RECEIVED AUGUST 5, 2008

0079798

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FLUOR

Memorandum

M4W41-SLF-08-781

To: H. Hampt E6-35 Date: August 4, 2008

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

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 WSCF20081240

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 WSCF20081240:

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

SLF/cmj

Attachments 4

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ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081240
Data Deliverable Date: 04-aug-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-035	B1V5H5	W08P002895	WATER
I08-043	B1VKW2	W08P002900	WATER
	B1VKW3	W08P002901	WATER
W08-004	B1V392	W08P002903	WATER
W08-006	B1VRJ9	W08P002896	WATER
	B1VRK0	W08P002897	WATER
	B1VRK6	W08P002902	WATER
	B1VRL2	W08P002898	WATER
	B1VRL3	W08P002899	WATER

M4W41-SLF-08-7811

ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Introduction

Nine groundwater samples were received at the WSCF Laboratory on June 20, 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 13-15 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 26-27 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.

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 28-31 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1VM26 (SDG# 20081187).

- Calcium, Magnesium and Sodium sample concentrations 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 32 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1VNX1 and B1VP96 (SDG# 20081184).

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 33 for QC details. Analytical Note(s):

- Duplicates were analyzed on samples B1VK09 (SDG# 20081252) and B1VRK0 of this SDG.

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 39-41 for QC details. Analytical Note(s):

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

- Methylene Chloride contamination detected in the Blank was evaluated and affected sample results were B flagged.

All other 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 page 46-48 for QC details. Analytical Note(s):

- Strontium-89/90 and 85 (tracer) – Duplicate QC was analyzed on sample# B1VLH7 (SDG# 20081245).

- Technetium-99 – Duplicate and Matrix Spike were analyzed on sample# B1VP48 (SDG# 20081187).

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 Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Pauline D. Mix
WSCF Client Services

M4W41-SLF-08-781

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 41 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical: William R Baird WW Baird 8/4/08

Client Services: P.D. Mix 8/4/2008

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#: WSCF20081240
Report Date: 4-aug-2008
Report WGPP/ver. 5.2
GPAP

w13qlog v4.2 04-aug-2008 11:03:56

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081240

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36790	2	37209	41549	BLANK		Anions by Ion Chromatography
36790	11	37209	41549	BLANK		Anions by Ion Chromatography
36790	3	37209	41549	LCS		Anions by Ion Chromatography
36790	6	37209	41549	SAMPLE	W08P002895	Anions by Ion Chromatography
36790	8	37209	41549	DUP	W08P002897	Anions by Ion Chromatography
36790	9	37209	41549	MS	W08P002897	Anions by Ion Chromatography
36790	10	37209	41549	MSD	W08P002897	Anions by Ion Chromatography
36790	7	37209	41549	SAMPLE	W08P002897	Anions by Ion Chromatography
36790	10	37209	41549	SPK-RPD	W08P002897	Anions by Ion Chromatography
36790	4	37209	41549	SAMPLE	W08P002899	Anions by Ion Chromatography
36790	5	37209	41549	SAMPLE	W08P002902	Anions by Ion Chromatography
36924	1	37345	41702	LCS		Total Alkalinity as mg/L CaCO3
36924	13	37345	41702	LCS		Total Alkalinity as mg/L CaCO3
36924	24	37345	41702	LCS		Total Alkalinity as mg/L CaCO3
36924	36	37345	41702	LCS		Total Alkalinity as mg/L CaCO3
36924	46	37345	41702	LCS		Total Alkalinity as mg/L CaCO3
36924	3	37345	41702	DUP	W08P002897	Total Alkalinity as mg/L CaCO3
36924	2	37345	41702	SAMPLE	W08P002897	Total Alkalinity as mg/L CaCO3
36924	4	37345	41702	SAMPLE	W08P002899	Total Alkalinity as mg/L CaCO3
36924	5	37345	41702	SAMPLE	W08P002902	Total Alkalinity as mg/L CaCO3
36924	26	37345	41702	DUP	W08P003018	Total Alkalinity as mg/L CaCO3
37006	1	37429	41770	BLANK		ICP-200.8 MS All possible meta
37006	2	37429	41770	LCS		ICP-200.8 MS All possible meta
37006	7	37429	41770	MS	W08P002825	ICP-200.8 MS All possible meta
37006	8	37429	41770	MSD	W08P002825	ICP-200.8 MS All possible meta
37006	8	37429	41770	SPK-RPD	W08P002825	ICP-200.8 MS All possible meta
37006	10	37429	41770	MS	W08P002831	ICP-200.8 MS All possible meta
37006	11	37429	41770	MSD	W08P002831	ICP-200.8 MS All possible meta
37006	11	37429	41770	SPK-RPD	W08P002831	ICP-200.8 MS All possible meta
37006	24	37429	41770	SAMPLE	W08P002901	ICP-200.8 MS All possible meta
37166	1	37589	41974	BLANK		ICP Metals Analysis, Grd H20 P
37166	2	37589	41974	LCS		ICP Metals Analysis, Grd H20 P
37166	4	37589	41974	MS	W08P002873	ICP Metals Analysis, Grd H20 P
37166	5	37589	41974	MSD	W08P002873	ICP Metals Analysis, Grd H20 P
37166	5	37589	41974	SPK-RPD	W08P002873	ICP Metals Analysis, Grd H20 P
37166	10	37589	41974	SAMPLE	W08P002896	ICP Metals Analysis, Grd H20 P
37166	11	37589	41974	SAMPLE	W08P002897	ICP Metals Analysis, Grd H20 P
37166	12	37589	41974	SAMPLE	W08P002898	ICP Metals Analysis, Grd H20 P
37166	13	37589	41974	SAMPLE	W08P002899	ICP Metals Analysis, Grd H20 P
37166	14	37589	41974	SAMPLE	W08P002900	ICP Metals Analysis, Grd H20 P
37166	15	37589	41974	SAMPLE	W08P002901	ICP Metals Analysis, Grd H20 P

