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RECEIVED SEPTEMBER 15, 2008

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WSCF Analytical Lab
P.O. Box 1000
Richland, WA 99352
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FLUOR

Memorandum

M4W41-SLF-08-1008

To:	H. Hampt	E6-35	Date:	September 15, 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 WSCF20081696

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 WSCF20081696:

- Cover Sheet (Attachment 1)
- Narrative (Attachment 2)
- Issue Resolution Form (Attachment 3)
- Analytical Results (Attachment 4
- Sample Receipt Information (Attachment 5)

SLF/grf

Attachments 5

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M4W41-SLF-08-1008

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081696
Data Deliverable Date: 10-sep-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-054	B1WF26	W08P003848	WATER
	B1WF27	W08P003850	WATER
	B1WF28	W08P003851	WATER
	B1WF38	W08P003858	WATER
	B1WF39	W08P003859	WATER
	B1WF47	W08P003849	WATER
W08-005	B1VHL5	W08P003861	WATER
W08-008	B1WJM9	W08P003860	WATER
	B1WKD0	W08P003852	WATER
	B1WKD1	W08P003853	WATER
	B1WKD3	W08P003854	WATER
	B1WKD4	W08P003856	WATER
	B1WKD6	W08P003855	WATER
	B1WKD7	W08P003857	WATER

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ATTACHMENT 2

NARRATIVE

Consisting of 5 pages
Including cover page

Introduction

Fourteen (14) groundwater samples were received at the WSCF Laboratory on August 11, 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 copy of proposed Issue Resolution Form documenting missed anion hold time is included as Attachment 3. A Data Summary Report (Attachment 4) 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 5.

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 18 through 20, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were not met. See comment below. 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 39 through 44 for QC details. Analytical Note(s):

- Missed Hold Time - A copy of proposed Issue Resolution Form documenting missed anion hold time is included as Attachment 3.
- 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.
- Duplicates, Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1WKD1 (of this SDG); and, B1WKC8, B1WF67 and B1WKC6 of this SDG.
    - Batch QC performed on sample# B1WKC8 – Spike Relative Percent Difference (RPD) for Nitrate-N slightly exceeded established laboratory limits. No flags issued.

- o Batch QC performed on sample# B1WKC6 – Matrix Spike Duplicate for Fluoride slightly exceeded established laboratory limits. Affected sample results in this Batch were N flagged.

All other 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 45 through 51 for QC details. Analytical Note(s):

- Sample results that were less than the reportable limit, however greater than the method detection limits, were B flagged.
- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1WKT6 and B1WKC8 (SDG# 20081691).

- Batch QC performed on sample# B1WKT6
  - o 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.
- Batch QC performed on sample# B1WKC8
  - o Batch QC for Bismuth was not captured in LABCORE and is therefore offered below
    - Matrix Spike recovery = 99.8%
    - Matrix Spike Duplicate recovery = 99.3%
    - Spike Relative Percent Difference = 0.5%
  - o 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 52 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1VKX5 and B1VKW7 (SDG# 20081654); and, B1WH08 and B1WFY6 (SDG# 20081677).

- Batch QC performed on samples B1WH08 and B1WFY6.
    - Uranium results were X flagged. The Matrix Spike recovery B1WH0) was less than established laboratory limits. Additionally, Matrix Spike and Matrix Spike Duplicate recoveries (B1WFY6) were less than established laboratory limits.

All other 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 53 for QC details. Analytical Note(s):

- Duplicate QC was analyzed on sample# B1WKC6 (SDG# 20081691).

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 66 through 69 for QC details. Analytical Note(s):

- Sample results that were less than the lowest calibration limit, however greater than the method detection limit, were J flagged.
- Acetone 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 pages 76 through 77 for QC details. Analytical Note(s):

- Technetium-99 – Duplicates and Matrix Spikes were analyzed on sample# B1WKY5 (SDG# 20081691). Matrix Spike recovery was less than established laboratory limits due to high sample activity.

All other QC controls are within the established limits.

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

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Pauline D. Mix
WSCF Client Services

M4W41-SLF-08-1008

ATTACHMENT 3

ISSUE RESOLUTION FORM

Consisting of 3 pages
Including cover page

ISSUE RESOLUTION FORM

DRAFT

FH TRACKING NUMBER: 08-XXX

Date : **9-15-2008** SAF No. **I08-054, W08-008**

SDG: **WSCF20081696** LOGIN No.: TEST: ANIONS (@IC-30)

Sample No.(s) **B1WF47, B1WF28, B1WF26, B1WKD7, B1WF39**

W08P003849, - 3851, -3848, -3857, -3859

Submitted By:	WW Baird	Submitted To:	H Hampt
Phone No.	373-7189	Phone No.	376-4319
Fax No.	372-0456	Fax No	

ISSUE	PROPOSED RESOLUTION
The 48-hour regulatory hold time authorization was slightly missed on groundwater samples identified above for the Nitrite-N and Nitrate-N analyses. Samples were collected in the field on August 10, 2008 and submitted to the WSCF Laboratory on August 11, 2008 for analysis. Samples were analyzed on August 12, 2008, exceeding the regulatory hold time by no more than 8 hours. Duplicates, Matrix Spikes and Matrix Spike Duplicates were analyzed in the following groups (batches) • Samples **B1WF47, B1WF28** - Batch QC performed on sample# B1WKC8. All QC controls were within established laboratory limits. Note: Spike Relative Percent Difference (RPD) slightly high @ 21.6%. RPD range is +/- 20%. • Samples **B1WF26, B1WKD7, B1WF39** - Batch QC performed on sample# B1WKC6. Matrix Spike Duplicate recovery for Fluoride slightly exceeded established laboratory limits. Sample results were N flagged. All other QC controls, however were within established laboratory limits.	Accept Nitrite-N and Nitrate-N analytical results (accept as-is) and document missed holding time in the case narrative.

GRP COMMENTS

Signature and Date

M4W41-SLF-08-1008

ATTACHMENT 4

ANALYTICAL RESULTS

Consisting of 67 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical: S. Fitzgerald 9/15/08

Client Services: P.D. Mix 9/15/2008

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

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Report#: WSCF20081696
Report Date: 14-sep-2008
Report WGPP/ver. 5.2
GPAP

w13qlog v4.2 14-sep-2008 15:45:09

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081696

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37540	2	37980	42306	BLANK		Anions by Ion Chromatography
37540	13	37980	42306	BLANK		Anions by Ion Chromatography
37540	3	37980	42306	LCS		Anions by Ion Chromatography
37540	5	37980	42306	DUP	W08P003853	Anions by Ion Chromatography
37540	6	37980	42306	MS	W08P003853	Anions by Ion Chromatography
37540	7	37980	42306	MSD	W08P003853	Anions by Ion Chromatography
37540	4	37980	42306	SAMPLE	W08P003853	Anions by Ion Chromatography
37540	7	37980	42306	SPK-RPD	W08P003853	Anions by Ion Chromatography
37540	11	37980	42306	SAMPLE	W08P003856	Anions by Ion Chromatography
37563	2	38001	42342	BLANK		Anions by Ion Chromatography
37563	13	38001	42342	BLANK		Anions by Ion Chromatography
37563	3	38001	42342	LCS		Anions by Ion Chromatography
37563	5	38001	42342	DUP	W08P003847	Anions by Ion Chromatography
37563	6	38001	42342	MS	W08P003847	Anions by Ion Chromatography
37563	7	38001	42342	MSD	W08P003847	Anions by Ion Chromatography
37563	7	38001	42342	SPK-RPD	W08P003847	Anions by Ion Chromatography
37563	10	38001	42342	SAMPLE	W08P003849	Anions by Ion Chromatography
37563	11	38001	42342	SAMPLE	W08P003851	Anions by Ion Chromatography
37561	2	38003	42345	BLANK		Anions by Ion Chromatography
37561	13	38003	42345	BLANK		Anions by Ion Chromatography
37561	25	38003	42345	BLANK		Anions by Ion Chromatography
37561	3	38003	42345	LCS		Anions by Ion Chromatography
37561	14	38003	42345	LCS		Anions by Ion Chromatography
37561	5	38003	42345	DUP	W08P003845	Anions by Ion Chromatography
37561	6	38003	42345	MS	W08P003845	Anions by Ion Chromatography
37561	7	38003	42345	MSD	W08P003845	Anions by Ion Chromatography
37561	7	38003	42345	SPK-RPD	W08P003845	Anions by Ion Chromatography
37561	10	38003	42345	SAMPLE	W08P003848	Anions by Ion Chromatography
37561	12	38003	42345	SAMPLE	W08P003857	Anions by Ion Chromatography
37561	11	38003	42345	SAMPLE	W08P003859	Anions by Ion Chromatography
37561	16	38003	42345	DUP	W08P003894	Anions by Ion Chromatography
37561	17	38003	42345	MS	W08P003894	Anions by Ion Chromatography
37561	18	38003	42345	MSD	W08P003894	Anions by Ion Chromatography
37561	18	38003	42345	SPK-RPD	W08P003894	Anions by Ion Chromatography
37597	1	38038	42383	BLANK		ICP-200.8 MS All possible meta
37597	2	38038	42383	LCS		ICP-200.8 MS All possible meta
37597	4	38038	42383	MS	W08P003727	ICP-200.8 MS All possible meta
37597	5	38038	42383	MSD	W08P003727	ICP-200.8 MS All possible meta
37597	5	38038	42383	SPK-RPD	W08P003727	ICP-200.8 MS All possible meta
37597	7	38038	42383	MS	W08P003729	ICP-200.8 MS All possible meta
37597	8	38038	42383	MSD	W08P003729	ICP-200.8 MS All possible meta
37597	8	38038	42383	SPK-RPD	W08P003729	ICP-200.8 MS All possible meta
37597	10	38038	42383	MS	W08P003767	ICP-200.8 MS All possible meta
37597	11	38038	42383	MSD	W08P003767	ICP-200.8 MS All possible meta
37597	11	38038	42383	SPK-RPD	W08P003767	ICP-200.8 MS All possible meta
37597	13	38038	42383	MS	W08P003769	ICP-200.8 MS All possible meta
37597	14	38038	42383	MSD	W08P003769	ICP-200.8 MS All possible meta
37597	14	38038	42383	SPK-RPD	W08P003769	ICP-200.8 MS All possible meta
37597	41	38038	42383	SAMPLE	W08P003849	ICP-200.8 MS All possible meta

