RECEIVED JULY 20, 2010

REVISION 2 0091401

Mission Support Alliance
P.O. Box 650
Richland, Washington 99352

42100-SLF-10-249

June 17, 2010

Mr. M. A. Neely, Manager
Analytical Services
CH2M HILL Plateau Remediation Company
PO Box 1600 MSIN R3-60
Richland, WA 99352

Dear Mike,

P&D RESULTS FOR SAMPLE DELIVERY GROUP WSCF20091035 – SAF NUMBER F09-047

References:
(1) Letter, SL Fitzgerald (FH) to MA Neely (CHPRC), Revised Final Results for SDG WSCF20091035 (M4W41-SLF-09-295), dated December 1, 2009
(2) Letter, SL Fitzgerald (FH) to MA Neely (CHPRC), Final Results for SDG WSCF20091035 (M4W41-SLF-09-278), dated October 27, 2009
(3) Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, 'FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER'
(4) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

On December 8, 2009, the subject P&D was received by the WSCF Laboratory. This letter replaces Reference 1 submittal in its entirety together with the P&D data for sample delivery group WSCF20091035.

Please accept our apology for any inconvenience this may have created. If you have any questions, don't hesitate to call on Marisol Avila, telephone 373-1613, for assistance.

Very truly yours,

S. L. Fitzgerald
WSCF Analytical Lab

SLF/grf

Attachments 4

cc: w/Attachments

M. Avila	S3-30
H. K. Meznarich	S3-30
J. E. Trechter	S3-30
S. J. Trent	R3-50
File/LB	

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OCT 27 2010
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42100-SLF-10-249

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20091035
Data Deliverable Date: 31-oct-2009
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
F09-047	B22CK8	W09GR00905	SOIL
	B22CL0	W09GR00903	SOIL
	B22CL1	W09GR00902	SOIL
	B22CL2	W09GR00904	SOIL
	B22CL3	W09GR00895	SOIL
	B22CL4	W09GR00901	SOIL
	B22CL5	W09GR00900	SOIL
	B22CL6	W09GR00899	SOIL
	B22CL7	W09GR00896	SOIL
	B22CL8	W09GR00898	SOIL
	B22CL9	W09GR00897	SOIL

42100-SLF-10-249

ATTACHMENT 2

NARRATIVE & P&D CORRECTION

Consisting of 6 pages
Including cover page

P&D Correction – Case Narrative Replaces the Prior Submittal in its Entirety

Introduction – Reanalysis of B22CL1

Eleven (11) S&GRP samples were received at the WSCF Laboratory on October 16, 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 customer subsequently identified sample B22CL1 for radiochemical re-analysis because the original radiochemistry results for this sample did not conform to those results from similar samples. This revised report presents the results from the re-analysis; the customer has determined that the re-analysis results should replace the results from the initial analysis.

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. Additionally, a copy of the completed P&D # WSCF20091035 and the email chain identifying sample B22CL1 for re-analysis are included with this case narrative.

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,* page 14, for a complete listing of approved analytical methods.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 26 through 35 for QC details. 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 the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

Marisol Avila
WSCF Client Services

12/8/2009

Problem and Discrepancy Report
WSCF
SDG WSCF20091035

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1. The data package has the following issues:

a) CHPRC received a revised data package for this SDG that has an e-mail embedded as the last page. The e-mail directs the lab to reanalyze sample number B22CL1 due to a perceived discrepancy. It appears that the lab did indeed reanalyze the sample and different results from the original are reported in the latest revision. As a consequence we have 2 sets of results- the original that were loaded into HEIS and the new results that are hung up in the staged results. We need the lab to provide an explanation in the narrative that provides the following:

a. Why the sample was re-analyzed.

b. What the outcome of that reanalysis was.

In addition, we need to know which results we need to purge and which we need to keep.

Resolution: *Provide discussion and clarification.*

Lab Response: **Short paragraph added to case narrative indicating why sample was reanalyzed and that the results from the reanalysis are the customer-preferred results.**

Please correct the issues and resubmit the hard copy data package.

From: Hermann, Randy M
To: Barker, Richard L; Medley, Heather A; Westberg, Richard A;
Subject: FW: INTERIM - FINAL REPORT FOR SDG 20091035 F09-047
Date: Monday, November 30, 2009 3:59:52 PM
Attachments: 10-23-09 20091035 F09-047 GRP S TRENT - INTERIM.pdf

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The sample identified below, should have been the one re-counted. With the low levels reported (near detection limit and error tolerances) we asked that the sample be recounted because the ratio of beta to alpha and alpha to alpha did not make sense when compared to the other 29 samples collected from the same general location.

From: Hermann, Randy M
Sent: Wednesday, November 04, 2009 10:14 AM
To: Westberg, Richard A
Subject: FW: INTERIM - FINAL REPORT FOR SDG 20091035 F09-047

The sample that our rad engineer has questions about is B22CL1, your sample number W09GR00902. I know these are at low levels and I am not sure how much you can do. Our rad engineer is requesting a re-run of this sample we want you to assess the value of going down that road. We will be over to talk about it directly just wanted to let you know which sample he is looking.

From: Westberg, Richard A
Sent: Monday, October 26, 2009 11:08 AM
To: Hermann, Randy M
Subject: FW: INTERIM - FINAL REPORT FOR SDG 20091035 F09-047

From: Medley, Heather A
Sent: Monday, October 26, 2009 7:56 AM
To: Westberg, Richard A
Subject: FW: INTERIM - FINAL REPORT FOR SDG 20091035 F09-047

From: Kessler, Mitchel D
Sent: Friday, October 23, 2009 2:07 PM
To: ^CPP Sample Management; Barker, Richard L; Fitzgerald, Scot L; Kopriva, Andrew; Kopriva, Sasha T; Medley, Heather A; Meznarich, Huei K; Trechter, John E

Jr
Subject: INTERIM - FINAL REPORT FOR SDG 20091035 F09-047

WSCF ANALYTICAL RESULTS REPORT FOR SAMPLE DELIVERY GROUP 20091035 F09-047 – INTERIM.

