

RECEIVED SEPTEMBER 23, 2008

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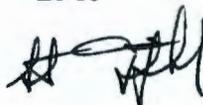
Fluor Hanford
WSCF Analytical Lab
P.O. Box 1000
Richland, WA 99352
Telephone 373-7495
Telefax 372-0456

FLUOR

Memorandum

M4W41-SLF-08-1049

To: H. Hampt E6-35 Date: September 23, 2008

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

cc: w/Attachments

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

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20081828

- 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 WSCF20081828:

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

SLF/grf

Attachments 4

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M4W41-SLF-08-1049

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081828
Data Deliverable Date: 24-sep-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-043	B1VL04	W08P004196	WATER
	B1VI05	W08P004197	WATER

M4W41-SLF-08-1049

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Two groundwater samples were received at the WSCF Laboratory on August 25, 2008. Samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

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

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report*, pages 11 through 12, 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 15 through 16 for QC details. Analytical Note(s):

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

All QC controls are within the established limits.

ICP-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 17 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1WDN1 (SDG# 20081849) and B1WDN7 (20081887).

All QC controls are within the established limits.

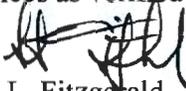
Organic Comments

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 20 through 22 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1WMT8 (SDG# 20081811).

All QC controls are within the established limits.

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



Scot L. Fitzgerald
WSCF Analytical Laboratory Manager



Pauline D. Mix
WSCF Client Services

M4W41-SLF-08-1049

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 16 pages
Including cover page

**WSCF
ANALYTICAL RESULTS REPORT**

for

**GPAP
Richland, WA 99352**

Attention: Steve Trent E6-35

Analytical: Stall S. Fitzgerald 9/23/08
Client Services: CDu P.D. Mix 9/23/2008

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

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Report#: WSCF20081828
Report Date: 23-sep-2008
Report WGPP/ver. 5.2
GPAP

Page 1

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081828

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37774	2	38210	42578	BLANK		Anions by Ion Chromatography
37774	12	38210	42578	BLANK		Anions by Ion Chromatography
37774	3	38210	42578	LCS		Anions by Ion Chromatography
37774	5	38210	42578	DUP	W08P004197	Anions by Ion Chromatography
37774	6	38210	42578	MS	W08P004197	Anions by Ion Chromatography
37774	7	38210	42578	MSD	W08P004197	Anions by Ion Chromatography
37774	4	38210	42578	SAMPLE	W08P004197	Anions by Ion Chromatography
37774	7	38210	42578	SPK-RPD	W08P004197	Anions by Ion Chromatography
38030	1	38452	42858	BLANK		ICP-200.8 MS All possible meta
38030	2	38452	42858	BLANK		ICP-200.8 MS All possible meta
38030	3	38452	42858	LCS		ICP-200.8 MS All possible meta
38030	4	38452	42858	LCS		ICP-200.8 MS All possible meta
38030	22	38452	42858	SAMPLE	W08P004196	ICP-200.8 MS All possible meta
38030	23	38452	42858	SAMPLE	W08P004197	ICP-200.8 MS All possible meta
38030	6	38452	42858	MS	W08P004214	ICP-200.8 MS All possible meta
38030	7	38452	42858	MSD	W08P004214	ICP-200.8 MS All possible meta
38030	7	38452	42858	SPK-RPD	W08P004214	ICP-200.8 MS All possible meta
38030	9	38452	42858	MS	W08P004270	ICP-200.8 MS All possible meta
38030	10	38452	42858	MSD	W08P004270	ICP-200.8 MS All possible meta
38030	10	38452	42858	SPK-RPD	W08P004270	ICP-200.8 MS All possible meta

W13q Worklist/Batch/QC Report for Group# WSCF20081828

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			42857	BLANK		VOA Ground Water Protection
			42857	LCS		VOA Ground Water Protection
			42857	MS	W08P004172	VOA Ground Water Protection
			42857	MSD	W08P004172	VOA Ground Water Protection
			42857	SPK-RPD	W08P004172	VOA Ground Water Protection
			42857	SAMPLE	W08P004197	VOA Ground Water Protection
			42857	SURR	W08P004197	VOA Ground Water Protection

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>.

Report Date: 23-sep-2008
Report#: WSCF20081828
Report WGPPM/5.2

Page 2

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>.

