

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

Memorandum

To: H. Hampt E6-35 Date: M4W41-SLF-08-288
March 13, 2008

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

cc: w/Attachments
T. F. Dale S3-30 J. E. Trechter S3-30
H. K. Mezmarich S3-30 S. J. Trent E6-35
P. D. Mix S3-30 File/LB

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20080384 – SAF NUMBER F07-075

Reference: (1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEM-001, October 31, 2002
(2) HNF-SD-CD-QAPP-017, Rev. 8, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF20080384:

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

SLF/grf

Attachments 4

RECEIVED
JUN 26 2008
EDMC

M4W41-SLF-08-288

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20080384
Data Deliverable Date: 12-mar-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
F07-075	B1PM68 B1PM96	W08GR00368 W08GR00369	WATER WATER

M4W41-SLF-08-288

ATTACHMENT 2

NARRATIVE

Consisting of 2 pages
Including cover page

Introduction

Two S&GRP samples were received at the WSCF Laboratory on February 27, 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 10 through 11, for a complete listing of approved analytical methods.

Organic Comments

VOA – The holding 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 13 through 14 for QC details.

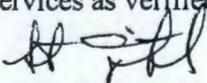
All QC controls are within the established limits.

Radiochemistry Comments

Tc-99 Screen by ICP-MS – The holding time requirement for this analysis was met. A Blank and Laboratory Control Sample were analyzed with this delivery group. See page 16 for QC details.

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


John E. Trechter
WSCF Client Services

M4W41-SLF-08-288

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 11 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical:

S. Fitzgerald 2/13/08

Client Services:

John Trechter 3/13/84

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

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Contract#: FH-EIS-2003-MEM-001

Report#: WSCF20080384

Report Date: 13-mar-2008

Report WGPP/ver. 5.2

Groundwater Remediation Program

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20080384

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			40168	BLANK		VOA Ground Water Protection
			40168	LCS		VOA Ground Water Protection
			40168	MS	W08GR00368	VOA Ground Water Protection
			40168	MSD	W08GR00368	VOA Ground Water Protection
			40168	SAMPLE	W08GR00368	VOA Ground Water Protection
			40168	SPK-RPD	W08GR00368	VOA Ground Water Protection
			40168	SURR	W08GR00368	VOA Ground Water Protection

w13qlog v4.2 13-mar-2008 08:03:24

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20080384

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
35345	1	35750	40032	BLANK		TC99 by ICP-200.8 MS
35345	2	35750	40032	LCS		TC99 by ICP-200.8 MS
35345	3	35750	40032	SAMPLE	W08GR00369	TC99 by ICP-200.8 MS

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: 13-mar-2008

Report #: WSCF20080384

Report WGPPM/5.2

Page 1

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-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

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: 13-mar-2008
Report#: WSCF20080384
Report WGPPM/5.2

Page 2

WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-075
Sample # W08GR00368
Client ID: B1PM68

GPP TRENT
WSCF

Matrix: WATER

Group #: WSCF20080384
Department: Organic
Sampled: 02/27/08
Received: 02/27/08

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		02/28/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		02/28/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		02/28/08
Toluene	108-88-3	LA-523-455	J	1.60	ug/L			1.00	1.0		02/28/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		02/28/08
Carbon tetrachloride	56-23-5	LA-523-455		22.0	ug/L			1.00	1.0		02/28/08

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

J - Analyte < lowest calibration but > = MDL.(org)
 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

Report WGPP/ver. 5.2

Groundwater Remediation Program

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20080384
 Matrix: WATER
 Test: VOA Ground Water Protection