w13qlog v4.2 04-aug-2008 11:03:56

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20081240

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			42144	BLANK		VOA Ground Water Protection
			42144	LCS		VOA Ground Water Protection
			42144	MS	W08P002901	VOA Ground Water Protection
			42144	MSD	W08P002901	VOA Ground Water Protection
			42144	SAMPLE	W08P002901	VOA Ground Water Protection
			42144	SPK-RPD	W08P002901	VOA Ground Water Protection
			42144	SURR	W08P002901	VOA Ground Water Protection
			42144	SAMPLE	W08P002903	VOA Ground Water Protection
			42144	SURR	W08P002903	VOA Ground Water Protection

w13qlog v4.2 04-aug-2008 11:03:56

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20081240

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36874	1	37294	41644	BLANK		TC99 by Liquid Scin.
36874	4	37294	41644	LCS		TC99 by Liquid Scin.
36874	3	37294	41644	DUP	W08P002871	TC99 by Liquid Scin.
36874	2	37294	41644	MS	W08P002871	TC99 by Liquid Scin.
36874	8	37294	41644	SAMPLE	W08P002897	TC99 by Liquid Scin.
36874	9	37294	41644	SAMPLE	W08P002899	TC99 by Liquid Scin.
36874	10	37294	41644	SAMPLE	W08P002902	TC99 by Liquid Scin.
36931	1	37353	41718	BLANK		Strontium 89/90
36931	2	37353	41718	LCS		Strontium 89/90
36931	6	37353	41718	SAMPLE	W08P002901	Strontium 89/90
36931	7	37353	41718	SURR	W08P002901	Strontium 89/90
36931	3	37353	41718	DUP	W08P002925	Strontium 89/90
36916	1	37337	41850	BLANK		Tritium by Liq Sct column prep
36916	2	37337	41850	LCS		Tritium by Liq Sct column prep
36916	4	37337	41850	DUP	W08P002901	Tritium by Liq Sct column prep
36916	3	37337	41850	MS	W08P002901	Tritium by Liq Sct column prep
36916	5	37337	41850	SAMPLE	W08P002901	Tritium by Liq Sct column prep

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

HEIS ALPHA_GPC	GROSS ALPHA GPC
HEIS BETA_GPC	GROSS BETA GPC
HEIS SRTOT_SEP_PRECIP_GPC	Strontium 89/90

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

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

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: I08-035
Sample # W08P002895
Client ID: B1V5H5 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Sulfate	14808-79-8	LA-533-410	D	21.1	mg/L			2.00	0.15		06/22/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: W08-006
Sample # W08P002896
Client ID: B1VRJ9 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/20/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/22/08
Magnesium	7439-95-4	LA-505-411		8.82e+03	ug/L			1.00	50		07/22/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Potassium	7440-09-7	LA-505-411		4.00e+03	ug/L			1.00	1.7e+02		07/22/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/22/08
Sodium	7440-23-5	LA-505-411		2.67e+04	ug/L			1.00	51		07/22/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/22/08
Barium	7440-39-3	LA-505-411		33.9	ug/L			1.00	4.0		07/22/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/22/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/22/08
Vanadium	7440-62-2	LA-505-411		19.6	ug/L			1.00	12		07/22/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/22/08
Calcium	7440-70-2	LA-505-411		3.11e+04	ug/L			1.00	73		07/22/08
Strontium	7440-24-6	LA-505-411		124	ug/L			1.00	4.0		07/22/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: W08-006
Sample # W08P002897
Client ID: B1VRK0 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

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	0.304	mg/L			2.00	0.042		06/22/08
Chloride	16887-00-6	LA-533-410	D	12.8	mg/L			2.00	0.22		06/22/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/22/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	6.46	mg/L			2.00	0.072		06/22/08
Sulfate	14808-79-8	LA-533-410	D	33.2	mg/L			2.00	0.15		06/22/08
ICP Metals Analysis, Grd H20 P Prep											**07/20/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		138	ug/L			1.00	25		07/22/08
Magnesium	7439-95-4	LA-505-411		8.60e+03	ug/L			1.00	50		07/22/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Potassium	7440-09-7	LA-505-411		3.97e+03	ug/L			1.00	1.7e+02		07/22/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/22/08
Sodium	7440-23-5	LA-505-411		2.60e+04	ug/L			1.00	51		07/22/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/22/08
Barium	7440-39-3	LA-505-411		33.3	ug/L			1.00	4.0		07/22/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Chromium	7440-47-3	LA-505-411		13.2	ug/L			1.00	13		07/22/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/22/08
Vanadium	7440-62-2	LA-505-411		18.3	ug/L			1.00	12		07/22/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/22/08
Calcium	7440-70-2	LA-505-411		3.10e+04	ug/L			1.00	73		07/22/08
Strontium	7440-24-6	LA-505-411		121	ug/L			1.00	4.0		07/22/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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)
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* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002897
Client ID: B1VRK0 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

