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FLUOR

Memorandum

M4W41-SLF-08-1160

To: M. A. Neely B6-06 Date: October 16, 2008

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

cc: w/Attachments

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

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20082004

Reference:
(1) Memorandum of Agreement #MOA-FH-CHPRC-2008, Rev. 0, for the Performance & Payment of Services, dated October 1, 2008

(2) HNF-SD-CD-QAPP-017, Rev. 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF20082004:

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

SLF/grf

Attachments 4

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ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20082004
Data Deliverable Date: 16-oct-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-053	B1T3B6	W08P004431	WATER
	B1WDM9	W08P004430	WATER
I08-054	B1WF93	W08P004432	WATER
S08-008	B1WMV6	W08P004433	WATER

M4W41-SLF-08-1160

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Four groundwater samples were received at the WSCF Laboratory on September 16, 2008. Samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Memorandum of Agreement (MOA-FH-CHPRC-2008, Rev.0)*, referenced in the cover letter.

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 4) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 5.

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

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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

- Sample results were D flagged if dilution(s) were required.
- Sample results that were less than the reportable limit, however greater than the method detection limit, were B flagged.
- Fluoride – Spike Relative Percent Difference (RPD) slightly exceeded established laboratory limits. No flags issued.

All other QC controls are within the established limits.

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

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1WJK1 and B1WKW1 (SDG# 20081993).
- Uranium sample concentration (B1WJK1) exceeded spiking levels by a factor of > 10. Spike recoveries are not valid. Affected sample results in this batch were X flagged.

All other 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 31 through 34 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1WXR2 (SDG# 20081993).
- Sample results that were less than the lowest calibration standard, however greater than the method detection limit, were J flagged.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 38 through 39 for QC details. Analytical Note(s):

- Technetium-99 – Duplicate and Matrix Spike were analyzed on sample# B1WYX9 (SDG# 20081933). Matrix Spike recovery slightly exceeded established laboratory limits due to high sample activity. No flags issued.

All other QC controls are within the established limits.

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

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Pauline D. Mix
WSCF Client Services

M4W41-SLF-08-1160

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 34 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical: M. Stauffer M. Stauffer 10/16/08

Client Services: P.D. Mix 10/16/2008

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#: WSCF20082004
Report Date: 15-oct-2008
Report WGPP/ver. 5.2
GPAP

w13qlog v4.2 15-oct-2008 14:55:56

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20082004

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
38042	2	38461	42867	BLANK		Anions by Ion Chromatography
38042	14	38461	42867	BLANK		Anions by Ion Chromatography
38042	23	38461	42867	BLANK		Anions by Ion Chromatography
38042	3	38461	42867	LCS		Anions by Ion Chromatography
38042	15	38461	42867	LCS		Anions by Ion Chromatography
38042	5	38461	42867	DUP	W08P004408	Anions by Ion Chromatography
38042	6	38461	42867	MS	W08P004408	Anions by Ion Chromatography
38042	7	38461	42867	MSD	W08P004408	Anions by Ion Chromatography
38042	7	38461	42867	SPK-RPD	W08P004408	Anions by Ion Chromatography
38042	21	38461	42867	SAMPLE	W08P004430	Anions by Ion Chromatography
38042	22	38461	42867	SAMPLE	W08P004431	Anions by Ion Chromatography
38042	17	38461	42867	DUP	W08P004432	Anions by Ion Chromatography
38042	18	38461	42867	MS	W08P004432	Anions by Ion Chromatography
38042	19	38461	42867	MSD	W08P004432	Anions by Ion Chromatography
38042	16	38461	42867	SAMPLE	W08P004432	Anions by Ion Chromatography
38042	19	38461	42867	SPK-RPD	W08P004432	Anions by Ion Chromatography
38188	1	38613	43038	BLANK		ICP-200.8 MS All possible meta
38188	2	38613	43038	BLANK		ICP-200.8 MS All possible meta
38188	3	38613	43038	LCS		ICP-200.8 MS All possible meta
38188	4	38613	43038	LCS		ICP-200.8 MS All possible meta
38188	6	38613	43038	MS	W08P004399	ICP-200.8 MS All possible meta
38188	7	38613	43038	MSD	W08P004399	ICP-200.8 MS All possible meta
38188	7	38613	43038	SPK-RPD	W08P004399	ICP-200.8 MS All possible meta
38188	9	38613	43038	MS	W08P004401	ICP-200.8 MS All possible meta
38188	10	38613	43038	MSD	W08P004401	ICP-200.8 MS All possible meta
38188	10	38613	43038	SPK-RPD	W08P004401	ICP-200.8 MS All possible meta
38188	19	38613	43038	SAMPLE	W08P004430	ICP-200.8 MS All possible meta
38188	20	38613	43038	SAMPLE	W08P004431	ICP-200.8 MS All possible meta

