0080022

RECEIVED AUGUST 8, 2008

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

FLUOR

Memorandum

M4W41-SLF-08-795

To:	H. Hampt	E6-35	Date:	August 7, 2008
From:	S. L. Fitzgerald, Manager WSCF Analytical Lab	by William H Bond		

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 WSCF20081142

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 WSCF20081142:

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

RECEIVED
JAN 29 2009
EDMC

SLF/cmj

Attachments 5

M4W41-SLF-08-795

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081142
Data Deliverable Date: 24-jul-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-037	B1V693	W08P002731	WATER
	B1V696	W08P002732	WATER
S08-005	B1V7V6	W08P002733	WATER
	B1V7V7	W08P002734	WATER
	B1V7W0	W08P002736	WATER
	B1V7W1	W08P002737	WATER
	B1V7X2	W08P002714	WATER
	B1V7X3	W08P002715	WATER
W08-004	B1V386	W08P002735	WATER
W08-005	B1V8C3	W08P002729	WATER
	B1V8C4	W08P002730	WATER
W08-006	B1VPK1	W08P002716	WATER
	B1VPK2	W08P002717	WATER
	B1VPK3	W08P002718	WATER
	B1VPK4	W08P002719	WATER
	B1VPL3	W08P002725	WATER
	B1VPL4	W08P002726	WATER
	B1VPL5	W08P002727	WATER
	B1VPL6	W08P002728	WATER
	B1VPP9	W08P002720	WATER
	B1VPR0	W08P002721	WATER
	B1VPR1	W08P002722	WATER
	B1VPR2	W08P002723	WATER
	B1VPR4	W08P002724	WATER

M4W41-SLF-08-795

ATTACHMENT 2

NARRATIVE

Consisting of 5 pages
Including cover page

Introduction

Twenty-four (24) groundwater samples were received at the WSCF Laboratory on June 5, 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 Issue Resolution Form #08-093, Rev 1 documenting improper preservation of TOC samples 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. Additionally, a copy of a sample record sheet is included as Attachment 6.

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 19-22 for a complete listing of approved analytical methods.

Inorganic Comments

Ammonia – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 48 for QC details. Analytical Note(s):

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1V654 (SDG# 20081134).
- Sample result was less than the reportable limit, however greater than the method detection limit. Sample result was B flagged.

All QC controls are within the established limits.

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 49-50 for QC details. Analytical Note(s):

- Sample results were D flagged (dilution).
- Chloride – Matrix Spike Duplicate recovery exceeded established laboratory limits. Affected sample results were N flagged.

All other QC controls are within the established limits.

Chemical Oxygen Demand – 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. See page 51 for QC details.

All QC controls are within the established limits.

Cyanide – 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 GRP Letter of Instruction. See page 52 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1VHX8 (SDG# 20081117, SAF# F08-094) and B1V7W1 of this SDG.

- Batch QC- B1V7W1 – Matrix Spike and Matrix Spike Duplicate recoveries were less than established laboratory limits. Sample result was N flagged. Additionally, there was presence of blank contamination. Contamination was evaluated and there was no affect on sample result.

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 53-59 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1V9R9 (SDG# 20081134) and B1V7W1 of this SDG.

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

- <u>Batch QC – B1V9R9</u>

    - Calcium, Magnesium and Sodium sample results exceeded the spiking levels by a factor of four. Spike recoveries are not valid. Check standard was analyzed to ensure linearity because sample results were greater than the calibration standard.

All QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 60 for QC details. Analytical Note(s):

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

All QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 61 for QC details. Analytical Note(s):

- Duplicate QC was analyzed on sample# B1VRK3 (SDG# 20081163).

All QC controls are within the established limits.

Total Organic Carbon – The hold time requirement for this analysis was not met on one sample. See comment below. A Matrix Spike, Matrix Spike Duplicate, Blank and Method Spike were analyzed with this delivery group per the GRP Letter of Instruction. See page 62-63 for QC details. Analytical Note(s):

- Missed Hold Time – Due to issues associated with improper preservation of samples, hold Time was missed on sample# B1VPP9. Sample was successfully analyzed on July 9, 2008.

- A copy of Issue Resolution Form #08-093, Rev 1 documenting improper preservation of TOC samples is included as Attachment 3.

- Matrix Spikes and Matrix Spike Duplicates were analyzed on the following samples
    - B1VPL3 and B1VPK2 of this SDG
    - B1VR19,B1VNW9 and B1V654 (SDG# 20081184)
    - B1VN95 (SDG# 20081195)

All QC controls are within the established limits.

Total Organic Halides – 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 page 64 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1V662 (SDG# 20081134).

- Samples showed greater than 10% but less than 25% carbon column breakthrough. At this low level, breakthrough is not due to column loading.

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 73-75 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1V384 (SDG# 20081121).
- 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 page 84-88 for QC details. Analytical Note(s):

- Gross Alpha/Gross Beta – Duplicate QC was analyzed on samples B1TH60 (SDG# 20081067) and B1VPR4 (SDG# 20081142). Gross Beta (B1TH60) Blank result was greater than established laboratory limits. No flags issued.
- Strontium-89/90 and 85 (tracer) – Duplicate QC was analyzed on sample# B1V654 (SDG# 20081134).
- Tritium – Duplicate and Matrix Spike were analyzed on sample# B1RTN8 (SDG# 20081136).

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.

for Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

for Pauline D. Mix
WSCF Client Services

M4W41-SLF-08-795

ATTACHMENT 3

ISSUE RESOLUTION FORM

Consisting of 3 pages
Including cover page

ISSUE RESOLUTION FORM

PNNL TRACKING NUMBER: 08-093, **Revision 1**

Date : **07-28-2008** SAF No. **W08-006**

SDG: **WSCF20081142** LOGIN No.: TEST: TOC-30

Sample No.(s) **B1VPK1, B1VPK3, B1VPR0, B1VPR1, B1VPR2 and B1VPP9**

(W08P002716, W08P002718, W08P002721, W08P002722, W08P002723, W08P002720)

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
Note: IRF# 08-093 has been revised to include sample B1VPP9 (W0P002720). On June 5, 2008, GPAP samples (identified above) were delivered to the WSCF Laboratory with improper preservation. Samples were not acidified as per COC requirements. Samples were acidified by WSCF Laboratory personnel: • Samples **B1VPK1, B1VPK3, B1VPR0, B1VPR1 and B1VPR2** were analyzed on June 27, 2008. • **Sample# B1VPP9 was analyzed on July 9, 2008.** All QC Controls were within established laboratory limits.	Accept all TOC sample results and document in the case narrative that the samples were not correctly preserved in the field.

GRP COMMENTS

Revision was noted by H Hampt, July 29, 2008
Signature and Date

Mix, Pauline D

From: Hampt, Heidi
Sent: Tuesday, July 29, 2008 2:26 PM
To: Mix, Pauline D
Cc: ^CPP Sample Management; Kopriva, Andrew; Trent, Stephen J; Anastos, Heather L; Widrig, Dana L
Subject: RE: Proposed IRF - TOC Preservation Issue

Pauline,

Revision has been noted.

Thanks,
Heidi

From: Mix, Pauline D
Sent: Monday, July 28, 2008 8:05 AM
To: Hampt, Heidi
Cc: ^CPP Sample Management; Kopriva, Andrew; Mix, Pauline D; Baird, William W (Bill); Stauffer, Markus; Ross, Gerald A
Subject: Proposed IRF - TOC Preservation Issue

Heid

See attached revised IRF. thx

Pauline D. Mix
WSCF Client Services
Phone 372-1488
Cell 947-0751
FAX 372-0456
MSIN S3-30
Pauline_D_Mix@rl.gov

M4W41-SLF-08-795

ATTACHMENT 4

ANALYTICAL RESULTS

Consisting of 80 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical: William D. Baird WW Baird 8/8/08
Client Services: C.D. Mix F.D. Mix 8/7/2008

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

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

Report#: WSCF20081142
Report Date: 7-aug-2008
Report WGPP/ver. 5.2
GPAP

w13qlog v4.2 07-aug-2008 06:44:08

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081142

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36584	2	37003	41347	BLANK		Anions by Ion Chromatography
36584	13	37003	41347	BLANK		Anions by Ion Chromatography
36584	3	37003	41347	LCS		Anions by Ion Chromatography
36584	8	37003	41347	SAMPLE	W08P002715	Anions by Ion Chromatography
36584	5	37003	41347	DUP	W08P002730	Anions by Ion Chromatography
36584	6	37003	41347	MS	W08P002730	Anions by Ion Chromatography
36584	7	37003	41347	MSD	W08P002730	Anions by Ion Chromatography
36584	4	37003	41347	SAMPLE	W08P002730	Anions by Ion Chromatography
36584	7	37003	41347	SPK-RPD	W08P002730	Anions by Ion Chromatography
36584	9	37003	41347	SAMPLE	W08P002731	Anions by Ion Chromatography
36584	10	37003	41347	SAMPLE	W08P002732	Anions by Ion Chromatography
36584	11	37003	41347	SAMPLE	W08P002734	Anions by Ion Chromatography
36584	12	37003	41347	SAMPLE	W08P002737	Anions by Ion Chromatography
36610	3	37027	41368	BLANK		Ammonia (N) by IC
36610	14	37027	41368	BLANK		Ammonia (N) by IC
36610	1	37027	41368	LCS		Ammonia (N) by IC
36610	5	37027	41368	DUP	W08P002695	Ammonia (N) by IC
36610	6	37027	41368	MS	W08P002695	Ammonia (N) by IC
36610	7	37027	41368	MSD	W08P002695	Ammonia (N) by IC
36610	7	37027	41368	SPK-RPD	W08P002695	Ammonia (N) by IC
36610	11	37027	41368	SAMPLE	W08P002730	Ammonia (N) by IC
36669	1	37082	41410	BLANK		Cyanide by Midi/Spectrophotom
36669	2	37082	41410	LCS		Cyanide by Midi/Spectrophotom
36669	4	37082	41410	MS	W08GR01437	Cyanide by Midi/Spectrophotom
36669	5	37082	41410	MSD	W08GR01437	Cyanide by Midi/Spectrophotom
36669	5	37082	41410	SPK-RPD	W08GR01437	Cyanide by Midi/Spectrophotom
36669	13	37082	41410	SAMPLE	W08P002734	Cyanide by Midi/Spectrophotom
36699	1	37116	41441	LCS		Total Alkalinity as mg/L CaCO3
36699	13	37116	41441	LCS		Total Alkalinity as mg/L CaCO3
36699	24	37116	41441	LCS		Total Alkalinity as mg/L CaCO3
36699	4	37116	41441	SAMPLE	W08P002715	Total Alkalinity as mg/L CaCO3
36699	5	37116	41441	SAMPLE	W08P002734	Total Alkalinity as mg/L CaCO3
36699	6	37116	41441	SAMPLE	W08P002737	Total Alkalinity as mg/L CaCO3
36699	3	37116	41441	DUP	W08P002755	Total Alkalinity as mg/L CaCO3
36757	7	37173	41517	BLANK		Cyanide by Midi/Spectrophotom
36757	8	37173	41517	LCS		Cyanide by Midi/Spectrophotom
36757	10	37173	41517	MS	W08P002737	Cyanide by Midi/Spectrophotom
36757	11	37173	41517	MSD	W08P002737	Cyanide by Midi/Spectrophotom
36757	9	37173	41517	SAMPLE	W08P002737	Cyanide by Midi/Spectrophotom
36757	11	37173	41517	SPK-RPD	W08P002737	Cyanide by Midi/Spectrophotom
36802	1	37221	41563	BLANK		Total Organic Carbon
36802	2	37221	41563	METHSPIKE		Total Organic Carbon
36802	3	37221	41563	SPK-RSD		Total Organic Carbon
36802	4	37221	41563	MS	W08P002725	Total Organic Carbon
36802	5	37221	41563	MSD	W08P002725	Total Organic Carbon
36802	11	37221	41563	SAMPLE	W08P002725	Total Organic Carbon
36802	5	37221	41563	SPK-RPD	W08P002725	Total Organic Carbon