42100-SLF-10-249

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 28 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: S.F.Fitzgerald 7/19/10

Client Services: Heather Medley 7/18/10

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#: MOA-FH-CHPRC-2008
Report#: WSCF20091035
Report Date: 16-jun-2010
Report WGPP/ver. 5.2
Groundwater Remediation Program

w13qlog v4.2 16-jun-2010 10:21:54

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20091035

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
40107	1	40538	45094	BLANK		Gamma Energy Analysis-grd H2O
40107	2	40538	45094	LCS		Gamma Energy Analysis-grd H2O
40107	3	40538	45094	DUP	W09GR00895	Gamma Energy Analysis-grd H2O
40107	4	40538	45094	SAMPLE	W09GR00895	Gamma Energy Analysis-grd H2O
40107	5	40538	45094	SAMPLE	W09GR00896	Gamma Energy Analysis-grd H2O
40107	6	40538	45094	SAMPLE	W09GR00897	Gamma Energy Analysis-grd H2O
40107	7	40538	45094	SAMPLE	W09GR00898	Gamma Energy Analysis-grd H2O
40107	8	40538	45094	SAMPLE	W09GR00899	Gamma Energy Analysis-grd H2O
40107	9	40538	45094	SAMPLE	W09GR00900	Gamma Energy Analysis-grd H2O
40107	10	40538	45094	SAMPLE	W09GR00901	Gamma Energy Analysis-grd H2O
40107	11	40538	45094	SAMPLE	W09GR00902	Gamma Energy Analysis-grd H2O
40107	12	40538	45094	SAMPLE	W09GR00903	Gamma Energy Analysis-grd H2O
40107	13	40538	45094	SAMPLE	W09GR00904	Gamma Energy Analysis-grd H2O
40107	14	40538	45094	SAMPLE	W09GR00905	Gamma Energy Analysis-grd H2O
40113	1	40541	45097	BLANK		Plutonium Isotopics by AEA
40113	2	40541	45097	LCS		Plutonium Isotopics by AEA
40113	3	40541	45097	DUP	W09GR00895	Plutonium Isotopics by AEA
40113	4	40541	45097	SAMPLE	W09GR00895	Plutonium Isotopics by AEA
40113	5	40541	45097	SURR	W09GR00895	Plutonium Isotopics by AEA
40113	6	40541	45097	SAMPLE	W09GR00896	Plutonium Isotopics by AEA
40113	7	40541	45097	SURR	W09GR00896	Plutonium Isotopics by AEA
40113	8	40541	45097	SAMPLE	W09GR00897	Plutonium Isotopics by AEA
40113	9	40541	45097	SURR	W09GR00897	Plutonium Isotopics by AEA
40113	10	40541	45097	SAMPLE	W09GR00898	Plutonium Isotopics by AEA
40113	11	40541	45097	SURR	W09GR00898	Plutonium Isotopics by AEA
40113	12	40541	45097	SAMPLE	W09GR00900	Plutonium Isotopics by AEA
40113	13	40541	45097	SURR	W09GR00900	Plutonium Isotopics by AEA
40113	14	40541	45097	SAMPLE	W09GR00905	Plutonium Isotopics by AEA
40113	15	40541	45097	SURR	W09GR00905	Plutonium Isotopics by AEA
40114	1	40542	45098	BLANK		Americium by AEA
40114	2	40542	45098	LCS		Americium by AEA
40114	3	40542	45098	DUP	W09GR00895	Americium by AEA
40114	4	40542	45098	SAMPLE	W09GR00895	Americium by AEA
40114	5	40542	45098	SURR	W09GR00895	Americium by AEA
40114	6	40542	45098	SAMPLE	W09GR00896	Americium by AEA
40114	7	40542	45098	SURR	W09GR00896	Americium by AEA
40114	8	40542	45098	SAMPLE	W09GR00897	Americium by AEA
40114	9	40542	45098	SURR	W09GR00897	Americium by AEA
40114	10	40542	45098	SAMPLE	W09GR00898	Americium by AEA
40114	11	40542	45098	SURR	W09GR00898	Americium by AEA
40114	12	40542	45098	SAMPLE	W09GR00900	Americium by AEA
40114	13	40542	45098	SURR	W09GR00900	Americium by AEA
40114	14	40542	45098	SAMPLE	W09GR00905	Americium by AEA
40114	15	40542	45098	SURR	W09GR00905	Americium by AEA
40111	1	40531	45104	BLANK		Strontium 89/90
40111	2	40531	45104	LCS		Strontium 89/90
40111	3	40531	45104	DUP	W09GR00899	Strontium 89/90
40111	4	40531	45104	SAMPLE	W09GR00899	Strontium 89/90
40111	5	40531	45104	SURR	W09GR00899	Strontium 89/90

