

WSCF Laboratory

RECEIVED DECEMBER 10, 2010

PO Box 650 S3-30
Richland, WA 99352

December 10, 2010

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

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF103241

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF103241

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

Very truly yours,

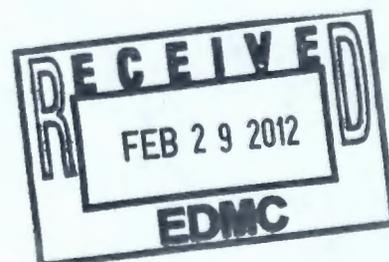
Electronically signed by Joseph Hale

For Lab Manager
WSCF Analytical Lab
(509) 373-7495

Attachments 4

CC: w/Attachments

File/LB



ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF103241
Data Deliverable Date 01/04/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X11-005	B28K50	103241001	WATER	12/05/10	12/05/10
X11-005	B28K51	103241002	WATER	12/05/10	12/05/10
X11-005	B28K46	103241003	WATER	12/05/10	12/05/10
X11-005	B28K47	103241004	WATER	12/05/10	12/05/10

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Four (4) groundwater samples were received at the WSCF Laboratory on December 5, 2010. 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 not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U 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 wet chemical 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.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

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):

- Batch QC 170706 analyzed on sample# B27CH1 (103240001)

All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF103241

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 # WSCF103241
Report Date December 10, 2010

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Heather Medley

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no 'Percent Solid' test is reported then the 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 # WSCF103241

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
170706	170706	17	LCS	43307	LCS		Hexavalent chromium Discrete Analyzer
170706	170706	18	BLANK	43308	BLANK		Hexavalent chromium Discrete Analyzer
170706	170706	19	DUP	43309	B27CH1(103240001DUP)	103240001	Hexavalent chromium Discrete Analyzer
170706	170706	20	MS	43310	B27CH1(103240001MS)	103240001	Hexavalent chromium Discrete Analyzer
170706	170706	23	SAMPLE	103241001	B28K50		Hexavalent chromium Discrete Analyzer
170706	170706	24	SAMPLE	103241002	B28K51		Hexavalent chromium Discrete Analyzer
170706	170706	25	SAMPLE	103241003	B28K46		Hexavalent chromium Discrete Analyzer
170706	170706	26	SAMPLE	103241004	B28K47		Hexavalent chromium Discrete Analyzer

Method Reference

Group # WSCF103241

Attention Michael Neely
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, 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

Group # WSCF103241

Attention Michael Neely
Department Inorganic

Sample # 103241001
SAF# X11-005
Sample ID B28K50

Matrix WATER
Sampled 12/05/10
Received 12/05/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										12/05/10
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	12/05/10

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

B - Analyte < the PQL(or EQL)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 recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
 Department Inorganic

Group # WSCF103241

Sample # 103241002
 SAF# X11-005
 Sample ID B28K51

Matrix WATER
 Sampled 12/05/10
 Received 12/05/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										12/05/10
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	12/05/10

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

B - Analyte < the PQL(or EQL)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 recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
 Department Inorganic

Group # WSCF103241

Sample # 103241003
 SAF# X11-005
 Sample ID B28K46

Matrix WATER
 Sampled 12/05/10
 Received 12/05/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										12/05/10
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	12/05/10

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

B - Analyte < the PQL(or EQL)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 recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Group # WSCF103241

Attention Michael Neely
 Department Inorganic

Sample # 103241004
 SAF# X11-005
 Sample ID B28K47

Matrix WATER
 Sampled 12/05/10
 Received 12/05/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										12/05/10
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	12/05/10

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

B - Analyte < the PQL(or EQL)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 recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
 X,Y or Z - See comment detail and/or narrative.
 PQL is equivalent to Estimated Quantitation Limit (EQL)

Quality Control Report

Attention Michael Neely
 Department Inorganic

Group # WSCF103241

QC Batch 170706 Test Hexavalent chromium Discrete Analyzer
 Associated Samples 103241001, 103241002, 103241003, 103241004

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS		QC Sample #43307								
Hexavalent chromium	18540-29-9	0.0501	mg/L	100.2	90 - 110					12/05/10
BLANK		QC Sample #43308								
Hexavalent chromium	18540-29-9	<0.0020	mg/L						U	12/05/10
DUP		QC Sample #43309								
		Original 103240001								
Hexavalent chromium	18540-29-9	<0.0020	mg/L				-43.50	20	U	12/05/10
MS		QC Sample #43310								
		Original 103240001								
Hexavalent chromium	18540-29-9	0.0382	mg/L	95.5	85 - 115					12/05/10