36802	12	37221	41563	SAMPLE	W08P002726	Total Organic Carbon
36802	13	37221	41563	SAMPLE	W08P002727	Total Organic Carbon
36802	14	37221	41563	SAMPLE	W08P002728	Total Organic Carbon
36802	8	37221	41563	SAMPLE	W08P002730	Total Organic Carbon
36804	1	37223	41567	BLANK		Total Organic Carbon
36804	2	37223	41567	METHSPIKE		Total Organic Carbon
36804	3	37223	41567	SPK-RSD		Total Organic Carbon
36804	4	37223	41567	MS	W08P002717	Total Organic Carbon
36804	5	37223	41567	MSD	W08P002717	Total Organic Carbon
36804	7	37223	41567	SAMPLE	W08P002717	Total Organic Carbon
36804	5	37223	41567	SPK-RPD	W08P002717	Total Organic Carbon
36804	13	37223	41567	SAMPLE	W08P002719	Total Organic Carbon
36820	1	37242	41582	BLANK		ICP-200.8 MS All possible meta
36820	2	37242	41582	LCS		ICP-200.8 MS All possible meta
36820	4	37242	41582	MS	W08P002695	ICP-200.8 MS All possible meta
36820	5	37242	41582	MSD	W08P002695	ICP-200.8 MS All possible meta
36820	5	37242	41582	SPK-RPD	W08P002695	ICP-200.8 MS All possible meta
36820	7	37242	41582	MS	W08P002697	ICP-200.8 MS All possible meta
36820	8	37242	41582	MSD	W08P002697	ICP-200.8 MS All possible meta
36820	8	37242	41582	SPK-RPD	W08P002697	ICP-200.8 MS All possible meta
36820	23	37242	41582	SAMPLE	W08P002729	ICP-200.8 MS All possible meta
36820	24	37242	41582	SAMPLE	W08P002730	ICP-200.8 MS All possible meta
36820	25	37242	41582	SAMPLE	W08P002731	ICP-200.8 MS All possible meta
36820	26	37242	41582	SAMPLE	W08P002734	ICP-200.8 MS All possible meta
36820	27	37242	41582	SAMPLE	W08P002737	ICP-200.8 MS All possible meta
36891	1	37311	41657	BLANK		Total Organic Halides
36891	2	37311	41657	LCS		Total Organic Halides
36891	5	37311	41657	MS	W08P002697	Total Organic Halides
36891	6	37311	41657	MSD	W08P002697	Total Organic Halides
36891	6	37311	41657	SPK-RPD	W08P002697	Total Organic Halides
36891	8	37311	41657	SAMPLE	W08P002716	Total Organic Halides
36891	9	37311	41657	SAMPLE	W08P002717	Total Organic Halides
36891	10	37311	41657	SAMPLE	W08P002718	Total Organic Halides
36891	11	37311	41657	SAMPLE	W08P002719	Total Organic Halides
36892	1	37312	41659	BLANK		Chemical Oxygen Demand
36892	2	37312	41659	LCS		Chemical Oxygen Demand
36892	4	37312	41659	MS	W08P002730	Chemical Oxygen Demand
36892	5	37312	41659	MSD	W08P002730	Chemical Oxygen Demand
36892	3	37312	41659	SAMPLE	W08P002730	Chemical Oxygen Demand
36892	5	37312	41659	SPK-RPD	W08P002730	Chemical Oxygen Demand
36908	1	37329	41675	BLANK		Total Organic Carbon
36908	2	37329	41675	METHSPIKE		Total Organic Carbon
36908	3	37329	41675	SPK-RSD		Total Organic Carbon
36908	19	37329	41675	SPK-RSD		Total Organic Carbon
36908	25	37329	41675	SAMPLE	W08P002716	Total Organic Carbon
36908	26	37329	41675	SAMPLE	W08P002718	Total Organic Carbon
36908	27	37329	41675	SAMPLE	W08P002721	Total Organic Carbon
36908	28	37329	41675	SAMPLE	W08P002722	Total Organic Carbon
36908	29	37329	41675	SAMPLE	W08P002723	Total Organic Carbon
36908	4	37329	41675	MS	W08P002809	Total Organic Carbon
36908	5	37329	41675	MSD	W08P002809	Total Organic Carbon
36908	5	37329	41675	SPK-RPD	W08P002809	Total Organic Carbon
36908	17	37329	41675	MS	W08P002819	Total Organic Carbon
36908	18	37329	41675	MSD	W08P002819	Total Organic Carbon
36908	18	37329	41675	SPK-RPD	W08P002819	Total Organic Carbon

37010	1	37433	41784	BLANK		Total Organic Carbon
37010	2	37433	41784	METHSPIKE		Total Organic Carbon
37010	3	37433	41784	SPK-RSD		Total Organic Carbon
37010	4	37433	41784	MS	W08P002695	Total Organic Carbon
37010	5	37433	41784	MSD	W08P002695	Total Organic Carbon
37010	5	37433	41784	SPK-RPD	W08P002695	Total Organic Carbon
37010	11	37433	41784	SAMPLE	W08P002720	Total Organic Carbon
37010	18	37433	41784	MS	W08P002879	Total Organic Carbon
37010	19	37433	41784	MSD	W08P002879	Total Organic Carbon
37010	19	37433	41784	SPK-RPD	W08P002879	Total Organic Carbon
37125	1	37551	41895	BLANK		ICP Metals Analysis, Grd H20 P
37125	2	37551	41895	LCS		ICP Metals Analysis, Grd H20 P
37125	4	37551	41895	MS	W08P002699	ICP Metals Analysis, Grd H20 P
37125	5	37551	41895	MSD	W08P002699	ICP Metals Analysis, Grd H20 P
37125	5	37551	41895	SPK-RPD	W08P002699	ICP Metals Analysis, Grd H20 P
37125	10	37551	41895	SAMPLE	W08P002714	ICP Metals Analysis, Grd H20 P
37125	11	37551	41895	SAMPLE	W08P002715	ICP Metals Analysis, Grd H20 P
37125	12	37551	41895	SAMPLE	W08P002729	ICP Metals Analysis, Grd H20 P
37125	13	37551	41895	SAMPLE	W08P002730	ICP Metals Analysis, Grd H20 P
37125	14	37551	41895	SAMPLE	W08P002733	ICP Metals Analysis, Grd H20 P
37125	15	37551	41895	SAMPLE	W08P002734	ICP Metals Analysis, Grd H20 P
37125	16	37551	41895	SAMPLE	W08P002736	ICP Metals Analysis, Grd H20 P
37132	1	37555	41934	BLANK		ICP Metals Analysis, Grd H20 P
37132	2	37555	41934	LCS		ICP Metals Analysis, Grd H20 P
37132	4	37555	41934	MS	W08P002737	ICP Metals Analysis, Grd H20 P
37132	5	37555	41934	MSD	W08P002737	ICP Metals Analysis, Grd H20 P
37132	3	37555	41934	SAMPLE	W08P002737	ICP Metals Analysis, Grd H20 P
37132	5	37555	41934	SPK-RPD	W08P002737	ICP Metals Analysis, Grd H20 P

w13qlog v4.2 07-aug-2008 06:44:08

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20081142

WL#	S# Batch	QC#	Tray Type	Sample#	Test
		41803	BLANK		VOA Ground Water Protection
		41803	LCS		VOA Ground Water Protection
		41803	MS	W08P002672	VOA Ground Water Protection
		41803	MSD	W08P002672	VOA Ground Water Protection
		41803	SPK-RPD	W08P002672	VOA Ground Water Protection
		41803	SAMPLE	W08P002730	VOA Ground Water Protection
		41803	SURR	W08P002730	VOA Ground Water Protection
		41803	SAMPLE	W08P002732	VOA Ground Water Protection
		41803	SURR	W08P002732	VOA Ground Water Protection
		41803	SAMPLE	W08P002735	VOA Ground Water Protection
		41803	SURR	W08P002735	VOA Ground Water Protection

w13qlog v4.2 07-aug-2008 06:44:08

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20081142

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36629	1	37046	41392	BLANK		Gross Alpha on Alpha Plateau
36629	2	37046	41392	LCS		Gross Alpha on Alpha Plateau
36629	3	37046	41392	DUP	W08P002581	Gross Alpha on Alpha Plateau
36629	9	37046	41392	SAMPLE	W08P002715	Gross Alpha on Alpha Plateau
36599	1	37016	41458	BLANK		Gross Alpha/Gross Beta (AB32)
36599	2	37016	41458	LCS		Gross Alpha/Gross Beta (AB32)
36599	3	37016	41458	DUP	W08P002581	Gross Alpha/Gross Beta (AB32)
36599	9	37016	41458	SAMPLE	W08P002715	Gross Alpha/Gross Beta (AB32)
36693	1	37110	41472	BLANK		Tritium by Liq Sct column prep
36693	2	37110	41472	LCS		Tritium by Liq Sct column prep
36693	4	37110	41472	DUP	W08P002702	Tritium by Liq Sct column prep
36693	3	37110	41472	MS	W08P002702	Tritium by Liq Sct column prep
36693	10	37110	41472	SAMPLE	W08P002715	Tritium by Liq Sct column prep
36693	11	37110	41472	SAMPLE	W08P002731	Tritium by Liq Sct column prep
36693	12	37110	41472	SAMPLE	W08P002732	Tritium by Liq Sct column prep
36693	13	37110	41472	SAMPLE	W08P002734	Tritium by Liq Sct column prep
36693	14	37110	41472	SAMPLE	W08P002737	Tritium by Liq Sct column prep
36701	1	37118	41566	BLANK		Strontium 89/90
36701	2	37118	41566	LCS		Strontium 89/90
36701	3	37118	41566	DUP	W08P002695	Strontium 89/90
36701	12	37118	41566	SAMPLE	W08P002715	Strontium 89/90
36701	13	37118	41566	SURR	W08P002715	Strontium 89/90
36683	1	37100	41597	BLANK		TC99 by Liquid Scin.
36683	2	37100	41597	LCS		TC99 by Liquid Scin.
36683	3	37100	41597	DUP	W08P002731	TC99 by Liquid Scin.
36683	4	37100	41597	MS	W08P002731	TC99 by Liquid Scin.
36683	5	37100	41597	SAMPLE	W08P002731	TC99 by Liquid Scin.
36683	6	37100	41597	SAMPLE	W08P002734	TC99 by Liquid Scin.
36683	7	37100	41597	SAMPLE	W08P002737	TC99 by Liquid Scin.
37296	1	37726	42069	BLANK		Gross Alpha on Alpha Plateau
37296	2	37726	42069	LCS		Gross Alpha on Alpha Plateau
37296	3	37726	42069	DUP	W08P002724	Gross Alpha on Alpha Plateau
37296	4	37726	42069	SAMPLE	W08P002724	Gross Alpha on Alpha Plateau
37416	5	37792	42201	BLANK		Gross Alpha/Gross Beta (AB32)
37416	6	37792	42201	LCS		Gross Alpha/Gross Beta (AB32)
37416	15	37792	42201	SAMPLE	W08P002734	Gross Alpha/Gross Beta (AB32)
37416	16	37792	42201	SAMPLE	W08P002737	Gross Alpha/Gross Beta (AB32)
37416	7	37792	42201	DUP	W08P002839	Gross Alpha/Gross Beta (AB32)
37444	1	37877	42202	BLANK		Gross Alpha on Alpha Plateau
37444	2	37877	42202	LCS		Gross Alpha on Alpha Plateau
37444	3	37877	42202	SAMPLE	W08P002734	Gross Alpha on Alpha Plateau
37444	4	37877	42202	SAMPLE	W08P002737	Gross Alpha on Alpha Plateau

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-344-406	LA-344-406: TOTAL ORGANIC CARBON (TOC) BASED ON SW-846	
	EPA SW-846 9060	TOTAL ORGANIC CARBON
	HEIS 9060_TOC	Total Organic Carbon
LA-503-401	LA-503-401: ANALYSIS OF CATIONS BY ION CHROMATOGRAPHY	
	EPA-600/4-86-024 300.7	Dissolved Sodium, Ammonium, Potassium, and Calcium in Wet Deposition by Chemical
	HEIS 300.7_CATIONS_IC	Determination of Ammonium by Ion Chromatography
LA-505-411	LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE	
	HEIS 6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY	
	EPA-600/R-94-111 200.8	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS
	HEIS 200.8_METALS_ICPMS	Inductively Coupled Plasma - Mass Spectrometry
	HEIS RADISOTOPES_ICPMS	Radioisotopes by ICP/MS
LA-523-444	LA-523-444: TOTAL ORGANIC HALIDES BASED ON SW-846 METHOD 9020B	
	EPA SW-846 9020B	TOTAL ORGANIC HALIDES (TOX)
	HEIS 9020_TOX	Total Organic Halides based on SW846 Method 9020B
LA-523-470	LA-523-470: CHEMICAL OXYGEN DEMAND	
	EPA-600/4-79-020 410.4	CHEMICAL OXYGEN DEMAND
	HEIS 410.4_COD	Chemical Oxygen Demand
LA-531-411	LA-531-411: ALKALINITY (TITRIMETRIC)	

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: 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.