40111	6	40531	45104	SAMPLE	W09GR00901	Strontium 89/90
40111	7	40531	45104	SURR	W09GR00901	Strontium 89/90
40111	8	40531	45104	SAMPLE	W09GR00902	Strontium 89/90
40111	9	40531	45104	SURR	W09GR00902	Strontium 89/90
40111	10	40531	45104	SAMPLE	W09GR00903	Strontium 89/90
40111	11	40531	45104	SURR	W09GR00903	Strontium 89/90
40111	12	40531	45104	SAMPLE	W09GR00904	Strontium 89/90
40111	13	40531	45104	SURR	W09GR00904	Strontium 89/90
40115	1	40543	45105	BLANK		Strontium 89/90
40115	2	40543	45105	LCS		Strontium 89/90
40115	3	40543	45105	DUP	W09GR00895	Strontium 89/90
40115	4	40543	45105	SAMPLE	W09GR00895	Strontium 89/90
40115	5	40543	45105	SURR	W09GR00895	Strontium 89/90
40115	6	40543	45105	SAMPLE	W09GR00896	Strontium 89/90
40115	7	40543	45105	SURR	W09GR00896	Strontium 89/90
40115	8	40543	45105	SAMPLE	W09GR00897	Strontium 89/90
40115	9	40543	45105	SURR	W09GR00897	Strontium 89/90
40115	10	40543	45105	SAMPLE	W09GR00898	Strontium 89/90
40115	11	40543	45105	SURR	W09GR00898	Strontium 89/90
40115	12	40543	45105	SAMPLE	W09GR00900	Strontium 89/90
40115	13	40543	45105	SURR	W09GR00900	Strontium 89/90
40115	14	40543	45105	SAMPLE	W09GR00905	Strontium 89/90
40115	15	40543	45105	SURR	W09GR00905	Strontium 89/90
40116	1	40544	45111	BLANK		Plutonium Isotopics by AEA
40116	2	40544	45111	LCS		Plutonium Isotopics by AEA
40116	3	40544	45111	DUP	W09GR00899	Plutonium Isotopics by AEA
40116	4	40544	45111	SAMPLE	W09GR00899	Plutonium Isotopics by AEA
40116	5	40544	45111	SURR	W09GR00899	Plutonium Isotopics by AEA
40116	6	40544	45111	SAMPLE	W09GR00901	Plutonium Isotopics by AEA
40116	7	40544	45111	SURR	W09GR00901	Plutonium Isotopics by AEA
40116	8	40544	45111	SAMPLE	W09GR00902	Plutonium Isotopics by AEA
40116	9	40544	45111	SURR	W09GR00902	Plutonium Isotopics by AEA
40116	10	40544	45111	SAMPLE	W09GR00903	Plutonium Isotopics by AEA
40116	11	40544	45111	SURR	W09GR00903	Plutonium Isotopics by AEA
40116	12	40544	45111	SAMPLE	W09GR00904	Plutonium Isotopics by AEA
40116	13	40544	45111	SURR	W09GR00904	Plutonium Isotopics by AEA
40117	1	40545	45113	BLANK		Americium by AEA
40117	2	40545	45113	LCS		Americium by AEA
40117	3	40545	45113	DUP	W09GR00899	Americium by AEA
40117	4	40545	45113	SAMPLE	W09GR00899	Americium by AEA
40117	5	40545	45113	SURR	W09GR00899	Americium by AEA
40117	6	40545	45113	SAMPLE	W09GR00901	Americium by AEA
40117	7	40545	45113	SURR	W09GR00901	Americium by AEA
40117	8	40545	45113	SAMPLE	W09GR00902	Americium by AEA
40117	9	40545	45113	SURR	W09GR00902	Americium by AEA
40117	10	40545	45113	SAMPLE	W09GR00903	Americium by AEA
40117	11	40545	45113	SURR	W09GR00903	Americium by AEA
40117	12	40545	45113	SAMPLE	W09GR00904	Americium by AEA
40117	13	40545	45113	SURR	W09GR00904	Americium by AEA

WSCF
METHOD REFERENCES REPORT

Department: Radiochemistry

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.

LA-508-415 LA-508-415: OPERATION OF THE PROTEAN 2-INCH ALPHA/BETA COUNTING SYSTEM FOR GROSS
None No reference to any industry method.

LA-508-471 LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP
None No reference to any industry method.

LA-508-481 LA-508-481: GAMMA ENERGY ANALYSIS USING PROCOUNT SOFTWARE
None No reference to any industry method.

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.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00895
Client ID: B22CL3 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471		1.00	pCi/g	+-0.540	pCi/g	1.00	0.60		10/19/09
Am-243 tracer by AEA	AM243	LA-508-471		100	pCi/g			1.00	0.29		10/19/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		1.78e+03	pCi/g	+-252	pCi/g	1.00	1.8		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.260	pCi/g	+-0.972	pCi/g	1.00	1.7		10/19/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.890	pCi/g	+-0.587	pCi/g	1.00	0.69		10/19/09
Pu-242	13982-10-0	LA-508-471		160	pCi/g			1.00	0.38		10/19/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		3.90e+03	pCi/g	+-468	pCi/g	1.00	17		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		95.5	Percent			1.00	0.0		10/19/09

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00896
Client ID: B22CL7 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471		0.550	pCi/g	+-0.253	pCi/g	1.00	0.22		10/19/09
Am-243 tracer by AEA	AM243	LA-508-471		49.0	pCi/g			1.00	0.050		10/19/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		786	pCi/g	+-139	pCi/g	1.00	1.4		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0240	pCi/g	+-0.0240	pCi/g	1.00	0.79		10/19/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.620	pCi/g	+-0.298	pCi/g	1.00	0.17		10/19/09
Pu-242	13982-10-0	LA-508-471		76.0	pCi/g			1.00	0.22		10/19/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		920	pCi/g	+-110	pCi/g	1.00	5.4		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		99.1	Percent			1.00	0.0		10/19/09

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00897
Client ID: B22CL9 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471		2.10	pCi/g	+-0.819	pCi/g	1.00	0.48		10/19/09
Am-243 tracer by AEA	AM243	LA-508-471		130	pCi/g			1.00	0.38		10/19/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		4.22e+03	pCi/g	+-656	pCi/g	1.00	3.3		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.250	pCi/g	+-1.10	pCi/g	1.00	1.9		10/19/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		2.70	pCi/g	+-1.08	pCi/g	1.00	0.17		10/19/09
Pu-242	13982-10-0	LA-508-471		200	pCi/g			1.00	0.66		10/19/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		2.70e+03	pCi/g	+-324	pCi/g	1.00	12		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		86.3	Percent			1.00	0.0		10/19/09

