

RECEIVED AUGUST 6, 2008

Fluor Hanford  
WSCF Analytical Lab  
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# FLUOR

## Memorandum

M4W41-SLF-08-789

To: H. Hampt E6-35 Date: August 6, 2008

From: S. L. Fitzgerald, Manager *Sy Sullivan*  
WSCF Analytical Lab

cc: w/Attachments

T. F. Dale	E6-35	J. E. Trechter	E6-35
A. J. Kopriva	E6-35	S. J. Trent	E6-35
H. K. Meznarich	E6-35	File/LB	
P. D. Mix	E6-35		

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20081553 – SAF NUMBER F08-001

Reference: (1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEM-001, October 31, 2002

(2) HNF-SD-CD-QAPP-017, Rev. 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following attachments for sample delivery group WSCF20081553:

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

SLF/cmj

Attachments 4



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ATTACHMENT 1

**COVER SHEET**

Consisting of 2 pages  
Including cover page

# WSCF SAF NUMBER CROSS REFERENCE

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Group#: WSCF20081553  
Data Deliverable Date: 08-sep-2008  
Data Deliverable: Cover Sheet

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SAF#	Sample ID	WSCF#	Matrix
F08-001	B1W9R8	W08GR02928	SOIL
	B1W9R9	W08GR02929	SOIL

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ATTACHMENT 2

**NARRATIVE**

Consisting of 2 pages  
Including cover page

**Introduction**

One S&GRP was received at the WSCF Laboratory on July 25, 2008. Sample was analyzed for the analyte 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.

**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 holding time requirement for this analysis was met. A Sample 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 12 for QC details.

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

  
Andrew Kopriva  
WSCF Client Services

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ATTACHMENT 3

**ANALYTICAL RESULTS**

Consisting of 7 pages  
Including cover page

**WSCF  
ANALYTICAL RESULTS REPORT**

**for**

**Groundwater Remediation Program**

**Richland, WA 99354**

**Attention: Steve Trent**

Analytical: William Baird WW Baird 8/4/08  
Client Services: A. Kopriva 8/1/08

*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#: WSCF20081553  
Report Date: 31-jul-2008  
Report WGPP/ver. 5.2  
Groundwater Remediation Program

W13q Worklist/Batch/QC Report for Group# WSCF20081553

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37377	2	37802	42123	BLNK-PREP		Hexavalent chromium
37377	3	37802	42123	LCS		Hexavalent chromium
37377	11	37802	42123	SAMPLE	W08GR02928	Hexavalent chromium
37377	5	37802	42123	DUP	W08GR02929	Hexavalent chromium
37377	6	37802	42123	MS	W08GR02929	Hexavalent chromium
37377	7	37802	42123	MSD	W08GR02929	Hexavalent chromium
37377	4	37802	42123	SAMPLE	W08GR02929	Hexavalent chromium
37377	8	37802	42123	SPK-POST	W08GR02929	Hexavalent chromium
37377	7	37802	42123	SPK-RPD	W08GR02929	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: 31-jul-2008  
Report#: WSCF20081553  
Report WGPPM/5.2

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-001  
**Sample #** W08GR02928  
**Client ID:** B1W9R8

**GPP** TRENT  
**WSCF**

**Matrix:** SOIL

**Group #:** WSCF20081553  
**Department:** Inorganic  
**Sampled:** 07/25/08  
**Received:** 07/25/08

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	U	< 0.100	mg/kg			1.00	0.10		07/31/08

**MDL=Minimum Detection Limit** 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

Groundwater Remediation Program

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F08-001  
**Sample #** W08GR02929  
**Client ID:** B1W9R9

**GPP** TRENT  
**WSCF**

**Matrix:** SOIL

**Group #:** WSCF20081553  
**Department:** Inorganic  
**Sampled:** 07/25/08  
**Received:** 07/25/08

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	U	< 0.100	mg/kg			1.00	0.10		07/31/08

**MDL=Minimum Detection Limit** 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

Groundwater Remediation Program

# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081553  
 Matrix: SOLID  
 Test: Hexavalent chromium