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		07/22/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		96.0	mg/L			1.00	1.0		07/02/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: W08-006
Sample # W08P002898
Client ID: B1VRL2 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/20/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/22/08
Magnesium	7439-95-4	LA-505-411		8.45e+03	ug/L			1.00	50		07/22/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Potassium	7440-09-7	LA-505-411		3.83e+03	ug/L			1.00	1.7e+02		07/22/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/22/08
Sodium	7440-23-5	LA-505-411		2.69e+04	ug/L			1.00	51		07/22/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/22/08
Barium	7440-39-3	LA-505-411		30.4	ug/L			1.00	4.0		07/22/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/22/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/22/08
Vanadium	7440-62-2	LA-505-411		25.8	ug/L			1.00	12		07/22/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/22/08
Calcium	7440-70-2	LA-505-411		2.78e+04	ug/L			1.00	73		07/22/08
Strontium	7440-24-6	LA-505-411		110	ug/L			1.00	4.0		07/22/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002899
Client ID: B1VRL3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

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	0.318	mg/L			2.00	0.042		06/22/08
Chloride	16887-00-6	LA-533-410	D	10.5	mg/L			2.00	0.22		06/22/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/22/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	10.4	mg/L			2.00	0.072		06/22/08
Sulfate	14808-79-8	LA-533-410	D	20.1	mg/L			2.00	0.15		06/22/08
ICP Metals Analysis, Grd H20 P Prep											**07/20/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/22/08
Magnesium	7439-95-4	LA-505-411		8.32e+03	ug/L			1.00	50		07/22/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Potassium	7440-09-7	LA-505-411		3.71e+03	ug/L			1.00	1.7e+02		07/22/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/22/08
Sodium	7440-23-5	LA-505-411		2.63e+04	ug/L			1.00	51		07/22/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/22/08
Barium	7440-39-3	LA-505-411		30.5	ug/L			1.00	4.0		07/22/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/22/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/22/08
Vanadium	7440-62-2	LA-505-411		20.5	ug/L			1.00	12		07/22/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/22/08
Calcium	7440-70-2	LA-505-411		2.75e+04	ug/L			1.00	73		07/22/08
Strontium	7440-24-6	LA-505-411		108	ug/L			1.00	4.0		07/22/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: W08-006
Sample # W08P002899
Client ID: B1VRL3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

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		07/22/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		87.0	mg/L			1.00	1.0		07/02/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P002900
Client ID: B1VKW2 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/20/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/22/08
Magnesium	7439-95-4	LA-505-411		1.18e+04	ug/L			1.00	50		07/22/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Potassium	7440-09-7	LA-505-411		4.49e+03	ug/L			1.00	1.7e+02		07/22/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/22/08
Sodium	7440-23-5	LA-505-411		2.64e+04	ug/L			1.00	51		07/22/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/22/08
Barium	7440-39-3	LA-505-411		45.6	ug/L			1.00	4.0		07/22/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Chromium	7440-47-3	LA-505-411		204	ug/L			1.00	13		07/22/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/22/08
Vanadium	7440-62-2	LA-505-411		22.1	ug/L			1.00	12		07/22/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/22/08
Calcium	7440-70-2	LA-505-411		3.90e+04	ug/L			1.00	73		07/22/08
Strontium	7440-24-6	LA-505-411		157	ug/L			1.00	4.0		07/22/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P002901
Client ID: B1VKW3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/20/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		128	ug/L			1.00	25		07/22/08
Magnesium	7439-95-4	LA-505-411		1.16e+04	ug/L			1.00	50		07/22/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Potassium	7440-09-7	LA-505-411		4.34e+03	ug/L			1.00	1.7e+02		07/22/08
Silver	7440-22-4	LA-505-411		5.20	ug/L			1.00	5.0		07/22/08
Sodium	7440-23-5	LA-505-411		2.54e+04	ug/L			1.00	51		07/22/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/22/08
Barium	7440-39-3	LA-505-411		45.3	ug/L			1.00	4.0		07/22/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Chromium	7440-47-3	LA-505-411		207	ug/L			1.00	13		07/22/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/22/08
Vanadium	7440-62-2	LA-505-411		19.7	ug/L			1.00	12		07/22/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/22/08
Calcium	7440-70-2	LA-505-411		3.79e+04	ug/L			1.00	73		07/22/08
Strontium	7440-24-6	LA-505-411		154	ug/L			1.00	4.0		07/22/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/22/08
ICP-200.8 MS All possible meta Prep											**07/07/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		1.37	ug/L			1.00	0.0500		07/08/08

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

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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)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002902
Client ID: B1VRK6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Inorganic
Sampled: 06/20/08
Received: 06/20/08