Report Date: 23-sep-2008

Report#: WSCF20081828

Report WGPPM/5.2

Page 1

WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P004196
Client ID: B1VL04

Group #: WSCF20081828
Department: Inorganic
Sampled: 08/25/08
Received: 08/25/08

TRENT

Matrix: WATER

WSCF

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP-200.8 MS All possible meta Prep											09/15/08
ICP-200.8 MS All possible meta											
Arsenic	7440-38-2	LA-505-412		2.57	ug/L			1.00	0.400		09/15/08

MDL=Minimum Detection Limit

RQ=Result Qualifier

TP Err=Total Propagated Error

DF=Dilution Factor

D - Analyte was identified at a secondary dilution factor(inorg)

U - Analyzed for but not detected above limiting criteria.(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: WSCF20081828
 Matrix: WATER
 Test: Anions by Ion Chromatography

Sample Date: 08/25/08
 Receive Date: 08/25/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
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Lab ID: W08P004197
BATCH QC ASSOCIATED WITH SAMPLE

DUP	Chloride	16887-00-6	12.2555		RPD			0.194	20.000		08/26/08
DUP	Fluoride	16984-48-8	0.1817		RPD			14.781	20.000		08/26/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/26/08
DUP	Nitrogen in Nitrate	NO3-N	2.1634		RPD			0.130	20.000		08/26/08
DUP	Sulfate	14808-79-8	21.0648		RPD			0.467	20.000		08/26/08
MS	Chloride	16887-00-6	0.97235	97.724	% Recov	80.000	120.000				08/26/08
MS	Fluoride	16984-48-8	0.4955	100.507	% Recov	80.000	120.000				08/26/08
MS	Nitrogen in Nitrite	NO2-N	0.43925	89.278	% Recov	80.000	120.000				08/26/08
MS	Nitrogen in Nitrate	NO3-N	0.4228	94.798	% Recov	80.000	120.000				08/26/08
MS	Sulfate	14808-79-8	1.75215	89.395	% Recov	80.000	120.000				08/26/08
MSD	Chloride	16887-00-6	0.9937	99.869	% Recov	80.000	120.000				08/26/08
MSD	Fluoride	16984-48-8	0.5217	105.822	% Recov	80.000	120.000				08/26/08
MSD	Nitrogen in Nitrite	NO2-N	0.4405	89.533	% Recov	80.000	120.000				08/26/08
MSD	Nitrogen in Nitrate	NO3-N	0.4235	94.955	% Recov	80.000	120.000				08/26/08
MSD	Sulfate	14808-79-8	1.77735	90.681	% Recov	80.000	120.000				08/26/08
SPK-RPD	Chloride	16887-00-6	99.869		RPD			2.171	20.000		08/26/08
SPK-RPD	Fluoride	16984-48-8	105.822		RPD			5.152	20.000		08/26/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	89.533		RPD			0.285	20.000		08/26/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	94.955		RPD			0.185	20.000		08/26/08
SPK-RPD	Sulfate	14808-79-8	90.681		RPD			1.428	20.000		08/26/08

BATCH QC

BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/26/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/26/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/26/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/26/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081828
 Matrix: WATER
 Test: Anions by Ion Chromatography

Sample Date:
 Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/26/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/26/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/26/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/26/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/26/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/26/08
LCS	Chloride	16887-00-6	201.3368	100.168	% Recov	80.000	120.000				08/26/08
LCS	Fluoride	16984-48-8	100.5456	100.949	% Recov	80.000	120.000				08/26/08
LCS	Nitrogen in Nitrite	NO2-N	99.1932	99.792	% Recov	80.000	120.000				08/26/08
LCS	Nitrogen in Nitrate	NO3-N	92.9378	103.150	% Recov	80.000	120.000				08/26/08
LCS	Sulfate	14808-79-8	396.6338	100.160	% Recov	80.000	120.000				08/26/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081828
 Matrix: WATER
 Test: ICP-200.8 MS All possible meta