Sample Date: 02/27/08
 Receive Date: 02/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR00368 BATCH QC ASSOCIATED WITH SAMPLE											
MS	1,1-Dichloroethene	75-35-4	22.260	89.000	% Recov	63.000	117.000				02/28/08
MS	Benzene	71-43-2	23.980	95.900	% Recov	75.000	129.000				02/28/08
MS	4-Bromofluorobenzene(Surr)	480-00-4	48.870	97.700	% Recov	75.000	125.000				02/28/08
MS	Chlorobenzene	108-90-7	24.890	99.600	% Recov	79.000	119.000				02/28/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	49.780	99.600	% Recov	75.000	125.000				02/28/08
MS	Toluene-d8(Surr)	2037-26-5	51.910	104.000	% Recov	75.000	125.000				02/28/08
MS	Toluene	108-88-3	25.968	104.000	% Recov	76.000	120.000				02/28/08
MS	Trichloroethene	79-01-6	20.600	82.400	% Recov	73.000	123.000				02/28/08
MSD	1,1-Dichloroethene	75-35-4	21.230	84.900	% Recov	63.000	117.000				02/28/08
MSD	Benzene	71-43-2	24.640	98.600	% Recov	75.000	129.000				02/28/08
MSD	4-Bromofluorobenzene(Surr)	480-00-4	48.780	97.600	% Recov	75.000	125.000				02/28/08
MSD	Chlorobenzene	108-90-7	25.780	103.000	% Recov	79.000	119.000				02/28/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	50.440	101.000	% Recov	75.000	125.000				02/28/08
MSD	Toluene-d8(Surr)	2037-26-5	51.540	103.000	% Recov	75.000	125.000				02/28/08
MSD	Toluene	108-88-3	26.778	107.000	% Recov	76.000	120.000				02/28/08
MSD	Trichloroethene	79-01-6	20.920	83.700	% Recov	73.000	123.000				02/28/08
SPK-RPD	1,1-Dichloroethene	75-35-4	84.900		RPD			4.715	20.000		02/28/08
SPK-RPD	Benzene	71-43-2	98.600		RPD			2.776	20.000		02/28/08
SPK-RPD	Chlorobenzene	108-90-7	103.000		RPD			3.356	20.000		02/28/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	101.000		RPD			1.396	20.000		02/28/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	103.000		RPD			0.966	20.000		02/28/08
SPK-RPD	Toluene	108-88-3	107.000		RPD			2.844	20.000		02/28/08
SPK-RPD	Trichloroethene	79-01-6	83.700		RPD			1.565	20.000		02/28/08
SURR	4-Bromofluorobenzene(Surr)	480-00-4	50.420	101.000	% Recov	75.000	125.000				02/28/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	50.680	101.000	% Recov	75.000	125.000				02/28/08
SURR	Toluene-d8(Surr)	2037-26-5	52.520	105.000	% Recov	75.000	125.000				02/28/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20080384
 Matrix: WATER
 Test: VOA Ground Water Protection

Sample Date: 02/27/08
 Receive Date: 02/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	02/28/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	02/28/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	50.290	101.000	% Recov	75.000	125.000				02/28/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	02/28/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	02/28/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	48.260	96.500	% Recov	75.000	125.000				02/28/08
BLANK	Toluene-d8(Surr)	2037-26-5	51.920	104.000	% Recov	75.000	125.000				02/28/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	02/28/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	02/28/08
LCS	1,1-Dichloroethene	75-35-4	22.220	88.900	% Recov	75.000	125.000				02/28/08
LCS	Benzene	71-43-2	24.460	97.800	% Recov	75.000	125.000				02/28/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	48.990	98.000	% Recov	75.000	125.000				02/28/08
LCS	Chlorobenzene	108-90-7	25.940	104.000	% Recov	75.000	125.000				02/28/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	49.580	99.200	% Recov	75.000	125.000				02/28/08
LCS	Toluene-d8(Surr)	2037-26-5	51.800	103.000	% Recov	75.000	125.000				02/28/08
LCS	Toluene	108-88-3	25.760	103.000	% Recov	75.000	125.000				02/28/08
LCS	Trichloroethene	79-01-6	19.840	79.400	% Recov	75.000	125.000				02/28/08

WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-075
Sample # W08GR00369
Client ID: B1PM96

GPP TRENT
WSCF

Matrix: WATER

Group #: WSCF20080384
Department: Radiochemistry
Sampled: 02/27/08
Received: 02/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by ICP-200.8 MS	14133-76-7	LA-505-412	U	< 1.00e-03	ug/L			1.00	1.0e-03		02/28/08

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

J - Analyte < lowest calibration but > = MDL.(org)
 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

Report WGPP/ver. 5.2
Groundwater Remediation Program

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20080384
 Matrix: WATER
 Test: TC99 by ICP-200.8 MS

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	Technetium by ICP-MS	14133-76-7	< 1e-3	n/a	ug/L					U	02/28/08
LCS	Technetium by ICP-MS	14133-76-7	0.14	97.902	% Recov	49.000	125.000				02/28/08

M4W41-SLF-08-288

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 4 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
MB
2/28/08

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program

Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 122590/ES10
Group#: 20080384
Project#: F07-075
Proj Mgr: STEVE TRENT E6-35
Phone: 373-5869



The following samples were received from you on 02/27/08. 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
W08GR00368	B1PM68	GPP @VOA-GPP	TRENT Water	02/27/08
W08GR00369	B1PM96	GPP @TC99-MS	TRENT Water	02/27/08

Test Acronym Description

Test Acronym	Description
@TC99-MS	TC99 screen by ICP-200.8 MS
@VOA-GPP	VOA Ground Water Protection

COLLECTOR

NCO Sampler

COMPANY CONTACT

Trent, SJ

TELEPHONE NO.

373-5869

PROJECT COORDINATOR

WIDRIG, DL

PRICE CODE

1A

DATA TURNAROUND

24 Hours / 15 Days

SAMPLING LOCATION

C4978, I-4

PROJECT DESIGNATION

200-UP-1 Remedial Investigation Sampling and Analysis - Groundwater

SAF NO.

F07-075

AIR QUALITY

ICE CHEST NO.

FIELD LOGBOOK NO.

ACTUAL SAMPLE DEPTH

380'

COA

122590ES10

METHOD OF SHIPMENT

GOVERNMENT VEHICLE

SHIPPED TO

Waste Sampling & Characterization

OFFSITE PROPERTY NO.

N/A

BILL OF LADING/AIR BILL NO.

N/A

MATRIX*

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

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)

PRESERVATION

HCl to pH <2/ Cool to 4C

TYPE OF CONTAINER

8Gs*

NO. OF CONTAINER(S)

3

VOLUME

40mL

SAMPLE ANALYSIS

SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SPECIAL HANDLING AND/OR STORAGE

20080384

SAMPLE NO.

MATRIX*

SAMPLE DATE

SAMPLE TIME

B1PM68 W08600384 WATER

2-27-08 1458

CHAIN OF POSSESSION

602*

SIGN/ PRINT NAMES

024002

SPECIAL INSTRUCTIONS

(1) VOLATILE ORGANICS BY FIELD GC (Carbon tetrachloride)

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

ICED

LABORATORY SECTION

RECEIVED BY

TITLE

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

COLLECTOR

NCO Sampler

SAMPLING LOCATION

C4978, I-4

ICE CHEST NO.

COMPANY CONTACT

Trent, SJ

TELEPHONE NO.

373-5869

PROJECT COORDINATOR

WIDRIG, DL

PRICE CODE

1A

DATA TURNAROUND

24 Hours / 15 Days

PROJECT DESIGNATION

200-UP-1 Remedial Investigation Sampling and Analysis - Groundwater

SAF NO.

F07-075

AIR QUALITY

FIELD LOGBOOK NO.

ACTUAL SAMPLE DEPTH

380'

COA

122590ES10

METHOD OF SHIPMENT

GOVERNMENT VEHICLE

SHIPPED TO

Waste Sampling & Characterization

OFFSITE PROPERTY NO.

N/A

BILL OF LADING/AIR BILL NO.

N/A

MATRIX*

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

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)

PRESERVATION

HNO3 to pH <2(ULTRAX)

TYPE OF CONTAINER

Nalgene

NO. OF CONTAINER(S)

1

VOLUME

500mL

SAMPLE ANALYSIS

Tc-99 by ICPMS (Technetium-99)

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO.

B1PM96

MATRIX*

W of 620369 WATER

SAMPLE DATE

2-27-08

SAMPLE TIME

1458

ICED

CHAIN OF POSSESSION

Lot #

027361

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

RELINQUISHED BY/ REMOVED FROM

Chris F. H... 2-27-08 1515

DATE/TIME

DATE/TIME

RECEIVED BY/ STORED IN

RECEIVED BY/ STORED IN

DATE/TIME

DATE/TIME

pH = 7.89

Temperature = 19.5 °C

Conductivity = 665 µS/cm

Turbidity = 4.05 NTU

Dissolved Oxygen = 7.02 mg/L

RELINQUISHED BY/ REMOVED FROM

DATE/TIME

RECEIVED BY/ STORED IN

DATE/TIME

RELINQUISHED BY/ REMOVED FROM

DATE/TIME

RECEIVED BY/ STORED IN

DATE/TIME

RELINQUISHED BY/ REMOVED FROM

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DATE/TIME

RECEIVED BY/ STORED IN

DATE/TIME

RELINQUISHED BY/ REMOVED FROM

DATE/TIME

RECEIVED BY/ STORED IN

DATE/TIME

LABORATORY SECTION

RECEIVED BY

TITLE

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

19A of 19