w13qlog v4.2 15-oct-2008 14:55:56

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20082004

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			43270	BLANK		VOA Ground Water Protection
			43270	LCS		VOA Ground Water Protection
			43270	MS	W08P004416	VOA Ground Water Protection
			43270	MSD	W08P004416	VOA Ground Water Protection
			43270	SPK-RPD	W08P004416	VOA Ground Water Protection
			43270	SAMPLE	W08P004430	VOA Ground Water Protection
			43270	SURR	W08P004430	VOA Ground Water Protection
			43270	SAMPLE	W08P004431	VOA Ground Water Protection
			43270	SURR	W08P004431	VOA Ground Water Protection
			43270	SAMPLE	W08P004432	VOA Ground Water Protection
			43270	SURR	W08P004432	VOA Ground Water Protection
			43270	SAMPLE	W08P004433	VOA Ground Water Protection
			43270	SURR	W08P004433	VOA Ground Water Protection

w13qlog v4.2 15-oct-2008 14:55:56

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20082004

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
38155	1	38584	43278	BLANK		Tritium by Liq Sct column prep
38155	2	38584	43278	LCS		Tritium by Liq Sct column prep
38155	4	38584	43278	DUP	W08P004430	Tritium by Liq Sct column prep
38155	3	38584	43278	MS	W08P004430	Tritium by Liq Sct column prep
38155	5	38584	43278	SAMPLE	W08P004430	Tritium by Liq Sct column prep
38155	6	38584	43278	SAMPLE	W08P004431	Tritium by Liq Sct column prep
38253	1	38603	43307	BLANK		TC99 by Liquid Scin.
38253	2	38603	43307	LCS		TC99 by Liquid Scin.
38253	4	38603	43307	DUP	W08P004361	TC99 by Liquid Scin.
38253	3	38603	43307	MS	W08P004361	TC99 by Liquid Scin.
38253	13	38603	43307	SAMPLE	W08P004430	TC99 by Liquid Scin.
38253	16	38603	43307	SAMPLE	W08P004431	TC99 by Liquid Scin.
38253	17	38603	43307	SAMPLE	W08P004432	TC99 by Liquid Scin.

WSCF
METHOD REFERENCES REPORT

Department: Inorganic

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

LA-505-412 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-533-410 LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY

EPA-600/R-94-111 300.0	DETERMINATION OF INORGANIC ANIONS BY ION CHROMATOGRAPHY
HEIS 300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

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

WSCF
METHOD REFERENCES REPORT

Department: Organic

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

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

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

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

WSCF
METHOD REFERENCES REPORT

Department: Radiochemistry

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

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

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

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-053
Sample # W08P004430
Client ID: B1WDM9 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Inorganic
Sampled: 09/16/08
Received: 09/16/08

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	0.317	mg/L			2.00	0.046		09/16/08
Chloride	16887-00-6	LA-533-410	D	8.97	mg/L			2.00	0.094		09/16/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		09/16/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	20.3	mg/L			10.00	0.12		09/16/08
Sulfate	14808-79-8	LA-533-410	D	28.8	mg/L			2.00	0.26		09/16/08
ICP-200.8 MS All possible meta Prep											**09/25/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412	X	138	ug/L			1.00	0.0500		09/25/08