Sample Date: 08/26/08
 Receive Date: 08/26/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004214											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	43.21	108.025	% Recov	70.000	130.000				09/15/08
MS	Uranium	7440-61-1	39.23	98.075	% Recov	70.000	130.000				09/15/08
MSD	Arsenic	7440-38-2	42.84	107.100	% Recov	70.000	130.000				09/15/08
MSD	Uranium	7440-61-1	39.88	99.700	% Recov	70.000	130.000				09/15/08
SPK-RPD	Arsenic	7440-38-2	107.100		RPD			0.860	20.000		09/15/08
SPK-RPD	Uranium	7440-61-1	99.700		RPD			1.643	20.000		09/15/08
Lab ID: W08P004270											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	42.79	106.975	% Recov	70.000	130.000				09/15/08
MS	Uranium	7440-61-1	44.466	111.165	% Recov	70.000	130.000				09/15/08
MSD	Arsenic	7440-38-2	42.74	106.850	% Recov	70.000	130.000				09/15/08
MSD	Uranium	7440-61-1	44.566	111.415	% Recov	70.000	130.000				09/15/08
SPK-RPD	Arsenic	7440-38-2	106.850		RPD			0.117	20.000		09/15/08
SPK-RPD	Uranium	7440-61-1	111.415		RPD			0.225	20.000		09/15/08
BATCH QC											
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	09/15/08
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	09/15/08
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	09/15/08
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	09/15/08
LCS	Arsenic	7440-38-2	40.2	100.500	% Recov	85.000	115.000				09/15/08
LCS	Arsenic	7440-38-2	40.11	100.275	% Recov	85.000	115.000				09/15/08
LCS	Uranium	7440-61-1	40.35	100.875	% Recov	85.000	115.000				09/15/08
LCS	Uranium	7440-61-1	40.32	100.800	% Recov	85.000	115.000				09/15/08

WSCF

ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-043
Sample # W08P004197
Client ID: B1V105

Group #: WSCF20081828
Department: Organic
Sampled: 08/25/08
Received: 08/25/08

TRENT

Matrix: WATER

WSCF

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		09/04/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Carbon tetrachloride	56-23-5	LA-523-455		12.0	ug/L			1.00	1.0		09/04/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		09/04/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		09/04/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/04/08

MDL = Minimum Detection Limit

RQ = Result Qualifier

TP Err = Total Propagated Error

DF = Dilution Factor

D - Analyte was identified at a secondary dilution factor(inorg)

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

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

* - Indicates results that have NOT been validated;

+ - Indicates more than six qualifier symbols

18 of 25
 Report WGPP/ver. 5.2
 GPAP

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Organic**

SDG Number: WSCF20081828
 Matrix: WATER
 Test: VOA Ground Water Protection

Sample Date: 08/24/08
 Receive Date: 08/24/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
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Lab ID: W08P004172
 BATCH QC ASSOCIATED WITH SAMPLE

MS	1,1-Dichloroethene	75-35-4	25.190	101.000	% Recov	63.000	117.000				09/04/08
MS	Benzene	71-43-2	24.150	96.600	% Recov	75.000	129.000				09/04/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	47.320	94.600	% Recov	75.000	125.000				09/04/08
MS	Chlorobenzene	108-90-7	25.120	100.000	% Recov	79.000	119.000				09/04/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.280	107.000	% Recov	75.000	125.000				09/04/08
MS	Toluene-d8(Surr)	2037-26-5	47.140	94.300	% Recov	75.000	125.000				09/04/08
MS	Toluene	108-88-3	25.090	100.000	% Recov	76.000	120.000				09/04/08
MS	Trichloroethene	79-01-6	20.440	81.800	% Recov	73.000	123.000				09/04/08
MSD	1,1-Dichloroethene	75-35-4	22.020	88.100	% Recov	63.000	117.000				09/04/08
MSD	Benzene	71-43-2	22.890	91.600	% Recov	75.000	129.000				09/04/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	46.930	93.900	% Recov	75.000	125.000				09/04/08
MSD	Chlorobenzene	108-90-7	24.280	97.000	% Recov	79.000	119.000				09/04/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.130	104.000	% Recov	75.000	125.000				09/04/08
MSD	Toluene-d8(Surr)	2037-26-5	47.230	94.500	% Recov	75.000	125.000				09/04/08
MSD	Toluene	108-88-3	23.710	94.800	% Recov	76.000	120.000				09/04/08
MSD	Trichloroethene	79-01-6	20.470	81.900	% Recov	73.000	123.000				09/04/08
SPK-RPD	1,1-Dichloroethene	75-35-4	88.100		RPD			13.644	20.000		09/04/08
SPK-RPD	Benzene	71-43-2	91.600		RPD			5.313	20.000		09/04/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	93.900		RPD			0.743	20.000		09/04/08
SPK-RPD	Chlorobenzene	108-90-7	97.000		RPD			3.046	20.000		09/04/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	104.000		RPD			2.844	20.000		09/04/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	94.500		RPD			0.212	20.000		09/04/08
SPK-RPD	Toluene	108-88-3	94.800		RPD			5.339	20.000		09/04/08
SPK-RPD	Trichloroethene	79-01-6	81.900		RPD			0.122	20.000		09/04/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081828
 Matrix: WATER
 Test: VOA Ground Water Protection