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		06/22/08
Chloride	16887-00-6	LA-533-410	D	7.01	mg/L			2.00	0.22		06/22/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/22/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	23.4	mg/L			10.00	0.36		06/22/08
Sulfate	14808-79-8	LA-533-410	D	16.4	mg/L			2.00	0.15		06/22/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		89.0	mg/L			1.00	1.0		07/02/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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)

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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081240
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 06/20/08
Receive Date:06/20/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002897											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	12.9049		RPD			0.596	20.000		06/22/08
DUP	Fluoride	16984-48-8	0.3259		RPD			7.019	20.000		06/22/08
DUP	Nitrogen in Nitrite	NO2-N	<1.98e-2		RPD			n/a	20.000	U	06/22/08
DUP	Nitrogen in Nitrate	NO3-N	6.4923		RPD			0.510	20.000		06/22/08
DUP	Sulfate	14808-79-8	33.349		RPD			0.349	20.000		06/22/08
MS	Chloride	16887-00-6	0.9109	91.548	% Recov	80.000	120.000				06/22/08
MS	Fluoride	16984-48-8	0.4879	98.966	% Recov	80.000	120.000				06/22/08
MS	Nitrogen in Nitrite	NO2-N	0.48215	97.998	% Recov	80.000	120.000				06/22/08
MS	Nitrogen in Nitrate	NO3-N	0.41695	93.487	% Recov	80.000	120.000				06/22/08
MS	Sulfate	14808-79-8	1.77835	90.732	% Recov	80.000	120.000				06/22/08
MSD	Chloride	16887-00-6	0.9208	92.543	% Recov	80.000	120.000				06/22/08
MSD	Fluoride	16984-48-8	0.49645	100.700	% Recov	80.000	120.000				06/22/08
MSD	Nitrogen in Nitrite	NO2-N	0.48595	98.770	% Recov	80.000	120.000				06/22/08
MSD	Nitrogen in Nitrate	NO3-N	0.4239	95.045	% Recov	80.000	120.000				06/22/08
MSD	Sulfate	14808-79-8	1.793	91.480	% Recov	80.000	120.000				06/22/08
SPK-RPD	Chloride	16887-00-6	92.543		RPD			1.081	20.000		06/22/08
SPK-RPD	Fluoride	16984-48-8	100.700		RPD			1.737	20.000		06/22/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	98.770		RPD			0.785	20.000		06/22/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	95.045		RPD			1.653	20.000		06/22/08
SPK-RPD	Sulfate	14808-79-8	91.480		RPD			0.821	20.000		06/22/08
BATCH QC											
BLANK	Chloride	16687-00-6	<0.11	n/a	mg/L	0.000	0.030			U	06/22/08
BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	06/22/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	06/22/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	06/22/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081240
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	<9.9e-3	n/a	mg/L	0.000	0.020			U	06/22/08
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	06/22/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	06/22/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	06/22/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	06/22/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	06/22/08
LCS	Chloride	16887-00-6	190.6259	94.839	% Recov	80.000	120.000				06/22/08
LCS	Fluoride	16984-48-8	102.0303	102.440	% Recov	80.000	120.000				06/22/08
LCS	Nitrogen in Nitrite	NO2-N	98.3061	98.899	% Recov	80.000	120.000				06/22/08
LCS	Nitrogen in Nitrate	NO3-N	90.5696	100.521	% Recov	80.000	120.000				06/22/08
LCS	Sulfate	14808-79-8	372.5274	94.073	% Recov	80.000	120.000				06/22/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081240
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 06/11/08
Receive Date:06/11/08