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00898
Client ID: B22CL8 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471		0.0790	pCi/g	+-0.0419	pCi/g	1.00	0.013		10/19/09
Am-243 tracer by AEA	AM243	LA-508-471		9.80	pCi/g			1.00	0.013		10/19/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		56.1	pCi/g	+-10.0	pCi/g	1.00	0.42		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0440	pCi/g	+-0.0818	pCi/g	1.00	0.14		10/19/09
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	0.0440	pCi/g	+-0.0418	pCi/g	1.00	0.059		10/19/09
Pu-242	13982-10-0	LA-508-471		15.0	pCi/g			1.00	0.045		10/19/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		140	pCi/g	+-16.8	pCi/g	1.00	1.0		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		80.3	Percent			1.00	0.0		10/19/09

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
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00899
Client ID: B22CL6 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471	U	-0.0380	pCi/g	+-0.0870	pCi/g	1.00	0.16		10/22/09
Am-243 tracer by AEA	AM243	LA-508-471		9.80	pCi/g			1.00	0.051		10/22/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		2.98	pCi/g	+-0.510	pCi/g	1.00	0.17		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0380	pCi/g	+-0.103	pCi/g	1.00	0.18		10/22/09
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	0.0540	pCi/g	+-0.0502	pCi/g	1.00	0.071		10/22/09
Pu-242	13982-10-0	LA-508-471		15.0	pCi/g			1.00	0.040		10/22/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		7.00	pCi/g	+-1.40	pCi/g	1.00	0.42		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		80.6	Percent			1.00	0.0		10/19/09

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RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00900
Client ID: B22CL5 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471		0.0260	pCi/g	+-0.0138	pCi/g	1.00	0.013		10/19/09
Am-243 tracer by AEA	AM243	LA-508-471		2.90	pCi/g			1.00	8.6e-03		10/19/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		9.78	pCi/g	+-1.81	pCi/g	1.00	0.14		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	-0.0520	pCi/g	+-0.0328	pCi/g	1.00	0.060		10/19/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0340	pCi/g	+-0.0184	pCi/g	1.00	0.017		10/19/09
Pu-242	13982-10-0	LA-508-471		4.50	pCi/g			1.00	0.013		10/19/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		8.10	pCi/g	+-1.22	pCi/g	1.00	0.28		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		85.2	Percent			1.00	0.0		10/19/09

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
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00901
Client ID: B22CL4 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471	U	0.0200	pCi/g	+-0.0666	pCi/g	1.00	0.11		10/22/09
Am-243 tracer by AEA	AM243	LA-508-471		9.70	pCi/g			1.00	0.047		10/22/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		20.6	pCi/g	+-3.87	pCi/g	1.00	0.39		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0450	pCi/g	+-0.0891	pCi/g	1.00	0.15		10/22/09
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	0.0310	pCi/g	+-0.0279	pCi/g	1.00	0.033		10/22/09
Pu-242	13982-10-0	LA-508-471		15.0	pCi/g			1.00	0.041		10/22/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		11.0	pCi/g	+-1.65	pCi/g	1.00	0.41		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		80.9	Percent			1.00	0.0		10/19/09

MDL = Minimum Detection Limit U - Analyzed for but not detected above limiting criteria(inorg)
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00902
Client ID: B22CL1 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471	U	0.0630	pCi/g	+-0.0561	pCi/g	1.00	0.082		10/22/09
Am-243 tracer by AEA	AM243	LA-508-471		9.80	pCi/g			1.00	0.046		10/22/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		1.22	pCi/g	+-0.320	pCi/g	1.00	0.14		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0329	pCi/g	+-0.0697	pCi/g	1.00	0.12		10/22/09
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	0.0274	pCi/g	+-0.0334	pCi/g	1.00	0.051		10/22/09
Pu-242	13982-10-0	LA-508-471		15.3	pCi/g			1.00	0.056		10/22/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		0.750	pCi/g	+-0.922	pCi/g	1.00	0.44		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		77.2	Percent			1.00	0.0		10/19/09

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00903
Client ID: B22CL0 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471	U	-0.0330	pCi/g	+-0.0789	pCi/g	1.00	0.15		10/22/09
Am-243 tracer by AEA	AM243	LA-508-471		9.90	pCi/g			1.00	0.075		10/22/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		0.789	pCi/g	+-0.292	pCi/g	1.00	0.26		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	4.60e-03	pCi/g	+-0.0460	pCi/g	1.00	0.15		10/22/09
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	-4.60e-03	pCi/g	+-0.0276	pCi/g	1.00	0.060		10/22/09
Pu-242	13982-10-0	LA-508-471		15.0	pCi/g			1.00	0.034		10/22/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	-0.340	pCi/g	+-0.959	pCi/g	1.00	0.45		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		76.0	Percent			1.00	0.0		10/19/09

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00904
Client ID: B22CL2 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471	U	0.0560	pCi/g	+-0.0823	pCi/g	1.00	0.13		10/22/09
Am-243 tracer by AEA	AM243	LA-508-471		10.0	pCi/g			1.00	0.081		10/22/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		8.19	pCi/g	+-1.51	pCi/g	1.00	0.14		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	4.90e-03	pCi/g	+-0.0490	pCi/g	1.00	0.17		10/22/09
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	0.0440	pCi/g	+-0.0370	pCi/g	1.00	0.046		10/22/09
Pu-242	13982-10-0	LA-508-471		16.0	pCi/g			1.00	0.036		10/22/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		5.50	pCi/g	+-1.26	pCi/g	1.00	0.51		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		68.2	Percent			1.00	0.0		10/19/09

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
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00905
Client ID: B22CK8 GPP WSCF

Matrix: SOIL

Group #: WSCF20091035
Department: Radiochemistry
Sampled: 10/16/09
Received: 10/16/09