	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
LA-695-402	LA-695-402: DETERMINATION OF CYANIDE BY MIDIDISTILLATION AND SPECTROPHOTOMETRIC	
	EPA-600/4-79-020 335.2	Cyanide, Total
	HEIS 335.2_CYANIDE	Cyanide, Total

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

WSCF
METHOD REFERENCES REPORT

Department: Organic

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

LA-523-455 LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846

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

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

WSCF
METHOD REFERENCES REPORT

Department: Radiochemistry

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

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

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

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002714
Client ID: B1V7X2 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		43.0	ug/L			1.00	25		07/17/08
Magnesium	7439-95-4	LA-505-411		4.50e+04	ug/L			1.00	50		07/17/08
Manganese	7439-96-5	LA-505-411		14.2	ug/L			1.00	4.0		07/17/08
Nickel	7440-02-0	LA-505-411		18.3	ug/L			1.00	4.0		07/17/08
Potassium	7440-09-7	LA-505-411	D	1.51e+04	ug/L			10.00	1.7e+03		07/17/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/17/08
Sodium	7440-23-5	LA-505-411		2.57e+04	ug/L			1.00	51		07/17/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/17/08
Barium	7440-39-3	LA-505-411		52.9	ug/L			1.00	4.0		07/17/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/17/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/17/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		07/17/08
Zinc	7440-66-6	LA-505-411		17.9	ug/L			1.00	9.0		07/17/08
Calcium	7440-70-2	LA-505-411	D	2.43e+05	ug/L			10.00	7.3e+02		07/17/08
Strontium	7440-24-6	LA-505-411		1.42e+03	ug/L			1.00	4.0		07/17/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002715
Client ID: B1V7X3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	DU	< 0.105	mg/L			5.00	0.10		06/05/08
Chloride	16887-00-6	LA-533-410	DN	243	mg/L			51.00	5.6		06/05/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0495	mg/L			5.00	0.050		06/05/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	38.3	mg/L			51.00	1.8		06/05/08
Sulfate	14808-79-8	LA-533-410	D	263	mg/L			51.00	3.9		06/05/08
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		212	ug/L			1.00	25		07/17/08
Magnesium	7439-95-4	LA-505-411		4.54e+04	ug/L			1.00	50		07/17/08
Manganese	7439-96-5	LA-505-411		11.1	ug/L			1.00	4.0		07/17/08
Nickel	7440-02-0	LA-505-411		22.0	ug/L			1.00	4.0		07/17/08
Potassium	7440-09-7	LA-505-411	D	1.51e+04	ug/L			10.00	1.7e+03		07/17/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/17/08
Sodium	7440-23-5	LA-505-411		2.56e+04	ug/L			1.00	51		07/17/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/17/08
Barium	7440-39-3	LA-505-411		53.6	ug/L			1.00	4.0		07/17/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Chromium	7440-47-3	LA-505-411		30.9	ug/L			1.00	13		07/17/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/17/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		07/17/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/17/08
Calcium	7440-70-2	LA-505-411	D	2.40e+05	ug/L			10.00	7.3e+02		07/17/08
Strontium	7440-24-6	LA-505-411		1.44e+03	ug/L			1.00	4.0		07/17/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002715
Client ID: B1V7X3 PNNL-GPP WSCF
Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		70.0	mg/L			1.00	1.0		06/12/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002716
Client ID: B1VPK1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Organic Halides Prep											**06/10/08**
Total Organic Halides											
Total Organic Halides	59473-04-0	LA-523-444		13.6	ug/L			1.00	5.0		06/10/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.618	mg/L			1.00	0.30		06/27/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002717
Client ID: B1VPK2 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Organic Halides Prep											**06/10/08**
Total Organic Halides											
Total Organic Halides	59473-04-0	LA-523-444		14.5	ug/L			1.00	5.0		06/10/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.567	mg/L			1.00	0.30		06/20/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002718
Client ID: B1VPK3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Organic Halides Prep											**06/10/08**
Total Organic Halides											
Total Organic Halides	59473-04-0	LA-523-444		15.5	ug/L			1.00	5.0		06/10/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.642	mg/L			1.00	0.30		06/27/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002719
Client ID: B1VPK4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Organic Halides Prep											**06/10/08**
Total Organic Halides											
Total Organic Halides	59473-04-0	LA-523-444		14.9	ug/L			1.00	5.0		06/10/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.540	mg/L			1.00	0.30		06/20/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002720
Client ID: B1VPP9 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.502	mg/L			1.00	0.30		07/09/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002721
Client ID: B1VPR0 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.527	mg/L			1.00	0.30		06/27/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002722
Client ID: B1VPR1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.571	mg/L			1.00	0.30		06/27/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002723
Client ID: B1VPR2 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.560	mg/L			1.00	0.30		06/27/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002725
Client ID: B1VPL3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total organic carbon											
Total organic carbon	TOC	LA-344-406	U	< 0.300	mg/L			1.00	0.30		06/19/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002726
Client ID: B1VPL4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total organic carbon											
Total organic carbon	TOC	LA-344-406	U	< 0.300	mg/L			1.00	0.30		06/19/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002727
Client ID: B1VPL5 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total organic carbon											
Total organic carbon	TOC	LA-344-406	U	< 0.300	mg/L			1.00	0.30		06/19/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002728
Client ID: B1VPL6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total organic carbon											
Total organic carbon	TOC	LA-344-406	U	< 0.300	mg/L			1.00	0.30		06/19/08

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.(org)

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)

* - 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 # W08P002729
Client ID: B1V8C3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/17/08
Magnesium	7439-95-4	LA-505-411		1.67e+04	ug/L			1.00	50		07/17/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Nickel	7440-02-0	LA-505-411		5.60	ug/L			1.00	4.0		07/17/08
Potassium	7440-09-7	LA-505-411		6.77e+03	ug/L			1.00	1.7e+02		07/17/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/17/08
Sodium	7440-23-5	LA-505-411		2.17e+04	ug/L			1.00	51		07/17/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/17/08
Barium	7440-39-3	LA-505-411		83.2	ug/L			1.00	4.0		07/17/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/17/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/17/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		07/17/08
Zinc	7440-66-6	LA-505-411		9.20	ug/L			1.00	9.0		07/17/08
Calcium	7440-70-2	LA-505-411		8.76e+04	ug/L			1.00	73		07/17/08
Strontium	7440-24-6	LA-505-411		362	ug/L			1.00	4.0		07/17/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
ICP-200.8 MS All possible meta Prep											**06/24/08**
ICP-200.8 MS All possible meta											
Arsenic	7440-38-2	LA-505-412		2.20	ug/L			1.00	0.400		06/24/08

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.(org)

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)

* - 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 # W08P002730
Client ID: B1V8C4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

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	0.262	mg/L			2.00	0.042		06/05/08
Chloride	16887-00-6	LA-533-410	DN	6.31	mg/L			2.00	0.22		06/05/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/05/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	3.15	mg/L			2.00	0.072		06/05/08
Sulfate	14808-79-8	LA-533-410	D	46.6	mg/L			2.00	0.15		06/05/08
Chemical Oxygen Demand											
Chemical Oxygen Demand	COD	LA-523-470	U	< 10.0	mg/L			1.00	10		06/06/08
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		107	ug/L			1.00	25		07/17/08
Magnesium	7439-95-4	LA-505-411		1.67e+04	ug/L			1.00	50		07/17/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Nickel	7440-02-0	LA-505-411		9.30	ug/L			1.00	4.0		07/17/08
Potassium	7440-09-7	LA-505-411		6.68e+03	ug/L			1.00	1.7e+02		07/17/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/17/08
Sodium	7440-23-5	LA-505-411		2.15e+04	ug/L			1.00	51		07/17/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/17/08
Barium	7440-39-3	LA-505-411		83.5	ug/L			1.00	4.0		07/17/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/17/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/17/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		07/17/08
Zinc	7440-66-6	LA-505-411		11.1	ug/L			1.00	9.0		07/17/08

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.(org)

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)

* - 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 # W08P002730
Client ID: B1V8C4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Calcium	7440-70-2	LA-505-411		8.82e+04	ug/L			1.00	73		07/17/08
Strontium	7440-24-6	LA-505-411		361	ug/L			1.00	4.0		07/17/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
ICP-200.8 MS All possible meta Prep											**06/24/08**
ICP-200.8 MS All possible meta											
Arsenic	7440-38-2	LA-505-412		2.23	ug/L			1.00	0.400		06/24/08
Nitrogen in ammonium											
Nitrogen in ammonium	NH4-N	LA-503-401	B	0.0106	mg/L			1.00	9.3e-03		06/06/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.663	mg/L			1.00	0.30		06/19/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P002731
Client ID: B1V693 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

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	0.232	mg/L			2.00	0.042		06/05/08
Chloride	16887-00-6	LA-533-410	DN	24.2	mg/L			2.00	0.22		06/05/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/05/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	36.9	mg/L			10.00	0.36		06/05/08
Sulfate	14808-79-8	LA-533-410	D	42.5	mg/L			2.00	0.15		06/05/08
ICP-200.8 MS All possible meta Prep											**06/24/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		2.11	ug/L			1.00	0.0500		06/24/08

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

B - The Analyte 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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P002732
Client ID: B1V696 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	D	0.224	mg/L			2.00	0.042		06/05/08
Chloride	16887-00-6	LA-533-410	DN	21.5	mg/L			2.00	0.22		06/05/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/05/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	48.9	mg/L			10.00	0.36		06/05/08
Sulfate	14808-79-8	LA-533-410	D	34.8	mg/L			2.00	0.15		06/05/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002733
Client ID: B1V7V6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		29.0	ug/L			1.00	25		07/17/08
Magnesium	7439-95-4	LA-505-411		2.43e+04	ug/L			1.00	50		07/17/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Potassium	7440-09-7	LA-505-411		7.02e+03	ug/L			1.00	1.7e+02		07/17/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/17/08
Sodium	7440-23-5	LA-505-411		3.24e+04	ug/L			1.00	51		07/17/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/17/08
Barium	7440-39-3	LA-505-411		70.3	ug/L			1.00	4.0		07/17/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/17/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/17/08
Vanadium	7440-62-2	LA-505-411		12.2	ug/L			1.00	12		07/17/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/17/08
Calcium	7440-70-2	LA-505-411		8.16e+04	ug/L			1.00	73		07/17/08
Strontium	7440-24-6	LA-505-411		441	ug/L			1.00	4.0		07/17/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002734
Client ID: B1V7V7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