Lab ID: W08P002873
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	988	98.800	% Recov	75.000	125.000				07/22/08
MS	Barium	7440-39-3	486.8	97.360	% Recov	75.000	125.000				07/22/08
MS	Beryllium	7440-41-7	519.1	103.820	% Recov	75.000	125.000				07/22/08
MS	Calcium	7440-70-2	-270	-27.000	% Recov	75.000	125.000			*	07/22/08
MS	Cadmium	7440-43-9	999.7	99.970	% Recov	75.000	125.000				07/22/08
MS	Cobalt	7440-48-4	996.7	99.670	% Recov	75.000	125.000				07/22/08
MS	Chromium	7440-47-3	978	97.800	% Recov	75.000	125.000				07/22/08
MS	Copper	7440-50-8	993.9	99.390	% Recov	75.000	125.000				07/22/08
MS	Iron	7439-89-6	969	96.900	% Recov	75.000	125.000				07/22/08
MS	Potassium	7440-09-7	10028	100.280	% Recov	75.000	125.000				07/22/08
MS	Magnesium	7439-95-4	700	70.000	% Recov	75.000	125.000			*	07/22/08
MS	Manganese	7439-96-5	1006	100.600	% Recov	75.000	125.000				07/22/08
MS	Sodium	7440-23-5	900	90.000	% Recov	75.000	125.000				07/22/08
MS	Nickel	7440-02-0	983.2	98.320	% Recov	75.000	125.000				07/22/08
MS	Antimony	7440-36-0	1023	102.300	% Recov	75.000	125.000				07/22/08
MS	Strontium	7440-24-6	502.3	100.460	% Recov	75.000	125.000				07/22/08
MS	Vanadium	7440-62-2	986.2	98.620	% Recov	75.000	125.000				07/22/08
MS	Zinc	7440-66-6	1001	100.100	% Recov	75.000	125.000				07/22/08
MSD	Silver	7440-22-4	1001	100.100	% Recov	75.000	125.000				07/22/08
MSD	Barium	7440-39-3	492.9	98.580	% Recov	75.000	125.000				07/22/08
MSD	Beryllium	7440-41-7	529.9	105.980	% Recov	75.000	125.000				07/22/08
MSD	Calcium	7440-70-2	2380	238.000	% Recov	75.000	125.000			*	07/22/08
MSD	Cadmium	7440-43-9	1021	102.100	% Recov	75.000	125.000				07/22/08
MSD	Cobalt	7440-48-4	1038	103.800	% Recov	75.000	125.000				07/22/08
MSD	Chromium	7440-47-3	1028.7	102.870	% Recov	75.000	125.000				07/22/08
MSD	Copper	7440-50-8	991.9	99.190	% Recov	75.000	125.000				07/22/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081240
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 06/11/08
Receive Date:06/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Iron	7439-89-6	1008	100.800	% Recov	75.000	125.000				07/22/08
MSD	Potassium	7440-09-7	9928	99.280	% Recov	75.000	125.000				07/22/08
MSD	Magnesium	7439-95-4	780	78.000	% Recov	75.000	125.000				07/22/08
MSD	Manganese	7439-96-5	1048	104.800	% Recov	75.000	125.000				07/22/08
MSD	Sodium	7440-23-5	550	55.000	% Recov	75.000	125.000				07/22/08
MSD	Nickel	7440-02-0	1014.5	101.450	% Recov	75.000	125.000				07/22/08
MSD	Antimony	7440-36-0	1055	105.500	% Recov	75.000	125.000				07/22/08
MSD	Strontium	7440-24-6	515.5	103.100	% Recov	75.000	125.000				07/22/08
MSD	Vanadium	7440-62-2	1024	102.400	% Recov	75.000	125.000				07/22/08
MSD	Zinc	7440-66-6	1015	101.500	% Recov	75.000	125.000				07/22/08
SPK-RPD	Silver	7440-22-4	100.100		RPD			1.307	20.000		07/22/08
SPK-RPD	Barium	7440-39-3	98.580		RPD			1.245	20.000		07/22/08
SPK-RPD	Beryllium	7440-41-7	105.980		RPD			2.059	20.000		07/22/08
SPK-RPD	Calcium	7440-70-2	238.000		RPD			251.185	20.000 *		07/22/08
SPK-RPD	Cadmium	7440-43-9	102.100		RPD			2.108	20.000		07/22/08
SPK-RPD	Cobalt	7440-48-4	103.800		RPD			4.060	20.000		07/22/08
SPK-RPD	Chromium	7440-47-3	102.870		RPD			5.053	20.000		07/22/08
SPK-RPD	Copper	7440-50-8	99.190		RPD			0.201	20.000		07/22/08
SPK-RPD	Iron	7439-89-6	100.800		RPD			3.945	20.000		07/22/08
SPK-RPD	Potassium	7440-09-7	99.280		RPD			1.002	20.000		07/22/08
SPK-RPD	Magnesium	7439-95-4	78.000		RPD			10.811	20.000		07/22/08
SPK-RPD	Manganese	7439-96-5	104.800		RPD			4.090	20.000		07/22/08
SPK-RPD	Sodium	7440-23-5	55.000		RPD			48.276	20.000 *		07/22/08
SPK-RPD	Nickel	7440-02-0	101.450		RPD			3.134	20.000		07/22/08
SPK-RPD	Antimony	7440-36-0	105.500		RPD			3.080	20.000		07/22/08
SPK-RPD	Strontium	7440-24-6	103.100		RPD			2.594	20.000		07/22/08
SPK-RPD	Vanadium	7440-62-2	102.400		RPD			3.761	20.000		07/22/08
SPK-RPD	Zinc	7440-66-6	101.500		RPD			1.389	20.000		07/22/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081240
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	07/22/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	07/22/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	07/22/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	07/22/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	07/22/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	07/22/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	07/22/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	07/22/08
BLANK	Iron	7439-89-6	<25	n/a	ug/L					U	07/22/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	07/22/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	07/22/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	07/22/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	07/22/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	07/22/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	07/22/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	07/22/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	07/22/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	07/22/08
LCS	Silver	7440-22-4	989.4	98.940	% Recov	80.000	120.000				07/22/08
LCS	Barium	7440-39-3	482	96.400	% Recov	80.000	120.000				07/22/08
LCS	Beryllium	7440-41-7	531.8	106.360	% Recov	80.000	120.000				07/22/08
LCS	Calcium	7440-70-2	1109	110.900	% Recov	80.000	120.000				07/22/08
LCS	Cadmium	7440-43-9	1029	102.900	% Recov	80.000	120.000				07/22/08
LCS	Cobalt	7440-48-4	1026	102.600	% Recov	80.000	120.000				07/22/08
LCS	Chromium	7440-47-3	963	96.300	% Recov	80.000	120.000				07/22/08
LCS	Copper	7440-50-8	992.1	99.210	% Recov	80.000	120.000				07/22/08
LCS	Iron	7439-89-6	1002	100.200	% Recov	80.000	120.000				07/22/08
LCS	Potassium	7440-09-7	10420	104.200	% Recov	80.000	120.000				07/22/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081240
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	964.5	96.450	% Recov	80.000	120.000				07/22/08
LCS	Manganese	7439-96-5	1007	100.700	% Recov	80.000	120.000				07/22/08
LCS	Sodium	7440-23-5	1014	101.400	% Recov	80.000	120.000				07/22/08
LCS	Nickel	7440-02-0	1029	102.900	% Recov	80.000	120.000				07/22/08
LCS	Antimony	7440-36-0	1056	105.600	% Recov	80.000	120.000				07/22/08
LCS	Strontium	7440-24-6	493.7	98.740	% Recov	80.000	120.000				07/22/08
LCS	Vanadium	7440-62-2	982.3	98.230	% Recov	80.000	120.000				07/22/08
LCS	Zinc	7440-66-6	1018	101.800	% Recov	80.000	120.000				07/22/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081240
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 06/11/08
Receive Date:06/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002825											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	38.863	97.157	% Recov	70.000	130.000				07/08/08
MSD	Uranium	7440-61-1	38.953	97.383	% Recov	70.000	130.000				07/08/08
SPK-RPD	Uranium	7440-61-1	97.383		RPD			0.232	20.000		07/08/08
Lab ID: W08P002831											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	40.8	102.000	% Recov	70.000	130.000				07/10/08
MSD	Uranium	7440-61-1	40.2	100.500	% Recov	70.000	130.000				07/10/08
SPK-RPD	Uranium	7440-61-1	100.500		RPD			1.481	20.000		07/10/08
BATCH QC											
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	07/08/08
LCS	Uranium	7440-61-1	39.59	98.975	% Recov	85.000	115.000				07/08/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081240
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 06/20/08
Receive Date:06/20/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002897											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	96.11		RPD			0.605	20.000		07/02/08
Lab ID: W08P003018											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	96.46		RPD			0.073	20.000		07/02/08
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	120.9	105.130	%Recove	80.000	120.000				07/02/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	114.6	99.652	%Recove	80.000	120.000				07/02/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	117.5	102.174	%Recove	80.000	120.000				07/02/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	115.0	100.000	%Recove	80.000	120.000				07/02/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	115.3	100.261	%Recove	80.000	120.000				07/02/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081240
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-AES: (Sample W08P2896-2901) No zirconium present in the LCS standard. Magnesium, calcium, and sodium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard is used to ensure sodium, magnesium, and calcium linearity because sample results are greater than the calibration standard.