Sample Date: 07/25/08  
 Receive Date: 07/25/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W08GR02929</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	Hexavalent chromium	18540-29-9	< 0.10		RPD			n/a	15.000	U	07/31/08
MS	Hexavalent chromium	18540-29-9	7.45	75.943	% Recov	75.000	125.000				07/31/08
MS	Hexavalent chromium	18540-29-9	310	76.167	% Recov	75.000	125.000				07/31/08
MSD	Hexavalent chromium	18540-29-9	7.48	76.797	% Recov	75.000	125.000				07/31/08
SPK-POST	Hexavalent chromium	18540-29-9	0.0546	101.866	% Recov	75.000	125.000				07/31/08
SPK-RPD	Hexavalent chromium	18540-29-9	76.797		RPD			1.118	20.000		07/31/08
<b>BATCH QC</b>											
BLNK-PREP	Hexavalent chromium	18540-29-9	< 0.10	n/a	ug/g	0.000	2.000			U	07/31/08
LCS	Hexavalent chromium	18540-29-9	8.65	88.175	% Recov	80.000	120.000				07/31/08

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ATTACHMENT 4

**SAMPLE RECEIPT INFORMATION**

Consisting of 4 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#: 122636/ES10  
Group#: 20081553  
Project#: F08-001  
Proj Mgr: Steve Trent E6-35  
Phone: 373-5869

The following samples were received from you on 07/25/08. 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
W08GR02928	B1W9R8	GPP CR+6	TRENT Solid, or handle as if solid	07/25/08
W08GR02929	B1W9R9	GPP CR+6	TRENT Solid, or handle as if solid	07/25/08

Test Acronym Description

Test Acronym	Description
CR+6	Hexavalent chromium

Fluor Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F08-001-029	PAGE 1 OF 1	
COLLECTOR NCO Sampler <i>Mouler</i>		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 8N	DATA TURNAROUND 45 Days / 45 Days	
SAMPLING LOCATION C6744 I-001		PROJECT DESIGNATION 100-KR-4 Pump & Treat Expansion - Soil		SAF NO. F08-001		AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO.		FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH 56'	COA 122636ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO TestAmerica Incorporated, Richland		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A				
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>PRESERVATION</b> Cool--4C					
			<b>TYPE OF CONTAINER</b>	G/P				
			<b>NO. OF CONTAINER(S)</b>	1				
			<b>VOLUME</b>	60mL				
<b>SPECIAL HANDLING AND/OR STORAGE</b> 20081553		<b>SAMPLE ANALYSIS</b>		Chromium Hex - 7196;				
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>					
B1W9R8	NO F0820298 SOIL	7/25/80	0925					
<b>CHAIN OF POSSESSION</b>		<b>SIGN/ PRINT NAMES</b>			<b>SPECIAL INSTRUCTIONS</b>			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	10 feet AWT				
<i>J. M. ...</i>	7/25/80 0935	<i>V. ...</i>	7/25/80 0935					
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME					
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME					
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME					
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME					
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME					
<b>LABORATORY SECTION</b>	RECEIVED BY				<b>TITLE</b>	<b>DATE/TIME</b>		
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD				<b>DISPOSED BY</b>	<b>DATE/TIME</b>		

Fluor Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F08-001-030	PAGE 1 OF 1		
COLLECTOR NCO Sampler <i>Moulton</i>		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 8N	DATA TURNAROUND 45 Days / 45 Days		
SAMPLING LOCATION C6744 I-002		PROJECT DESIGNATION 100-KR-4 Pump & Treat Expansion - Soil		SAF NO. F08-001		AIR QUALITY <input type="checkbox"/>			
ICE CHEST NO.		FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH <i>61'</i>	COA 122636ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE			
SHIPPED TO TestAmerica Incorporated, Richland		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A					
MATRIX* A=Air DL=Drum L=Liquid DS=Drum S=Solid L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool-4C						
		TYPE OF CONTAINER	G/P						
		NO. OF CONTAINER(S)	1						
		VOLUME	60mL						
	<b>SPECIAL HANDLING AND/OR STORAGE</b>	<b>SAMPLE ANALYSIS</b>	Chromium Hex - 7196;						
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>						
B1W9R9 <i>w086202929</i>	SOIL	<i>2/25/8</i>	<i>1015</i>						
<b>CHAIN OF POSSESSION</b>		<b>SIGN/ PRINT NAMES</b>		<b>SPECIAL INSTRUCTIONS</b>					
RELINQUISHED BY/REMOVED FROM <i>J. Moulton</i>	DATE/TIME <i>2/25/8 10:35</i>	RECEIVED BY/STORED IN <i>V. L...</i>	DATE/TIME <i>2/25/08 10:35</i>	5 feet AWT					
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME						
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME						
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME						
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME						
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME						
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME					
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME					