

RECEIVED DECEMBER 19, 2008

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

**FLUOR**<sup>®</sup>

M4W41-SLF-08-1302

December 17, 2008

Mr. M. A. Neely, Manager  
 Analytical Services  
 CH2M HILL Plateau Remediation Contract  
 PO Box 1600 MSIN B6-06  
 Richland, WA 99352

RECEIVED  
 FEB 19 2009  
 EDMC

Dear Mike:

RDR #R5346 RESULTS FOR SAMPLE DELIVERY GROUP WSCF20082369 – SDG F06-027

- References: (1) Memo, SL Fitzgerald to H Hampt, Final Results for SDG WSCF20081438 (M4W41-SLF-08-760), dated July 30, 2008
- (2) Memorandum of Agreement #MOA-FH-CHPRC-2008, Rev. 0, for the Performance & Payment of Services, dated October 1, 2008
- (3) HNF-SD-CD-QAPP-017, Rev. 9, Waste Sampling & Characterization Facility Quality Assurance Plan

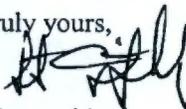
This letter contains the following RDR attachments for sample delivery group WSCF20082369:

- Recheck, Recount or Reanalysis Order #R5346 dated December 9, 2008 (Attachment 1)
- Analytical Results (Attachment 2)
- Sample Receipt Acknowledgement (Attachment 3)

Uranium results are near or below detection for each sample, and therefore uranium is a minor contributor to the gross alpha activity in these samples.

If you have any questions, don't hesitate to call on Andy Kopriva, telephone 373-1613, for assistance.

Very truly yours,



S. L. Fitzgerald  
 WSCF Analytical Lab

SLF/grf

Attachments 3

cc: w/Attachments			
T. F. Dale	S3-30	J. E. Trechter	S3-30
A. J. Kopriva	S3-30	S. J. Trent	B6-06
H. K. Meznarich	S3-30	File/LB	
P. D. Mix	S3-30		

M4W41-SLF-08-1302

ATTACHMENT 1

**RECHECK, RECOUNT OR REANALYSIS ORDER #R5346**

Consisting of 2 pages  
Including cover page

12/09/2008  
**RECHECK, RECOUNT, OR REANALYSIS ORDER**  
**CONTRACT NO MW6-SBB-A19981**

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

Battelle PNNL Order Number: 081209WSCF-R5346 (WSCF20082369)

Sample Delivery Group: WSCF20081438

Special Instructions **Please analyze for isotopic uranium, not gross alpha.**

**Samples(s)**

Lab Sample ID	PNNL Sample	Action	TAT	METHOD_NAME:
W08GR02590	B1WBD4	Reanalysis	15/15	ALPHA_GPC
W08GR02513	B1W860	Reanalysis	15/15	ALPHA_GPC
W08GR02521	B1W868	Reanalysis	15/15	ALPHA_GPC

**WSCF Response**

Samples were analyzed for isotopic uranium, and report and EDD file submitted to client.

Deliver Report Results to:CH2M Hill Plateau Remediation Company  
P.O. Box 1600  
Mail Stop - B6-06  
Richland, WA 99352  
C/O Mr. Mike Neely

M4W41-SLF-08-1302

ATTACHMENT 2

**ANALYTICAL RESULTS**

Consisting of 9 pages  
Including cover page

**WSCF  
ANALYTICAL RESULTS REPORT**

**for**

**Groundwater Remediation Program**

**Richland, WA 99354**

**Attention: Steve Trent**

Analytical: \_\_\_\_\_

Client Services: ~~AM~~ A. Koprwa 12-17-08

*All results are reported on an "as received" basis unless otherwise noted in the comment section.*

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Contract#: MOA-FH-CHPRC-2008

Report#: WSCF20082369

Report Date: 16-dec-2008

Report WGPP/ver. 5.2

Groundwater Remediation Program

W13q Worklist/Batch/QC Report for Group# WSCF20082369

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
38818	1	39235	43732	BLANK		Uranium Isotopics by AEA
38818	2	39235	43732	LCS		Uranium Isotopics by AEA
38818	3	39235	43732	DUP	W08GR04250	Uranium Isotopics by AEA
38818	4	39235	43732	SAMPLE	W08GR04250	Uranium Isotopics by AEA
38818	5	39235	43732	SURR	W08GR04250	Uranium Isotopics by AEA
38818	6	39235	43732	SAMPLE	W08GR04251	Uranium Isotopics by AEA
38818	7	39235	43732	SURR	W08GR04251	Uranium Isotopics by AEA
38818	8	39235	43732	SAMPLE	W08GR04252	Uranium Isotopics by AEA
38818	9	39235	43732	SURR	W08GR04252	Uranium Isotopics by AEA

# WSCF

## METHOD REFERENCES REPORT

Department: Radiochemistry

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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-508-471</b>	<b>LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP</b>
	<b>HEIS PUIISO_IE_PRECIP_AEA</b> Plutonium by Alpha Energy Analysis
	<b>HEIS RAISO_AEA</b> Radium-226

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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: 16-dec-2008  
Report#: WSCF20082369  
Report WGPPM/5.2

# WSCF ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent  
**SAF Number:** F06-027  
**Sample #** W08GR04250  
**Client ID:** B1WBD4