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

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(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: I08-053
Sample # W08P004431
Client ID: B1T3B6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Inorganic
Sampled: 09/16/08
Received: 09/16/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	BD	0.165	mg/L			2.00	0.046		09/16/08
Chloride	16887-00-6	LA-533-410	D	8.45	mg/L			2.00	0.094		09/16/08
Nitrogen in Nitrite	NO2-N	LA-533-410	BD	0.135	mg/L			2.00	0.026		09/16/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	15.7	mg/L			10.00	0.12		09/16/08
Sulfate	14808-79-8	LA-533-410	D	35.4	mg/L			2.00	0.26		09/16/08
ICP-200.8 MS All possible meta Prep											**09/25/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412	X	1.66	ug/L			1.00	0.0500		09/25/08

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

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(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: I08-054
Sample # W08P004432
Client ID: B1WF93 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Inorganic
Sampled: 09/16/08
Received: 09/16/08

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	0.174	mg/L			2.00	0.046		09/16/08
Chloride	16887-00-6	LA-533-410	D	14.2	mg/L			2.00	0.094		09/16/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		09/16/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	2.32	mg/L			2.00	0.024		09/16/08
Sulfate	14808-79-8	LA-533-410	D	23.1	mg/L			2.00	0.26		09/16/08

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

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20082004
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 09/15/08
Receive Date:09/15/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004408											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	3.6965		RPD			1.424	20.000		09/16/08
DUP	Fluoride	16984-48-8	<4.64e-2		RPD			n/a	20.000	U	09/16/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	09/16/08
DUP	Nitrogen in Nitrate	NO3-N	4.4075		RPD			0.207	20.000		09/16/08
DUP	Sulfate	14808-79-8	19.9245		RPD			0.056	20.000		09/16/08
MS	Chloride	16887-00-6	0.90045	90.497	% Recov	80.000	120.000				09/16/08
MS	Fluoride	16984-48-8	0.50075	101.572	% Recov	80.000	120.000				09/16/08
MS	Nitrogen in Nitrite	NO2-N	0.5005	101.728	% Recov	80.000	120.000				09/16/08
MS	Nitrogen in Nitrate	NO3-N	0.42205	94.630	% Recov	80.000	120.000				09/16/08
MS	Sulfate	14808-79-8	1.79375	91.518	% Recov	80.000	120.000				09/16/08
MSD	Chloride	16887-00-6	1.01355	101.864	% Recov	80.000	120.000				09/16/08
MSD	Fluoride	16984-48-8	0.49205	99.807	% Recov	80.000	120.000				09/16/08
MSD	Nitrogen in Nitrite	NO2-N	0.5166	105.000	% Recov	80.000	120.000				09/16/08
MSD	Nitrogen in Nitrate	NO3-N	0.43575	97.702	% Recov	80.000	120.000				09/16/08
MSD	Sulfate	14808-79-8	1.8255	93.138	% Recov	80.000	120.000				09/16/08
SPK-RPD	Chloride	16887-00-6	101.864		RPD			11.818	20.000		09/16/08
SPK-RPD	Fluoride	16984-48-8	99.807		RPD			1.753	20.000		09/16/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	105.000		RPD			3.166	20.000		09/16/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	97.702		RPD			3.194	20.000		09/16/08
SPK-RPD	Sulfate	14808-79-8	93.138		RPD			1.755	20.000		09/16/08
Lab ID: W08P004432											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	14.3446		RPD			1.039	20.000		09/16/08
DUP	Fluoride	16984-48-8	0.1767		RPD			1.482	20.000		09/16/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	09/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20082004
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 09/16/08
Receive Date:09/16/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
DUP	Nitrogen in Nitrate	NO3-N	2.3174		RPD			0.017	20.000		09/16/08
DUP	Sulfate	14808-79-8	22.8852		RPD			1.000	20.000		09/16/08
MS	Chloride	16887-00-6	0.9085	91.307	% Recov	80.000	120.000				09/16/08
MS	Fluoride	16984-48-8	0.5535	112.272	% Recov	80.000	120.000				09/16/08
MS	Nitrogen in Nitrite	NO2-N	0.52535	106.778	% Recov	80.000	120.000				09/16/08