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Americium by AEA											
Americium-241	14596-10-2	LA-508-471		0.0460	pCi/g	+-0.0230	pCi/g	1.00	0.021		10/19/09
Am-243 tracer by AEA	AM243	LA-508-471		4.50	pCi/g			1.00	0.013		10/19/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		36.4	pCi/g	+-6.84	pCi/g	1.00	0.18		10/19/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	-0.0460	pCi/g	+-0.0451	pCi/g	1.00	0.085		10/19/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0610	pCi/g	+-0.0293	pCi/g	1.00	0.020		10/19/09
Pu-242	13982-10-0	LA-508-471		7.00	pCi/g			1.00	0.024		10/19/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		15.0	pCi/g	+-2.10	pCi/g	1.00	0.38		10/19/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		99.1	Percent			1.00	0.0		10/19/09

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
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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091035
Matrix: SOLID
Test: Americium by AEA

Sample Date: 10/16/09
Receive Date:10/16/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00895											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Americium-241	14596-10-2	1.2		RPD			18.182	20.000		10/19/09
DUP	Am-243 tracer by AEA	AM243	95.47	87.950	% Recov	30.000	105.000				10/19/09
SURR	Am-243 tracer by AEA	AM243	99.65	90.040	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00896											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	48.57	90.060	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00897											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	128.5	84.940	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00898											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	9.848	79.900	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00900											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	2.888	83.820	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00905											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	4.499	90.650	% Recov	30.000	105.000				10/19/09
BATCH QC											
BLANK	Americium-241	14596-10-2	U-3.6e-3	n/a	pCi/g	-10.000	1000.000				10/19/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091035
Matrix: SOLID
Test: Americium by AEA

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Am-243 tracer by AEA	AM243	4.002	90.160	% Recov	30.000	105.000				10/19/09
LCS	Americium-241	14596-10-2	12.62	106.498	% Recov	80.000	120.000				10/19/09
LCS	Am-243 tracer by AEA	AM243	11.11	80.840	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00899											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Americium-241	14596-10-2	U-2.7e-2		RPD			n/a	20.000		10/22/09
DUP	Am-243 tracer by AEA	AM243	9.906	103.400	% Recov	30.000	105.000				10/22/09
SURR	Am-243 tracer by AEA	AM243	9.828	96.600	% Recov	30.000	105.000				10/22/09
Lab ID: W09GR00901											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	9.714	104.110	% Recov	30.000	105.000				10/22/09
Lab ID: W09GR00902											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	9.809	102.500	% Recov	30.000	105.000				10/22/09
Lab ID: W09GR00903											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	9.926	96.470	% Recov	30.000	105.000				10/22/09
Lab ID: W09GR00904											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	10.01	91.990	% Recov	30.000	105.000				10/22/09
BATCH QC											
BLANK	Americium-241	14596-10-2	U3.4e-2	n/a	pCi/g	-10.000	1000.000				10/22/09
BLANK	Am-243 tracer by AEA	AM243	9.828	84.930	% Recov	30.000	105.000				10/22/09
LCS	Americium-241	14596-10-2	12.18	102.785	% Recov	80.000	120.000				10/22/09

REVISION 2

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20091035
Matrix: SOLID
Test: Americium by AEA

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Am-243 tracer by AEA	AM243	11.11	93.150	% Recov	30.000	105.000				10/22/09

REVISION 2

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091035
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

Sample Date: 10/16/09
Receive Date:10/16/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00895											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Cesium-137	10045-97-3	1750		RPD			1.700	20.000		10/19/09
BATCH QC											
BLANK	Cesium-137	10045-97-3	U9.328e-3	n/a	pCi/g	-10.000	1000.000				10/19/09
LCS	Cesium-137	10045-97-3	6481	107.301	% Recov	80.000	120.000				10/19/09

REVISION 2

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091035
Matrix: SOLID
Test: Plutonium Isotopics by AEA

Sample Date: 10/16/09
Receive Date:10/16/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00895											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Plutonium-238	13981-16-3	U9.5e-2		RPD			n/a	20.000		10/19/09
DUP	Pu-239/240 by AEA	PU-239/240	1		RPD			11.640	20.000		10/19/09
DUP	Pu-242	13982-10-0	148.7	83.490	% Recov	30.000	105.000				10/19/09
SURR	Pu-242	13982-10-0	155.2	80.930	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00896											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	75.66	90.040	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00897											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	200.2	86.960	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00898											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	15.34	84.850	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00900											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	4.498	90.000	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00905											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	7.008	84.510	% Recov	30.000	105.000				10/19/09

REVISION 2

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091035
Matrix: SOLID
Test: Plutonium Isotopics by AEA

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	Plutonium-238	13981-16-3	U-5.6e-3	n/a	pCi/g	-10.000	1000.000				10/19/09
BLANK	Pu-239/240 by AEA	PU-239/240	U9.4e-3	n/a	pCi/g	-10.000	1000.000				10/19/09
BLANK	Pu-242	PU242	6.23	86.335	% Recov	30.000	105.000				10/19/09
LCS	Pu-239/240 by AEA	PU-239/240	14.52	113.040	% Recov	80.000	120.000				10/19/09
LCS	Pu-242	PU242	17.3	82.860	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00899											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Plutonium-238	13981-16-3	U-5e-3		RPD			n/a	20.000		10/22/09
DUP	Pu-239/240 by AEA	PU-239/240	6e-2		RPD			n/a	20.000		10/22/09
DUP	Pu-242	13982-10-0	15.43	82.620	% Recov	30.000	105.000				10/22/09
SURR	Pu-242	13982-10-0	15.31	77.350	% Recov	30.000	105.000				10/22/09
Lab ID: W09GR00901											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	15.13	95.410	% Recov	30.000	105.000				10/22/09
Lab ID: W09GR00902											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	15.28	73.066	% Recov	30.000	105.000				10/22/09
Lab ID: W09GR00903											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	15.46	92.500	% Recov	30.000	105.000				10/22/09
Lab ID: W09GR00904											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	15.59	79.680	% Recov	30.000	105.000				10/22/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091035
Matrix: SOLID
Test: Plutonium Isotopics by AEA