37597	42	38038	42383	SAMPLE	W08P003851	ICP-200.8 MS All possible meta
37703	1	38137	42503	LCS		Total Alkalinity as mg/L CaCO3
37703	13	38137	42503	LCS		Total Alkalinity as mg/L CaCO3
37703	24	38137	42503	LCS		Total Alkalinity as mg/L CaCO3
37703	3	38137	42503	DUP	W08P003845	Total Alkalinity as mg/L CaCO3
37703	5	38137	42503	SAMPLE	W08P003853	Total Alkalinity as mg/L CaCO3
37703	6	38137	42503	SAMPLE	W08P003856	Total Alkalinity as mg/L CaCO3
37703	7	38137	42503	SAMPLE	W08P003857	Total Alkalinity as mg/L CaCO3
37703	8	38137	42503	SAMPLE	W08P003860	Total Alkalinity as mg/L CaCO3
37875	1	38257	42773	BLANK		ICP Metals Analysis, Grd H20 P
37875	2	38257	42773	LCS		ICP Metals Analysis, Grd H20 P
37875	4	38257	42773	MS	W08P003828	ICP Metals Analysis, Grd H20 P
37875	5	38257	42773	MSD	W08P003828	ICP Metals Analysis, Grd H20 P
37875	5	38257	42773	SPK-RPD	W08P003828	ICP Metals Analysis, Grd H20 P
37875	20	38257	42773	SAMPLE	W08P003855	ICP Metals Analysis, Grd H20 P
37838	1	38268	42816	BLANK		ICP Metals Analysis, Grd H20 P
37838	2	38268	42816	LCS		ICP Metals Analysis, Grd H20 P
37838	4	38268	42816	MS	W08P003847	ICP Metals Analysis, Grd H20 P
37838	5	38268	42816	MSD	W08P003847	ICP Metals Analysis, Grd H20 P
37838	5	38268	42816	SPK-RPD	W08P003847	ICP Metals Analysis, Grd H20 P
37838	6	38268	42816	SAMPLE	W08P003850	ICP Metals Analysis, Grd H20 P
37838	7	38268	42816	SAMPLE	W08P003851	ICP Metals Analysis, Grd H20 P
37838	8	38268	42816	SAMPLE	W08P003852	ICP Metals Analysis, Grd H20 P
37838	9	38268	42816	SAMPLE	W08P003853	ICP Metals Analysis, Grd H20 P
37838	10	38268	42816	SAMPLE	W08P003854	ICP Metals Analysis, Grd H20 P
37838	11	38268	42816	SAMPLE	W08P003856	ICP Metals Analysis, Grd H20 P
37838	12	38268	42816	SAMPLE	W08P003857	ICP Metals Analysis, Grd H20 P
37838	13	38268	42816	SAMPLE	W08P003858	ICP Metals Analysis, Grd H20 P
37838	14	38268	42816	SAMPLE	W08P003859	ICP Metals Analysis, Grd H20 P

w13qlog v4.2 14-sep-2008 15:45:09

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20081696

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			42725	BLANK		VOA Ground Water Protection
			42725	LCS		VOA Ground Water Protection
			42725	MS	W08P003848	VOA Ground Water Protection
			42725	MSD	W08P003848	VOA Ground Water Protection
			42725	SAMPLE	W08P003848	VOA Ground Water Protection
			42725	SPK-RPD	W08P003848	VOA Ground Water Protection
			42725	SURR	W08P003848	VOA Ground Water Protection
			42725	SAMPLE	W08P003849	VOA Ground Water Protection
			42725	SURR	W08P003849	VOA Ground Water Protection
			42725	SAMPLE	W08P003851	VOA Ground Water Protection
			42725	SURR	W08P003851	VOA Ground Water Protection
			42725	SAMPLE	W08P003859	VOA Ground Water Protection
			42725	SURR	W08P003859	VOA Ground Water Protection
			42725	SAMPLE	W08P003861	VOA Ground Water Protection
			42725	SURR	W08P003861	VOA Ground Water Protection

w13qlog v4.2 14-sep-2008 15:45:09

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20081696

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37716	1	38153	42682	BLANK		TC99 by Liquid Scin.
37716	2	38153	42682	LCS		TC99 by Liquid Scin.
37716	4	38153	42682	DUP	W08P003835	TC99 by Liquid Scin.
37716	3	38153	42682	MS	W08P003835	TC99 by Liquid Scin.
37716	12	38153	42682	SAMPLE	W08P003851	TC99 by Liquid Scin.
37716	13	38153	42682	SAMPLE	W08P003853	TC99 by Liquid Scin.
37716	14	38153	42682	SAMPLE	W08P003856	TC99 by Liquid Scin.
37716	15	38153	42682	SAMPLE	W08P003857	TC99 by Liquid Scin.
37716	16	38153	42682	SAMPLE	W08P003859	TC99 by Liquid Scin.
37930	1	38357	42766	BLANK		Tritium by Liq Sct column prep
37930	2	38357	42766	LCS		Tritium by Liq Sct column prep
37930	4	38357	42766	DUP	W08P003849	Tritium by Liq Sct column prep
37930	3	38357	42766	MS	W08P003849	Tritium by Liq Sct column prep
37930	5	38357	42766	SAMPLE	W08P003849	Tritium by Liq Sct column prep
37930	6	38357	42766	SAMPLE	W08P003851	Tritium by Liq Sct column prep
37930	7	38357	42766	SAMPLE	W08P003859	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-508-421 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: I08-054
Sample # W08P003848
Client ID: B1WF26 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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	BDN	0.136	mg/L			2.00	0.046		08/12/08
Chloride	16887-00-6	LA-533-410	D	46.7	mg/L			10.00	0.47		08/12/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/12/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	13.9	mg/L			10.00	0.12		08/12/08
Sulfate	14808-79-8	LA-533-410	D	49.9	mg/L			2.00	0.26		08/12/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003849
Client ID: B1WF47 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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	0.155	mg/L			2.00	0.046		08/12/08
Chloride	16887-00-6	LA-533-410	D	17.1	mg/L			2.00	0.094		08/12/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/12/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	88.7	mg/L			20.00	0.24		08/12/08
Sulfate	14808-79-8	LA-533-410	D	71.0	mg/L			2.00	0.26		08/12/08
ICP-200.8 MS All possible meta Prep											**08/14/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412	X	2.90	ug/L			1.00	0.0500		08/14/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003850
Client ID: B1WF27 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	124	ug/L			1.00	25		09/11/08
Magnesium	7439-95-4	LA-505-411		1.51e+04	ug/L			1.00	50		09/11/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Potassium	7440-09-7	LA-505-411		5.16e+03	ug/L			1.00	1.7e+02		09/11/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/11/08
Sodium	7440-23-5	LA-505-411		5.08e+04	ug/L			1.00	51		09/11/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/11/08
Barium	7440-39-3	LA-505-411		29.5	ug/L			1.00	4.0		09/11/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Chromium	7440-47-3	LA-505-411	B	27.9	ug/L			1.00	13		09/11/08
Cobalt	7440-48-4	LA-505-411	B	4.70	ug/L			1.00	4.0		09/11/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/11/08
Vanadium	7440-62-2	LA-505-411	B	13.8	ug/L			1.00	12		09/11/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/11/08
Calcium	7440-70-2	LA-505-411		4.20e+04	ug/L			1.00	73		09/11/08
Strontium	7440-24-6	LA-505-411		312	ug/L			1.00	4.0		09/11/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003851
Client ID: B1WF28 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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	0.784	mg/L			2.00	0.046		08/12/08
Chloride	16887-00-6	LA-533-410	D	13.1	mg/L			2.00	0.094		08/12/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/12/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	27.8	mg/L			10.00	0.12		08/12/08
Sulfate	14808-79-8	LA-533-410	D	37.8	mg/L			2.00	0.26		08/12/08
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		1.43e+04	ug/L			1.00	25		09/11/08
Magnesium	7439-95-4	LA-505-411		1.54e+04	ug/L			1.00	50		09/11/08
Manganese	7439-96-5	LA-505-411		350	ug/L			1.00	4.0		09/11/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Potassium	7440-09-7	LA-505-411		5.06e+03	ug/L			1.00	1.7e+02		09/11/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/11/08
Sodium	7440-23-5	LA-505-411		5.06e+04	ug/L			1.00	51		09/11/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/11/08
Barium	7440-39-3	LA-505-411		86.5	ug/L			1.00	4.0		09/11/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Chromium	7440-47-3	LA-505-411		163	ug/L			1.00	13		09/11/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/11/08
Vanadium	7440-62-2	LA-505-411	B	33.4	ug/L			1.00	12		09/11/08
Zinc	7440-66-6	LA-505-411	B	13.3	ug/L			1.00	9.0		09/11/08
Calcium	7440-70-2	LA-505-411		4.57e+04	ug/L			1.00	73		09/11/08
Strontium	7440-24-6	LA-505-411		337	ug/L			1.00	4.0		09/11/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003851
Client ID: B1WF28 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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		09/11/08
ICP-200.8 MS All possible meta Prep											**08/14/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412	X	1.86	ug/L			1.00	0.0500		08/14/08