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	0.292	mg/L			2.00	0.042		06/05/08
Chloride	16887-00-6	LA-533-410	DN	23.4	mg/L			2.00	0.22		06/05/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/05/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	22.0	mg/L			10.00	0.36		06/05/08
Sulfate	14808-79-8	LA-533-410	D	136	mg/L			10.00	0.77		06/05/08
Cyanide											
Cyanide	57-12-5	LA-695-402		46.7	ug/L			1.00	4.0		06/09/08
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		35.8	ug/L			1.00	25		07/17/08
Magnesium	7439-95-4	LA-505-411		2.44e+04	ug/L			1.00	50		07/17/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Potassium	7440-09-7	LA-505-411		7.77e+03	ug/L			1.00	1.7e+02		07/17/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/17/08
Sodium	7440-23-5	LA-505-411		3.45e+04	ug/L			1.00	51		07/17/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/17/08
Barium	7440-39-3	LA-505-411		69.9	ug/L			1.00	4.0		07/17/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/17/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/17/08
Vanadium	7440-62-2	LA-505-411		15.2	ug/L			1.00	12		07/17/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/17/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002734
Client ID: B1V7V7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Calcium	7440-70-2	LA-505-411		7.91e+04	ug/L			1.00	73		07/17/08
Strontium	7440-24-6	LA-505-411		437	ug/L			1.00	4.0		07/17/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
ICP-200.8 MS All possible meta Prep											**06/24/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		10.5	ug/L			1.00	0.0500		06/24/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		110	mg/L			1.00	1.0		06/12/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002736
Client ID: B1V7W0 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**07/08/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/17/08
Magnesium	7439-95-4	LA-505-411	U	< 50.0	ug/L			1.00	50		07/17/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Potassium	7440-09-7	LA-505-411	U	< 170	ug/L			1.00	1.7e+02		07/17/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/17/08
Sodium	7440-23-5	LA-505-411	U	< 51.0	ug/L			1.00	51		07/17/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/17/08
Barium	7440-39-3	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/17/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/17/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		07/17/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/17/08
Calcium	7440-70-2	LA-505-411		116	ug/L			1.00	73		07/17/08
Strontium	7440-24-6	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/17/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002737
Client ID: B1V7W1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	DU	< 0.0420	mg/L			2.00	0.042		06/05/08
Chloride	16887-00-6	LA-533-410	DNU	< 0.220	mg/L			2.00	0.22		06/05/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0198	mg/L			2.00	0.020		06/05/08
Nitrogen in Nitrate	NO3-N	LA-533-410	DU	< 0.0720	mg/L			2.00	0.072		06/05/08
Sulfate	14808-79-8	LA-533-410	DU	< 0.154	mg/L			2.00	0.15		06/05/08
Cyanide											
Cyanide	57-12-5	LA-695-402	NU	< 4.00	ug/L			1.00	4.0		06/17/08
ICP Metals Analysis, Grd H20 P Prep											**07/17/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		07/18/08
Magnesium	7439-95-4	LA-505-411	U	< 50.0	ug/L			1.00	50		07/18/08
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/18/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/18/08
Potassium	7440-09-7	LA-505-411	U	< 170	ug/L			1.00	1.7e+02		07/18/08
Silver	7440-22-4	LA-505-411	U	< 5.00	ug/L			1.00	5.0		07/18/08
Sodium	7440-23-5	LA-505-411	U	< 51.0	ug/L			1.00	51		07/18/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		07/18/08
Barium	7440-39-3	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/18/08
Cadmium	7440-43-9	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/18/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		07/18/08
Cobalt	7440-48-4	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/18/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		07/18/08
Vanadium	7440-62-2	LA-505-411	U	< 12.0	ug/L			1.00	12		07/18/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		07/18/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002737
Client ID: B1V7W1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Inorganic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Calcium	7440-70-2	LA-505-411	U	< 73.0	ug/L			1.00	73		07/18/08
Strontium	7440-24-6	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/18/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		07/18/08
ICP-200.8 MS All possible meta Prep											**06/24/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412	U	< 0.0500	ug/L			1.00	0.0500		06/24/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411	U	< 1.00	mg/L			1.00	1.0		06/12/08

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.(org)

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)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: Ammonia (N) by IC

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002695											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Ammonia (N) by IC	7664-41-7	<9.32e-3		RPD			n/a	20.000	U	06/06/08
MS	Ammonia (N) by IC	7664-41-7	0.4942	99.237	% Recov	80.000	120.000				06/06/08
MSD	Ammonia (N) by IC	7664-41-7	0.5263	105.683	% Recov	80.000	120.000				06/06/08
SPK-RPD	Ammonia (N) by IC	7664-41-7	105.683		RPD			6.291	20.000		06/06/08
BATCH QC											
BLANK	Ammonia (N) by IC	7664-41-7	<9.32e-3	n/a	mg/L	0.000	0.002			U	06/06/08
BLANK	Ammonia (N) by IC	7664-41-7	<9.32e-3	n/a	mg/L	0.000	0.002			U	06/06/08
LCS	Ammonia (N) by IC	7664-41-7	92.6644	92.664	% Recov	80.000	120.000				06/06/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: Anions by Ion Chromatography

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

Lab ID: W08P002730

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
DUP	Chloride	16887-00-6	6.3687		RPD			0.890	20.000		06/05/08
DUP	Fluoride	16984-48-8	0.2694		RPD			2.785	20.000		06/05/08
DUP	Nitrogen in Nitrite	NO2-N	<1.98e-2		RPD			n/a	20.000	U	06/05/08
DUP	Nitrogen in Nitrate	NO3-N	3.1583		RPD			0.130	20.000		06/05/08
DUP	Sulfate	14808-79-8	46.8677		RPD			0.493	20.000		06/05/08
MS	Chloride	16887-00-6	1.10285	110.839	% Recov	80.000	120.000				06/05/08
MS	Fluoride	16984-48-8	0.49035	99.462	% Recov	80.000	120.000				06/05/08
MS	Nitrogen in Nitrite	NO2-N	0.467	94.919	% Recov	80.000	120.000				06/05/08
MS	Nitrogen in Nitrate	NO3-N	0.4617	103.520	% Recov	80.000	120.000				06/05/08
MS	Sulfate	14808-79-8	2.04325	104.247	% Recov	80.000	120.000				06/05/08
MSD	Chloride	16887-00-6	1.2058	121.186	% Recov	80.000	120.000				06/05/08
MSD	Fluoride	16984-48-8	0.4902	99.432	% Recov	80.000	120.000				06/05/08
MSD	Nitrogen in Nitrite	NO2-N	0.4679	95.102	% Recov	80.000	120.000				06/05/08
MSD	Nitrogen in Nitrate	NO3-N	0.485	108.744	% Recov	80.000	120.000				06/05/08
MSD	Sulfate	14808-79-8	2.13925	109.145	% Recov	80.000	120.000				06/05/08
SPK-RPD	Chloride	16887-00-6	121.186		RPD			8.919	20.000		06/05/08
SPK-RPD	Fluoride	16984-48-8	99.432		RPD			0.030	20.000		06/05/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	95.102		RPD			0.193	20.000		06/05/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	108.744		RPD			4.922	20.000		06/05/08
SPK-RPD	Sulfate	14808-79-8	109.145		RPD			4.591	20.000		06/05/08

BATCH QC

BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	06/05/08
BLANK	Chloride	16887-00-6	<0.11	n/a	mg/L	0.000	0.030			U	06/05/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	06/05/08
BLANK	Fluoride	16984-48-8	<2.1e-2	n/a	mg/L	0.000	0.030			U	06/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	06/05/08
BLANK	Nitrogen in Nitrite	NO2-N	<9.9e-3	n/a	mg/L	0.000	0.020			U	06/05/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	06/05/08
BLANK	Nitrogen in Nitrate	NO3-N	<3.6e-2	n/a	mg/L	0.000	0.040			U	06/05/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	06/05/08
BLANK	Sulfate	14808-79-8	<7.7e-2	n/a	mg/L	0.000	0.200			U	06/05/08
LCS	Chloride	16887-00-6	204.4973	101.740	% Recov	80.000	120.000				06/05/08
LCS	Fluoride	16984-48-8	105.9817	106.407	% Recov	80.000	120.000				06/05/08
LCS	Nitrogen in Nitrite	NO2-N	103.4106	104.035	% Recov	80.000	120.000				06/05/08
LCS	Nitrogen in Nitrate	NO3-N	95.4218	105.907	% Recov	80.000	120.000				06/05/08
LCS	Sulfate	14808-79-8	394.9852	99.744	% Recov	80.000	120.000				06/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081142
Matrix: WATER
Test: Chemical Oxygen Demand

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002730											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Chemical Oxygen Demand	COD	244	97.600	% Recov	75.000	125.000				06/06/08
MSD	Chemical Oxygen Demand	COD	244	97.600	% Recov	75.000	125.000				06/06/08
SPK-RPD	Chemical Oxygen Demand	COD	97.600		RPD			0.000	20.000		06/06/08
BATCH QC											
BLANK	Chemical Oxygen Demand	COD	< 10	n/a	mg/L	-20.000	20.000			U	06/06/08
LCS	Chemical Oxygen Demand	COD	251	100.400	% Recov	80.000	120.000				06/06/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: Cyanide by Midi/Spectrophotom

Sample Date: 06/03/08
Receive Date:06/03/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR01437											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cyanide by Midi/Spectrophotom	57-12-5	37.5	93.750	% Recov	75.000	125.000				06/09/08
MSD	Cyanide by Midi/Spectrophotom	57-12-5	35.2	88.000	% Recov	75.000	125.000				06/09/08
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	88.000		RPD			6.327	20.000		06/09/08
BATCH QC											
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	< 4	n/a	ug/L	-4.000	4.000			U	06/09/08
LCS	Cyanide by Midi/Spectrophotom	57-12-5	44.4	88.800	% Recov	85.000	115.000				06/09/08
Lab ID: W08P002737											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cyanide by Midi/Spectrophotom	57-12-5	16.6	41.500	% Recov	75.000	125.000		*		06/17/08
MSD	Cyanide by Midi/Spectrophotom	57-12-5	21.7	54.250	% Recov	75.000	125.000		*		06/17/08
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	54.250		RPD			26.632	20.000 *		06/17/08
BATCH QC											
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	4.3	4.300	ug/L	-4.000	4.000		*		06/17/08
LCS	Cyanide by Midi/Spectrophotom	57-12-5	49.3	98.600	% Recov	85.000	115.000				06/17/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

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

Lab ID: W08P002699
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	1044	104.400	% Recov	75.000	125.000				07/17/08
MS	Barium	7440-39-3	525.2	105.040	% Recov	75.000	125.000				07/17/08
MS	Beryllium	7440-41-7	546.6	109.320	% Recov	75.000	125.000				07/17/08
MS	Calcium	7440-70-2	1430	143.000	% Recov	75.000	125.000			*	07/17/08
MS	Cadmium	7440-43-9	1080	108.000	% Recov	75.000	125.000				07/17/08
MS	Cobalt	7440-48-4	1049	104.900	% Recov	75.000	125.000				07/17/08
MS	Chromium	7440-47-3	1077	107.700	% Recov	75.000	125.000				07/17/08
MS	Copper	7440-50-8	1018	101.800	% Recov	75.000	125.000				07/17/08
MS	Iron	7439-89-6	1059	105.900	% Recov	75.000	125.000				07/17/08
MS	Potassium	7440-09-7	8938	89.380	% Recov	75.000	125.000				07/17/08
MS	Magnesium	7439-95-4	1180	118.000	% Recov	75.000	125.000				07/17/08
MS	Manganese	7439-96-5	1089.3	108.930	% Recov	75.000	125.000				07/17/08
MS	Sodium	7440-23-5	1120	112.000	% Recov	75.000	125.000				07/17/08
MS	Nickel	7440-02-0	1071	107.100	% Recov	75.000	125.000				07/17/08
MS	Antimony	7440-36-0	1051	105.100	% Recov	75.000	125.000				07/17/08
MS	Strontium	7440-24-6	546.6	109.320	% Recov	75.000	125.000				07/17/08
MS	Vanadium	7440-62-2	1054.9	105.490	% Recov	75.000	125.000				07/17/08
MS	Zinc	7440-66-6	1142	114.200	% Recov	75.000	125.000				07/17/08
MSD	Silver	7440-22-4	1044	104.400	% Recov	75.000	125.000				07/17/08
MSD	Barium	7440-39-3	523	104.600	% Recov	75.000	125.000				07/17/08
MSD	Beryllium	7440-41-7	547.5	109.500	% Recov	75.000	125.000				07/17/08
MSD	Calcium	7440-70-2	1930	193.000	% Recov	75.000	125.000			*	07/17/08
MSD	Cadmium	7440-43-9	1086	108.600	% Recov	75.000	125.000				07/17/08
MSD	Cobalt	7440-48-4	1056	105.600	% Recov	75.000	125.000				07/17/08
MSD	Chromium	7440-47-3	1085	108.500	% Recov	75.000	125.000				07/17/08
MSD	Copper	7440-50-8	1009	100.900	% Recov	75.000	125.000				07/17/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Iron	7439-89-6	1061	106.100	% Recov	75.000	125.000				07/17/08
MSD	Potassium	7440-09-7	8708	87.080	% Recov	75.000	125.000				07/17/08
MSD	Magnesium	7439-95-4	1170	117.000	% Recov	75.000	125.000				07/17/08
MSD	Manganese	7439-96-5	1095.3	109.530	% Recov	75.000	125.000				07/17/08
MSD	Sodium	7440-23-5	970	97.000	% Recov	75.000	125.000				07/17/08
MSD	Nickel	7440-02-0	1077	107.700	% Recov	75.000	125.000				07/17/08
MSD	Antimony	7440-36-0	1061	106.100	% Recov	75.000	125.000				07/17/08
MSD	Strontium	7440-24-6	544.5	108.900	% Recov	75.000	125.000				07/17/08
MSD	Vanadium	7440-62-2	1055.9	105.590	% Recov	75.000	125.000				07/17/08
MSD	Zinc	7440-66-6	1149	114.900	% Recov	75.000	125.000				07/17/08
SPK-RPD	Silver	7440-22-4	104.400		RPD			0.000	20.000		07/17/08
SPK-RPD	Barium	7440-39-3	104.600		RPD			0.420	20.000		07/17/08
SPK-RPD	Beryllium	7440-41-7	109.500		RPD			0.165	20.000		07/17/08
SPK-RPD	Calcium	7440-70-2	193.000		RPD			29.762	20.000 *		07/17/08
SPK-RPD	Cadmium	7440-43-9	108.600		RPD			0.554	20.000		07/17/08
SPK-RPD	Cobalt	7440-48-4	105.600		RPD			0.665	20.000		07/17/08
SPK-RPD	Chromium	7440-47-3	108.500		RPD			0.740	20.000		07/17/08
SPK-RPD	Copper	7440-50-8	100.900		RPD			0.888	20.000		07/17/08
SPK-RPD	Iron	7439-89-6	106.100		RPD			0.189	20.000		07/17/08
SPK-RPD	Potassium	7440-09-7	87.080		RPD			2.607	20.000		07/17/08
SPK-RPD	Magnesium	7439-95-4	117.000		RPD			0.851	20.000		07/17/08
SPK-RPD	Manganese	7439-96-5	109.530		RPD			0.549	20.000		07/17/08
SPK-RPD	Sodium	7440-23-5	97.000		RPD			14.354	20.000		07/17/08
SPK-RPD	Nickel	7440-02-0	107.700		RPD			0.559	20.000		07/17/08
SPK-RPD	Antimony	7440-36-0	106.100		RPD			0.947	20.000		07/17/08
SPK-RPD	Strontium	7440-24-6	108.900		RPD			0.385	20.000		07/17/08
SPK-RPD	Vanadium	7440-62-2	105.590		RPD			0.095	20.000		07/17/08
SPK-RPD	Zinc	7440-66-6	114.900		RPD			0.611	20.000		07/17/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	Silver	7440-22-4	<5	n/a	ug/L					U	07/17/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	07/17/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	07/17/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	07/17/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	07/17/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	07/17/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	07/17/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	07/17/08
BLANK	Iron	7439-89-6	<25	n/a	ug/L					U	07/17/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	07/17/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	07/17/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	07/17/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	07/17/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	07/17/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	07/17/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	07/17/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	07/17/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	07/17/08
LCS	Silver	7440-22-4	1034	103.400	% Recov	80.000	120.000				07/17/08
LCS	Barium	7440-39-3	523.3	104.660	% Recov	80.000	120.000				07/17/08
LCS	Beryllium	7440-41-7	554.4	110.880	% Recov	80.000	120.000				07/17/08
LCS	Calcium	7440-70-2	1095	109.500	% Recov	80.000	120.000				07/17/08
LCS	Cadmium	7440-43-9	1075	107.500	% Recov	80.000	120.000				07/17/08
LCS	Cobalt	7440-48-4	1055	105.500	% Recov	80.000	120.000				07/17/08
LCS	Chromium	7440-47-3	1070	107.000	% Recov	80.000	120.000				07/17/08
LCS	Copper	7440-50-8	1018	101.800	% Recov	80.000	120.000				07/17/08
LCS	Iron	7439-89-6	1052	105.200	% Recov	80.000	120.000				07/17/08
LCS	Potassium	7440-09-7	9398	93.980	% Recov	80.000	120.000				07/17/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
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	1049	104.900	% Recov	80.000	120.000				07/17/08
LCS	Manganese	7439-96-5	1079	107.900	% Recov	80.000	120.000				07/17/08
LCS	Sodium	7440-23-5	1072	107.200	% Recov	80.000	120.000				07/17/08
LCS	Nickel	7440-02-0	1083	108.300	% Recov	80.000	120.000				07/17/08
LCS	Antimony	7440-36-0	1061	106.100	% Recov	80.000	120.000				07/17/08
LCS	Strontium	7440-24-6	544.4	108.880	% Recov	80.000	120.000				07/17/08
LCS	Vanadium	7440-62-2	1052	105.200	% Recov	80.000	120.000				07/17/08
LCS	Zinc	7440-66-6	1143	114.300	% Recov	80.000	120.000				07/17/08

Lab ID: W08P002737
BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	1001	100.100	% Recov	75.000	125.000				07/18/08
MS	Barium	7440-39-3	507.6	101.520	% Recov	75.000	125.000				07/18/08
MS	Beryllium	7440-41-7	556	111.200	% Recov	75.000	125.000				07/18/08
MS	Calcium	7440-70-2	1042	104.200	% Recov	75.000	125.000				07/18/08
MS	Cadmium	7440-43-9	1031	103.100	% Recov	75.000	125.000				07/18/08
MS	Cobalt	7440-48-4	1008	100.800	% Recov	75.000	125.000				07/18/08
MS	Chromium	7440-47-3	1019	101.900	% Recov	75.000	125.000				07/18/08
MS	Copper	7440-50-8	999.1	99.910	% Recov	75.000	125.000				07/18/08
MS	Iron	7439-89-6	1005	100.500	% Recov	75.000	125.000				07/18/08
MS	Potassium	7440-09-7	9527	95.270	% Recov	75.000	125.000				07/18/08
MS	Magnesium	7439-95-4	1025	102.500	% Recov	75.000	125.000				07/18/08
MS	Manganese	7439-96-5	1030	103.000	% Recov	75.000	125.000				07/18/08
MS	Sodium	7440-23-5	1080	108.000	% Recov	75.000	125.000				07/18/08
MS	Nickel	7440-02-0	1031	103.100	% Recov	75.000	125.000				07/18/08
MS	Antimony	7440-36-0	1047	104.700	% Recov	75.000	125.000				07/18/08
MS	Strontium	7440-24-6	528.3	105.660	% Recov	75.000	125.000				07/18/08
MS	Vanadium	7440-62-2	1014	101.400	% Recov	75.000	125.000				07/18/08
MS	Zinc	7440-66-6	1101	110.100	% Recov	75.000	125.000				07/18/08
MSD	Silver	7440-22-4	971.8	97.180	% Recov	75.000	125.000				07/18/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Barium	7440-39-3	497.2	99.440	% Recov	75.000	125.000				07/18/08
MSD	Beryllium	7440-41-7	540.7	108.140	% Recov	75.000	125.000				07/18/08
MSD	Calcium	7440-70-2	990.9	99.090	% Recov	75.000	125.000				07/18/08
MSD	Cadmium	7440-43-9	990.6	99.060	% Recov	75.000	125.000				07/18/08
MSD	Cobalt	7440-48-4	966.8	96.680	% Recov	75.000	125.000				07/18/08
MSD	Chromium	7440-47-3	985.3	98.530	% Recov	75.000	125.000				07/18/08
MSD	Copper	7440-50-8	984.6	98.460	% Recov	75.000	125.000				07/18/08
MSD	Iron	7439-89-6	1004	100.400	% Recov	75.000	125.000				07/18/08
MSD	Potassium	7440-09-7	9559	95.590	% Recov	75.000	125.000				07/18/08
MSD	Magnesium	7439-95-4	999.6	99.960	% Recov	75.000	125.000				07/18/08
MSD	Manganese	7439-96-5	996.2	99.620	% Recov	75.000	125.000				07/18/08
MSD	Sodium	7440-23-5	1034	103.400	% Recov	75.000	125.000				07/18/08
MSD	Nickel	7440-02-0	992.5	99.250	% Recov	75.000	125.000				07/18/08
MSD	Antimony	7440-36-0	1039	103.900	% Recov	75.000	125.000				07/18/08
MSD	Strontium	7440-24-6	517	103.400	% Recov	75.000	125.000				07/18/08
MSD	Vanadium	7440-62-2	984	98.400	% Recov	75.000	125.000				07/18/08
MSD	Zinc	7440-66-6	1058	105.800	% Recov	75.000	125.000				07/18/08
SPK-RPD	Silver	7440-22-4	97.180		RPD			2.960	20.000		07/18/08
SPK-RPD	Barium	7440-39-3	99.440		RPD			2.070	20.000		07/18/08
SPK-RPD	Beryllium	7440-41-7	108.140		RPD			2.790	20.000		07/18/08
SPK-RPD	Calcium	7440-70-2	99.090		RPD			5.027	20.000		07/18/08
SPK-RPD	Cadmium	7440-43-9	99.060		RPD			3.997	20.000		07/18/08
SPK-RPD	Cobalt	7440-48-4	96.680		RPD			4.173	20.000		07/18/08
SPK-RPD	Chromium	7440-47-3	98.530		RPD			3.363	20.000		07/18/08
SPK-RPD	Copper	7440-50-8	98.460		RPD			1.462	20.000		07/18/08
SPK-RPD	Iron	7439-89-6	100.400		RPD			0.100	20.000		07/18/08
SPK-RPD	Potassium	7440-09-7	95.590		RPD			0.335	20.000		07/18/08
SPK-RPD	Magnesium	7439-95-4	99.960		RPD			2.509	20.000		07/18/08
SPK-RPD	Manganese	7439-96-5	99.620		RPD			3.336	20.000		07/18/08
SPK-RPD	Sodium	7440-23-5	103.400		RPD			4.352	20.000		07/18/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