MS	Nitrogen in Nitrate	NO3-N	0.4423	99.170	% Recov	80.000	120.000				09/16/08
MS	Sulfate	14808-79-8	1.8073	92.209	% Recov	80.000	120.000				09/16/08
MSD	Chloride	16887-00-6	0.87795	88.236	% Recov	80.000	120.000				09/16/08
MSD	Fluoride	16984-48-8	0.4339	88.012	% Recov	80.000	120.000				09/16/08
MSD	Nitrogen in Nitrite	NO2-N	0.5078	103.211	% Recov	80.000	120.000				09/16/08
MSD	Nitrogen in Nitrate	NO3-N	0.4488	100.628	% Recov	80.000	120.000				09/16/08
MSD	Sulfate	14808-79-8	1.7988	91.776	% Recov	80.000	120.000				09/16/08
SPK-RPD	Chloride	16887-00-6	88.236		RPD			3.421	20.000		09/16/08
SPK-RPD	Fluoride	16984-48-8	88.012		RPD			24.226	20.000 *		09/16/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	103.211		RPD			3.397	20.000		09/16/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	100.628		RPD			1.459	20.000		09/16/08
SPK-RPD	Sulfate	14808-79-8	91.776		RPD			0.471	20.000		09/16/08
BATCH QC											
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	09/16/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	09/16/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	09/16/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	09/16/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	09/16/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	09/16/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	09/16/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	09/16/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	09/16/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	09/16/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	09/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20082004
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 Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	09/16/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	09/16/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	09/16/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	09/16/08
LCS	Chloride	16887-00-6	187.2846	93.176	% Recov	80.000	120.000				09/16/08
LCS	Chloride	16887-00-6	194.4177	96.725	% Recov	80.000	120.000				09/16/08
LCS	Fluoride	16984-48-8	96.0487	96.434	% Recov	80.000	120.000				09/16/08
LCS	Fluoride	16984-48-8	104.8507	105.272	% Recov	80.000	120.000				09/16/08
LCS	Nitrogen in Nitrite	NO2-N	99.2671	99.866	% Recov	80.000	120.000				09/16/08
LCS	Nitrogen in Nitrite	NO2-N	98.85	99.447	% Recov	80.000	120.000				09/16/08
LCS	Nitrogen in Nitrate	NO3-N	93.2385	103.483	% Recov	80.000	120.000				09/16/08
LCS	Nitrogen in Nitrate	NO3-N	92.1822	102.311	% Recov	80.000	120.000				09/16/08
LCS	Sulfate	14808-79-8	389.5338	98.367	% Recov	80.000	120.000				09/16/08
LCS	Sulfate	14808-79-8	386.4394	97.586	% Recov	80.000	120.000				09/16/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20082004
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 09/15/08
Receive Date:09/15/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004399											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	21.7	54.250	% Recov	70.000	130.000		•		09/25/08
MSD	Uranium	7440-61-1	2.4	6.000	% Recov	70.000	130.000		•		09/25/08
SPK-RPD	Uranium	7440-61-1	6.000		RPD			160.166	20.000 •		09/25/08
Lab ID: W08P004401											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	40.8	102.000	% Recov	70.000	130.000				09/25/08
MSD	Uranium	7440-61-1	39.8	99.500	% Recov	70.000	130.000				09/25/08
SPK-RPD	Uranium	7440-61-1	99.500		RPD			2.481	20.000		09/25/08
BATCH QC											
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	09/25/08
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	09/25/08
LCS	Uranium	7440-61-1	38.49	96.225	% Recov	85.000	115.000				09/25/08
LCS	Uranium	7440-61-1	39.72	99.300	% Recov	85.000	115.000				09/25/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20082004
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		IC Anion - Sample spike RPD out of limits for fluoride in sample W08P004432. No flag required. DTS Tc-99 MS high. All other QC acceptable. Batch is OK. ICP-MS:Sample result for sample P-4399 more than 10 times the spike amount. Recovery data not valid.