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)
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N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003852
Client ID: B1WKD0 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	59.5	ug/L			1.00	25		09/11/08
Magnesium	7439-95-4	LA-505-411		9.65e+03	ug/L			1.00	50		09/11/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Potassium	7440-09-7	LA-505-411		4.32e+03	ug/L			1.00	1.7e+02		09/11/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/11/08
Sodium	7440-23-5	LA-505-411		1.68e+04	ug/L			1.00	51		09/11/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/11/08
Barium	7440-39-3	LA-505-411		40.3	ug/L			1.00	4.0		09/11/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		09/11/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/11/08
Vanadium	7440-62-2	LA-505-411	B	28.5	ug/L			1.00	12		09/11/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/11/08
Calcium	7440-70-2	LA-505-411		3.26e+04	ug/L			1.00	73		09/11/08
Strontium	7440-24-6	LA-505-411		173	ug/L			1.00	4.0		09/11/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003853
Client ID: B1WKD1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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	0.341	mg/L			2.00	0.046		08/11/08
Chloride	16887-00-6	LA-533-410	D	9.12	mg/L			2.00	0.094		08/11/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/11/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	8.69	mg/L			2.00	0.024		08/11/08
Sulfate	14808-79-8	LA-533-410	D	20.7	mg/L			2.00	0.26		08/11/08
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		178	ug/L			1.00	25		09/11/08
Magnesium	7439-95-4	LA-505-411		9.62e+03	ug/L			1.00	50		09/11/08
Manganese	7439-96-5	LA-505-411	B	8.50	ug/L			1.00	4.0		09/11/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Potassium	7440-09-7	LA-505-411		4.28e+03	ug/L			1.00	1.7e+02		09/11/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/11/08
Sodium	7440-23-5	LA-505-411		1.71e+04	ug/L			1.00	51		09/11/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/11/08
Barium	7440-39-3	LA-505-411		41.0	ug/L			1.00	4.0		09/11/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		09/11/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/11/08
Vanadium	7440-62-2	LA-505-411	B	19.1	ug/L			1.00	12		09/11/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/11/08
Calcium	7440-70-2	LA-505-411		3.12e+04	ug/L			1.00	73		09/11/08
Strontium	7440-24-6	LA-505-411		169	ug/L			1.00	4.0		09/11/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
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U - Analyzed for but not detected above limiting criteria.(org)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003853
Client ID: B1WKD1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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		09/11/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		91.0	mg/L			1.00	1.0		08/19/08

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)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003854
Client ID: B1WKD3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	31.6	ug/L			1.00	25		09/11/08
Magnesium	7439-95-4	LA-505-411		1.68e+04	ug/L			1.00	50		09/11/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Potassium	7440-09-7	LA-505-411		5.20e+03	ug/L			1.00	1.7e+02		09/11/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/11/08
Sodium	7440-23-5	LA-505-411		2.31e+04	ug/L			1.00	51		09/11/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/11/08
Barium	7440-39-3	LA-505-411		62.6	ug/L			1.00	4.0		09/11/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		09/11/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/11/08
Vanadium	7440-62-2	LA-505-411	B	15.2	ug/L			1.00	12		09/11/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/11/08
Calcium	7440-70-2	LA-505-411		5.13e+04	ug/L			1.00	73		09/11/08
Strontium	7440-24-6	LA-505-411		318	ug/L			1.00	4.0		09/11/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003855
Client ID: B1WKD6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/28/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		09/09/08
Magnesium	7439-95-4	LA-505-411		1.38e+04	ug/L			1.00	50		09/09/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/09/08
Nickel	7440-02-0	LA-505-411	B	5.20	ug/L			1.00	4.0		09/09/08
Potassium	7440-09-7	LA-505-411		4.74e+03	ug/L			1.00	1.7e+02		09/09/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/09/08
Sodium	7440-23-5	LA-505-411		2.31e+04	ug/L			1.00	51		09/09/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/09/08
Barium	7440-39-3	LA-505-411		47.0	ug/L			1.00	4.0		09/09/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/09/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		09/09/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/09/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/09/08
Vanadium	7440-62-2	LA-505-411	B	24.7	ug/L			1.00	12		09/09/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/09/08
Calcium	7440-70-2	LA-505-411		4.06e+04	ug/L			1.00	73		09/09/08
Strontium	7440-24-6	LA-505-411		226	ug/L			1.00	4.0		09/09/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/09/08

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

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D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003856
Client ID: B1WKD4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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	0.342	mg/L			2.00	0.046		08/11/08
Chloride	16887-00-6	LA-533-410	D	44.1	mg/L			10.00	0.47		08/11/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/11/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	10.3	mg/L			10.00	0.12		08/11/08
Sulfate	14808-79-8	LA-533-410	D	40.9	mg/L			2.00	0.26		08/11/08
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		595	ug/L			1.00	25		09/11/08
Magnesium	7439-95-4	LA-505-411		1.73e+04	ug/L			1.00	50		09/11/08
Manganese	7439-96-5	LA-505-411	B	5.60	ug/L			1.00	4.0		09/11/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Potassium	7440-09-7	LA-505-411		5.33e+03	ug/L			1.00	1.7e+02		09/11/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/11/08
Sodium	7440-23-5	LA-505-411		2.42e+04	ug/L			1.00	51		09/11/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/11/08
Barium	7440-39-3	LA-505-411		66.5	ug/L			1.00	4.0		09/11/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		09/11/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/11/08
Vanadium	7440-62-2	LA-505-411	B	20.7	ug/L			1.00	12		09/11/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/11/08
Calcium	7440-70-2	LA-505-411		5.14e+04	ug/L			1.00	73		09/11/08
Strontium	7440-24-6	LA-505-411		322	ug/L			1.00	4.0		09/11/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003856
Client ID: B1WKD4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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		09/11/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		100	mg/L			1.00	1.0		08/19/08

MDL=Minimum Detection Limit
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U - Analyzed for but not detected above limiting criteria.(org)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003857
Client ID: B1WKD7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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	DN	0.277	mg/L			2.00	0.046		08/12/08
Chloride	16887-00-6	LA-533-410	D	23.8	mg/L			2.00	0.094		08/12/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/12/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	9.28	mg/L			2.00	0.024		08/12/08
Sulfate	14808-79-8	LA-533-410	D	41.1	mg/L			2.00	0.26		08/12/08
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	57.6	ug/L			1.00	25		09/11/08
Magnesium	7439-95-4	LA-505-411		1.29e+04	ug/L			1.00	50		09/11/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Potassium	7440-09-7	LA-505-411		4.38e+03	ug/L			1.00	1.7e+02		09/11/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/11/08
Sodium	7440-23-5	LA-505-411		2.08e+04	ug/L			1.00	51		09/11/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/11/08
Barium	7440-39-3	LA-505-411		45.8	ug/L			1.00	4.0		09/11/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		09/11/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/11/08
Vanadium	7440-62-2	LA-505-411	B	15.8	ug/L			1.00	12		09/11/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/11/08
Calcium	7440-70-2	LA-505-411		4.18e+04	ug/L			1.00	73		09/11/08
Strontium	7440-24-6	LA-505-411		233	ug/L			1.00	4.0		09/11/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003857
Client ID: B1WKD7 PNNL-GPP WSCF
Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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		09/11/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		88.0	mg/L			1.00	1.0		08/19/08

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TP Err=Total Propagated Error
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003858
Client ID: B1WF38 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		09/11/08
Magnesium	7439-95-4	LA-505-411		3.20e+04	ug/L			1.00	50		09/11/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Potassium	7440-09-7	LA-505-411		7.56e+03	ug/L			1.00	1.7e+02		09/11/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/11/08
Sodium	7440-23-5	LA-505-411		2.00e+05	ug/L			1.00	51		09/11/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/11/08
Barium	7440-39-3	LA-505-411		124	ug/L			1.00	4.0		09/11/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Chromium	7440-47-3	LA-505-411		143	ug/L			1.00	13		09/11/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/11/08
Vanadium	7440-62-2	LA-505-411	B	16.8	ug/L			1.00	12		09/11/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/11/08
Calcium	7440-70-2	LA-505-411		1.12e+05	ug/L			1.00	73		09/11/08
Strontium	7440-24-6	LA-505-411		615	ug/L			1.00	4.0		09/11/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Bismuth	7440-69-9	LA-505-411	U	< 35.0	ug/L			1.00	35		09/11/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003859
Client ID: B1WF39 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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	DN	2.72	mg/L			3.00	0.070		08/12/08
Chloride	16887-00-6	LA-533-410	D	27.0	mg/L			3.00	0.14		08/12/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0384	mg/L			3.00	0.038		08/12/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	160	mg/L			51.00	0.62		08/12/08
Sulfate	14808-79-8	LA-533-410	D	62.6	mg/L			3.00	0.40		08/12/08
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	81.0	ug/L			1.00	25		09/11/08
Magnesium	7439-95-4	LA-505-411		3.20e+04	ug/L			1.00	50		09/11/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Potassium	7440-09-7	LA-505-411		7.71e+03	ug/L			1.00	1.7e+02		09/11/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		09/11/08
Sodium	7440-23-5	LA-505-411		1.98e+05	ug/L			1.00	51		09/11/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/11/08
Barium	7440-39-3	LA-505-411		124	ug/L			1.00	4.0		09/11/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Chromium	7440-47-3	LA-505-411		154	ug/L			1.00	13		09/11/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/11/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/11/08
Vanadium	7440-62-2	LA-505-411	B	17.0	ug/L			1.00	12		09/11/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/11/08
Calcium	7440-70-2	LA-505-411		1.11e+05	ug/L			1.00	73		09/11/08
Strontium	7440-24-6	LA-505-411		616	ug/L			1.00	4.0		09/11/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003859
Client ID: B1WF39 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