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

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	99.250		RPD			3.805	20.000		07/18/08
SPK-RPD	Antimony	7440-36-0	103.900		RPD			0.767	20.000		07/18/08
SPK-RPD	Strontium	7440-24-6	103.400		RPD			2.162	20.000		07/18/08
SPK-RPD	Vanadium	7440-62-2	98.400		RPD			3.003	20.000		07/18/08
SPK-RPD	Zinc	7440-66-6	105.800		RPD			3.983	20.000		07/18/08
BATCH QC											
BLANK	Silver	7440-22-4	<5	n/a	ug/L					U	07/18/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	07/18/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	07/18/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	07/18/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	07/18/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	07/18/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	07/18/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	07/18/08
BLANK	Iron	7439-89-6	<25	n/a	ug/L					U	07/18/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	07/18/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	07/18/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	07/18/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	07/18/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	07/18/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	07/18/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	07/18/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	07/18/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	07/18/08
LCS	Silver	7440-22-4	1010	101.000	% Recov	80.000	120.000				07/18/08
LCS	Barium	7440-39-3	519	103.800	% Recov	80.000	120.000				07/18/08
LCS	Beryllium	7440-41-7	568.7	113.740	% Recov	80.000	120.000				07/18/08
LCS	Calcium	7440-70-2	1058	105.800	% Recov	80.000	120.000				07/18/08
LCS	Cadmium	7440-43-9	1043	104.300	% Recov	80.000	120.000				07/18/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
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	Cobalt	7440-48-4	1025	102.500	% Recov	80.000	120.000				07/18/08
LCS	Chromium	7440-47-3	1038	103.800	% Recov	80.000	120.000				07/18/08
LCS	Copper	7440-50-8	1027	102.700	% Recov	80.000	120.000				07/18/08
LCS	Iron	7439-89-6	1023	102.300	% Recov	80.000	120.000				07/18/08
LCS	Potassium	7440-09-7	10050	100.500	% Recov	80.000	120.000				07/18/08
LCS	Magnesium	7439-95-4	1051	105.100	% Recov	80.000	120.000				07/18/08
LCS	Manganese	7439-96-5	1046	104.600	% Recov	80.000	120.000				07/18/08
LCS	Sodium	7440-23-5	1110	111.000	% Recov	80.000	120.000				07/18/08
LCS	Nickel	7440-02-0	1044	104.400	% Recov	80.000	120.000				07/18/08
LCS	Antimony	7440-36-0	1043	104.300	% Recov	80.000	120.000				07/18/08
LCS	Strontium	7440-24-6	541.4	108.280	% Recov	80.000	120.000				07/18/08
LCS	Vanadium	7440-62-2	1031	103.100	% Recov	80.000	120.000				07/18/08
LCS	Zinc	7440-66-6	1119	111.900	% Recov	80.000	120.000				07/18/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081142
Matrix: WATER
Test: ICP-200.8 MS All possible meta

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002695											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	34.98	87.450	% Recov	70.000	130.000				06/24/08
MS	Uranium	7440-61-1	38.48	96.200	% Recov	70.000	130.000				06/24/08
MSD	Arsenic	7440-38-2	35.04	87.600	% Recov	70.000	130.000				06/24/08
MSD	Uranium	7440-61-1	38.56	96.400	% Recov	70.000	130.000				06/24/08
SPK-RPD	Arsenic	7440-38-2	87.600		RPD			0.171	20.000		06/25/08
SPK-RPD	Uranium	7440-61-1	96.400		RPD			0.208	20.000		06/25/08
Lab ID: W08P002697											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	35.66	89.150	% Recov	70.000	130.000				06/24/08
MS	Uranium	7440-61-1	44.87	112.175	% Recov	70.000	130.000				06/24/08
MSD	Arsenic	7440-38-2	34.53	86.325	% Recov	70.000	130.000				06/24/08
MSD	Uranium	7440-61-1	40.54	101.350	% Recov	70.000	130.000				06/24/08
SPK-RPD	Arsenic	7440-38-2	86.325		RPD			3.220	20.000		06/25/08
SPK-RPD	Uranium	7440-61-1	101.350		RPD			10.139	20.000		06/25/08
BATCH QC											
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	06/24/08
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	06/24/08
LCS	Arsenic	7440-38-2	34.39	85.975	% Recov	85.000	115.000				06/24/08
LCS	Uranium	7440-61-1	39.18	97.950	% Recov	85.000	115.000				06/24/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081142
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 06/09/08
Receive Date:06/09/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002755											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	93.5		RPD			5.721	20.000		06/12/08
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	114.4	99.478	%Recove	80.000	120.000				06/12/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	115.2	100.174	%Recove	80.000	120.000				06/12/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	115.4	100.348	%Recove	80.000	120.000				06/12/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: Total Organic Carbon

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002725											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Carbon	TOC	2.024	101.200	% Recov	75.000	125.000				06/19/08
MSD	Total Organic Carbon	TOC	2.028	101.400	% Recov	75.000	125.000				06/19/08
SPK-RPD	Total Organic Carbon	TOC	101.400		RPD			0.197	20.000		06/19/08
BATCH QC											
BLANK	Total Organic Carbon	TOC	< 0.045	n/a	mg/L	0.000	300.000			U	06/19/08
METHSPIKE	Total Organic Carbon	TOC	2.007	100.350	% Recov	80.000	120.000				06/19/08
SPK-RSD	Total Organic Carbon	TOC	0.1836	0.184	% RSD	0.000	20.000				06/19/08
Lab ID: W08P002717											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Carbon	TOC	4.014	100.350	% Recov	75.000	125.000				06/20/08
MSD	Total Organic Carbon	TOC	4.084	102.100	% Recov	75.000	125.000				06/20/08
SPK-RPD	Total Organic Carbon	TOC	102.100		RPD			1.729	20.000		06/20/08
BATCH QC											
BLANK	Total Organic Carbon	TOC	<0.045	n/a	mg/L	0.000	300.000			U	06/20/08
METHSPIKE	Total Organic Carbon	TOC	2.023	101.150	% Recov	80.000	120.000				06/20/08
SPK-RSD	Total Organic Carbon	TOC	1.258	1.258	% RSD	0.000	20.000				06/20/08
Lab ID: W08P002809											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Carbon	TOC	4.046	101.150	% Recov	75.000	125.000				06/27/08
MSD	Total Organic Carbon	TOC	4.114	102.850	% Recov	75.000	125.000				06/27/08
SPK-RPD	Total Organic Carbon	TOC	102.850		RPD			1.667	20.000		06/27/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: Total Organic Carbon

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002819											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Carbon	TOC	4.099	102.475	% Recov	75.000	125.000				06/27/08
MSD	Total Organic Carbon	TOC	4.037	100.925	% Recov	75.000	125.000				06/27/08
SPK-RPD	Total Organic Carbon	TOC	100.925		RPD			1.524	20.000		06/27/08
BATCH QC											
BLANK	Total Organic Carbon	TOC	< 0.045	n/a	mg/L	0.000	300.000			U	06/27/08
METHSPIKE	Total Organic Carbon	TOC	1.984	99.200	% Recov	80.000	120.000				06/27/08
SPK-RSD	Total Organic Carbon	TOC	0.6818	0.682	% RSD	0.000	20.000				06/27/08
SPK-RSD	Total Organic Carbon	TOC	0.5396	0.540	% RSD	0.000	20.000				06/27/08
Lab ID: W08P002695											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Carbon	TOC	3.992	99.800	% Recov	75.000	125.000				07/09/08
MSD	Total Organic Carbon	TOC	3.875	96.875	% Recov	75.000	125.000				07/09/08
SPK-RPD	Total Organic Carbon	TOC	96.875		RPD			2.974	20.000		07/09/08
Lab ID: W08P002879											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Carbon	TOC	4.089	102.225	% Recov	75.000	125.000				07/09/08
MSD	Total Organic Carbon	TOC	3.981	99.525	% Recov	75.000	125.000				07/09/08
SPK-RPD	Total Organic Carbon	TOC	99.525		RPD			2.677	20.000		07/09/08
BATCH QC											
BLANK	Total Organic Carbon	TOC	< 0.045	n/a	mg/L	0.000	300.000			U	07/09/08
METHSPIKE	Total Organic Carbon	TOC	1.973	98.650	% Recov	80.000	120.000				07/09/08
SPK-RSD	Total Organic Carbon	TOC	1.335	1.335	% RSD	0.000	20.000				07/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081142
Matrix: WATER
Test: Total Organic Halides

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002697											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Halides	TOX	41.0	102.500	% Recov	50.000	150.000				06/10/08
MSD	Total Organic Halides	TOX	45.5	113.750	% Recov	50.000	150.000				06/10/08
SPK-RPD	Total Organic Halides	TOX	113.750		RPD			10.405	20.000		06/10/08
BATCH QC											
BLANK	Total Organic Halides	TOX	<5	n/a	ug/L	0.000	300.000			U	06/10/08
LCS	Total Organic Halides	TOX	393	98.250	%rec	80.000	120.000				06/10/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081142
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		W08P002581/Gross beta prep blank is flagged for having a high result. Since all the other QC checks came out fine, this batch has been approved. lmh cyanide: Spike recovery below 75%. "N" flag TOX: Samples B1VPK1, B1VPK2, B1VPK3, and B1VPK4, showed > 10% Carbon column breakthrough, but less than 25%, at this low level it is not due to column loading. gar VOA: Large amt of Acetone found in the blank but amount found in any samples was less than in the blank, and is B-flagged. gar ICP-AES: [Sample W08P2714-2715; 2729-2730; 2733-2734; and 2736] No zirconium present in the LCS. Sodium, magnesium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard is used to ensure calcium, sodium, and magnesium linearity because sample results are greater than the calibration standard. ICP-AES: [Sample W08P2737]

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

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

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081142
Department: Inorganic

Sample #	Client ID		Lab Area	Test	Comment
					No zirconium present in the LCS.
					IC Anion - MSD recovery slightly high for chloride in
					sample W08P002730; Data N-flagged. DTS
W08P002716	B1VPK1	PNNL-GPP	VALTEST	Total Organic Carbon	o.o.c.r. gar
W08P002718	B1VPK3	PNNL-GPP	VALTEST	Total Organic Carbon	o.o.c.r. gar
W08P002721	B1VPR0	PNNL-GPP	VALTEST	Total Organic Carbon	gar
W08P002722	B1VPR1	PNNL-GPP	VALTEST	Total Organic Carbon	oor gar
W08P002723	B1VPR2	PNNL-GPP	VALTEST	Total Organic Carbon	oor gar

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-005
Sample # W08P002730
Client ID: B1V8C4 PNNL-GPP WSCF
Matrix: WATER

Group #: WSCF20081142
Department: Organic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Acetone	67-64-1	LA-523-455	B	7.30	ug/L			1.00	1.0		06/09/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/09/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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.(org)

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)

* - 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 # W08P002730
Client ID: B1V8C4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Organic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P002732
Client ID: B1V696 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Organic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon tetrachloride	56-23-5	LA-523-455	J	2.60	ug/L			1.00	1.0		06/09/08
Acetone	67-64-1	LA-523-455	B	13.0	ug/L			1.00	1.0		06/09/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/09/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P002732
Client ID: B1V696 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Organic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-004
Sample # W08P002735
Client ID: B1V386 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Organic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Acetone	67-64-1	LA-523-455	B	5.90	ug/L			1.00	1.0		06/09/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		06/09/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-004
Sample # W08P002735
Client ID: B1V386 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Organic
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		06/09/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		06/09/08

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.(org)

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)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081142
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 06/03/08
Receive Date:06/03/08