Sample Date: 10/16/09
Receive Date:10/16/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	Plutonium-238	13981-16-3	U-3.1e-2	n/a	pCi/g	-10.000	1000.000				10/22/09
BLANK	Pu-239/240 by AEA	PU-239/240	U4.3e-2	n/a	pCi/g	-10.000	1000.000				10/22/09
BLANK	Pu-242	PU242	15.31	64.800	% Recov	30.000	105.000				10/22/09
LCS	Pu-239/240 by AEA	PU-239/240	13.89	108.135	% Recov	80.000	120.000				10/22/09
LCS	Pu-242	PU242	17.3	82.730	% Recov	30.000	105.000				10/22/09

REVISION 2

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091035
Matrix: SOLID
Test: Strontium 89/90

Sample Date: 10/16/09
Receive Date:10/16/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00899											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	69.9	69.900	% Recov	30.000	105.000				10/19/09
DUP	Strontium-89/90	SR-RAD	6.6		RPD			5.882	20.000		10/19/09
SURR	Sr-85 Tracer by Beta Counting	SR85	80.6	80.600	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00901											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	80.9	80.900	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00902											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	77.2	77.200	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00903											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	76.0	76.000	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00904											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	68.2	68.200	% Recov	30.000	105.000				10/19/09
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	73.2	73.200	% Recov	30.000	105.000				10/19/09
BLANK	Strontium-89/90	10098-97-2	U-7.2E-01	n/a	pCi/g	-10.000	300.000				10/19/09
LCS	Sr-85 Tracer by Beta Counting	SR85	79.7	79.700	% Recov	30.000	105.000				10/19/09
LCS	Strontium-89/90	10098-97-2	69.8	99.714	% Recov	80.000	120.000				10/19/09

REVISION 2

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091035
Matrix: SOLID
Test: Strontium 89/90

Sample Date: 10/16/09
Receive Date:10/16/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00895											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	84.6	84.600	% Recov	30.000	105.000				10/19/09
DUP	Strontium-89/90	SR-RAD	4.0E+03		RPD			2.532	20.000		10/19/09
SURR	Sr-85 Tracer by Beta Counting	SR85	95.5	95.500	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00896											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	99.1	99.100	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00897											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	86.3	86.300	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00898											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	80.3	80.300	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00900											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	85.2	85.200	% Recov	30.000	105.000				10/19/09
Lab ID: W09GR00905											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	99.1	99.100	% Recov	30.000	105.000				10/19/09
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	88.9	88.900	% Recov	30.000	105.000				10/19/09
BLANK	Strontium-89/90	10098-97-2	U-2.4	n/a	pCi/g	-10.000	300.000				10/19/09

REVISION 2

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091035
Matrix: SOLID
Test: Strontium 89/90

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Sr-85 Tracer by Beta Counting	SR85	81.4	81.400	% Recov	30.000	105.000				10/19/09
LCS	Strontium-89/90	10098-97-2	67.2	96.000	% Recov	80.000	120.000				10/19/09

REVISION 2

WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention: Steve Trent
Project Number F09-047 :F09-047

Group #: WSCF20091035
Department: Radiochemistry

Sample #	Client ID		Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W09GR00895	B22CL3	GPP	Gamma Energy Analysis-grd H2O	K-40				28	pCi/g
W09GR00895	B22CL3	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				30	%
W09GR00896	B22CL7	GPP	Gamma Energy Analysis-grd H2O	K-40				18	pCi/g
W09GR00896	B22CL7	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				29	%
W09GR00898	B22CL8	GPP	Gamma Energy Analysis-grd H2O	K-40				19	pCi/g
W09GR00898	B22CL8	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				26	%
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	K-40				22	pCi/g
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				21	%
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	PB-212				1.4	pCi/g
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	PB-212 Count Error				22	%
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	PB-214				1.1	pCi/g
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	PB-214 Count Error				44	%
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	RA-228				1.5	pCi/g
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	RA-228 Count Error				48	%
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	TL-208				0.39	pCi/g
W09GR00899	B22CL6	GPP	Gamma Energy Analysis-grd H2O	TL-208 Count Error				46	%
W09GR00900	B22CL5	GPP	Gamma Energy Analysis-grd H2O	K-40				16	pCi/g
W09GR00900	B22CL5	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				20	%
W09GR00900	B22CL5	GPP	Gamma Energy Analysis-grd H2O	PB-214				0.73	pCi/g
W09GR00900	B22CL5	GPP	Gamma Energy Analysis-grd H2O	PB-214 Count Error				49	%
W09GR00901	B22CL4	GPP	Gamma Energy Analysis-grd H2O	AC-228				1.5	pCi/g
W09GR00901	B22CL4	GPP	Gamma Energy Analysis-grd H2O	AC-228 Count Error				32	%
W09GR00901	B22CL4	GPP	Gamma Energy Analysis-grd H2O	K-40				18	pCi/g
W09GR00901	B22CL4	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				21	%
W09GR00901	B22CL4	GPP	Gamma Energy Analysis-grd H2O	PB-212				0.89	pCi/g

RQ=Result Qualifier

REVISION 2

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WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention: Steve Trent
Project Number F09-047 :F09-047