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		09/11/08
Bismuth	7440-69-9	LA-505-411	U	< 35.0	ug/L			1.00	35		09/11/08

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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)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003860
Client ID: B1WJM9 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Inorganic
Sampled: 08/10/08
Received: 08/11/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		140	mg/L			1.00	1.0		08/19/08

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

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N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/10/08
Receive Date:08/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003853											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	9.101		RPD			0.214	20.000		08/11/08
DUP	Fluoride	16984-48-8	0.335		RPD			1.716	20.000		08/11/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/11/08
DUP	Nitrogen in Nitrate	NO3-N	8.668		RPD			0.214	20.000		08/11/08
DUP	Sulfate	14808-79-8	20.6159		RPD			0.302	20.000		08/11/08
MS	Chloride	16887-00-6	1.06605	107.141	% Recov	80.000	120.000				08/11/08
MS	Fluoride	16984-48-8	0.55405	112.383	% Recov	80.000	120.000				08/11/08
MS	Nitrogen in Nitrite	NO2-N	0.44505	90.457	% Recov	80.000	120.000				08/11/08
MS	Nitrogen in Nitrate	NO3-N	0.40435	90.661	% Recov	80.000	120.000				08/11/08
MS	Sulfate	14808-79-8	1.97935	100.987	% Recov	80.000	120.000				08/11/08
MSD	Chloride	16887-00-6	1.10505	111.060	% Recov	80.000	120.000				08/11/08
MSD	Fluoride	16984-48-8	0.5447	110.487	% Recov	80.000	120.000				08/11/08
MSD	Nitrogen in Nitrite	NO2-N	0.4445	90.346	% Recov	80.000	120.000				08/11/08
MSD	Nitrogen in Nitrate	NO3-N	0.4218	94.574	% Recov	80.000	120.000				08/11/08
MSD	Sulfate	14808-79-8	2.0485	104.515	% Recov	80.000	120.000				08/11/08
SPK-RPD	Chloride	16887-00-6	111.060		RPD			3.592	20.000		08/11/08
SPK-RPD	Fluoride	16984-48-8	110.487		RPD			1.701	20.000		08/11/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	90.346		RPD			0.123	20.000		08/11/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	94.574		RPD			4.225	20.000		08/11/08
SPK-RPD	Sulfate	14808-79-8	104.515		RPD			3.434	20.000		08/11/08
BATCH QC											
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/11/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/11/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/11/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/11/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
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	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/11/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/11/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/11/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/11/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/11/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/11/08
LCS	Chloride	16887-00-6	192.1199	95.582	% Recov	80.000	120.000				08/11/08
LCS	Fluoride	16984-48-8	106.6725	107.101	% Recov	80.000	120.000				08/11/08
LCS	Nitrogen in Nitrite	NO2-N	97.9204	98.511	% Recov	80.000	120.000				08/11/08
LCS	Nitrogen in Nitrate	NO3-N	91.4315	101.478	% Recov	80.000	120.000				08/11/08
LCS	Sulfate	14808-79-8	375.3472	94.785	% Recov	80.000	120.000				08/11/08

Lab ID: W08P003847
BATCH QC ASSOCIATED WITH SAMPLE

DUP	Chloride	16887-00-6	8.598		RPD			0.410	20.000		08/12/08
DUP	Fluoride	16984-48-8	0.3455		RPD			1.094	20.000		08/12/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/12/08
DUP	Nitrogen in Nitrate	NO3-N	7.3678		RPD			0.359	20.000		08/12/08
DUP	Sulfate	14808-79-8	20.503		RPD			0.766	20.000		08/12/08
MS	Chloride	16887-00-6	1.01315	101.824	% Recov	80.000	120.000				08/12/08
MS	Fluoride	16984-48-8	0.50595	102.627	% Recov	80.000	120.000				08/12/08
MS	Nitrogen in Nitrite	NO2-N	0.4582	93.130	% Recov	80.000	120.000				08/12/08
MS	Nitrogen in Nitrate	NO3-N	0.41405	92.836	% Recov	80.000	120.000				08/12/08
MS	Sulfate	14808-79-8	2.01215	102.661	% Recov	80.000	120.000				08/12/08
MSD	Chloride	16887-00-6	1.1614	116.724	% Recov	80.000	120.000				08/12/08
MSD	Fluoride	16984-48-8	0.51895	105.264	% Recov	80.000	120.000				08/12/08
MSD	Nitrogen in Nitrite	NO2-N	0.4697	95.467	% Recov	80.000	120.000				08/12/08
MSD	Nitrogen in Nitrate	NO3-N	0.5144	115.336	% Recov	80.000	120.000				08/12/08
MSD	Sulfate	14808-79-8	2.26115	115.365	% Recov	80.000	120.000				08/12/08
SPK-RPD	Chloride	16887-00-6	116.724		RPD			13.635	20.000		08/12/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/10/08
Receive Date:08/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Fluoride	16984-48-8	105.264		RPD			2.537	20.000		08/12/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	95.467		RPD			2.478	20.000		08/12/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	115.336		RPD			21.617	20.000 *		08/12/08
SPK-RPD	Sulfate	14808-79-8	115.365		RPD			11.654	20.000		08/12/08
BATCH QC											
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/12/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/12/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/12/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/12/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/12/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/12/08
LCS	Chloride	16887-00-6	196.612	97.817	% Recov	80.000	120.000				08/12/08
LCS	Fluoride	16984-48-8	104.5054	104.925	% Recov	80.000	120.000				08/12/08
LCS	Nitrogen in Nitrite	NO2-N	100.0436	100.647	% Recov	80.000	120.000				08/12/08
LCS	Nitrogen in Nitrate	NO3-N	93.8246	104.134	% Recov	80.000	120.000				08/12/08
LCS	Sulfate	14808-79-8	381.7291	96.396	% Recov	80.000	120.000				08/12/08
Lab ID: W08P003845											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	8.3151		RPD			0.818	20.000		08/12/08
DUP	Fluoride	16984-48-8	0.252		RPD			18.229	20.000		08/12/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/12/08
DUP	Nitrogen in Nitrate	NO3-N	7.0055		RPD			0.393	20.000		08/12/08
DUP	Sulfate	14808-79-8	20.97		RPD			0.433	20.000		08/12/08
MS	Chloride	16887-00-6	0.95725	96.206	% Recov	80.000	120.000				08/12/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/10/08
Receive Date:08/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	Fluoride	16984-48-8	0.55995	113.580	% Recov	80.000	120.000				08/12/08
MS	Nitrogen in Nitrite	NO2-N	0.44495	90.437	% Recov	80.000	120.000				08/12/08
MS	Nitrogen in Nitrate	NO3-N	0.39995	89.675	% Recov	80.000	120.000				08/12/08
MS	Sulfate	14808-79-8	1.7966	91.663	% Recov	80.000	120.000				08/12/08
MSD	Chloride	16887-00-6	0.9457	95.045	% Recov	80.000	120.000				08/12/08
MSD	Fluoride	16984-48-8	0.59265	120.213	% Recov	80.000	120.000			*	08/12/08
MSD	Nitrogen in Nitrite	NO2-N	0.4444	90.325	% Recov	80.000	120.000				08/12/08
MSD	Nitrogen in Nitrate	NO3-N	0.3931	88.139	% Recov	80.000	120.000				08/12/08
MSD	Sulfate	14808-79-8	1.7821	90.923	% Recov	80.000	120.000				08/12/08
SPK-RPD	Chloride	16887-00-6	95.045		RPD			1.214	20.000		08/12/08
SPK-RPD	Fluoride	16984-48-8	120.213		RPD			5.674	20.000		08/12/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	90.325		RPD			0.124	20.000		08/12/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	88.139		RPD			1.728	20.000		08/12/08
SPK-RPD	Sulfate	14808-79-8	90.923		RPD			0.811	20.000		08/12/08

Lab ID: W08P003894
BATCH QC ASSOCIATED WITH SAMPLE

DUP	Chloride	16887-00-6	6.2634		RPD			0.750	20.000		08/12/08
DUP	Fluoride	16984-48-8	0.1056		RPD			1.036	20.000		08/12/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/12/08
DUP	Nitrogen in Nitrate	NO3-N	3.7891		RPD			0.406	20.000		08/12/08
DUP	Sulfate	14808-79-8	43.6669		RPD			0.011	20.000		08/12/08
MS	Chloride	16887-00-6	0.7106	71.417	% Recov	80.000	120.000			*	08/12/08
MS	Fluoride	16984-48-8	0.5418	109.899	% Recov	80.000	120.000				08/12/08
MS	Nitrogen in Nitrite	NO2-N	0.40045	81.392	% Recov	80.000	120.000				08/12/08
MS	Nitrogen in Nitrate	NO3-N	0.31295	70.168	% Recov	80.000	120.000			*	08/12/08
MS	Sulfate	14808-79-8	1.6345	83.393	% Recov	80.000	120.000				08/12/08
MSD	Chloride	16887-00-6	1.0118	101.688	% Recov	80.000	120.000				08/12/08
MSD	Fluoride	16984-48-8	0.53705	108.935	% Recov	80.000	120.000				08/12/08
MSD	Nitrogen in Nitrite	NO2-N	0.4285	87.093	% Recov	80.000	120.000				08/12/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: Anions by Ion Chromatography

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Nitrogen in Nitrate	NO3-N	0.4103	91.996	% Recov	80.000	120.000				08/12/08
MSD	Sulfate	14808-79-8	1.67375	85.395	% Recov	80.000	120.000				08/12/08
SPK-RPD	Chloride	16887-00-6	101.688		RPD			34.974	20.000 *		08/12/08
SPK-RPD	Fluoride	16984-48-8	108.935		RPD			0.881	20.000		08/12/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	87.093		RPD			6.767	20.000		08/12/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	91.996		RPD			26.921	20.000 *		08/12/08
SPK-RPD	Sulfate	14808-79-8	85.395		RPD			2.372	20.000		08/12/08