Sample Date: 08/25/08
 Receive Date: 08/25/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
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Lab ID: W08P004197
BATCH QC ASSOCIATED WITH SAMPLE

SURR	4-Bromofluorobenzene(Surr)	460-00-4	46.180	92.400	% Recov	75.000	125.000				09/04/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.430	105.000	% Recov	75.000	125.000				09/04/08
SURR	Toluene-d8(Surr)	2037-26-5	48.180	96.400	% Recov	75.000	125.000				09/04/08

BATCH QC

BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	09/04/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	09/04/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	09/04/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	09/04/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	09/04/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	09/04/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	09/04/08
BLANK	4-Methyl-2-Pentahone	108-10-1	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	09/04/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	47.180	94.300	% Recov	75.000	125.000				09/04/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	09/04/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	09/04/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.580	107.000	% Recov	75.000	125.000				09/04/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	09/04/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Methylenechloride	75-09-2	1.5	1.500	ug/L						09/04/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081828
 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	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	09/04/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	09/04/08
BLANK	Toluene-d8(Surr)	2037-26-5	47.100	94.200	% Recov	75.000	125.000				09/04/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	09/04/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	09/04/08
LCS	1,1-Dichloroethene	75-35-4	20.930	83.700	% Recov	75.000	125.000				09/04/08
LCS	Benzene	71-43-2	22.650	90.600	% Recov	75.000	125.000				09/04/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	46.230	92.500	% Recov	75.000	125.000				09/04/08
LCS	Chlorobenzene	108-90-7	23.360	93.400	% Recov	75.000	125.000				09/04/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.650	105.000	% Recov	75.000	125.000				09/04/08
LCS	Toluene-d8(Surr)	2037-26-5	47.380	94.800	% Recov	75.000	125.000				09/04/08
LCS	Toluene	108-88-3	23.220	92.900	% Recov	75.000	125.000				09/04/08
LCS	Trichloroethene	79-01-6	20.480	81.900	% Recov	75.000	125.000				09/04/08

M4W41-SLF-08-1049

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 3 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
Due
10/9/08*

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081828

The following samples were received from you on 08/25/08. 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
W08P004196	B1VL04	@2008	TRENT Water	08/25/08
W08P004197	B1V105	@2008	TRENT Water @IC-30 @VOA-GPP	08/25/08

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@IC-30	Anions by Ion Chromatography
@VOA-GPP	VOA Ground Water Protection

10/9/08

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector D. J. Sparks	Contact/Requester Steve Trent	Telephone No. 509-373-5869	MSIN	FAX
SAF No. 108-043	Sampling Origin Hanford Site	Purchase Order/Charge Code		
Project Title 2UPL JUNE 2008	INF-N-506-14	Ice Chest No. ERC-1	Temp.	
Shipped To (Lab) Waste Sampling & Characterization	Method of Shipment Govt. Vehicle	Bill of Lading/Air Bill No.		
Protocol SURV	Priority: 45 Days	Offsite Property No.		

POSSIBLE SAMPLE HAZARDS/REMARKS
 ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)
20081820

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
B1VL04 (F)	W08P00496	W	8/25/08	1352	1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1)	HNO3 to pH <2
B1VL05	W08P00497	W			4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool-4C
B1VL05		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1VL05		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool-4C
B1VL05		W			1x500-mL G/P	200.8_METALS_ICPMS: Arsenic (1)	HNO3 to pH <2
							ICED

Relinquished By D. J. Sparks	Print Sign <i>[Signature]</i>	Date/Time AUG 25 2008 1410	Received By <i>[Signature]</i>	Print Sign <i>[Signature]</i>	Date/Time AUG 25 2008 1410	Matrix * S = Soil DS = Drum Solid SF = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By		Date/Time	Received By		Date/Time	
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

25 of 25