Group #: WSCF20091035
Department: Radiochemistry

Sample #	Client ID		Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W09GR00901	B22CL4	GPP	Gamma Energy Analysis-grd H2O	PB-212 Count Error				36	%
W09GR00901	B22CL4	GPP	Gamma Energy Analysis-grd H2O	RA-228				1.5	pCi/g
W09GR00901	B22CL4	GPP	Gamma Energy Analysis-grd H2O	RA-228 Count Error				32	%
W09GR00902	B22CL1	GPP	Gamma Energy Analysis-grd H2O	K-40				16	pCi/g
W09GR00902	B22CL1	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				22	%
W09GR00902	B22CL1	GPP	Gamma Energy Analysis-grd H2O	PB-212				0.97	pCi/g
W09GR00902	B22CL1	GPP	Gamma Energy Analysis-grd H2O	PB-212 Count Error				35	%
W09GR00902	B22CL1	GPP	Gamma Energy Analysis-grd H2O	TL-208				0.31	pCi/g
W09GR00902	B22CL1	GPP	Gamma Energy Analysis-grd H2O	TL-208 Count Error				49	%
W09GR00903	B22CL0	GPP	Gamma Energy Analysis-grd H2O	K-40				19	pCi/g
W09GR00903	B22CL0	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				25	%
W09GR00903	B22CL0	GPP	Gamma Energy Analysis-grd H2O	PB-212				1.3	pCi/g
W09GR00903	B22CL0	GPP	Gamma Energy Analysis-grd H2O	PB-212 Count Error				25	%
W09GR00904	B22CL2	GPP	Gamma Energy Analysis-grd H2O	K-40				16	pCi/g
W09GR00904	B22CL2	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				21	%
W09GR00904	B22CL2	GPP	Gamma Energy Analysis-grd H2O	PB-212				0.90	pCi/g
W09GR00904	B22CL2	GPP	Gamma Energy Analysis-grd H2O	PB-212 Count Error				26	%
W09GR00905	B22CK8	GPP	Gamma Energy Analysis-grd H2O	AC-228				1.5	pCi/g
W09GR00905	B22CK8	GPP	Gamma Energy Analysis-grd H2O	AC-228 Count Error				32	%
W09GR00905	B22CK8	GPP	Gamma Energy Analysis-grd H2O	K-40				18	pCi/g
W09GR00905	B22CK8	GPP	Gamma Energy Analysis-grd H2O	K-40 Count Error				21	%
W09GR00905	B22CK8	GPP	Gamma Energy Analysis-grd H2O	PB-212				0.89	pCi/g
W09GR00905	B22CK8	GPP	Gamma Energy Analysis-grd H2O	PB-212 Count Error				36	%
W09GR00905	B22CK8	GPP	Gamma Energy Analysis-grd H2O	RA-228				1.5	pCi/g
W09GR00905	B22CK8	GPP	Gamma Energy Analysis-grd H2O	RA-228 Count Error				32	%

RQ=Result Qualifier

REVISION 2

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42100-SLF-10-249

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 13 pages
Including cover page

REVISION 2

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

10/23/09
taf

Groundwater Remediation Program

Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 302222/ES10
Group#: 20091035
Project#: F09-047
Proj Mgr: Steve Trent
Phone: 373-5869

The following samples were received from you on 10/16/09. 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
W09GR00895	B22CL3	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00896	B22CL7	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00897	B22CL9	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00898	B22CL8	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00899	B22CL6	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00900	B22CL5	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00901	B22CL4	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00902	B22CL1	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00903	B22CL0	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00904	B22CL2	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09
W09GR00905	B22CK8	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	Solid, or handle as if solid	10/16/09

Test Acronym Description

Test Acronym	Description
@AEA-30	Plutonium Isotopics by AEA
@AEA-31	Americium by AEA
@GEA-GPP	Gamma Energy Analysis-grd H2O
@SR89_90	Strontium 89/90

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-014 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC 10/23/09	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: ZA-L1-05	PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling		SAF NO.: F09-047
ICE CHEST NO.: GWS-102	FIELD LOGBOOK NO.: HHF-N-507-7	ACTUAL SAMPLE DEPTH: 0-3"	COA: 302222ES10
SHIPPED TO: Waste Sampling & Characterization 20091035	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8B

AIR QUALITY: ☐

DATA TURNAROUND: 7 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*
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

POSSIBLE SAMPLE HAZARDS/ REMARKS: 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL3	SOIL	10/16/09	1050	✓	✓	✓
W09GR00895						

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC OCT 16 2009	1340	TA FRAZIER OCT 16 2009	1340

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKJ applies to this SAF.
(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ICED

☐ ORIGINAL

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-6003-618(01/06)

REVISION 2

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-018 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: ZA-L1-08	PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling		SAF NO.: F09-047
ICE CHEST NO.: GWS - 102	FIELD LOGBOOK NO.: HNF-N-507-7	ACTUAL SAMPLE DEPTH: 0-3"	COA: 302222ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8B

AIR QUALITY: ☐

DATA TURNAROUND: 7 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: 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

POSSIBLE SAMPLE HAZARDS/ REMARKS: 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL7 896	SOIL	1016	1140	✓	✓	✓

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC [signature]	OCT 16 2009 1340	TA FRAZIER [signature]	OCT 16 2009 1340

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ICED

ORIGINAL

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618(01/06)

REVISION 2

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-020

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 8B	DATA TURNAROUND: 7 Days / 15 Days		
SAMPLING LOCATION: ZA-L1-10	PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling		SAF NO.: F09-047
AIR QUALITY: ☐	ICE CHEST NO.: CWS-102	FIELD LOGBOOK NO.: HHF-M-507-7	ACTUAL SAMPLE DEPTH: 0-3"
COA: 302222ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A
BILL OF LADING/AIR BILL NO.: N/A			

MATRIX*
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

POSSIBLE SAMPLE HAZARDS/ REMARKS
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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL9	897	SOIL	10/16/09	1225	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	OCT 16 2009 1340	JA FRAZIER	OCT 16 2009 1340

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ICED

ORIGINAL

REVISION 2

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-019

COLLECTOR: FM Hall CHPRC

SAMPLING LOCATION: ZA-L1-09

ICE CHEST NO.: GWS-102

SHIPPED TO: Waste Sampling & Characterization

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: 8B

DATA TURNAROUND: 7 Days / 15 Days

PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling

SAF NO.: F09-047

AIR QUALITY: ☐

FIELD LOGBOOK NO.: HNP-N-507-7

ACTUAL SAMPLE DEPTH: 0-3"