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P002901
Client ID: B1VKW3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Organic
Sampled: 06/20/08
Received: 06/20/08

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		07/01/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Carbon tetrachloride	56-23-5	LA-523-455		58.0	ug/L			1.00	1.0		07/01/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Chloroform	67-66-3	LA-523-455	J	2.50	ug/L			1.00	1.0		07/01/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Methylenechloride	75-09-2	LA-523-455	B	8.60	ug/L			1.00	1.0		07/01/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		07/01/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		07/01/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: I08-043
Sample # W08P002901
Client ID: B1VKW3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Organic
Sampled: 06/20/08
Received: 06/20/08

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		07/01/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
J - Analyte < lowest calibration but > = MDL.(org)
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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 # W08P002903
Client ID: B1V392 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Organic
Sampled: 06/20/08
Received: 06/20/08

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		07/01/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
Methylenechloride	75-09-2	LA-523-455	B	9.40	ug/L			1.00	1.0		07/01/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		07/01/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		07/01/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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 # W08P002903
Client ID: B1V392 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Organic
Sampled: 06/20/08
Received: 06/20/08

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		07/01/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/01/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: WSCF20081240
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 06/20/08
Receive Date:06/20/08

Lab ID: W08P002901
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	23.380	93.500	% Recov	63.000	117.000				07/01/08
MS	Benzene	71-43-2	24.270	97.100	% Recov	75.000	129.000				07/01/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	47.880	95.800	% Recov	75.000	125.000				07/01/08
MS	Chlorobenzene	108-90-7	24.490	98.000	% Recov	79.000	119.000				07/01/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	42.810	85.600	% Recov	75.000	125.000				07/01/08
MS	Toluene-d8(Surr)	2037-26-5	47.410	94.800	% Recov	75.000	125.000				07/01/08
MS	Toluene	108-88-3	25.130	101.000	% Recov	76.000	120.000				07/01/08
MS	Trichloroethene	79-01-6	23.840	95.400	% Recov	73.000	123.000				07/01/08
MSD	1,1-Dichloroethene	75-35-4	25.030	100.000	% Recov	63.000	117.000				07/01/08
MSD	Benzene	71-43-2	24.660	98.600	% Recov	75.000	129.000				07/01/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	47.380	94.800	% Recov	75.000	125.000				07/01/08
MSD	Chlorobenzene	108-90-7	25.030	100.000	% Recov	79.000	119.000				07/01/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	44.020	88.000	% Recov	75.000	125.000				07/01/08
MSD	Toluene-d8(Surr)	2037-26-5	47.660	95.300	% Recov	75.000	125.000				07/01/08
MSD	Toluene	108-88-3	25.820	103.000	% Recov	76.000	120.000				07/01/08
MSD	Trichloroethene	79-01-6	24.630	98.500	% Recov	73.000	123.000				07/01/08
SPK-RPD	1,1-Dichloroethene	75-35-4	100.000		RPD			6.718	20.000		07/01/08
SPK-RPD	Benzene	71-43-2	98.600		RPD			1.533	20.000		07/01/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	94.800		RPD			1.049	20.000		07/01/08
SPK-RPD	Chlorobenzene	108-90-7	100.000		RPD			2.020	20.000		07/01/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	88.000		RPD			2.765	20.000		07/01/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	95.300		RPD			0.526	20.000		07/01/08
SPK-RPD	Toluene	108-88-3	103.000		RPD			1.961	20.000		07/01/08
SPK-RPD	Trichloroethene	79-01-6	98.500		RPD			3.198	20.000		07/01/08
SURR	4-Bromofluorobenzene(Surr)	460-00-4	47.400	94.800	% Recov	75.000	125.000				07/01/08
SURR	1,2-Dichloroethane d4(Surr)	17060-07-0	42.040	84.100	% Recov	75.000	125.000				07/01/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081240
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 06/20/08
Receive Date:06/20/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SURR	Toluene-d8(Surr)	2037-26-5	47.520	95.000	% Recov	75.000	125.000				07/01/08

