaker	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: S08-005	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: SURV, MAY 2008	1HNF-N-506-13	Ice Chest No.: 6W-1 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: SURV 20081110	Priority: 45 Days	Offsite Property No.

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 INSTRUCTIONS Hold Time
Site-Wide Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V7J6	W08P002653	W	6.2.08	1334	1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1V7J6		W	↓	↓	1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Scott E. Hamaker	Scott Hamaker		JUN 0 2 2008 14:20	V. Stan			JUN 0 2 2008 14:20
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

S08-005-12

Collector Scott E. Hamaker	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. S08-005	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title SURV MAY 2008	HNF-N-506-13	**Ice Chest No.** GW-1 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 45 Days	**Offsite Property No.**

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 INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Site-Wide Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V7J8	WO 8P002654	W	6-2-08	1017	1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1V7J8		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1V7J8		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V7J8		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1V7J8		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V7Y9 (F)	655	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Scott E. Hamaker		Scott Hamaker	JUN 0 2 2008 14:20		Victor Sims		JUN 0 2 2008 14:20
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

W08-004-192

Collector D. R. Williamson	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-004	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA APRIL 2008	4INF-N-506-16	**Ice Chest No.** CRP-03-004 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol RCRA	**Priority:** 45 Days	**Offsite Property No.**

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 INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Site-Wide Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V383	W08P002656	W	6/02/08	0949	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V383		W	↓	↓	1x20-mL P	Activity Scan	None

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. R. Williamson			JUN 02 2008 1445				JUN 02 2008 1445
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S	= Soil	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

I08-038-70

Collector D. R. Williamson	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-038	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2ZP1 MAY 2008	HNF-N-506-16	**Ice Chest No.** CRP-03-004 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 45 Days	**Offsite Property No.**

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 INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
200 Area Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V6M2	W08W02657	W	6/02/08	1237	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V6M2		W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. R. Williamson			JUN 02 2008 14:45	Victor Bins			JUN 02 2008 14:45
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S	= Soil	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # I08-038-32

Collector: D. R. Williamson	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: I08-038	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: 2ZPL MAY 2008	HNF-N-506-16	Ice Chest No.: GRP-03-004 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: CERCLA	Priority: 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes ☑ No ☐
200 Area Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V6F7	W08P002656	W	6/02/08	0949	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V6F7		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1V6F7		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V6F7		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1V6F7		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

ICED

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
D. R. Williamson	JUN 02 2008 1445		JUN 02 2008 1445
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time

99/10 03 66

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # I08-038-33

Collector: D. R. Williamson	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: I08-038	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: 2ZP1, MAY 2008	LOG Book HNF-N-506-16	Ice Chest No.: GRP-03-004 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: CERCLA	Priority: 45 Days	Offsite Property No.

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 INSTRUCTIONS Hold Time
200 Area Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V6F8	WDSP002159	W	6-2-08	0800	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V6F8		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1V6F8		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V6F8		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1V6F8		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. R. Williamson			6/2/08	Victor Sims			6/2/08 14:45
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S	= Soil	DS	= Drum Solid
SE	= Sediment	DL	= Drum Liqui
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wine
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W08-005-224**

Page 1 of 1

Collector D. R. Williamson	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-005	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA MAY 2008	HNF-N-506-16	**Ice Chest No.** GRP-03-004 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol RCRA	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Site-Wide Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V938 (F)	W08-005-2660	W	6/02/08	1411	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V939	2661	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V939		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1V939		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V939		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1V939		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. R. Williamson			JUN 02 2008 14:45				JUN 02 2008 14:45
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W08-005-290

Collector: D. R. Williamson	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: W08-005	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: RCRA MAY 2008	HNF-N-506-16	Ice Chest No.: GRP-03-004 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: RCRA	Priority: 45 Days	Offsite Property No.

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 INSTRUCTIONS Hold Time — Total Activity Exemption: Yes ☑ No ☐
Site-Wide Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V817 (F)	W08P002662	W	6/02/08	1142	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V818	2663	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V818		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1V818		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V818		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1V818		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

ICED

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
D. R. Williamson	JUN 02 2008 1445	Victor Bins	JUN 02 2008 1445

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) — Disposed By — Date/Time