COA: 302222ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*
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

POSSIBLE SAMPLE HAZARDS/ REMARKS: 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL8	898	SOIL	10/16/09	1215	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	OCT 16 2009 1340	TA Frazier	OCT 16 2009 1340
TA Frazier			10/16/09

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ICED

ORIGINAL

REVISION 2

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-6003-618(01/06)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-017

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 8B	DATA TURNAROUND: 7 Days / 15 Days	AIR QUALITY: ☐	SAMPLING LOCATION: ZA-L1-07
PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling	SAF NO.: F09-047	ICE CHEST NO.: GW3 - 102	FIELD LOGBOOK NO.: HNF-N-507-7
ACTUAL SAMPLE DEPTH: 0 - 3"	COA: 302222ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization
OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: 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

POSSIBLE SAMPLE HAZARDS/ REMARKS: 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL6 899	SOIL	10/16/09	1120	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	OCT 16 2009 1340	TA FRAZIER	OCT 16 2009 1340

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Americium-241 (Americium-241) Isotopic Plutonium (Plutonium-239/240, Plutonium-238)

ORIGINAL ICED

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-6003-618(01/06)

REVISION 2

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-016 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: 8B

DATA TURNAROUND: 7 Days / 15 Days

SAMPLING LOCATION: ZA-L1-06DUP

PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling

SAF NO.: F09-047

AIR QUALITY: ☐

ICE CHEST NO.: GWS-102

FIELD LOGBOOK NO.: HNF-N-507-7

ACTUAL SAMPLE DEPTH: 0-3"

COA: 302222ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: 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

POSSIBLE SAMPLE HAZARDS/ REMARKS: 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL5	900	SOIL	10/16/09	1105	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	OCT 16 2009 1340	TA Espinoza	OCT 16 2009 1340

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ICED

ORIGINAL

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-6003-618(01/06)

REVISION 2

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-015 PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: 8B

DATA TURNAROUND: 7 Days / 15 Days

SAMPLING LOCATION: ZA-L1-06

PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling

SAF NO.: F09-047

AIR QUALITY: ☐

ICE CHEST NO.: GWS-102

FIELD LOGBOOK NO.: HHF-H-507-7

ACTUAL SAMPLE DEPTH: 0-3"

COA: 302222ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*
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

POSSIBLE SAMPLE HAZARDS/ REMARKS: 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL4	901	SOIL	10/16/09	1105	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	OCT 16 2009 1340	TA Frazier	OCT 16 2009 1340

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ICED

ORIGINAL

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-6003-618(01/06)

REVISION 2

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-012 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: 8B

DATA TURNAROUND: 7 Days / 15 Days

AIR QUALITY: ☐

SAMPLING LOCATION: ZA-L1-03

PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling

SAF NO.: F09-047

ICE CHEST NO.: GWS - 102

FIELD LOGBOOK NO.: HNF-N-507-7

ACTUAL SAMPLE DEPTH: 0-3"

COA: 302222ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*
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

POSSIBLE SAMPLE HAZARDS/ REMARKS: 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL1	902	SOIL	10/16/09	1030	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	OCT 16 2009 1340	TA Erstein	OCT 16 2009 1340

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ICED

ORIGINAL

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618(01/06)

REVISION 2

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-011 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: 8B

DATA TURNAROUND: 7 Days / 15 Days

SAMPLING LOCATION: ZA-L1-02

PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling

SAF NO.: F09-047

AIR QUALITY: ☐

ICE CHEST NO.: GWS-102

FIELD LOGBOOK NO.: HNF-N-507-7

ACTUAL SAMPLE DEPTH: 0-3"

COA: 302222ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*
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

POSSIBLE SAMPLE HAZARDS/ REMARKS: 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL0 903	SOIL	10/16/09	1020	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	OCT 16 2009 1340	TA Frazier	OCT 16 2009 / 1340
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
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ICED

ORIGINAL

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-6003-618(01/06)

REVISION 2

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-013

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 8B	DATA TURNAROUND: 7 Days / 15 Days		
SAMPLING LOCATION: ZA-L1-04	PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling		SAF NO.: F09-047
AIR QUALITY: ☐			
ICE CHEST NO.	FIELD LOGBOOK NO.: HHF-N-507-7	ACTUAL SAMPLE DEPTH: 0-3"	COA: 302222ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*
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

POSSIBLE SAMPLE HAZARDS/ REMARKS
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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CL2	904	SOIL	10/16/09	1040	✓	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	OCT 16 2009 1340	TA Franklin	OCT 16 2009 1340

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

☐ ORIGINAL

ICED

REVISION 2

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618(01/06)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-008 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC

SAMPLING LOCATION: ZA-L1-01

ICE CHEST NO.: GWS-102

SHIPPED TO: Waste Sampling & Characterization

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 373-5869

PROJECT DESIGNATION: ARRA BC Controlled Area Remediation - In Process Soil Sampling

FIELD LOGBOOK NO.: HHF-M-507-7

ACTUAL SAMPLE DEPTH: 0 - 3"

OFFSITE PROPERTY NO.: N/A

PROJECT COORDINATOR: WIDRIG, DL

SAF NO.: F09-047

COA: 302222ES10

BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8B

AIR QUALITY: ☐

DATA TURNAROUND: 7 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: 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

POSSIBLE SAMPLE HAZARDS/ REMARKS: 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None	None
TYPE OF CONTAINER	Square Bottle - Poly	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	120mL	120mL
SAMPLE ANALYSIS	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 -- Total Sr;	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CK8 905	SOIL	10/16/09	1010	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	OCT 16 2009 1340	TA Frazier	OCT 16 2009 1340

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ICED

ORIGINAL

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-6003-618(01/06)

REVISION 2

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