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-053
Sample # W08P004430
Client ID: B1WDM9 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Organic
Sampled: 09/16/08
Received: 09/16/08

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		09/17/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Carbon tetrachloride	56-23-5	LA-523-455		110	ug/L			1.00	1.0		09/17/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Chloroform	67-66-3	LA-523-455	J	2.20	ug/L			1.00	1.0		09/17/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		09/17/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		09/17/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08

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

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(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: I08-053
Sample # W08P004430
Client ID: B1WDM9 PNNL-GPP WSCF
Matrix: WATER

Group #: WSCF20082004
Department: Organic
Sampled: 09/16/08
Received: 09/16/08

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		09/17/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-053
Sample # W08P004431
Client ID: B1T3B6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Organic
Sampled: 09/16/08
Received: 09/16/08

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		09/17/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		09/17/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		09/17/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-053
Sample # W08P004431
Client ID: B1T3B6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Organic
Sampled: 09/16/08
Received: 09/16/08

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		09/17/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08

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

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

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

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P004432
Client ID: B1WF93 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Organic
Sampled: 09/16/08
Received: 09/16/08

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		09/17/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
4-Methyl-2-Pentenone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Carbon tetrachloride	56-23-5	LA-523-455		40.0	ug/L			1.00	1.0		09/17/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		09/17/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		09/17/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-054
Sample # W08P004432
Client ID: B1WF93 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Organic
Sampled: 09/16/08
Received: 09/16/08

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		09/17/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08

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

B - The analyte < the RDL but > = the IDL/MDL (inorg)
J - Analyte < lowest calibration but > = MDL.(org)
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D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: S08-008
Sample # W08P004433
Client ID: B1WMV6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Organic
Sampled: 09/16/08
Received: 09/16/08

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		09/17/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		09/17/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		09/17/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08

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

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(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: S08-008
Sample # W08P004433
Client ID: B1WMV6 PNNL-GPP WSCF
Matrix: WATER

Group #: WSCF20082004
Department: Organic
Sampled: 09/16/08
Received: 09/16/08

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		09/17/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/17/08

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

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20082004
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 09/15/08
Receive Date:09/15/08