BATCH QC

BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/12/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/12/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/12/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/12/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/12/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/12/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/12/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/12/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/12/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/12/08
LCS	Chloride	16887-00-6	195.335	97.182	% Recov	80.000	120.000				08/12/08
LCS	Chloride	16887-00-6	195.5853	97.306	% Recov	80.000	120.000				08/12/08
LCS	Fluoride	16984-48-8	105.8143	106.239	% Recov	80.000	120.000				08/12/08
LCS	Fluoride	16984-48-8	107.0673	107.497	% Recov	80.000	120.000				08/12/08
LCS	Nitrogen in Nitrite	NO2-N	96.7885	97.373	% Recov	80.000	120.000				08/12/08
LCS	Nitrogen in Nitrite	NO2-N	98.0713	98.663	% Recov	80.000	120.000				08/12/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081696
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
LCS	Nitrogen in Nitrate	NO3-N	91.1132	101.125	% Recov	80.000	120.000				08/12/08
LCS	Nitrogen in Nitrate	NO3-N	92.0513	102.166	% Recov	80.000	120.000				08/12/08
LCS	Sulfate	14808-79-8	392.9638	99.233	% Recov	80.000	120.000				08/12/08
LCS	Sulfate	14808-79-8	384.3703	97.063	% Recov	80.000	120.000				08/12/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 08/10/08
Receive Date:08/11/08

Lab ID: W08P003828
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	1033	103.300	% Recov	75.000	125.000				09/09/08
MS	Barium	7440-39-3	547.5	109.500	% Recov	75.000	125.000				09/09/08
MS	Beryllium	7440-41-7	544.7	108.940	% Recov	75.000	125.000				09/09/08
MS	Calcium	7440-70-2	12300	1230.000	% Recov	75.000	125.000			•	09/09/08
MS	Cadmium	7440-43-9	1029	102.900	% Recov	75.000	125.000				09/09/08
MS	Cobalt	7440-48-4	988.1	98.810	% Recov	75.000	125.000				09/09/08
MS	Chromium	7440-47-3	1033.2	103.320	% Recov	75.000	125.000				09/09/08
MS	Copper	7440-50-8	1043	104.300	% Recov	75.000	125.000				09/09/08
MS	Iron	7439-89-6	1017.8	101.780	% Recov	75.000	125.000				09/09/08
MS	Potassium	7440-09-7	10590	105.900	% Recov	75.000	125.000				09/09/08
MS	Magnesium	7439-95-4	860	86.000	% Recov	75.000	125.000				09/09/08
MS	Manganese	7439-96-5	1065	106.500	% Recov	75.000	125.000				09/09/08
MS	Sodium	7440-23-5	-10900	-1090.000	% Recov	75.000	125.000			•	09/09/08
MS	Nickel	7440-02-0	971.9	97.190	% Recov	75.000	125.000				09/09/08
MS	Antimony	7440-36-0	1011	101.100	% Recov	75.000	125.000				09/09/08
MS	Strontium	7440-24-6	594	118.800	% Recov	75.000	125.000				09/09/08
MS	Vanadium	7440-62-2	1037.6	103.760	% Recov	75.000	125.000				09/09/08
MS	Zinc	7440-66-6	1047	104.700	% Recov	75.000	125.000				09/09/08
MSD	Silver	7440-22-4	1058	105.800	% Recov	75.000	125.000				09/09/08
MSD	Barium	7440-39-3	559	111.800	% Recov	75.000	125.000				09/09/08
MSD	Beryllium	7440-41-7	562.2	112.440	% Recov	75.000	125.000				09/09/08
MSD	Calcium	7440-70-2	10000	1000.000	% Recov	75.000	125.000			•	09/09/08
MSD	Cadmium	7440-43-9	1061	106.100	% Recov	75.000	125.000				09/09/08
MSD	Cobalt	7440-48-4	1016.6	101.660	% Recov	75.000	125.000				09/09/08
MSD	Chromium	7440-47-3	1083.2	108.320	% Recov	75.000	125.000				09/09/08
MSD	Copper	7440-50-8	1073	107.300	% Recov	75.000	125.000				09/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 08/10/08
Receive Date:08/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Iron	7439-89-6	1070.8	107.080	% Recov	75.000	125.000				09/09/08
MSD	Potassium	7440-09-7	10850	108.500	% Recov	75.000	125.000				09/09/08
MSD	Magnesium	7439-95-4	740	74.000	% Recov	75.000	125.000			•	09/09/08
MSD	Manganese	7439-96-5	1104	110.400	% Recov	75.000	125.000				09/09/08
MSD	Sodium	7440-23-5	-10500	-1050.000	% Recov	75.000	125.000			•	09/09/08
MSD	Nickel	7440-02-0	1004.7	100.470	% Recov	75.000	125.000				09/09/08
MSD	Antimony	7440-36-0	1033	103.300	% Recov	75.000	125.000				09/09/08
MSD	Strontium	7440-24-6	587	117.400	% Recov	75.000	125.000				09/09/08
MSD	Vanadium	7440-62-2	1068.6	106.860	% Recov	75.000	125.000				09/09/08
MSD	Zinc	7440-66-6	1090	109.000	% Recov	75.000	125.000				09/09/08
SPK-RPD	Silver	7440-22-4	105.800		RPD			2.391	20.000		09/09/08
SPK-RPD	Barium	7440-39-3	111.800		RPD			2.079	20.000		09/09/08
SPK-RPD	Beryllium	7440-41-7	112.440		RPD			3.162	20.000		09/09/08
SPK-RPD	Calcium	7440-70-2	1000.000		RPD			20.628	20.000	•	09/09/08
SPK-RPD	Cadmium	7440-43-9	106.100		RPD			3.062	20.000		09/09/08
SPK-RPD	Cobalt	7440-48-4	101.660		RPD			2.843	20.000		09/09/08
SPK-RPD	Chromium	7440-47-3	108.320		RPD			4.725	20.000		09/09/08
SPK-RPD	Copper	7440-50-8	107.300		RPD			2.836	20.000		09/09/08
SPK-RPD	Iron	7439-89-6	107.080		RPD			5.075	20.000		09/09/08
SPK-RPD	Potassium	7440-09-7	108.500		RPD			2.425	20.000		09/09/08
SPK-RPD	Magnesium	7439-95-4	74.000		RPD			15.000	20.000		09/09/08
SPK-RPD	Manganese	7439-96-5	110.400		RPD			3.596	20.000		09/09/08
SPK-RPD	Sodium	7440-23-5	-1050.000		RPD			-3.738	20.000	•	09/09/08
SPK-RPD	Nickel	7440-02-0	100.470		RPD			3.319	20.000		09/09/08
SPK-RPD	Antimony	7440-36-0	103.300		RPD			2.153	20.000		09/09/08
SPK-RPD	Strontium	7440-24-6	117.400		RPD			1.185	20.000		09/09/08
SPK-RPD	Vanadium	7440-62-2	106.860		RPD			2.944	20.000		09/09/08
SPK-RPD	Zinc	7440-66-6	109.000		RPD			4.024	20.000		09/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
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	09/09/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	09/09/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	09/09/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	09/09/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	09/09/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	09/09/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	09/09/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	09/09/08
BLANK	Iron	7439-89-6	<25	n/a	ug/L					U	09/09/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	09/09/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	09/09/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	09/09/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	09/09/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	09/09/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	09/09/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	09/09/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	09/09/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	09/09/08
LCS	Silver	7440-22-4	996.3	99.630	% Recov	80.000	120.000				09/09/08
LCS	Barium	7440-39-3	459.7	91.940	% Recov	80.000	120.000				09/09/08
LCS	Beryllium	7440-41-7	517	103.400	% Recov	80.000	120.000				09/09/08
LCS	Calcium	7440-70-2	1046	104.600	% Recov	80.000	120.000				09/09/08
LCS	Cadmium	7440-43-9	1009	100.900	% Recov	80.000	120.000				09/09/08
LCS	Cobalt	7440-48-4	976.9	97.690	% Recov	80.000	120.000				09/09/08
LCS	Chromium	7440-47-3	955.6	95.560	% Recov	80.000	120.000				09/09/08
LCS	Copper	7440-50-8	969.9	96.990	% Recov	80.000	120.000				09/09/08
LCS	Iron	7439-89-6	955.1	95.510	% Recov	80.000	120.000				09/09/08
LCS	Potassium	7440-09-7	11410	114.100	% Recov	80.000	120.000				09/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
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	982.8	98.280	% Recov	80.000	120.000				09/09/08
LCS	Manganese	7439-96-5	966.5	96.650	% Recov	80.000	120.000				09/09/08
LCS	Sodium	7440-23-5	1114	111.400	% Recov	80.000	120.000				09/09/08
LCS	Nickel	7440-02-0	1002	100.200	% Recov	80.000	120.000				09/09/08
LCS	Antimony	7440-36-0	1010	101.000	% Recov	80.000	120.000				09/09/08
LCS	Strontium	7440-24-6	490	98.000	% Recov	80.000	120.000				09/09/08
LCS	Vanadium	7440-62-2	970.1	97.010	% Recov	80.000	120.000				09/09/08
LCS	Zinc	7440-66-6	1003	100.300	% Recov	80.000	120.000				09/09/08