Lab ID: W08P002903
BATCH QC ASSOCIATED WITH SAMPLE

SURR	4-Bromofluorobenzene(Surr)	460-00-4	48.800	97.600	% Recov	75.000	125.000				07/01/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	44.010	88.000	% Recov	75.000	125.000				07/01/08
SURR	Toluene-d8(Surr)	2037-26-5	47.560	95.100	% Recov	75.000	125.000				07/01/08

BATCH QC

BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	07/01/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	07/01/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	07/01/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	07/01/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	07/01/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	07/01/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	07/01/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	07/01/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	47.110	94.200	% Recov	75.000	125.000				07/01/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	07/01/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	07/01/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	41.220	82.400	% Recov	75.000	125.000				07/01/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	07/01/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	07/01/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081240
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	Methylenechloride	75-09-2	18	18.000	ug/L						07/01/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	07/01/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	07/01/08
BLANK	Toluene-d8(Surr)	2037-26-5	47.480	95.000	% Recov	75.000	125.000				07/01/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	07/01/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	07/01/08
LCS	1,1-Dichloroethene	75-35-4	27.390	110.000	% Recov	75.000	125.000				07/01/08
LCS	Benzene	71-43-2	24.980	99.900	% Recov	75.000	125.000				07/01/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	50.000	100.000	% Recov	75.000	125.000				07/01/08
LCS	Chlorobenzene	108-90-7	24.920	99.700	% Recov	75.000	125.000				07/01/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	49.130	98.300	% Recov	75.000	125.000				07/01/08
LCS	Toluene-d8(Surr)	2037-26-5	48.070	96.100	% Recov	75.000	125.000				07/01/08
LCS	Toluene	108-88-3	25.700	103.000	% Recov	75.000	125.000				07/01/08
LCS	Trichloroethene	79-01-6	24.790	99.200	% Recov	75.000	125.000				07/01/08

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002897
Client ID: B1VRK0 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Radiochemistry
Sampled: 06/20/08
Received: 06/20/08

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		180	pCi/L	+-36.0	pCi/L	1.00	6.0		06/25/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: W08-006
Sample # W08P002899
Client ID: B1VRL3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Radiochemistry
Sampled: 06/20/08
Received: 06/20/08

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		160	pCi/L	+-32.0	pCi/L	1.00	6.0		06/25/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: I08-043
Sample # W08P002901
Client ID: B1VKW3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Radiochemistry
Sampled: 06/20/08
Received: 06/20/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	-0.630	pCi/L	+-2.29	pCi/L	1.00	0.92		07/03/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		92.9	Percent			1.00	0.0		07/03/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		2.20e+04	pCi/L	+-4.40e+03	pCi/L	1.00	2.1e+02		07/03/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: W08-006
Sample # W08P002902
Client ID: B1VRK6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081240
Department: Radiochemistry
Sampled: 06/20/08
Received: 06/20/08

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		1.80e+04	pCi/L	+-3.60e+03	pCi/L	1.00	6.0		06/25/08

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

B - The Analyte detected in both the BLANK and the SAMPLE.(org)
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: WSCF20081240
Matrix: WATER
Test: Strontium 89/90

