

RECEIVED JULY 14, 2008

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WSCF Analytical Lab
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Richland, WA 99352
Telephone 373-7495
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FLUOR

Memorandum

M4W41-SLF-08-685

To: H. Hampt E6-35 Date: July 10, 2008

From: S. L. Fitzgerald, Manager WSCF Analytical Lab *by William J. Baird*

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 WSCF20081383

- 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 WSCF20081383:

- 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#: WSCF20081383
Data Deliverable Date: 10-jul-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
I08-039	B1V713	W08P003377	WATER
I08-046	B1W1K8	W08P003380	WATER
	B1W1L0	W08P003381	WATER
	B1W1L9	W08P003382	WATER
	B1W1M0	W08P003383	WATER
	B1W1M1	W08P003384	WATER
I08-050	B1W3B6	W08P003378	WATER
	B1W3B7	W08P003379	WATER

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ATTACHMENT 2

NARRATIVE

Consisting of 2 pages
Including cover page

Introduction

Eight groundwater samples were received at the WSCF Laboratory on July 9, 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.

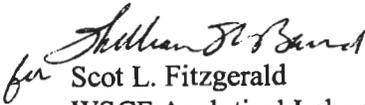
Inorganic Comments

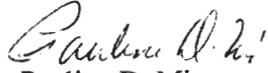
Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 18 for QC details. Analytical Note(s):

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

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.

for 
Scot L. Fitzgerald
WSCF Analytical Laboratory Manager


Pauline D. Mix
WSCF Client Services

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ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 13 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical:

Shannon Ferber W/W Baird 7/10/2008

Client Services:

CPD; P.D. Mix 7/10/2008

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#: WSCF20081383
Report Date: 10-jul-2008
Report WGPP/ver. 5.2
GPAP

Page 1

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081383

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37020	2	37443	41799	BLANK		Hexavalent chromium
37020	15	37443	41799	BLANK		Hexavalent chromium
37020	3	37443	41799	LCS		Hexavalent chromium
37020	5	37443	41799	DUP	W08P003377	Hexavalent chromium
37020	6	37443	41799	MS	W08P003377	Hexavalent chromium
37020	7	37443	41799	MSD	W08P003377	Hexavalent chromium
37020	4	37443	41799	SAMPLE	W08P003377	Hexavalent chromium
37020	7	37443	41799	SPK-RPD	W08P003377	Hexavalent chromium
37020	8	37443	41799	SAMPLE	W08P003378	Hexavalent chromium
37020	9	37443	41799	SAMPLE	W08P003379	Hexavalent chromium
37020	10	37443	41799	SAMPLE	W08P003380	Hexavalent chromium
37020	11	37443	41799	SAMPLE	W08P003381	Hexavalent chromium
37020	12	37443	41799	SAMPLE	W08P003382	Hexavalent chromium
37020	13	37443	41799	SAMPLE	W08P003383	Hexavalent chromium
37020	14	37443	41799	SAMPLE	W08P003384	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: 10-jul-2008
Report#: WSCF20081383
Report WGPPM/5.2

WSCF

ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-039

Sample # W08P003377

Client ID: B1V713 GPP-PNNL TRENT

WSCF

Matrix: WATER

Group #: WSCF20081383

Department: Inorganic

Sampled: 07/09/08

Received: 07/09/08

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		0.0118	mg/L			1.00	2.0e-03		07/09/08

MDL=Minimum Detection Limit

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

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: I08-050

Sample # W08P003378

Client ID: B1W3B6 GPP-PNNL TRENT

WSCF

Matrix: WATER

Group #: WSCF20081383

Department: Inorganic

Sampled: 07/09/08

Received: 07/09/08

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	D	1.32	mg/L			9.30	0.019		07/09/08

MDL=Minimum Detection Limit

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

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

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WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-050

