

RECEIVED APRIL 1, 2008

Fluor Hanford  
 WSCF Analytical Lab  
 P.O. Box 1000  
 Richland, WA 99352  
 Telephone 373-7495  
 Telefax 372-0456

**FLUOR****Memorandum**

M4W41-SLF-08-347

To: H. Hampt E6-35 Date: April 1, 2008

From: S. L. Fitzgerald, Manager  
 WSCF Analytical Lab 

cc: w/Attachments  
 T. F. Dale S3-30 J. E. Trechter S3-30  
 H. K. Meznarich S3-30 S. J. Trent E6-35  
 P. D. Mix S3-30 File/LB

Subject: RDR #RWSCF REANALYSIS FOR SAMPLE DELIVERY GROUP WSCF20080516  
 (WSCF20080566) – SAF NUMBER F08-069

Reference: (1) Memo, SL Fitzgerald to H Hampt, Final Results for SDG WSCF20072066 (M4W41-SLF-08-002), dated January 3, 2008

(2) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEM-001, October 31, 2002

(3) HNF-SD-CD-QAPP-017, Rev. 8, Waste Sampling & Characterization Facility Quality Assurance Plan

On March 19, 2008, RDR #RWSCF was received by the WSCF Laboratory. This letter contains the following information for sample delivery group WSCF20080516 (WSCF20080566):

- Cover Sheet (Attachment 1)
- Analytical Results (Attachment 2)
- Sample Receipt Acknowledgement (Attachment 3)
- Recheck, Recount, or Reanalysis Order #R4730, dated March 19, 2008 (Attachment 4)

SLF/grf

Attachments 4

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M4W41-SLF-08-347

ATTACHMENT 1

**COVER SHEET**

Consisting of 2 pages  
Including cover page

# WSCF SAF NUMBER CROSS REFERENCE

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Group#: WSCF20080566  
Data Deliverable Date: 02-apr-2008  
Data Deliverable: Cover Sheet

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SAF#	Sample ID	WSCF#	Matrix
F08-069	B1TV38	W08GR00666	WATER
	B1TV39	W08GR00667	WATER
	B1TV40	W08GR00668	WATER
	B1TV41	W08GR00669	WATER
	B1TV42	W08GR00670	WATER
	B1TV43	W08GR00671	WATER
	B1TV44	W08GR00672	WATER
	B1TV45	W08GR00673	WATER
	B1TV46	W08GR00674	WATER
	B1TV47	W08GR00675	WATER

M4W41-SLF-08-347

ATTACHMENT 2

**ANALYTICAL RESULTS**

Consisting of 15 pages  
Including cover page

**WSCF  
ANALYTICAL RESULTS REPORT**

for

**Groundwater Remediation Program**

**Richland, WA 99354**

**Attention: Steve Trent**

Analytical:

*S. Fitzgerald 4/1/08*

Client Services:

*John Trechter John Trechter 3/31/08*

*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.

Contract#: FH-EIS-2003-MEM-001

Report#: WSCF20080566

Report Date: 26-mar-2008

Report WGPP/ver. 5.2

Groundwater Remediation Program

## W13q Worklist/Batch/QC Report for Group# WSCF20080566

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
35611	2	36017	40293	BLANK		Hexavalent chromium
35611	17	36017	40293	BLANK		Hexavalent chromium
35611	3	36017	40293	LCS		Hexavalent chromium
35611	11	36017	40293	SAMPLE	W08GR00666	Hexavalent chromium
35611	12	36017	40293	SAMPLE	W08GR00667	Hexavalent chromium
35611	13	36017	40293	SAMPLE	W08GR00668	Hexavalent chromium
35611	14	36017	40293	SAMPLE	W08GR00669	Hexavalent chromium
35611	15	36017	40293	SAMPLE	W08GR00670	Hexavalent chromium
35611	16	36017	40293	SAMPLE	W08GR00671	Hexavalent chromium
35611	5	36017	40293	DUP	W08GR00672	Hexavalent chromium
35611	6	36017	40293	MS	W08GR00672	Hexavalent chromium
35611	7	36017	40293	MSD	W08GR00672	Hexavalent chromium
35611	4	36017	40293	SAMPLE	W08GR00672	Hexavalent chromium
35611	7	36017	40293	SPK-RPD	W08GR00672	Hexavalent chromium
35611	8	36017	40293	SAMPLE	W08GR00673	Hexavalent chromium
35611	9	36017	40293	SAMPLE	W08GR00674	Hexavalent chromium
35611	10	36017	40293	SAMPLE	W08GR00675	Hexavalent chromium

# WSCF

## METHOD REFERENCES REPORT

Department: Inorganic

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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 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.

