

WSCF Laboratory

RECEIVED OCTOBER 06, 2009

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

Memorandum

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

Date: October 6, 2009

From: WSCF Laboratory
WSCF Analytical Chemistry

RECEIVED
DEC 14 2009
EDMC

CC:

Subject: FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF91229

Reference: (1) SOW, Mod 2, #36587, Release 3
(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 WSCF91229

- * 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

Group # WSCF91229
Data Deliverable Date 10/20/09

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
W10-010	B224M4	91229001	WATER	10/05/09	10/05/09
W10-010	B224M5	91229002	WATER	10/05/09	10/05/09
W10-010	B224M6	91229003	WATER	10/05/09	10/05/09
W10-010	B224M7	91229004	WATER	10/05/09	10/05/09

ATTACHMENT 2

NARRATIVE

Consisting of 2 pages
Including cover page

Introduction

Four (4) groundwater samples were received at the WSCF Laboratory on October 5, 2009. The samples were analyzed for the analytes 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.

The following generic data qualifiers (i.e., B, D, and J) may be applicable to this report, as appropriate

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

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report*, pages 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):

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 9 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 # WSCF91229
Report Date October 6, 2009

Analytical: Electronically signed by Scot Fitzgerald

Client Services: Electronically signed by Richard Barker

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

Attention Michael Neely
Department Inorganic

Group # WSCF91229

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
64845	64845	1	BLANK	16174	BLANK		Hexavalent chromium Discrete Analyzer
64845	64845	3	LCS	16176	LCS		Hexavalent chromium Discrete Analyzer
64845	64845	4	DUP	16177	B224M4(91229001DUP)	91229001	Hexavalent chromium Discrete Analyzer
64845	64845	5	MS	16178	B224M4(91229001MS)	91229001	Hexavalent chromium Discrete Analyzer
64845	64845	6	SAMPLE	91229001	B224M4		Hexavalent chromium Discrete Analyzer
64845	64845	7	SAMPLE	91229002	B224M5		Hexavalent chromium Discrete Analyzer
64845	64845	8	SAMPLE	91229003	B224M6		Hexavalent chromium Discrete Analyzer
64845	64845	9	SAMPLE	91229004	B224M7		Hexavalent chromium Discrete Analyzer

Method Reference

Attention Michael Neely
Department Inorganic

Group # WSCF91229

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.

LA-265-403	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium

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 # WSCF91229

Sample # 91229001
 SAF# W10-010
 Sample ID B224M4

Matrix WATER
 Sampled 10/05/09
 Received 10/05/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										10/05/09
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	10/05/09

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.

WSCF Analytical Results Report

Attention Michael Neely
 Department Inorganic

Group # WSCF91229

Sample # 91229002
 SAF# W10-010
 Sample ID B224M5

Matrix WATER
 Sampled 10/05/09
 Received 10/05/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										10/05/09
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	10/05/09

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.

WSCF Analytical Results Report

Attention Michael Neely
 Department Inorganic

Group # WSCF91229

Sample # 91229003
 SAF# W10-010
 Sample ID B224M6

Matrix WATER
 Sampled 10/05/09
 Received 10/05/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										10/05/09
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	10/05/09

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.

WSCF Analytical Results Report

Attention Michael Neely
 Department Inorganic

Group # WSCF91229

Sample # 91229004
 SAF# W10-010
 Sample ID B224M7

Matrix WATER
 Sampled 10/05/09
 Received 10/05/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										10/05/09
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	10/05/09

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 # WSCF91229

QC Batch 64845 Test Hexavalent chromium Discrete Analyzer
 Associated Samples 91229001, 91229002, 91229003, 91229004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK										
Hexavalent chromium LCS	18540-29-9	<0.0020		mg/L					U	10/05/09
Hexavalent chromium DUP	18540-29-9	0.0509		mg/L	101.4	90 - 110				10/05/09
Hexavalent chromium MS	18540-29-9	<0.0020	<0.0020	mg/L			11.80	20	U	10/05/09
Hexavalent chromium	18540-29-9	<0.0020	0.0442	mg/L	110.1	85 - 115				10/05/09

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 4 pages
Including cover page

Sample Receipt

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 #: 400637
Work Order #: 91229
Profile #: W10-010-454
Proj. Mgr.:
Phone:

The following samples were received from you on 10/5/2009 3:30:00 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
		Tests scheduled		
91229001	B224M4	WATER	10/5/2009 13:01	10/5/2009 15:30
		CR6DA-W		
91229002	B224M5	WATER	10/5/2009 13:01	10/5/2009 15:30
		CR6DA-W		
91229003	B224M6	WATER	10/5/2009 14:23	10/5/2009 15:30
		CR6DA-W		
91229004	B224M7	WATER	10/5/2009 14:23	10/5/2009 15:30
		CR6DA-W		

Test Acronym Description

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

CHPRC		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # W10-010-454
				Page 1 of 1
Collector HA Shepard CHPRC	Contact/Requester Dawn Widze	Telephone No. 509-376-2858	Purchase Order/Charge Code 4002216520	
SAF No. W10-010	Sampling Origin Identified Site	Ice Chest No. N/A	Bill of Lading/Air Bill No. N/A	
Project Title RCRA OCTOBER 2009	Logbook No. HNF-N-506 2615	Offsite Property No. N/A	Priority: 24 Hours PRIORITY	
Shipped To (Lab) Waste Sampling & Characterization	Method of Shipment Government Vehicle	POSSIBLE SAMPLE HAZARDS/REMARKS ** Certain Radioactive Material at concentrations that are not releasable for transportation per RCRA but are not releasable per DOE Order 540.5 (1990-1999)		
Protocol RCRA	SPECIAL INSTRUCTIONS		Hold Time	Total Activity Exemption Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
91229		FY09 and FY10 samples cannot be in the same SBU Site-Wide Contractor Knowledge Information Form applies		

Sample No.	Filter	Date	Time	Vol/Type Container	Sample Analysis	Holding Time	Preservative
B224M4	Y 01 W	11/5/09	1:50P	1x500-mL aG	719G_CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C
B224M5	N 02 W	↓	↓	1x500-mL aG	719E_CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C
<div style="position: absolute; top: 20px; left: 20px; font-size: 2em; opacity: 0.5;"> 91229 10/5/09 </div>							
ICED							

Relinquished By HA Shepard CHPRC	Date/Time 15:30 OCT 05 2009	Received By T.A. Frazier	Date/Time 15:30 OCT 05 2009	Matrix S - Soil DS - Thin Solid SF - Sediment FF - Drum Fills SL - Solid T - Tissue SW - Sludge WY - Wine W - Water L - Liquid O - Oil V - Vapor/Steam 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, net lab process, used in process)	Disposed By	Date/Time	



CHPRC		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C.# W10-010-455	
Collector RA Shepard CHPRC		Contact/Requester Data Waiver		Telephone No. 509-376-2838	
SAF No. W10010		Sampling Origin Hanford Site		Purchase Order/Charge Code 100071ES20	
Project Title RCRA OCTOBER 2009		Logbook No. HNF-N-506 2615		Ice Chest No. N/A	
Shipped To (Lab) Waste Sampling & Characterization		Method of Shipment Government Vehicle		Bill of Lading/Air Bill No. N/A	
Protocol RCRA		Priority: 24 Hours PRIORITY		Offsite Property No. N/A	
Possible Sample Hazards/Remarks ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR. Do not release to per DCR Order 5400 5/19/09/9993.			SPECIAL INSTRUCTIONS FY09 and FY10 samples cannot be in the same SDG Also-Write Generator Knowledge Laboratory T map applies		Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Sample No	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B224M6	Y 803	W	10/15/09	1423	1x500-ml aG 7196_CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C
B224M7	N 804	W	↓	↓	1x500-ml aG 7196_CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C
 [Handwritten: 7224 10/15/09] 							
ICED							

Requested By RA Shepard CHPRC	Date/Time OCT 15 2009	Received By T A Frazier	Date/Time OCT 15 2009	Matrix *
Requested By	Date/Time	Received By	Date/Time	S - Solid L - Liquid G - Gas A - Air T - Tissue W - Water Y - Yarn F - Fiber P - Paper M - Metal O - Oil X - Other
Requested By	Date/Time	Received By	Date/Time	
Requested By	Date/Time	Received By	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to container, partial procedure, used in process)		Disposed By	Date/Time