Lab ID: W08P002672
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	1,1-Dichloroethene	75-35-4	24.640	98.600	% Recov	63.000	117.000				06/09/08
MS	Benzene	71-43-2	23.770	95.100	% Recov	75.000	129.000				06/09/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	54.920	110.000	% Recov	75.000	125.000				06/09/08
MS	Chlorobenzene	108-90-7	25.740	103.000	% Recov	79.000	119.000				06/09/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.710	115.000	% Recov	75.000	125.000				06/09/08
MS	Toluene-d8(Surr)	2037-26-5	52.250	104.000	% Recov	75.000	125.000				06/09/08
MS	Toluene	108-88-3	24.800	99.200	% Recov	76.000	120.000				06/09/08
MS	Trichloroethene	79-01-6	21.200	84.800	% Recov	73.000	123.000				06/09/08
MSD	1,1-Dichloroethene	75-35-4	23.040	92.200	% Recov	63.000	117.000				06/09/08
MSD	Benzene	71-43-2	25.240	101.000	% Recov	75.000	129.000				06/09/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	55.490	111.000	% Recov	75.000	125.000				06/09/08
MSD	Chlorobenzene	108-90-7	27.000	108.000	% Recov	79.000	119.000				06/09/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.420	117.000	% Recov	75.000	125.000				06/09/08
MSD	Toluene-d8(Surr)	2037-26-5	52.080	104.000	% Recov	75.000	125.000				06/09/08
MSD	Toluene	108-88-3	26.210	105.000	% Recov	76.000	120.000				06/09/08
MSD	Trichloroethene	79-01-6	21.950	87.800	% Recov	73.000	123.000				06/09/08
SPK-RPD	1,1-Dichloroethene	75-35-4	92.200		RPD			6.709	20.000		06/09/08
SPK-RPD	Benzene	71-43-2	101.000		RPD			6.017	20.000		06/09/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	111.000		RPD			0.905	20.000		06/09/08
SPK-RPD	Chlorobenzene	108-90-7	108.000		RPD			4.739	20.000		06/09/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	117.000		RPD			1.724	20.000		06/09/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	104.000		RPD			0.000	20.000		06/09/08
SPK-RPD	Toluene	108-88-3	105.000		RPD			5.681	20.000		06/09/08
SPK-RPD	Trichloroethene	79-01-6	87.800		RPD			3.476	20.000		06/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081142
Matrix: WATER
Test: VOA Ground Water Protection

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002730											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	55.210	110.000	% Recov	75.000	125.000				06/09/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.100	116.000	% Recov	75.000	125.000				06/09/08
SURR	Toluene-d8(Surr)	2037-26-5	52.760	106.000	% Recov	75.000	125.000				06/09/08
Lab ID: W08P002732											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	55.270	111.000	% Recov	75.000	125.000				06/09/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.410	115.000	% Recov	75.000	125.000				06/09/08
SURR	Toluene-d8(Surr)	2037-26-5	52.440	105.000	% Recov	75.000	125.000				06/09/08
Lab ID: W08P002735											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	54.140	108.000	% Recov	75.000	125.000				06/09/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.370	117.000	% Recov	75.000	125.000				06/09/08
SURR	Toluene-d8(Surr)	2037-26-5	52.830	106.000	% Recov	75.000	125.000				06/09/08
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	06/09/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Acetone	67-64-1	270	270.000	ug/L						06/09/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	06/09/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081142
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	4-Bromofluorobenzene(Surr)	460-00-4	55.790	112.000	% Recov	75.000	125.000				06/09/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	06/09/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	06/09/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	58.010	116.000	% Recov	75.000	125.000				06/09/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	06/09/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	06/09/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	06/09/08
BLANK	Toluene-d8(Surr)	2037-26-5	51.820	104.000	% Recov	75.000	125.000				06/09/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	06/09/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	06/09/08
LCS	1,1-Dichloroethene	75-35-4	24.340	97.400	% Recov	75.000	125.000				06/09/08
LCS	Benzene	71-43-2	23.830	95.300	% Recov	75.000	125.000				06/09/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	54.970	110.000	% Recov	75.000	125.000				06/09/08
LCS	Chlorobenzene	108-90-7	25.710	103.000	% Recov	75.000	125.000				06/09/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	57.740	115.000	% Recov	75.000	125.000				06/09/08
LCS	Toluene-d8(Surr)	2037-26-5	52.220	104.000	% Recov	75.000	125.000				06/09/08
LCS	Toluene	108-88-3	24.450	97.800	% Recov	75.000	125.000				06/09/08
LCS	Trichloroethene	79-01-6	20.740	83.000	% Recov	75.000	125.000				06/09/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081142
Department: Organic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		W08P002581/Gross beta prep blank is flagged for having a high result. Since all the other QC checks came out fine, this batch has been approved. lmh cyanide: Spike recovery below 75%. "N" flag TOX: Samples B1VPK1, B1VPK2, B1VPK3, and B1VPK4, showed > 10% Carbon column breakthrough, but less than 25%, at this low level it is not due to column loading. gar VOA: Large amt of Acetone found in the blank but amount found in any samples was less than in the blank, and is B-flagged. gar ICP-AES: [Sample W08P2714-2715; 2729-2730; 2733-2734; and 2736] No zirconium present in the LCS. Sodium, magnesium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard is used to ensure calcium, sodium, and magnesium linearity because sample results are greater than the calibration standard. ICP-AES: [Sample W08P2737]

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

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

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081142
Department: Organic

Sample #	Client ID	Lab Area	Test	Comment
				No zirconium present in the LCS. IC Anion - MSD recovery slightly high for chloride in sample W08P002730; Data N-flagged. DTS

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002715
Client ID: B1V7X3 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Radiochemistry
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gross Alpha on Alpha Plateau											
Gross alpha on alpha plateau	12587-46-1	LA-508-415	U	0.0350	pCi/L	+-3.85e-03	pCi/L	1.00	11		06/09/08
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415		300	pCi/L	+-39.0	pCi/L	1.00	25		06/06/08
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		200	pCi/L	+-24.0	pCi/L	1.00	0.88		06/16/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		103	Percent			1.00	0.0		06/16/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	-170	pCi/L	+-170	pCi/L	1.00	2.2e+02		06/13/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-006
Sample # W08P002724
Client ID: B1VPR4 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Radiochemistry
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gross Alpha on Alpha Plateau											
Gross alpha on alpha plateau	12587-46-1	LA-508-415	U	1.60	pCi/L	+-1.22	pCi/L	1.00	1.8		07/28/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P002731
Client ID: B1V693 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Radiochemistry
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		1.00e+03	pCi/L	+-200	pCi/L	1.00	5.7		06/16/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		9.30e+03	pCi/L	+-1.86e+03	pCi/L	1.00	2.2e+02		06/13/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-037
Sample # W08P002732
Client ID: B1V696 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Radiochemistry
Sampled: 06/05/08
Received: 06/05/08

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		1.50e+04	pCi/L	+-3.00e+03	pCi/L	1.00	2.2e+02		06/13/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002734
Client ID: B1V7V7 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Radiochemistry
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gross Alpha on Alpha Plateau											
Gross alpha on alpha plateau	12587-46-1	LA-508-415		6.30	pCi/L	+-2.96	pCi/L	1.00	2.7		08/05/08
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415		890	pCi/L	+-89.0	pCi/L	1.00	7.7		08/01/08
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		1.40e+03	pCi/L	+-280	pCi/L	1.00	5.7		06/16/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		8.90e+03	pCi/L	+-1.78e+03	pCi/L	1.00	2.2e+02		06/13/08

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.(org)

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)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-005
Sample # W08P002737
Client ID: B1V7W1 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20081142
Department: Radiochemistry
Sampled: 06/05/08
Received: 06/05/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gross Alpha on Alpha Plateau											
Gross alpha on alpha plateau	12587-46-1	LA-508-415	U	0.450	pCi/L	+-0.342	pCi/L	1.00	0.42		08/05/08
Gross Alpha/Gross Beta (AB32)											
Gross beta	12587-47-2	LA-508-415	U	14.0	pCi/L	+-9.24	pCi/L	1.00	14		08/01/08
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	-0.800	pCi/L	+-3.44	pCi/L	1.00	5.7		06/16/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	-30.0	pCi/L	+-69.0	pCi/L	1.00	2.2e+02		06/13/08

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.(org)

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)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081142
Matrix: WATER
Test: Gross Alpha on Alpha Plateau

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002581											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross alpha on alpha plateau	12587-46-1	2.5		RPD			n/a	20.000		06/09/08
BATCH QC											
BLANK	Gross alpha on alpha plateau	12587-46-1-ap	U-4.4E-01	n/a	pCi/L	-100.000	100.000				06/09/08
LCS	Gross alpha on alpha plateau	12587-46-1-ap	73.4	94.832	% Recov	80.000	120.000				06/09/08
Lab ID: W08P002724											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross alpha on alpha plateau	12587-46-1	U9.2E-01		RPD			n/a	20.000		07/28/08
BATCH QC											
BLANK	Gross alpha on alpha plateau	12587-46-1-ap	U4.2E-01	n/a	pCi/L	-100.000	100.000				07/28/08
LCS	Gross alpha on alpha plateau	12587-46-1-ap	71.7	92.516	% Recov	80.000	120.000				07/28/08
BLANK	Gross alpha on alpha plateau	12587-46-1-ap	U2.2E-01	n/a	pCi/L	-100.000	100.000				08/05/08
LCS	Gross alpha on alpha plateau	12587-46-1-ap	36.8	94.992	% Recov	80.000	120.000				08/05/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20081142
Matrix: WATER
Test: Gross Alpha/Gross Beta (AB32)

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002581											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross beta	12587-47-2	3.8E+03		RPD			5.405	20.000		06/06/08
BATCH QC											
BLANK	Gross beta	12587-47-2	1.1E+01	11.000	pCi/L	-10.000	10.000				06/06/08
LCS	Gross beta	12587-47-2	25.9	115.470	% Recov	80.000	120.000				06/06/08
Lab ID: W08P002839											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Gross beta	12587-47-2	1.5E+03		RPD			18.978	20.000		08/01/08
BATCH QC											
BLANK	Gross beta	12587-47-2	U-1.8E-01	n/a	pCi/L	-10.000	10.000				08/01/08
LCS	Gross beta	12587-47-2	126	112.299	% Recov	80.000	120.000				08/01/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081142
Matrix: WATER
Test: Strontium 89/90

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002695											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	84.2	84.200	% Recov	30.000	105.000				06/16/08
DUP	Strontium-89/90	SR-RAD	U-2.6		RPD			n/a	20.000		06/16/08
Lab ID: W08P002715											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	103.3	103.300	% Recov	30.000	105.000				06/16/08
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	90.9	90.900	% Recov	30.000	105.000				06/16/08
BLANK	Strontium-89/90	10098-97-2	U-1.3	n/a	pCi/L	-10.000	100.000				06/16/08
LCS	Sr-85 Tracer by Beta Counting	SR85	91.6	91.600	% Recov	30.000	105.000				06/16/08
LCS	Strontium-89/90	10098-97-2	128	92.199	% Recov	80.000	120.000				06/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081142
Matrix: WATER
Test: TC99 by Liquid Scin.