Sample # W08P003379

Client ID: B1W3B7 GPP-PNNL TRENT

WSCF

Matrix: WATER

Group #: WSCF20081383

Department: Inorganic

Sampled: 07/09/08

Received: 07/09/08

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		0.266	mg/L			1.00	2.0e-03		07/09/08

MDL=Minimum Detection Limit

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

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

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WSCF

ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-046

Sample # W08P003380

Client ID: B1W1K8

GPP-PNNL TRENT
WSCF

Matrix: WATER

Group #: WSCF20081383

Department: Inorganic

Sampled: 07/09/08

Received: 07/09/08

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		7.90e-03	mg/L			1.00	2.0e-03		07/09/08

MDL=Minimum Detection Limit

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

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

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WSCF

ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-046

Sample # W08P003381

Client ID: B1W1L0 GPP-PNNL TRENT

Matrix: WATER

Group #: WSCF20081383

Department: Inorganic

Sampled: 07/09/08

Received: 07/09/08

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		0.114	mg/L			1.00	2.0e-03		07/09/08

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(inorg)

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

Report WGPP/ver. 5.2

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WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-046

Sample # W08P003382

Client ID: B1W1L9 GPP-PNNL TRENT

Matrix: WATER

Group #: WSCF20081383

Department: Inorganic

Sampled: 07/09/08

Received: 07/09/08

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		0.0781	mg/L			1.00	2.0e-03		07/09/08

MDL=Minimum Detection Limit

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

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

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WSCF

ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-046

Sample # W08P003383

Client ID: B1W1M0 GPP-PNNL TRENT

WSCF

Matrix: WATER

Group #: WSCF20081383

Department: Inorganic

Sampled: 07/09/08

Received: 07/09/08

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		0.294	mg/L			1.00	2.0e-03		07/09/08

MDL = Minimum Detection Limit

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

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

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WSCF ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35

SAF Number: I08-046

Sample # W08P003384

Client ID: B1W1M1 GPP-PNNL TRENT

Matrix: WATER

Group #: WSCF20081383

Department: Inorganic

Sampled: 07/09/08

Received: 07/09/08

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		07/09/08

MDL=Minimum Detection Limit

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

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

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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081383
 Matrix: WATER
 Test: Hexavalent chromium

Sample Date: 07/09/08
 Receive Date: 07/09/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P003377											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	0.0118		RPD			0.000	15.000		07/09/08
MS	Hexavalent chromium	18540-29-9	0.0570	106.343	% Recov	85.000	115.000				07/09/08
MSD	Hexavalent chromium	18540-29-9	0.0570	106.343	% Recov	85.000	115.000				07/09/08
SPK-RPD	Hexavalent chromium	18540-29-9	106.343		RPD			0.000	20.000		07/09/08
BATCH QC											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	07/09/08
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	07/09/08
LCS	Hexavalent chromium	18540-29-9	0.0516	102.381	% Recov	80.000	120.000				07/09/08

M4W41-SLF-08-685

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 10 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
✓B
7/10/08*

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081383



The following samples were received from you on 07/09/08. 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
W08P003377	B1V713	GPP-PNNL CR+6	TRENT Water	07/09/0
W08P003378	B1W3B6	GPP-PNNL CR+6	TRENT Water	07/09/0
W08P003379	B1W3B7	GPP-PNNL CR+6	TRENT Water	07/09/0
W08P003380	B1W1K8	GPP-PNNL CR+6	TRENT Water	07/09/0
W08P003381	B1W1L0	GPP-PNNL CR+6	TRENT Water	07/09/0
W08P003382	B1W1L9	GPP-PNNL CR+6	TRENT Water	07/09/0
W08P003383	B1W1M0	GPP-PNNL CR+6	TRENT Water	07/09/0
W08P003384	B1W1M1	GPP-PNNL CR+6	TRENT Water	07/09/0

Test Acronym Description

Test Acronym	Description
CR+6	Hexavalent chromium