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 650 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC
PO #: 401922
Work Order #: 103241
Profile #: X11-005-363
Proj. Mgr.:
Phone:

The following samples were received from you on 12/5/2010 2:50:00 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		
103241001	B28K50	WATER CR6DA-W	12/5/2010 10:33	12/5/2010 14:50
103241002	B28K51	WATER CR6DA-W	12/5/2010 10:33	12/5/2010 14:50
103241003	B28K46	WATER CR6DA-W	12/5/2010 13:44	12/5/2010 14:50
103241004	B28K47	WATER CR6DA-W	12/5/2010 13:44	12/5/2010 14:50

Test Acronym Description

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

CHPRC		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			C.O.C. # X11-005-363		
					Page <u>1</u> of <u>1</u>		
Collector DJ Woehle CHPRC		Contact/Requester Karen Waters-Husted		Telephone No. 376-4650			
SAF No. X11-005		Sampling Origin		Purchase Order/Charge Code 3G0118ES20			
Project Title DDP R-618 IIA ON TCBYBZBIB		Logbook No. HNF-N-506 31195		Ice Chest No. N/A			
Shipment To/Label Waste Sampling & Characterization		Method of Shipment Government Vehicle		Bill of Lading/Air Bill No. N/A			
Protocol CRCLA		Priority: 30 Days		PRIORITY		Offsite Property No. N/A	
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 5400.4 (rev. 1993)				SPECIAL INSTRUCTIONS Hold Time Site Wide Area Generator Knowledge Information Form applies The CAPN for all analytical work at WSCF is 401922 Please report all TICs		Total Activity Excursion Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B28K50	N	12-5-10	1033	1x500-ml. aG	7196_CR6 Hexavalent Chromium (1)	24 Hours	Cool-4C
B28K51	Y			1x500-ml. aG	7196_CR6 Hexavalent Chromium (1)	24 Hours	Cool-4C

103241

Requested By DJ Woehle CHPRC	Sign <i>[Signature]</i>	Date/Time DEC 05 2010 1450	Received By JA RYZER <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time DEC 05 2010 1450	Matrix * N = Soil DS = Dioxin/Solid SL = Sediment TR = Trace Gas SLI = Solid T = Tissue SLF = Sludge WF = Waste W = Water V = Vapor/Gas O = Oil X = Other A = Air
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 container per lab procedure used if correct)		Disposed By		Date/Time

A-6004-842 (REV 2)

Monday, December 06, 2010 7:05:47 AM

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CHPRC		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			C.O.C. # X11-005-361		
					Page 1 of 1		
Collector DJ Woskie CHPRC	Contact/Requester Ernie Watson/Haged	Telephone No. 376-1650		Purchase Order/Charge Code 3001BE520			
SAF No. X11-005	Sampling Origin	Logbook No. HNF-N-506 31 195		Ice Chest No. N/A			
Project Title H2 HADUSA OCTOBER 2010	Method of Shipment Government Vehicle	Bill of Lading/Air Bill No. N/A		Offsite Property No. N/A			
Shipped To (Lab) Waste Sampling & Characterization	Priority: 30 Days PRIORITY	Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Protocol CERCLA	POSSIBLE SAMPLE HAZARDS/REMARKS ** ** Contain Radioactive Material at concentrations that are not regulated for transportation per 49 CFR, but are not releasable per DOE Order 440.5 (10/01/92)		SPECIAL INSTRUCTIONS Site Wide Area Generator Knowledge information form applies. The CAON for all analytical work at WSCF is 10192. Please repeat all IICs.				
Sample No	Filter	Date	Time	No./Type Container	Sample Analytes	Holding Time	Preservative
E28K46	003 N	12-5-10	1344	1x500-mL aG	7195_CR6: Hexavalent Chromium (I)	24 Hours	Cool-AC
E28K47	004 Y	↓	↓	1x500-mL aG	7195_CR6: Hexavalent Chromium (I)	24 Hours	Cool-AC

Requested By	Date/Time	Received By	Date/Time	Matrix*
DJ Woskie CHPRC	DEC 05 2010 1450	M. P. ...	DEC 05 2010 1450	S - Soil SI - Sediment SO - Solid SL - Sludge W - Water A - Air
Requested By	Date/Time	Received By	Date/Time	DN - Ditch Sediment DI - Ditch Inflow T - Tissue WI - Waste L - Landfill V - Vegetation 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, per lab protocol, used in process)	Disposed By	Date/Time	

A-6004-842 (REV 2)

CHPRC

Monday, December 06, 2010 7:05:47 AM
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