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

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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: 26-mar-2008  
Report #: WSCF20080566  
Report WGPPM/5.2

Page 1

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00666  
**Client ID:** B1TV38

**CR+6 RERUN**  
**WSCF**

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium	18540-29-9	LA-265-403	D	31.2	mg/L			3.73e+002	0.75		03/19/08

**MDL=Minimum Detection Limit**    D - Analyte was identified at a secondary dilution factor(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*  
*Groundwater Remediation Program*

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00667  
**Client ID:** B1TV39

CR+6 RERUN  
 WSCF

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium	18540-29-9	LA-265-403	D	31.7	mg/L			3.73e+002	0.75		03/19/08

**MDL=Minimum Detection Limit**    D - Analyte was identified at a secondary dilution factor(inorg)  
**RQ=Result Qualifier**  
**TP Err=Total Propagated Error**  
**DF=Dilution Factor**

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*Groundwater Remediation Program*

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00668  
**Client ID:** B1TV40

CR+6 RERUN  
 WSCF

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	D	32.1	mg/L			3.73e+002	0.75		03/19/08

**MDL=Minimum Detection Limit**    D - Analyte was identified at a secondary dilution factor(inorg)  
**RQ=Result Qualifier**  
**TP Err=Total Propagated Error**  
**DF=Dilution Factor**

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*Report WGPP/ver. 5.2*  
*Groundwater Remediation Program*

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00669  
**Client ID:** BITV41

**CR+6 RERUN**  
**WSCF**

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	D	30.7	mg/L			3.73e + 002	0.75		03/19/08

**MDL = Minimum Detection Limit**    D - Analyte was identified at a secondary dilution factor(inorg)  
**RQ = Result Qualifier**  
**TP Err = Total Propagated Error**  
**DF = Dilution Factor**

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*Report WGPP/ver. 5.2*  
*Groundwater Remediation Program*

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00670  
**Client ID:** B1TV42

**CR+6 RERUN**  
**WSCF**

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	D	31.2	mg/L			3.73e+002	0.75		03/19/08

**MDL=Minimum Detection Limit**    D - Analyte was identified at a secondary dilution factor(inorg)  
**RQ=Result Qualifier**  
**TP Err=Total Propagated Error**  
**DF=Dilution Factor**

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*Report WGPP/ver. 5.2*  
*Groundwater Remediation Program*

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00671  
**Client ID:** B1TV43

CR+6 RERUN  
 WSCF

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	D	30.2	mg/L			3.73e+002	0.75		03/19/08

**MDL=Minimum Detection Limit**    D - Analyte was identified at a secondary dilution factor(inorg)  
**RQ=Result Qualifier**  
**TP Err=Total Propagated Error**  
**DF=Dilution Factor**

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*Report WGPP/ver. 5.2*  
*Groundwater Remediation Program*

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00672  
**Client ID:** BITV44

**CR+6 RERUN**  
**WSCF**

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	D	29.3	mg/L			3.73e + 002	0.75		03/19/08

**MDL=Minimum Detection Limit**    D - Analyte was identified at a secondary dilution factor(inorg)  
**RQ=Result Qualifier**  
**TP Err=Total Propagated Error**  
**DF=Dilution Factor**

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*Report WGPP/ver. 5.2*  
*Groundwater Remediation Program*

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# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00673  
**Client ID:** B1TV45

**CR+6 RERUN**  
**WSCF**

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium	18540-29-9	LA-265-403	D	30.2	mg/L			3.73e + 002	0.75		03/19/08

**MDL=Minimum Detection Limit**    D - Analyte was identified at a secondary dilution factor(inorg)  
**RQ=Result Qualifier**  
**TP Err=Total Propagated Error**  
**DF=Dilution Factor**

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*Report WGPP/ver. 5.2*  
*Groundwater Remediation Program*

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00674  
**Client ID:** BITV46

**CR+6 RERUN**  
**WSCF**

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	D	28.8	mg/L			3.73e+002	0.75		03/19/08

**MDL=Minimum Detection Limit**    D - Analyte was identified at a secondary dilution factor(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*  
*Groundwater Remediation Program*

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-069  
**Sample #** W08GR00675  
**Client ID:** BITV47