Lab ID: W08P003847
BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	1027	102.700	% Recov	75.000	125.000				09/11/08
MS	Barium	7440-39-3	517.9	103.580	% Recov	75.000	125.000				09/11/08
MS	Beryllium	7440-41-7	551.9	110.380	% Recov	75.000	125.000				09/11/08
MS	Calcium	7440-70-2	4760	476.000	% Recov	75.000	125.000			•	09/11/08
MS	Cadmium	7440-43-9	1075.3	107.530	% Recov	75.000	125.000				09/11/08
MS	Cobalt	7440-48-4	1064.7	106.470	% Recov	75.000	125.000				09/11/08
MS	Chromium	7440-47-3	1039.5	103.950	% Recov	75.000	125.000				09/11/08
MS	Copper	7440-50-8	1048.2	104.820	% Recov	75.000	125.000				09/11/08
MS	Iron	7439-89-6	920.4	92.040	% Recov	75.000	125.000				09/11/08
MS	Potassium	7440-09-7	11991	119.910	% Recov	75.000	125.000				09/11/08
MS	Magnesium	7439-95-4	1265	126.500	% Recov	75.000	125.000			•	09/11/08
MS	Manganese	7439-96-5	1060.4	106.040	% Recov	75.000	125.000				09/11/08
MS	Sodium	7440-23-5	970	97.000	% Recov	75.000	125.000				09/11/08
MS	Nickel	7440-02-0	1054.3	105.430	% Recov	75.000	125.000				09/11/08
MS	Antimony	7440-36-0	1044	104.400	% Recov	75.000	125.000				09/11/08
MS	Strontium	7440-24-6	565.6	113.120	% Recov	75.000	125.000				09/11/08
MS	Vanadium	7440-62-2	1021	102.100	% Recov	75.000	125.000				09/11/08
MS	Zinc	7440-66-6	1071.1	107.110	% Recov	75.000	125.000				09/11/08
MSD	Silver	7440-22-4	1005	100.500	% Recov	75.000	125.000				09/11/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 08/10/08
Receive Date:08/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Barium	7440-39-3	508.4	101.680	% Recov	75.000	125.000				09/11/08
MSD	Beryllium	7440-41-7	543.3	108.660	% Recov	75.000	125.000				09/11/08
MSD	Calcium	7440-70-2	5010	501.000	% Recov	75.000	125.000			*	09/11/08
MSD	Cadmium	7440-43-9	1062.3	106.230	% Recov	75.000	125.000				09/11/08
MSD	Cobalt	7440-48-4	1054.7	105.470	% Recov	75.000	125.000				09/11/08
MSD	Chromium	7440-47-3	1015.5	101.550	% Recov	75.000	125.000				09/11/08
MSD	Copper	7440-50-8	1017.2	101.720	% Recov	75.000	125.000				09/11/08
MSD	Iron	7439-89-6	791.4	79.140	% Recov	75.000	125.000				09/11/08
MSD	Potassium	7440-09-7	11481	114.810	% Recov	75.000	125.000				09/11/08
MSD	Magnesium	7439-95-4	1328	132.800	% Recov	75.000	125.000			*	09/11/08
MSD	Manganese	7439-96-5	1049.4	104.940	% Recov	75.000	125.000				09/11/08
MSD	Sodium	7440-23-5	870	87.000	% Recov	75.000	125.000				09/11/08
MSD	Nickel	7440-02-0	1039.3	103.930	% Recov	75.000	125.000				09/11/08
MSD	Antimony	7440-36-0	992.3	99.230	% Recov	75.000	125.000				09/11/08
MSD	Strontium	7440-24-6	555.6	111.120	% Recov	75.000	125.000				09/11/08
MSD	Vanadium	7440-62-2	1015	101.500	% Recov	75.000	125.000				09/11/08
MSD	Zinc	7440-66-6	1060.1	106.010	% Recov	75.000	125.000				09/11/08
SPK-RPD	Silver	7440-22-4	100.500		RPD			2.165	20.000		09/11/08
SPK-RPD	Barium	7440-39-3	101.680		RPD			1.851	20.000		09/11/08
SPK-RPD	Beryllium	7440-41-7	108.660		RPD			1.570	20.000		09/11/08
SPK-RPD	Calcium	7440-70-2	501.000		RPD			5.118	20.000		09/11/08
SPK-RPD	Cadmium	7440-43-9	106.230		RPD			1.216	20.000		09/11/08
SPK-RPD	Cobalt	7440-48-4	105.470		RPD			0.944	20.000		09/11/08
SPK-RPD	Chromium	7440-47-3	101.550		RPD			2.336	20.000		09/11/08
SPK-RPD	Copper	7440-50-8	101.720		RPD			3.002	20.000		09/11/08
SPK-RPD	Iron	7439-89-6	79.140		RPD			15.072	20.000		09/11/08
SPK-RPD	Potassium	7440-09-7	114.810		RPD			4.346	20.000		09/11/08
SPK-RPD	Magnesium	7439-95-4	132.800		RPD			4.859	20.000		09/11/08
SPK-RPD	Manganese	7439-96-5	104.940		RPD			1.043	20.000		09/11/08
SPK-RPD	Sodium	7440-23-5	87.000		RPD			10.870	20.000		09/11/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 08/10/08
Receive Date:08/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Nickel	7440-02-0	103.930		RPD			1.433	20.000		09/11/08
SPK-RPD	Antimony	7440-36-0	99.230		RPD			5.078	20.000		09/11/08
SPK-RPD	Strontium	7440-24-6	111.120		RPD			1.784	20.000		09/11/08
SPK-RPD	Vanadium	7440-62-2	101.500		RPD			0.589	20.000		09/11/08
SPK-RPD	Zinc	7440-66-6	106.010		RPD			1.032	20.000		09/11/08

BATCH QC

BLANK	Silver	7440-22-4	<5	n/a	ug/L					U	09/11/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	09/11/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	09/11/08
BLANK	Bismuth	7440-69-9	<35	n/a	ug/L					U	09/11/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	09/11/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	09/11/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	09/11/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	09/11/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	09/11/08
BLANK	Iron	7439-89-6	<25	n/a	ug/L					U	09/11/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	09/11/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	09/11/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	09/11/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	09/11/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	09/11/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	09/11/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	09/11/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	09/11/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	09/11/08
LCS	Silver	7440-22-4	999.3	99.930	% Recov	80.000	120.000				09/11/08
LCS	Barium	7440-39-3	496.1	99.220	% Recov	80.000	120.000				09/11/08
LCS	Beryllium	7440-41-7	555.4	111.080	% Recov	80.000	120.000				09/11/08
LCS	Bismuth	7440-69-9	1005	100.500	% Recov	80.000	120.000				09/11/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081696
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	Calcium	7440-70-2	1076	107.600	% Recov	80.000	120.000				09/11/08
LCS	Cadmium	7440-43-9	1036	103.600	% Recov	80.000	120.000				09/11/08
LCS	Cobalt	7440-48-4	1073	107.300	% Recov	80.000	120.000				09/11/08
LCS	Chromium	7440-47-3	1037	103.700	% Recov	80.000	120.000				09/11/08
LCS	Copper	7440-50-8	971.1	97.110	% Recov	80.000	120.000				09/11/08
LCS	Iron	7439-89-6	1052	105.200	% Recov	80.000	120.000				09/11/08
LCS	Potassium	7440-09-7	10080	100.800	% Recov	80.000	120.000				09/11/08
LCS	Magnesium	7439-95-4	940.8	94.080	% Recov	80.000	120.000				09/11/08
LCS	Manganese	7439-96-5	1065	106.500	% Recov	80.000	120.000				09/11/08
LCS	Sodium	7440-23-5	932.3	93.230	% Recov	80.000	120.000				09/11/08
LCS	Nickel	7440-02-0	1077	107.700	% Recov	80.000	120.000				09/11/08
LCS	Antimony	7440-36-0	952	95.200	% Recov	80.000	120.000				09/11/08
LCS	Strontium	7440-24-6	525.9	105.180	% Recov	80.000	120.000				09/11/08
LCS	Vanadium	7440-62-2	1036	103.600	% Recov	80.000	120.000				09/11/08
LCS	Zinc	7440-66-6	1009	100.900	% Recov	80.000	120.000				09/11/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 08/05/08
Receive Date:08/06/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003727											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	36.72	91.800	% Recov	70.000	130.000				08/14/08
MSD	Uranium	7440-61-1	37.3	93.250	% Recov	70.000	130.000				08/14/08
SPK-RPD	Uranium	7440-61-1	93.250		RPD			1.567	20.000		08/14/08
Lab ID: W08P003729											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	38.019	95.047	% Recov	70.000	130.000				08/14/08
MSD	Uranium	7440-61-1	38.159	95.398	% Recov	70.000	130.000				08/14/08
SPK-RPD	Uranium	7440-61-1	95.398		RPD			0.369	20.000		08/14/08
Lab ID: W08P003767											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	26.7	66.750	% Recov	70.000	130.000		*		08/14/08
MSD	Uranium	7440-61-1	33.3	83.250	% Recov	70.000	130.000				08/14/08
SPK-RPD	Uranium	7440-61-1	83.250		RPD			22.000	20.000 *		08/14/08
Lab ID: W08P003769											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	25.2	63.000	% Recov	70.000	130.000		*		08/14/08
MSD	Uranium	7440-61-1	27.4	68.500	% Recov	70.000	130.000		*		08/14/08
SPK-RPD	Uranium	7440-61-1	68.500		RPD			8.365	20.000		08/14/08
BATCH QC											
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	08/14/08
LCS	Uranium	7440-61-1	39.96	99.900	% Recov	85.000	115.000				08/14/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081696
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 08/10/08
Receive Date:08/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003845											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	87.94		RPD			0.080	20.000		08/19/08
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	32.90	110.403	%Recove	80.000	120.000				08/19/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	32.52	109.128	%Recove	80.000	120.000				08/19/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	32.56	109.262	%Recove	80.000	120.000				08/19/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081696
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-MS: Uranium spike amount less than 25% of the sample result.Spike recovery data not valid. "X" flag Tc-99 matrix spike failure is due to the high Tc-99 activity in the sample. Matrix spike criterion does not apply. lmh IC Anion - ICV recovery for fluoride out of limits; Recovery 110.2%, limit 110%; Subsequent CCV analysis within required limits; All other batch QC within required limits. DTS IC Anion - Sample hold times missed for samples W08P003848, 3857, 3859. DTS ICP-AES: B-Flag for samples <5X MDL ICP-AES: [Sample W08P3855] No zirconium present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard used to ensure sodium, calcium, and magnesium linearity because sample results are greater than the calibration standard. ICP-AES: [Samples W08P3850-3854; 3856-3859] No zirconium is present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking

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 COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081696
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
				level by a factor of 4 so spike recoveries are not valid. Check and high standards used to ensure magnesium, sodium, and calcium linearity because sample results are greater than the calibration standard.
				ICP-AES: B flag used for samples < 5X MDL

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: I08-054
Sample # W08P003848
Client ID: B1WF26 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Carbon tetrachloride	56-23-5	LA-523-455		530	ug/L			1.00	25		08/22/08
Acetone	67-64-1	LA-523-455	B	43.0	ug/L			1.00	1.0		08/20/08
Chloroform	67-66-3	LA-523-455	J	4.80	ug/L			1.00	1.0		08/20/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		08/20/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		08/20/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003848
Client ID: B1WF26 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003849
Client ID: B1WF47 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
Trichloroethene	79-01-6	LA-523-455		6.90	ug/L			1.00	1.0		08/20/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Carbon tetrachloride	56-23-5	LA-523-455		750	ug/L			1.00	25		08/22/08
Acetone	67-64-1	LA-523-455	B	47.0	ug/L			1.00	1.0		08/20/08
Chloroform	67-66-3	LA-523-455		6.50	ug/L			1.00	1.0		08/20/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		08/20/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		08/20/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003849
Client ID: B1WF47 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003851
Client ID: B1WF28 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Carbon tetrachloride	56-23-5	LA-523-455		240	ug/L			1.00	25		08/22/08
Acetone	67-64-1	LA-523-455	B	32.0	ug/L			1.00	1.0		08/20/08
Chloroform	67-66-3	LA-523-455	J	3.30	ug/L			1.00	1.0		08/20/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		08/20/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		08/20/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003851
Client ID: B1WF28 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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)
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003859
Client ID: B1WF39 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
Trichloroethene	79-01-6	LA-523-455		5.60	ug/L			1.00	1.0		08/20/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Carbon tetrachloride	56-23-5	LA-523-455		1.20e+03	ug/L			1.00	25		08/22/08
Acetone	67-64-1	LA-523-455	B	< 1.00	ug/L			1.00	1.0		08/20/08
Chloroform	67-66-3	LA-523-455		10.0	ug/L			1.00	1.0		08/20/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Methylenechloride	75-09-2	LA-523-455	J	1.50	ug/L			1.00	1.0		08/20/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		08/20/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		08/20/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
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B - The analyte < the RDL but > = the IDL/MDL (inorg)
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U - Analyzed for but not detected above limiting criteria(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003859
Client ID: B1WF39 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P003861
Client ID: B1VHL5 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Carbon tetrachloride	56-23-5	LA-523-455		5.80	ug/L			1.00	1.0		08/20/08
Acetone	67-64-1	LA-523-455	B	34.0	ug/L			1.00	1.0		08/20/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
Methylenechloride	75-09-2	LA-523-455	J	1.80	ug/L			1.00	1.0		08/20/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		08/20/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		08/20/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P003861
Client ID: B1VHL5 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Organic
Sampled: 08/10/08
Received: 08/11/08

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		08/20/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/20/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081696
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/10/08
Receive Date:08/11/08

Lab ID: W08P003848
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	27.680	111.000	% Recov	63.000	117.000				08/20/08
MS	Benzene	71-43-2	22.720	90.900	% Recov	75.000	129.000				08/20/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	46.430	92.900	% Recov	75.000	125.000				08/20/08
MS	Chlorobenzene	108-90-7	24.940	99.800	% Recov	79.000	119.000				08/20/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.990	104.000	% Recov	75.000	125.000				08/20/08
MS	Toluene-d8(Surr)	2037-26-5	47.860	95.700	% Recov	75.000	125.000				08/20/08
MS	Toluene	108-88-3	23.740	95.000	% Recov	76.000	120.000				08/20/08
MS	Trichloroethene	79-01-6	22.190	88.800	% Recov	73.000	123.000				08/20/08
MSD	1,1-Dichloroethene	75-35-4	25.810	103.000	% Recov	63.000	117.000				08/20/08
MSD	Benzene	71-43-2	22.780	91.100	% Recov	75.000	129.000				08/20/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	46.650	93.300	% Recov	75.000	125.000				08/20/08
MSD	Chlorobenzene	108-90-7	25.180	101.000	% Recov	79.000	119.000				08/20/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.720	103.000	% Recov	75.000	125.000				08/20/08
MSD	Toluene-d8(Surr)	2037-26-5	47.700	95.400	% Recov	75.000	125.000				08/20/08
MSD	Toluene	108-88-3	23.760	95.000	% Recov	76.000	120.000				08/20/08
MSD	Trichloroethene	79-01-6	21.950	87.800	% Recov	73.000	123.000				08/20/08
SPK-RPD	1,1-Dichloroethene	75-35-4	103.000		RPD			7.477	20.000		08/20/08
SPK-RPD	Benzene	71-43-2	91.100		RPD			0.220	20.000		08/20/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	93.300		RPD			0.430	20.000		08/20/08
SPK-RPD	Chlorobenzene	108-90-7	101.000		RPD			1.195	20.000		08/20/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	103.000		RPD			0.966	20.000		08/20/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	95.400		RPD			0.314	20.000		08/20/08
SPK-RPD	Toluene	108-88-3	95.000		RPD			0.000	20.000		08/20/08
SPK-RPD	Trichloroethene	79-01-6	87.800		RPD			1.133	20.000		08/20/08
SURR	4-Bromofluorobenzene(Surr)	460-00-4	46.740	93.500	% Recov	75.000	125.000				08/20/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.460	103.000	% Recov	75.000	125.000				08/20/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081696
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/10/08
Receive Date:08/11/08

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	47.980	96.000	% Recov	75.000	125.000				08/20/08
Lab ID: W08P003849											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	46.660	93.300	% Recov	75.000	125.000				08/20/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.360	105.000	% Recov	75.000	125.000				08/20/08
SURR	Toluene-d8(Surr)	2037-26-5	48.530	97.100	% Recov	75.000	125.000				08/20/08
Lab ID: W08P003851											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	46.110	92.200	% Recov	75.000	125.000				08/20/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.310	105.000	% Recov	75.000	125.000				08/20/08
SURR	Toluene-d8(Surr)	2037-26-5	48.490	97.000	% Recov	75.000	125.000				08/20/08
Lab ID: W08P003859											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	45.900	91.800	% Recov	75.000	125.000				08/20/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.480	103.000	% Recov	75.000	125.000				08/20/08
SURR	Toluene-d8(Surr)	2037-26-5	48.680	97.400	% Recov	75.000	125.000				08/20/08
Lab ID: W08P003861											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	46.940	93.900	% Recov	75.000	125.000				08/20/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.840	104.000	% Recov	75.000	125.000				08/20/08
SURR	Toluene-d8(Surr)	2037-26-5	49.100	98.200	% Recov	75.000	125.000				08/20/08
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	08/20/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	08/20/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	08/20/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081696
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	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	08/20/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	08/20/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	08/20/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	08/20/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Acetone	67-64-1	15	15.000	ug/L						08/20/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	08/20/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	46.440	92.900	% Recov	75.000	125.000				08/20/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	08/20/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	08/20/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.760	104.000	% Recov	75.000	125.000				08/20/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	08/20/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	08/20/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	08/20/08
BLANK	Toluene-d8(Surr)	2037-26-5	48.550	97.100	% Recov	75.000	125.000				08/20/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	08/20/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	08/20/08
LCS	1,1-Dichloroethene	75-35-4	24.600	98.400	% Recov	75.000	125.000				08/20/08
LCS	Benzene	71-43-2	22.910	91.600	% Recov	75.000	125.000				08/20/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	46.270	92.500	% Recov	75.000	125.000				08/20/08
LCS	Chlorobenzene	108-90-7	24.610	98.400	% Recov	75.000	125.000				08/20/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081696
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	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.840	104.000	% Recov	75.000	125.000				08/20/08
LCS	Toluene-d8(Surr)	2037-26-5	48.400	96.800	% Recov	75.000	125.000				08/20/08
LCS	Toluene	108-88-3	23.740	95.000	% Recov	75.000	125.000				08/20/08
LCS	Trichloroethene	79-01-6	22.610	90.400	% Recov	75.000	125.000				08/20/08

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003849
Client ID: B1WF47 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Radiochemistry
Sampled: 08/10/08
Received: 08/11/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		8.00e+03	pCi/L	+-1.60e+03	pCi/L	1.00	2.4e+02		09/09/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003851
Client ID: B1WF28 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Radiochemistry
Sampled: 08/10/08
Received: 08/11/08

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		320	pCi/L	+-64.0	pCi/L	1.00	5.5		08/24/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		1.10e+04	pCi/L	+-2.20e+03	pCi/L	1.00	2.4e+02		09/09/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003853
Client ID: B1WKD1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Radiochemistry
Sampled: 08/10/08
Received: 08/11/08

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		34.0	pCi/L	+-7.82	pCi/L	1.00	5.5		08/24/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003856
Client ID: B1WKD4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Radiochemistry
Sampled: 08/10/08
Received: 08/11/08

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		400	pCi/L	+-80.0	pCi/L	1.00	5.5		08/24/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-008
Sample # W08P003857
Client ID: B1WKD7 PNNL-GPP WSCF
Matrix: WATER

Group #: WSCF20081696
Department: Radiochemistry
Sampled: 08/10/08
Received: 08/11/08

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		38.0	pCi/L	+-8.36	pCi/L	1.00	5.5		08/24/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P003859
Client ID: B1WF39 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081696
Department: Radiochemistry
Sampled: 08/10/08
Received: 08/11/08

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		4.90e+03	pCi/L	+-980	pCi/L	1.00	5.5		08/24/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		8.10e+03	pCi/L	+-1.62e+03	pCi/L	1.00	2.4e+02		09/09/08

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)
D - Analyte was identified at a secondary dilution factor(inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.