Lab ID: W08P004416
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	25.230	101.000	% Recov	63.000	117.000				09/17/08
MS	Benzene	71-43-2	24.140	96.600	% Recov	75.000	129.000				09/17/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	47.870	95.700	% Recov	75.000	125.000				09/17/08
MS	Chlorobenzene	108-90-7	24.860	99.400	% Recov	79.000	119.000				09/17/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.410	103.000	% Recov	75.000	125.000				09/17/08
MS	Toluene-d8(Surr)	2037-26-5	47.030	94.100	% Recov	75.000	125.000				09/17/08
MS	Toluene	108-88-3	24.310	97.200	% Recov	76.000	120.000				09/17/08
MS	Trichloroethene	79-01-6	20.000	80.000	% Recov	73.000	123.000				09/17/08
MSD	1,1-Dichloroethene	75-35-4	22.490	90.000	% Recov	63.000	117.000				09/17/08
MSD	Benzene	71-43-2	23.780	95.100	% Recov	75.000	129.000				09/17/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	47.570	95.100	% Recov	75.000	125.000				09/17/08
MSD	Chlorobenzene	108-90-7	24.820	99.300	% Recov	79.000	119.000				09/17/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.400	103.000	% Recov	75.000	125.000				09/17/08
MSD	Toluene-d8(Surr)	2037-26-5	46.900	93.800	% Recov	75.000	125.000				09/17/08
MSD	Toluene	108-88-3	23.950	95.800	% Recov	76.000	120.000				09/17/08
MSD	Trichloroethene	79-01-6	20.400	81.600	% Recov	73.000	123.000				09/17/08
SPK-RPD	1,1-Dichloroethene	75-35-4	90.000		RPD			11.518	20.000		09/17/08
SPK-RPD	Benzene	71-43-2	95.100		RPD			1.565	20.000		09/17/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	95.100		RPD			0.629	20.000		09/17/08
SPK-RPD	Chlorobenzene	108-90-7	99.300		RPD			0.101	20.000		09/17/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	103.000		RPD			0.000	20.000		09/17/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	93.800		RPD			0.319	20.000		09/17/08
SPK-RPD	Toluene	108-88-3	95.800		RPD			1.451	20.000		09/17/08
SPK-RPD	Trichloroethene	79-01-6	81.600		RPD			1.980	20.000		09/17/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20082004
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 09/16/08
Receive Date:09/16/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004430											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	47.480	95.000	% Recov	75.000	125.000				09/17/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.400	103.000	% Recov	75.000	125.000				09/17/08
SURR	Toluene-d8(Surr)	2037-26-5	47.690	95.400	% Recov	75.000	125.000				09/17/08
Lab ID: W08P004431											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	47.620	95.200	% Recov	75.000	125.000				09/17/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	50.780	102.000	% Recov	75.000	125.000				09/17/08
SURR	Toluene-d8(Surr)	2037-26-5	47.650	95.300	% Recov	75.000	125.000				09/17/08
Lab ID: W08P004432											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	47.190	94.400	% Recov	75.000	125.000				09/17/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.550	103.000	% Recov	75.000	125.000				09/17/08
SURR	Toluene-d8(Surr)	2037-26-5	47.890	95.800	% Recov	75.000	125.000				09/17/08
Lab ID: W08P004433											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	47.120	94.200	% Recov	75.000	125.000				09/17/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.210	102.000	% Recov	75.000	125.000				09/17/08
SURR	Toluene-d8(Surr)	2037-26-5	47.620	95.200	% Recov	75.000	125.000				09/17/08
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	09/17/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	09/17/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	09/17/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	09/17/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20082004
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	09/17/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	09/17/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	09/17/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	09/17/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	47.980	96.000	% Recov	75.000	125.000				09/17/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	09/17/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	09/17/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.120	102.000	% Recov	75.000	125.000				09/17/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	09/17/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	09/17/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	09/17/08
BLANK	Toluene-d8(Surr)	2037-26-5	47.310	94.600	% Recov	75.000	125.000				09/17/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	09/17/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	09/17/08
LCS	1,1-Dichloroethene	75-35-4	22.730	90.900	% Recov	75.000	125.000				09/18/08
LCS	Benzene	71-43-2	24.230	96.900	% Recov	75.000	125.000				09/18/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	47.000	94.000	% Recov	75.000	125.000				09/18/08
LCS	Chlorobenzene	108-90-7	24.580	98.300	% Recov	75.000	125.000				09/18/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.090	102.000	% Recov	75.000	125.000				09/18/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Organic**

SDG Number: WSCF20082004
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Toluene-d8(Surr)	2037-26-5	47.300	94.600	% Recov	75.000	125.000				09/18/08
LCS	Toluene	108-88-3	24.100	96.400	% Recov	75.000	125.000				09/18/08
LCS	Trichloroethene	79-01-6	20.660	82.600	% Recov	75.000	125.000				09/18/08

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-053
Sample # W08P004430
Client ID: B1WDM9 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Radiochemistry
Sampled: 09/16/08
Received: 09/16/08

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		7.70e+03	pCi/L	+-1.54e+03	pCi/L	1.00	5.9		09/26/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		260	pCi/L	+-148	pCi/L	1.00	2.3e+02		10/10/08

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

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(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: I08-053
Sample # W08P004431
Client ID: B1T3B6 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Radiochemistry
Sampled: 09/16/08
Received: 09/16/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421	U	2.30	pCi/L	+-3.52	pCi/L	1.00	5.9		09/26/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	-110	pCi/L	+-133	pCi/L	1.00	2.3e+02		10/10/08

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

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(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: I08-054
Sample # W08P004432
Client ID: B1WF93 PNNL-GPP WSCF

Matrix: WATER

Group #: WSCF20082004
Department: Radiochemistry
Sampled: 09/16/08
Received: 09/16/08

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		7.80	pCi/L	+-3.98	pCi/L	1.00	5.9		09/26/08

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

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20082004
Matrix: WATER
Test: TC99 by Liquid Scin.