U-ISO  
 WSCF

**Matrix:** WATER

**Group #:** WSCF20082369  
**Department:** Radiochemistry  
**Sampled:** 07/13/08  
**Received:** 07/14/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Uranium Isotopics by AEA</b>											
Uranium-233/234	U-233/234	LA-508-471		2.40	pCi/L	+ -1.63	pCi/L	1.00	0.65		12/15/08
Uranium-235	15117-96-1	LA-508-471		0.780	pCi/L	+ -0.920	pCi/L	1.00	0.71		12/15/08
Uranium-238	U-238	LA-508-471	U	1.40	pCi/L	+ -1.37	pCi/L	1.00	1.8		12/15/08
U-232 tracer by AEA	U232	LA-508-471		510	pCi/L			1.00	4.6		12/15/08

**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:** F06-027  
**Sample #** W08GR04251  
**Client ID:** B1W860

U-ISO  
 WSCF

**Matrix:** WATER

**Group #:** WSCF20082369  
**Department:** Radiochemistry  
**Sampled:** 07/14/08  
**Received:** 07/14/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Uranium Isotopics by AEA</b>											
Uranium-233/234	U-233/234	LA-508-471		5.90	pCi/L	+4.72	pCi/L	1.00	2.3		12/15/08
Uranium-235	15117-96-1	LA-508-471		3.70	pCi/L	+3.81	pCi/L	1.00	2.5		12/15/08
Uranium-238	U-238	LA-508-471		5.00	pCi/L	+4.30	pCi/L	1.00	2.3		12/15/08
U-232 tracer by AEA	U232	LA-508-471		1.70e+03	pCi/L			1.00	16		12/15/08

**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:** F06-027  
**Sample #** W08GR04252  
**Client ID:** B1W868

U-ISO  
 WSCF

**Matrix:** WATER

**Group #:** WSCF20082369  
**Department:** Radiochemistry  
**Sampled:** 07/14/08  
**Received:** 07/14/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
<b>Uranium Isotopics by AEA</b>											
Uranium-233/234	U-233/234	LA-508-471	U	1.20	pCi/L	+ -2.42	pCi/L	1.00	4.3		12/15/08
Uranium-235	15117-98-1	LA-508-471	U	0.590	pCi/L	+ -0.590	pCi/L	1.00	4.7		12/15/08
Uranium-238	U-238	LA-508-471	U	3.00	pCi/L	+ -3.27	pCi/L	1.00	4.3		12/15/08
U-232 tracer by AEA	U232	LA-508-471		1.30e +03	pCi/L			1.00	8.3		12/15/08

**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

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# WSCF ANALYTICAL COMMENT REPORT

**Attention:** Steve Trent  
**Project Number** F06-027

**Group #:** WSCF20082369  
**Department:** Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		W08GR04250-4252/U-235 duplicate is flagged for poor RPD but the sample activity is low level. RPD doesn't apply to low level samples. Imh

**Lab Areas:** VALGROUP - Group Validation  
LOGSAMP - Login for Sample

VALTEST - Test Validation  
LOGTEST - Login for Tests

TESTDATA - Test Data Entry

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# WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20082369  
 Matrix: WATER  
 Test: Uranium Isotopics by AEA

Sample Date: 07/13/08  
 Receive Date: 07/14/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
<b>Lab ID: W08GR04250</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
DUP	U-232 tracer by AEA	U232	513.9	86.940	% Recov	30.000	105.000				12/15/08
DUP	Uranium-233/234	U-233/234	2.1		RPD			13.333	20.000		12/15/08
DUP	Uranium-235	15117-96-1	1.3		RPD			50.000	20.000		12/15/08
DUP	Uranium-238	U-238	U0.48		RPD			n/a	20.000		12/15/08
SURR	U-232 tracer by AEA	U232	513.9	85.600	% Recov	30.000	105.000				12/15/08
<b>Lab ID: W08GR04251</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	U-232 tracer by AEA	U232	1713	87.380	% Recov	30.000	105.000				12/15/08
<b>Lab ID: W08GR04252</b>											
<b>BATCH QC ASSOCIATED WITH SAMPLE</b>											
SURR	U-232 tracer by AEA	U232	1285	88.820	% Recov	30.000	105.000				12/15/08
<b>BATCH QC</b>											
BLANK	U-232 tracer by AEA	U232	513.9	83.500	% Recov	30.000	105.000				12/15/08
BLANK	Uranium-233/234	13966-29-5	U0.97	n/a	pCi/L	-10.000	1000.000				12/15/08
BLANK	Uranium-235	15117-96-1	U0.53	n/a	pCi/L	-10.000	1000.000				12/15/08
BLANK	Uranium-238	24678-82-8	U0.24	n/a	pCi/L	-10.000	1000.000				12/15/08
LCS	U-232 tracer by AEA	U232	11.41	82.250	% Recov	30.000	105.000				12/15/08
LCS	Uranium-233/234	13966-29-5	82.25	82.250	% Recov	75.000	125.000				12/15/08
LCS	Uranium-238	24678-82-8	21.25	112.108	% Recov	80.000	120.000				12/15/08

M4W41-SLF-08-1302

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

*File*

ACKNOWLEDGMENT OF SAMPLES RECEIVED

*12/28/08*  
*tl*  
*R534*

Groundwater Remediation Program

Richland, WA 99354  
Attn: Steve Trent

Customer Code: GPP  
PO#: 122561/ES20  
Group#: 20082369  
Project#: F06-027  
Proj Mgr: Steve Trent E6-35  
Phone: 373-5869

The following samples were received from you on 07/14/08. 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
W08GR04250	B1WB4	U-ISO @AEA-32	Water	07/13/08
W08GR04251	B1W860	U-ISO @AEA-32	Water	07/14/08
W08GR04252	B1W868	U-ISO @AEA-32	Water	07/14/08

Test Acronym Description

Test Acronym	Description
@AEA-32	Uranium Isotopics by AEA