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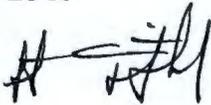
FLUOR

Memorandum

M4W41-SLF-08-604

To: H. Hampt E6-35 Date: June 5, 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 WSCF20081133

- 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. 8, Waste Sampling & Characterization Facility Quality Assurance Plan

This transmittal contains the following information for sample delivery group WSCF20081133:

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

SLF/grf

Attachments 4

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JUL 28 2008
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M4W41-SLF-08-604

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081133
Data Deliverable Date: 05-jun-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-037	B1V697 P	W08P002689	WATER
	B1V698 P	W08P002685	WATER
	B1V9T1 P	W08P002688	WATER
	B1V9V3 PNN	W08P002700	WATER

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ATTACHMENT 2

NARRATIVE

Consisting of 2 pages
Including cover page

Introduction

Four groundwater samples were received at the WSCF Laboratory on June 4, 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

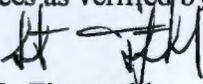
Refer to *WSCF Method References Report*, page 9, for a complete listing of approved analytical methods.

Inorganic Comments

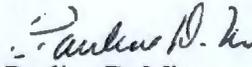
Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 14 for QC details.

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



Pauline D. Mix
WSCF Client Services

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ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 9 pages
Including cover page

**WSCF
ANALYTICAL RESULTS REPORT**

for

**GPAP
Richland, WA 99352**

Attention: Steve Trent E6-35

Analytical:

~~Handwritten signature~~ S. Fitzgerald 6/5/08

Client Services:

CDhy P.D. Miy 6/5/2008

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#: WSCF20081133
Report Date: 5-jun-2008
Report WGPP/ver. 5.2
GPAP

W13q Worklist/Batch/QC Report for Group# WSCF20081133

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
36557	2	36973	41327	BLANK		Hexavalent chromium
36557	11	36973	41327	BLANK		Hexavalent chromium
36557	3	36973	41327	LCS		Hexavalent chromium
36557	5	36973	41327	DUP	W08P002685	Hexavalent chromium
36557	6	36973	41327	MS	W08P002685	Hexavalent chromium
36557	7	36973	41327	MSD	W08P002685	Hexavalent chromium
36557	4	36973	41327	SAMPLE	W08P002685	Hexavalent chromium
36557	7	36973	41327	SPK-RPD	W08P002685	Hexavalent chromium
36557	8	36973	41327	SAMPLE	W08P002688	Hexavalent chromium
36557	9	36973	41327	SAMPLE	W08P002689	Hexavalent chromium
36557	10	36973	41327	SAMPLE	W08P002700	Hexavalent chromium

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-265-403	LA-265-403: Hexavalent Chromium analysis by Spectrophotometer
EPA SW-846 7196A	HEXAVALENT CHROMIUM
HEIS 7196_CR6	Hexavalent Chromium

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: 5-jun-2008
Report#: WSCF20081133
Report WGPPM/5.2

WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-037

Sample # W08P002685

Client ID: B1V698 PNNL GPP TRENT

WSCF

Matrix: WATER

Group #: WSCF20081133

Department: Inorganic

Sampled: 06/04/08

Received: 06/04/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 2.00e-03	mg/L			1.00	2.0e-03		06/04/08

MDL=Minimum Detection Limit

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

RQ=Result Qualifier

TP Err=Total Propagated Error

DF=Dilution Factor

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

Report WGPP/ver. 5.2

GPAP

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WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-037

Sample # W08P002688

Client ID: B1V9T1 PNNL GPP TRENT

Matrix: WATER

Group #: WSCF20081133

Department: Inorganic

Sampled: 06/04/08

Received: 06/04/08

WSCF

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date.
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-285-403	U	< 2.00e-03	mg/L			1.00	2.0e-03		06/04/08

MDL=Minimum Detection Limit

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

RQ=Result Qualifier

TP Err=Total Propagated Error

DF=Dilution Factor

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

Report WGPP/ver. 5.2

GPAP

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WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-037

Sample # W08P002689

Client ID: B1V697 PNNL GPP TRENT

Matrix: WATER

Group #: WSCF20081133

Department: Inorganic

Sampled: 06/04/08

Received: 06/04/08

WSCF

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403		4.40e-03	mg/L			1.00	2.0e-03		06/04/08

MDL=Minimum Detection Limit

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

RQ=Result Qualifier

TP Err=Total Propagated Error

DF=Dilution Factor

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

Report WGPP/ver. 5.2

GPAP

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WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-037

Sample # W08P002700

Client ID: B1V9V3 PNNL GPP TRENT

WSCF

Matrix: WATER

Group #: WSCF20081133

Department: Inorganic

Sampled: 06/04/08

Received: 06/04/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 2.00e-03	mg/L			1.00	2.0e-03		06/04/08

MDL = Minimum Detection Limit

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

RQ = Result Qualifier

TP Err = Total Propagated Error

DF = Dilution Factor

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

Report WGPP/ver. 5.2

GPAP

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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081133
 Matrix: WATER
 Test: Hexavalent chromium

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

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P002685											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	<0.002		RPD			n/a	15.000	U	06/04/08
MS	Hexavalent chromium	18540-29-9	0.0536	100.000	% Recov	85.000	115.000				06/04/08
MSD	Hexavalent chromium	18540-29-9	0.0550	102.612	% Recov	85.000	115.000				06/04/08
SPK-RPD	Hexavalent chromium	18540-29-9	102.612		RPD			2.578	20.000		06/04/08
BATCH QC											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	06/04/08
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	06/04/08
LCS	Hexavalent chromium	18540-29-9	0.0522	103.571	% Recov	80.000	120.000				06/04/08

M4W41-SLF-08-604

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
Due
6/5/08

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081133

The following samples were received from you on 06/04/08. 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
W08P002685	B1V698	PNNL GPP CR+6	TRENT Water	06/04/08
W08P002688	B1V9T1	PNNL GPP CR+6	TRENT Water	06/04/08
W08P002689	B1V697	PNNL GPP CR+6	TRENT Water	06/04/08
W08P002700	B1V9V3	PNNL GPP CR+6	TRENT Water	06/04/08

Test Acronym Description

Test Acronym	Description
CR+6	Hexavalent chromium