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004361											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	1.1E+03		RPD			9.524	20.000		10/02/08
MS	Tc-99 by Liquid Scin.	14133-76-7	798.2	125.377	% Recov	75.000	125.000			•	10/02/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U0.4	n/a	pCi/L	-10.000	10.000				10/02/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	169.8	106.658	% Recov	80.000	120.000				10/02/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20082004
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 09/16/08
Receive Date:09/16/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004430											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	2.4E+02		RPD			8.000	20.000		10/10/08
MS	Tritium	10028-17-8	20542	91.580	% Recov	75.000	125.000				10/10/08
BATCH QC											
BLANK	Tritium	10028-17-8	U-9.0E+01	n/a	pCi/L	-10.000	1000.000				10/10/08
LCS	Tritium	10028-17-8	3090	91.450	% Recov	80.000	120.000				10/10/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20082004
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		IC Anion - Sample spike RPD out of limits for fluoride in sample W08P004432. No flag required. DTS Tc-99 MS high. All other QC acceptable. Batch is OK. ICP-MS:Sample result for sample P-4399 more than 10 times the spike amount. Recovery data not valid.

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

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M4W41-SLF-08-1160

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 6 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. BOX 1970 S3-30, Richland, WA 99352
PHONE: (509) 373-7004/FAX: (509) 373-7134

File
10/16/08

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20082004

The following samples were received from you on 09/16/08. 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
W08P004430	B1WDM9	PNNL-GPP @2008 @H3-33 @IC-30 @TC99-30 @VOA-GPP	Water	09/16/08
W08P004431	B1T3B6	PNNL-GPP @2008 @H3-33 @IC-30 @TC99-30 @VOA-GPP	Water	09/16/08
W08P004432	B1WF93	PNNL-GPP @IC-30 @TC99-30 @VOA-GPP	Water	09/16/08
W08P004433	B1WMV6	PNNL-GPP @VOA-GPP	Water	09/16/08

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@H3-33	Tritium by Liq Sct column prep
@IC-30	Anions by Ion Chromatography
@TC99-30	TC99 by Liquid Scin.
@VOA-GPP	VOA Ground Water Protection

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

10/16/08 20082004

I08-053-18

Collector D. Woehle	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-053	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2UPL AUGUST 2008	HNF-N-306/b	**Ice Chest No.** GWS-024 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 30 Days **PRIORITY**	**Offsite Property No.**

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B1WDM9	W08P004430	W	9/16/08	1238	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	14 Days	HCl or H2SO4 to pH <2 Cool~4C
B1WDM9		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	28 Days/48 Hours	Cool~4C
B1WDM9		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	6 Months	HCl to pH <2
B1WDM9		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	6 Months	None
B1WDM9		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	D. Woehle		SEP 16 2008 1500	TA Ornazin			SEP 16 2008 1500
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

I08-023-167

Collector D. Woehle	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-023	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2ZPL FEBRUARY 2008	HWF-N-501/6	**Ice Chest No.** GW5-029 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 45 Days	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** **

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1T3B6	4431	W	9/16/08	1418	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1T3B6	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1T3B6		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1T3B6		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1T3B6		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2

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Relinquished By	Received By
Print / Sign / Date/Time: D. Woehle / SEP 16 2008 1500	Print / Sign / Date/Time: TAFNAZIAN Teresa / SEP 16 2008 1500
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

I08-054-117

Collector D. Woehle	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-054	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2ZPL AUGUST 2008	HNF-N-506-16	**Ice Chest No.** GU5-029 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol CERCLA	**Priority:** 30 Days **PRIORITY**	**Offsite Property No.**

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1WF93	4432	W	9/16/08	1104	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1WF93	↓	W	↓	↓	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1WF93	↓	W	↓	↓	1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. Woehle			1500 SEP 16 2008	TA FRAZIER			1500 SEP 16 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

S08-008-89

Collector D. Woehle	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. S08-008	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title SURV. AUGUST 2008	HNF-N-506-1L	**Ice Chest No.** GWS-029 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 30 Days **PRIORITY**	**Offsite Property No.**

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

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

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1WMV6	4433	W	9/16/08	1104	1x20-mL P	Activity Scan	None
B1WMV6	↓	W	↓	↓	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D. Woehle			SEP 16 2008 1500	TA FRAZIM			SEP 16 2008 1500
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
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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