

PO Box 1000 S3-30  
Richland, WA 99352  
(509) 373-7005  
(509) 372-0456

**Memorandum**

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To: Michael Neely  
CH2M-HILL PRC  
PO Box 1600  
Richland, WA 99352

Date: March 19, 2009

From: WSCF Laboratory  
WSCF Analytical Chemistry

CC:

Subject: FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF90207

Reference: (1) MOA-FH-CHPRC-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 WSCF90207

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

Electronically signed by Scot Fitzgerald  
For Lab Manager

Attachments 4

ATTACHMENT 1

**COVER SHEET**

Consisting of 2 pages  
Including cover page

## WSCF SAF Number Cross Reference

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Group # WSCF90207  
Data Deliverable Date 03/31/09

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F08-039	B1YP75	90207001	WATER	03/16/09	03/16/09

ATTACHMENT 2

**NARRATIVE**

Consisting of 2 pages  
Including cover page

**Introduction**

One S&GRP sample was received at the WSCF Laboratory on March 16, 2009. Sample was analyzed for the analyte indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

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 transport container.

**Analytical Methodology for Requested Analyses**

Refer to *WSCF Method References Report* 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, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required, as appropriate.
- Sample results with a concentration greater than the MDL but less than the PQL were B flagged (applies to inorganic and wetchem analyses), as appropriate.

All QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

**ANALYTICAL RESULTS**

Consisting of 7 pages  
Including cover page

## WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600  
Richland, WA 99352

Attention: Michael Neely

**Contract #** MOA-FH-CHPRC-2008  
**Group #** WSCF90207  
**Report Date** March 19, 2009

Analytical: Electronically signed by Scot Fitzgerald

Client Services: Electronically signed by Pauline Mix

*All radiochemistry results are reported on an "as received" basis.*

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.

## Batch QC List

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Attention Michael Neely  
Department Inorganic

Group # WSCF90207  
Project Number F08-039

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QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
	21248	1	BLANK	5651	BLANK		Hexavalent chromium Discrete Analyzer
	21248	2	LCS	5652	LCS		Hexavalent chromium Discrete Analyzer
	21248	6	DUP	5654	B1YRF2(90202002DUP)	90202002	Hexavalent chromium Discrete Analyzer
	21248	7	MS	5655	B1YRF2(90202002MS)	90202002	Hexavalent chromium Discrete Analyzer
	21248	12	SAMPLE	90207001	B1YP75		Hexavalent chromium Discrete Analyzer

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## Method Reference

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**Attention** Michael Neely  
**Department** Inorganic

**Group #** WSCF90207  
**Project Number** F08-039

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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, industry methods or HEIS 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 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.

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<b>LA-265-403</b>	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium

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Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at <http://www7.rl.gov/rapidweb/AS-DOL/index.cfm>

# WSCF Analytical Results Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF90207  
 Project Number F08-039

Sample # 90207001  
 SAF# F08-039  
 Sample ID B1YP75

Matrix WATER  
 Sampled 03/16/09  
 Received 03/16/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Cr(VI)</b>										
Hexavalent chromium	18540-29-9	LA-265-403	D	0.640		mg/L	2	0.0080	0.020	03/16/09

MDL = Minimum Detection  
 RQ = Result Qualifier  
 TP Err = Total Propagated  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL. (Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD sample recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.

# Quality Control Report

Attention Michael Neely  
 Department Inorganic

Group # WSCF90207  
 Project Number F08-039

QC Batch 21248 Test Hexavalent chromium Discrete Analyzer  
 Associated Samples 90207001

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
			<b>QC Sample #5651</b>							
Hexavalent chromium <b>LCS</b>	18540-29-9	<0.0020		mg/L					U	03/16/09
			<b>QC Sample #5652</b>							
Hexavalent chromium <b>DUP</b>	18540-29-9	0.0494		mg/L	98.4	90 - 110				03/16/09
			<b>QC Sample #5654</b>							
			<b>Original 90202002</b>							
Hexavalent chromium <b>MS</b>	18540-29-9	0.00340		mg/L			5.70	20	B	03/16/09
			<b>QC Sample #5655</b>							
			<b>Original 90202002</b>							
Hexavalent chromium	18540-29-9	0.0439		mg/L	100.3	85 - 115				03/16/09

# Analytical Comment Report

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**Attention** Michael Neely

**Group #** WSCF90207

**Project Number** F08-039

ATTACHMENT4

**SAMPLE RECEIPT**

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**

**ACKNOWLEDGEMENT OF SAMPLES RECEIVED**

**WSCF Laboratory**  
PO Box 1000 S3-30  
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC  
PO #: 131280  
Work Order #: 90207  
Profile #: F08-039-192  
Proj. Mgr.:  
Phone:

The following samples were received from you on 3/16/2009 2:26:00 PM. 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	Matrix	Collected	Received
		<b>Tests scheduled</b>		
90207001	B1YP75	WATER CR6DA-W	3/16/2009 12:00	3/16/2009 14:00

**Test Acronym Description**

Test Acronym	Description
CR6DA-W	Cr6 (W,Discrete analyzer)