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002731											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	1.0E+03		RPD			0.000	20.000		06/16/08
MS	Tc-99 by Liquid Scin.	14133-76-7	770.0	102.360	% Recov	75.000	125.000				06/16/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U1.1	n/a	pCi/L	-10.000	10.000				06/16/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	193.7	102.977	% Recov	80.000	120.000				06/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081142
Matrix: WATER
Test: Tritium by Liq Sct column prep

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002702											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	9.9E+02		RPD			19.178	20.000		06/13/08
MS	Tritium	10028-17-8	24190	93.372	% Recov	75.000	125.000				06/13/08
BATCH QC											
BLANK	Tritium	10028-17-8	U-1.4E+02	n/a	pCi/L	-10.000	1000.000				06/13/08
LCS	Tritium	10028-17-8	3130.0	91.147	% Recov	80.000	120.000				06/13/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081142
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		W08P002581/Gross beta prep blank is flagged for having a high result. Since all the other QC checks came out fine, this batch has been approved. lmh cyanide: Spike recovery below 75%. "N" flag TOX: Samples B1VPK1, B1VPK2, B1VPK3, and B1VPK4, showed > 10% Carbon column breakthrough, but less than 25%, at this low level it is not due to column loading. gar VOA: Large amt of Acetone found in the blank but amount found in any samples was less than in the blank, and is B-flagged. gar ICP-AES: [Sample W08P2714-2715; 2729-2730; 2733-2734; and 2736] No zirconium present in the LCS. Sodium, magnesium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard is used to ensure calcium, sodium, and magnesium linearity because sample results are greater than the calibration standard. ICP-AES: [Sample W08P2737]

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

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

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081142
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
				No zirconium present in the LCS. IC Anion - MSD recovery slightly high for chloride in sample W08P002730; Data N-flagged. DTS

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

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

M4W41-SLF-08-795

ATTACHMENT 5

SAMPLE RECEIPT INFORMATION

Consisting of 13 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
07/24/08

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081142

The following samples were received from you on 06/05/08. 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
W08P002714	B1V7X2	PNNL-GPP @GPP6010	Water	06/05/08
W08P002715	B1V7X3	PNNL-GPP @AB-32 @ALPHA @GPP6010 @H3-33 @IC-30 @SR89_90 ALKALI	Water	06/05/08
W08P002716	B1VPK1	PNNL-GPP TOC-30 TOX	Water	06/05/08
W08P002717	B1VPK2	PNNL-GPP TOC-30 TOX	Water	06/05/08
W08P002718	B1VPK3	PNNL-GPP TOC-30 TOX	Water	06/05/08
W08P002719	B1VPK4	PNNL-GPP TOC-30 TOX	Water	06/05/08
W08P002720	B1VPP9	PNNL-GPP TOC-30	Water	06/05/08
W08P002721	B1VPR0	PNNL-GPP TOC-30	Water	06/05/08
W08P002722	B1VPR1	PNNL-GPP TOC-30	Water	06/05/08
W08P002723	B1VPR2	PNNL-GPP TOC-30	Water	06/05/08
W08P002724	B1VPR4	PNNL-GPP @ALPHA	Water	06/05/08
W08P002725	B1VPL3	PNNL-GPP TOC-30	Water	06/05/08
W08P002726	B1VPL4	PNNL-GPP TOC-30	Water	06/05/08
W08P002727	B1VPL5	PNNL-GPP TOC-30	Water	06/05/08
W08P002728	B1VPL6	PNNL-GPP TOC-30	Water	06/05/08

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081142

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
W08P002729	B1V8C3	PNNL-GPP @2008 @GPP6010	Water	06/05/08
W08P002730	B1V8C4	PNNL-GPP @2008 @GPP6010 @IC-30 @VOA-GPP COD NH4-IC TOC-30	Water	06/05/08
W08P002731	B1V693	PNNL-GPP @2008 @H3-33 @IC-30 @TC99-30	Water	06/05/08
W08P002732	B1V696	PNNL-GPP @H3-33 @IC-30 @VOA-GPP	Water	06/05/08
W08P002733	B1V7V6	PNNL-GPP @GPP6010	Water	06/05/08
W08P002734	B1V7V7	PNNL-GPP @2008 @AB-32 @ALPHA @GPP6010 @H3-33 @IC-30 @TC99-30 ALKALI CN-02	Water	06/05/08
W08P002735	B1V386	PNNL-GPP @VOA-GPP	Water	06/05/08
W08P002736	B1V7W0	PNNL-GPP @GPP6010	Water	06/05/08
W08P002737	B1V7W1	PNNL-GPP @2008 @AB-32 @ALPHA @GPP6010 @H3-33 @IC-30 @TC99-30 ALKALI CN-02	Water	06/05/08

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@AB-32	Gross Alpha/Gross Beta (AB32)
@ALPHA	Gross Alpha on Alpha Plateau
@GPP6010	ICP Metals Analysis, Grd H20 P
@H3-33	Tritium by Liq Sct column prep
@IC-30	Anions by Ion Chromatography
@SR89_90	Strontium 89/90
@TC99-30	TC99 by Liquid Scin.
@VOA-GPP	VOA Ground Water Protection
ALKALI	Total Alkalinity as mg/L CaCO3
CN-02	Cyanide by Midi/Spectrophotom
COD	Chemical Oxygen Demand
NH4-IC	Ammonia (N) by IC
TOC-30	Total Organic Carbon
TOX	Total Organic Halides

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

07/24/08 2008114 2

S08-005-184

Collector R. D. Julian	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. S08-005	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title SURV, MAY 2008	4NF-N-506-12	**Ice Chest No.** 017 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 45 Days	**Offsite Property No.**

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V7X2 (F)	0008 P002714	W	06/05/08	1056	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V7X3	2715	W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V7X3		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1V7X3		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V7X3		W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1V7X3		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1V7X3		W			1x1-L G/P	Strontium-89,90 – Total Sr	HNO3 to pH <2

ICED

Relinquished By	Received By
Print R. D. Julian Sign JUN 05 2008 Date/Time 1345	Print Clifton Sign JUN 05 2008 Date/Time 1345
Relinquished By Date/Time	Received By Date/Time
Relinquished By Date/Time	Received By Date/Time
Relinquished By Date/Time	Received By Date/Time

Matrix *

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

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

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W08-006-10**

Collector R. A. Shepard	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-006	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA, JUNE 2008	HNF-N-506-15	**Ice Chest No.** ERC-96-028 **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
B1VPK1	2716	W	6/05/08	1130	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPK1	↓	W	↓	↓	1x1000-mL aGs*	9020_TOX: TOX (1)	H2SO4 to pH <2 Cool~4C
B1VPK2	2717	W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPK2	↓	W	↓	↓	1x1000-mL aGs*	9020_TOX: TOX (1)	H2SO4 to pH <2 Cool~4C
B1VPK3	2718	W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPK3	↓	W	↓	↓	1x1000-mL aGs*	9020_TOX: TOX (1)	H2SO4 to pH <2 Cool~4C
B1VPK4	2719	W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPK4	↓	W	↓	↓	1x1000-mL aGs*	9020_TOX: TOX (1)	H2SO4 to pH <2 Cool~4C

ICED

Relinquished By R. A. Shepard Print Sign	Date/Time 1345 JUN 05 2008	Received By Print Sign	Date/Time 1345 JUN 05 2008
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = 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. # **W08-006-22**

Collector R. A. Shepard	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-006	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA JUNE 2008	HNF-N-506-15	**Ice Chest No.** ERC-96-028 **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
B1VPP9	2720	W	6/05/08	1255	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPR0	2721	W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPR1	2722	W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPR2	2723	W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPR4	2724	W	↓	↓	1x500-mL G/P	Gross Alpha	HNO3 to pH <2

ICED

Relinquished By R. A. Shepard Print Sign Date/Time 1345 JUN 05 2008	Received By Print Sign Date/Time 1545 6/5/08	Matrix *
Relinquished By Date/Time	Received By Date/Time	S = Soil, SE = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air, DS = Drum Solid, DL = Drum Liqui, T = Tissue, WI = Wine, L = Liquid, V = Vegetation, X = Other
Relinquished By Date/Time	Received By Date/Time	
Relinquished By Date/Time	Received By Date/Time	

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. #
W08-006-11

Collector: R. A. Shepard	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: W08-006	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: RCRA JUNE 2008	HNF-N-506-~~65~~ 15 VEH 6/5/08	Ice Chest No.: ERC-~~08~~ 96-028 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.: 6/5/08
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
B1VPL3	2725	W	6/05/08	0900	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPL4	2726	W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPL5	2727	W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1VPL6	2728	W	↓	↓	1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C

ICED

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
R. A. Shepard	1345 JUN 05 2008		6/5/08 1345
Relinquished By	JUN 05 2008	Received By	
Relinquished By		Received By	
Relinquished By		Received By	

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

97 of 104

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# **W08-005-438**

Page 1 of 1

Collector R. Ellingsworth	Contact/Requester Steve Trent	Telephone No. 509-373-5869 MSIN FAX
SAF No. W08-005	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title RCRA MAY 2008	HNF-N-506-16	Ice Chest No. CPR-4 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
B1V8C3 (F)	2729	W	6/5/08	1210	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V8C3 (F)	↓	W			1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1)	HNO3 to pH <2
B1V8C4	2730	W			1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1V8C4		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V8C4		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V8C4		W			4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V8C4		W			1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1)	HNO3 to pH <2
B1V8C4		W			1x~~150~~-mL G/P	300.7_CATIONS_IC: Ammonia (1)	H2SO4 to pH <2
B1V8C4		W			1x500-mL G/P	410.4_COD: COD (1)	H2SO4 to pH <2 Cool~4C

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth			JUN 05 2008 1345		CA Hudson		JUN 05 2008 1345
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

I08-037-57

Collector: R. Ellingsworth	Contact/Requester: Steve Trent	Telephone No.: 509-373-5869 MSIN FAX
SAF No.: I08-037	Sampling Origin: Hanford Site	Purchase Order/Charge Code
Project Title: 2UPL MAY 2008	HNF-N-506-16	Ice Chest No.: GRP-4 Temp.
Shipped To (Lab): Waste Sampling & Characterization	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol: SURV	Priority: 45 Days	Offsite Property No.

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

SPECIAL INSTRUCTIONS Hold Time
200 Area Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V693	2731	W	6-5-08	0944	1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1V693	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V693		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1V693		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth			JUN 05 2008 1345				JUN 05 2008 1345
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

COC# I08-037-63

Collector R. Ellingsworth	Contact/Requester Steve Trent	Telephone No. 509-373-5869 MSIN FAX
SAF No. I08-037	Sampling Origin Hanford Site	Purchase Order/Charge Code
Project Title 2UPL MAY 2008	HNF-N-SOL-16	Ice Chest No. QR1-4 Temp.
Shipped To (Lab) Waste Sampling & Characterization	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.
Protocol SURV	Priority: 45 Days	Offsite Property No.

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V696	2732	W	6-5-08	1029	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V696	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V696	↓	W	↓	↓	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth	R. Ellingsworth		JUN 05 2008 1245		CA Hudson		JUN 05 2008 1345
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Chain # **S08-005-168**

Collector R. Ellingsworth	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. S08-005	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title SURV, MAY 2008	HNF-N-586-LL	**Ice Chest No.** GRP-4 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 45 Days	**Offsite Property No.**

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V7V6 (F)	2733	W	6-5-08	1114	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V7V7	2734	W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1V7V7		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1V7V7		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V7V7		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1V7V7		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V7V7		W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1V7V7		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1V7V7		W			1x250-mL G/P	335.2_CYANIDE: Cyanide (1)	NaOH to pH >= 12 Cool~4C

ICED

Relinquished By	Date/Time	Received By	Date/Time
Print R. Ellingsworth Sign	JUN 05 2008 1345	Print Sign	JUN 05 2008 1345
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Matrix *

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

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

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W08-004-195

Collector R. Ellingsworth	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-004	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA, APRIL 2008	HUE-N-506-16	**Ice Chest No.** GRD-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
B1V386	2735	W	6-5-08	1029	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1V386	↓	W	↓	↓	1x20-mL P	Activity Scan	None

ICED

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
R. Ellingsworth	[signature]	JUN 05 2008 1345	CA Hudson	[signature]	JUN 05 2008 1345
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time

Matrix *

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

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

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S08-005-169**

Collector R. Ellingsworth	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. S08-005	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title SURV, MAY 2008	HWF-N-SGL-1C	**Ice Chest No.** CARP-4 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 45 Days	**Offsite Property No.**

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1V7W0 (F)	2736	W	6-5-08	0750	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V7W1	2737	W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1V7W1		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1V7W1		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1V7W1		W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1V7W1		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1V7W1		W			1x500-mL G/P	ALPHABETA_GPC: Alpha discrete + Beta (2); ALPHABETA_GPC: Alpha discrete + Beta (2)	HNO3 to pH <2
B1V7W1		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1V7W1		W			1x250-mL G/P	335.2_CYANIDE: Cyanide (1)	NaOH to pH >= 12 Cool~4C

ICED

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R. Ellingsworth			JUN 05 2008 1345				JUN 05 2008 1345
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

BLANK PAGE

NO DATA