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

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081696
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 08/10/08
Receive Date:08/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003835											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	2.4E+04		RPD			0.000	20.000		08/24/08
MS	Tc-99 by Liquid Scin.	14133-76-7	-336.3	-52.824	% Recov	75.000	125.000			*	08/24/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U1.0	n/a	pCi/L	-10.000	10.000				08/24/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	166.4	104.523	% Recov	80.000	120.000				08/24/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081696
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 08/10/08
Receive Date:08/11/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003849											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	7.9E+03		RPD			1.258	20.000		09/09/08
MS	Tritium	10028-17-8	19050	84.721	% Recov	75.000	125.000				09/09/08
BATCH QC											
BLANK	Tritium	10028-17-8	U-1.4E+02	n/a	pCi/L	-10.000	1000.000				09/09/08
LCS	Tritium	10028-17-8	2990.0	88.274	% Recov	80.000	120.000				09/09/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081696
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-MS: Uranium spike amount less than 25% of the sample result.Spike recovery data not valid. "X" flag Tc-99 matrix spike failure is due to the high Tc-99 activity in the sample. Matrix spike criterion does not apply. lmh IC Anion - ICV recovery for fluoride out of limits; Recovery 110.2%, limit 110%; Subsequent CCV analysis within required limits; All other batch QC within required limits. DTS IC Anion - Sample hold times missed for samples W08P003848, 3857, 3859. DTS ICP-AES: B-Flag for samples <5X MDL ICP-AES: [Sample W08P3855] No zirconium present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard used to ensure sodium, calcium, and magnesium linearity because sample results are greater than the calibration standard. ICP-AES: [Samples W08P3850-3854; 3856-3859] No zirconium is present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking

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

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M4W41-SLF-08-1008

ATTACHMENT 5

SAMPLE RECEIPT INFORMATION

Consisting of 12 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
09/10/08

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081696

The following samples were received from you on 08/11/08. 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
W08P003848	B1WF26	PNNL-GPP @IC-30 @VOA-GPP	Water	08/10/08
W08P003849	B1WF47	PNNL-GPP @2008 @H3-33 @IC-30 @VOA-GPP	Water	08/10/08
W08P003850	B1WF27	PNNL-GPP @GPP6010	Water	08/10/08
W08P003851	B1WF28	PNNL-GPP @2008 @GPP6010 @H3-33 @IC-30 @TC99-30 @VOA-GPP	Water	08/10/08
W08P003852	B1WKD0	PNNL-GPP @GPP6010	Water	08/10/08
W08P003853	B1WKD1	PNNL-GPP @GPP6010 @IC-30 @TC99-30 ALKALI	Water	08/10/08
W08P003854	B1WKD3	PNNL-GPP @GPP6010	Water	08/10/08
W08P003855	B1WKD6	PNNL-GPP @GPP6010	Water	08/10/08
W08P003856	B1WKD4	PNNL-GPP @GPP6010 @IC-30 @TC99-30 ALKALI	Water	08/10/08
W08P003857	B1WKD7	PNNL-GPP @GPP6010 @IC-30 @TC99-30 ALKALI	Water	08/10/08
W08P003858	B1WF38	PNNL-GPP @GPP6010	Water	08/10/08
W08P003859	B1WF39	PNNL-GPP @GPP6010 @H3-33 @IC-30 @TC99-30 @VOA-GPP	Water	08/10/08
W08P003860	B1WJM9	PNNL-GPP ALKALI	Water	08/10/08
W08P003861	B1VHL5	PNNL-GPP @VOA-GPP	Water	08/10/08

Test Acronym Description

Test Acronym	Description

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081696

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

09/10/08 20081696

I08-054-19

Collector: R. Crow	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: I08-054	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: 2ZPL AUGUST 2008	HNF-N-506-18	Ice Chest No. Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: CERCLA	Priority: 30 Days **PRIORITY**	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
B1WF26	W08P003848	W	8/10/8	1231	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1WF26	↓	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
R. Crow	R Crow		8-11-08 1015	FM Hill			8-11-08 1015
FM Hill			8-11-08 1020	CH Hilton			8-11-08 1020

Matrix *

S = Soil		DS = Drum Solid	
SF = 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

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FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

I08-054-55

Collector R. Crow	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. 108-054	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2ZP1, AUGUST 2008	HNF-N-506-18	**Ice Chest No.** **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 30 Days **PRIORITY**	**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
B1WF47	3849	W	8/10/08	1100	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1WF47	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1WF47		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1WF47		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Crow.	R Crow		1015 8-11-08	FIM	HALL		1015 8-11-08
FIM	HALL		1020 8-11-08	DA Hudson			1020 8-11-08

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. # **I08-054-25**

Page 1 of 1

Collector: R. Crow	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: I08-054	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: 2ZP1, AUGUST 2008	HNF-N-506-18	Ice Chest No. Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: CERCLA	Priority: 30 Days **PRIORITY**	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
B1WF27 (F)	3850	W	8/10/8	0921	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1WF28	3851	W			4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1WF28		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1WF28		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1WF28		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1WF28		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1WF28		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

ICL

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Crow	R Crow		8-11-08 1015	Fim Hall	Fim Hall		8-11-08 1015
Fim Hall			8-11-08 1020	CA Hudson			8-11-08 1020

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

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FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

W08-008-350

Collector A. M. Chacon / JP Herrick	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-008	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA AUGUST 2008	HNF-N-506-17	**Ice Chest No.** SAW-1 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol RCRA	**Priority:** 30 Days **PRIORITY**	**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
B1WKD0 (F)	3852	W	8/10/08	1229	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1WKD1	3853	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1WKD1		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1WKD1		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1WKD1		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

8/10/08

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J. P. Herrick			8-11-08 1015		Fun Hall		8-11-08 1015
Relinquished By	Fun Hall		8-11-08 1020	Received By			8-11-08 1020
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

C.O.C. # **W08-008-354**

Collector A. M. Chacon / JP Herrick	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-008	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA, AUGUST 2008	HNF-N-506-14	**Ice Chest No.** SAWS-1 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol RCRA	**Priority:** 30 Days **PRIORITY**	**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
B1WKD3 (F)	3854	W	8/10/08	1142	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1WKD4	3856	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1WKD4		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1WKD4		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1WKD4		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

8/10/08

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	J. P. Herrick		8-11-08 1015		Fran Hall		8-11-08 1015
Relinquished By			Date/Time	Received By			Date/Time
Fran Hall			8-11-08 1020	CA Hulder			8-11-08 1020
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. # W08-008-358

Collector: A. M. Chacon / JP Herrick	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: W08-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: RCRA, AUGUST 2008	HNF-N-506-14	Ice Chest No.: SAW-1 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: RCRA	Priority: 30 Days **PRIORITY**	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
B1WKD6 (F)	3855	W	8/8/08	1010	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1WKD7	3857	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1WKD7		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1WKD7		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1WKD7		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

8/10/08

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J. P Herrick			1015 9-11-08	FM	Hall		1015 9-11-08
FM	Hall		1020 9-11-08				1020 9-11-08
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. # **108-054-43**

Page 1 of 1

Collector: A. M. Chacon / JP Herrick	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: 108-054	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: 2ZPL AUGUST 2008	HNF-N-506-14	Ice Chest No.: SAWS 1 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: CERCLA	Priority: 30 Days **PRIORITY**	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
B1WF38 (F)	3858	W	8/10/08	702	1x500-mL G/P	6010_METALS_ICP: List-5 (19)	HNO3 to pH <2
B1WF39	3859	W			4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1WF39		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1WF39		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1WF39		W			1x500-mL G/P	6010_METALS_ICP: List-5 (19)	HNO3 to pH <2
B1WF39		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

8/10/08

ICED

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
J. P. Herrick	8-11-08 0915	Fun Hall	8-11-08 0915
Fun Hall	8-11-08 1020		8-11-08 1020

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

C.O.C. # **W08-008-254**

Page 1 of 1

Collector: A. Chacon / JP Herrick	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: W08-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: RCRA AUGUST 2008	HNF-N-306-14	Ice Chest No.: SAWS 1 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt Vehicle	Bill of Lading/Air Bill No.
Protocol: RCRA	Priority: 30 Days **PRIORITY**	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
B1WJM9	3860	W	8/10/08	902	1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C

8/10/08

ICED

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
J. P. Herrick	1015 8-11-08	Fan Hill	1015 8-11-08
Fan Hill	1020 8-11-08	Arthur Chacon	1020 8-11-08

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

08 010 90

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

W08-005-482

Collector A. M. Chacon / JP Herrick	**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-IN-506-14	**Ice Chest No.** SAWB-1 **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
B1VHL5	3861	W	8/10/08	0902	1x20-mL P	Activity Scan	None
B1VHL5	↓	W	↓	↓	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C

8/10/08

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J. P. Herrick	J. P. Herrick		8-11-08 1015	Fm Hall	Fm Hall		8-11-08 1015
Relinquished By			Date/Time	Received By			Date/Time
Fm Hall	Fm Hall		8-11-08 1020	OA Hudson	OA Hudson		8-11-08 1020
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

08-10-06