Sample Date: 06/20/08
Receive Date:06/20/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002901											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	92.9	92.900	% Recov	30.000	105.000				07/03/08
Lab ID: W08P002925											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	101.5	101.500	% Recov	30.000	105.000				07/03/08
DUP	Strontium-89/90	SR-RAD	U-3.8		RPD			n/a	20.000		07/03/08
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	92.1	92.100	% Recov	30.000	105.000				07/03/08
BLANK	Strontium-89/90	10098-97-2	U-1.4	n/a	pCi/L	-10.000	100.000				07/03/08
LCS	Sr-85 Tracer by Beta Counting	SR85	87.8	87.800	% Recov	30.000	105.000				07/03/08
LCS	Strontium-89/90	10098-97-2	155	109.386	% Recov	80.000	120.000				07/03/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081240
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 06/11/08
Receive Date:06/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002871											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	6.4E+01		RPD			3.175	20.000		06/25/08
MS	Tc-99 by Liquid Scin.	14133-76-7	813.3	108.116	% Recov	75.000	125.000				06/25/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U-1.3	n/a	pCi/L	-10.000	10.000				06/25/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	200.6	106.645	% Recov	80.000	120.000				06/25/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081240
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 06/20/08
Receive Date:06/20/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002901											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	2.3E+04		RPD			4.444	20.000		07/03/08
MS	Tritium	10028-17-8	23200.0	89.824	% Recov	75.000	125.000				07/03/08
BATCH QC											
BLANK	Tritium	10028-17-8	U1.9E+01	n/a	pCi/L	-10.000	1000.000				07/03/08
LCS	Tritium	10028-17-8	3130.0	91.424	% Recov	80.000	120.000				07/03/08

M4W41-SLF-08-781

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 8 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
08/04/08
Tal

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081240

The following samples were received from you on 06/20/08. 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
W08P002895	B1V5H5	PNNL-GPP @IC-30	Water	06/20/0
W08P002896	B1VRJ9	PNNL-GPP @GPP6010	Water	06/20/0
W08P002897	B1VRK0	PNNL-GPP @GPP6010 @IC-30 @TC99-30 ALKALI	Water	06/20/0
W08P002898	B1VRL2	PNNL-GPP @GPP6010	Water	06/20/0
W08P002899	B1VRL3	PNNL-GPP @GPP6010 @IC-30 @TC99-30 ALKALI	Water	06/20/0
W08P002900	B1VKW2	PNNL-GPP @GPP6010	Water	06/20/0
W08P002901	B1VKW3	PNNL-GPP @2008 @GPP6010 @H3-33 @SR89_90 @VOA-GPP	Water	06/20/0
W08P002902	B1VRK6	PNNL-GPP @IC-30 @TC99-30 ALKALI	Water	06/20/0
W08P002903	B1V392	PNNL-GPP @VOA-GPP	Water	06/20/0

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
@SR89_90	Strontium 89/90
@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

08/04/08 20081240

I08-035-65

Page 1 of 1

Collector	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-035 Scott E. Hamaker	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 100HR3IAM(1/2) MAY 2008	HWF-N-506 12	**Ice Chest No.** 008 **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 ☐
100 Area Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V5H5 WO8	P002555	W	6-20-08	1131	1x500-mL P	300.0_ANIONS_IC: Sulfate (1)	Cool~4C

ICED

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
Scott E. Hamaker	Scott Hamaker	1315 JUN 20 2008	TA FRAZIER	Teresa Frazier	1315 JUN 20 2008
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 = Wipe	
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

W08-006-314

Collector KE Hamilton	Contact/Requester Steve Trent	Telephone No. 509-373-5869 MSIN FAX
SAF No. W08-006	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title RCRA, JUNE 2008	HNF-N-526-14	Ice Chest No. 6WS-10 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
B1VRJ9 (F)	2896	W	6-2008	1228	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1VRK0	2897	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1VRK0		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1VRK0		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1VRK0		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
KE Hamilton			JUN 20 2008 1315	TA FIZAZIER			JUN 20 2008 1315
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 = Wipe	
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

W08-006-330

Col[redacted]	Contact/Requester Steve Trent	Telephone No. 509-373-5869 MSIN FAX
SAF No. W08-006	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title RCRA JUNE 2008	HAF-W-506-4	Ice Chest No. 6WS-101 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
B1VRL2 (F)	2898	W	6-20-08	1300	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1VRL3	2899	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1VRL3		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1VRL3		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1VRL3		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

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KE Hamilton			JUN 20 2008 1315	TA Frazier			JUN 20 2008 1315
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

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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

I08-043-31

Page 1 of 1

Collector KE Hamilton	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-043	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2UP1, JUNE 2008	HNF-N-5074	**Ice Chest No.** 6WS-701 **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 ☐
200 Area Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1VKW2 (F)	2900	W	62008	1045	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1VKW3	2901	W	↓	↓	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1VKW3	↓	W	↓	↓	1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1VKW3	↓	W	↓	↓	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1VKW3	↓	W	↓	↓	1x1-L G/P	Strontium-89,90 – Total Sr	HNO3 to pH <2
B1VKW3	↓	W	↓	↓	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
KE Hamilton			1315 JUN 20 2008	TA Frazier			1315 JUN 20 2008
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 *

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SL	= Sludge	WI	= Wine
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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

W08-006-322

Collector KE Hamilton	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-006	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA JUNE 2008	HNF-N-506 14	**Ice Chest No.** GWS-101 **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
B1VRK6	2902	W	6-20-08	1045	1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1VRK6	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1VRK6	↓	W	↓	↓	1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

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KE Hamilton			6/20/08 1315	TA FRAZIER			6/20/08 1315
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
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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

W08-004-201

Collector: KE Hamilton	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	HNF-N-506-14	Ice Chest No.: 6WS-701 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
B1V392	2903	W	6-20-08	1045	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V392	↓	W	↓	↓	1x20-mL P	Activity Scan	None

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KE Hamilton			JUN 20 2008 1315	TA Rinazin			JUN 20 2008 1315
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

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