**CR+6 RERUN**  
**WSCF**

**Matrix:** WATER

**Group #:** WSCF20080566  
**Department:** Inorganic  
**Sampled:** 03/12/08  
**Received:** 03/12/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Hexavalent Chromium</b>											
Hexavalent Chromium	18540-29-9	LA-265-403	D	27.9	mg/L			3.73e+002	0.75		03/19/08

**MDL=Minimum Detection Limit**      D - Analyte was identified at a secondary dilution factor(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

Groundwater Remediation Program

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20080566  
 Matrix: WATER  
 Test: Hexavalent chromium

Sample Date: 03/12/08  
 Receive Date: 03/12/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W08GR00672</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	Hexavalent chromium	18540-29-9	31.1963		RPD			6.291	15.000		03/19/08
MS	Hexavalent chromium	18540-29-9	0.0536	100.187	% Recov	85.000	115.000				03/19/08
MSD	Hexavalent chromium	18540-29-9	0.0536	100.187	% Recov	85.000	115.000				03/19/08
SPK-RPD	Hexavalent chromium	18540-29-9	100.187		RPD			0.000	20.000		03/19/08
<b>BATCH QC</b>											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	03/19/08
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	03/19/08
LCS	Hexavalent chromium	18540-29-9	0.0518	102.778	% Recov	80.000	120.000				03/19/08

M4W41-SLF-08-347

ATTACHMENT 3

**SAMPLE RECEIPT ACKNOWLEDGEMENT**

Consisting of 2 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

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program

Richland, WA 99354  
Attn: Steve Trent

Customer Code: GPP  
PO#: 122616/ES20  
Group#: 20080566  
Project#: F08-069  
Proj Mgr: Steve Trent E6-35  
Phone: 373-5869

The following samples were received from you on 03/12/08. 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
W08GR00666	B1TV38	CR+6 RERUN CR+6	Water	03/12/08
W08GR00667	B1TV39	CR+6 RERUN CR+6	Water	03/12/08
W08GR00668	B1TV40	CR+6 RERUN CR+6	Water	03/12/08
W08GR00669	B1TV41	CR+6 RERUN CR+6	Water	03/12/08
W08GR00670	B1TV42	CR+6 RERUN CR+6	Water	03/12/08
W08GR00671	B1TV43	CR+6 RERUN CR+6	Water	03/12/08
W08GR00672	B1TV44	CR+6 RERUN CR+6	Water	03/12/08
W08GR00673	B1TV45	CR+6 RERUN CR+6	Water	03/12/08
W08GR00674	B1TV46	CR+6 RERUN CR+6	Water	03/12/08
W08GR00675	B1TV47	CR+6 RERUN CR+6	Water	03/12/08

Test Acronym Description

Test Acronym	Description
CR+6	Hexavalent chromium

M4W41-SLF-08-347

ATTACHMENT 4

**RECHECK, RECOUNT, OR REANALYSIS ORDER**

Consisting of 2 pages  
Including cover page

**03/19/2008**  
**RECHECK, RECOUNT, OR REANALYSIS ORDER**  
**CONTRACT NO MW6-SBB-A19981**

*Peru*  
 20080566  
 04/02/08

**Waste Sampling &  
 600 AREA Hanford, MSIN  
 Richland, WA 99352**

Battelle PNNL Order Number: RWSCF  
 Sample Delivery Group: WSCF20080516  
 Special Instructions: None

Lab Sample ID	PNNL Sample	Action	TAT	METHOD_NAME:
W08GR00574	B1TV38	Reanalysis	15/15	7196_CR6 - W08GR00666
W08GR00575	B1TV39	Reanalysis	15/15	7196_CR6 - 667
W08GR00576	B1TV40	Reanalysis	15/15	7196_CR6 - 668
W08GR00577	B1TV41	Reanalysis	15/15	7196_CR6 - 669
W08GR00578	B1TV42	Reanalysis	15/15	7196_CR6 - 670
W08GR00579	B1TV43	Reanalysis	15/15	7196_CR6 - 671
W08GR00580	B1TV44	Reanalysis	15/15	7196_CR6 - 672
W08GR00581	B1TV45	Reanalysis	15/15	7196_CR6 - 673
W08GR00582	B1TV46	Reanalysis	15/15	7196_CR6 - 674
W08GR00583	B1TV47	Reanalysis	15/15	7196_CR6 - 675

Deliver Report Results to: Fluor Hanford, Inc.  
 1200 Jadwin Ave.  
 Richland, WA 99352  
 C/O Mr. Steve Trent

The report results must reference the Battelle PNNL-order number, SDG number, and the Battelle PNNL sample identification number shown above.