RECEIVED NOVEMBER 02, 2009

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

M4W41-SLF-09-279

November 2, 2009

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

Dear Mike:

FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20091071 – SAF NUMBER F09-047

Reference: (1) Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, 'FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER'

(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 WSCF20091071:

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

Very truly yours,

S. L. Fitzgerald
WSCF Analytical Lab

SLF/grf

Attachments 4

cc: w/Attachments

R. L. Barker	S3-30
H. K. Meznarich	S3-30
J. E. Trechter	S3-30
S. J. Trent	R3-50
File/LB	

M4W41-SLF-09-279

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20091071
Data Deliverable Date: 29-oct-2009
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
F09-047	B22CN1	W09GR00930	SOIL
	B22CN3	W09GR00931	SOIL
	B22CN4	W09GR00932	SOIL
	B22CN5	W09GR00933	SOIL
	B22CN6	W09GR00934	SOIL
	B22CN7	W09GR00935	SOIL
	B22CN8	W09GR00936	SOIL
	B22CN9	W09GR00937	SOIL
	B22CP0	W09GR00926	SOIL
	B22CP1	W09GR00928	SOIL
	B22CP2	W09GR00929	SOIL

M4W41-SLF-09-279

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Eleven (11) S&GRP samples were received at the WSCF Laboratory on October 23, 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 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.

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 11, 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 23 through 32 for QC details. Analytical Note(s):

- Pu-239 batch duplicate is flagged however, the sample activity is low level and the PRD does not apply.

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

Richard Barker 11/2/09
Richard Barker
WSCF Client Services

M4W41-SLF-09-279

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 30 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: S. Fitzgerald 11/2/09

Client Services: Richard L Barker 11/2/09 Richard Barker

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#: WSCF20091071
Report Date: 29-oct-2009
Report WGPP/ver. 5.2
Groundwater Remediation Program

w13qlog v4.2 29-oct-2009 12:40:57

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20091071

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
40148	1	40576	45131	BLANK		Gamma Energy Analysis-grd H2O
40148	2	40576	45131	LCS		Gamma Energy Analysis-grd H2O
40148	3	40576	45131	DUP	W09GR00932	Gamma Energy Analysis-grd H2O
40148	4	40576	45131	SAMPLE	W09GR00932	Gamma Energy Analysis-grd H2O
40148	5	40576	45131	SAMPLE	W09GR00933	Gamma Energy Analysis-grd H2O
40148	6	40576	45131	SAMPLE	W09GR00934	Gamma Energy Analysis-grd H2O
40148	7	40576	45131	SAMPLE	W09GR00935	Gamma Energy Analysis-grd H2O
40147	1	40575	45135	BLANK		Gamma Energy Analysis-grd H2O
40147	2	40575	45135	LCS		Gamma Energy Analysis-grd H2O
40147	3	40575	45135	DUP	W09GR00926	Gamma Energy Analysis-grd H2O
40147	4	40575	45135	SAMPLE	W09GR00926	Gamma Energy Analysis-grd H2O
40147	5	40575	45135	SAMPLE	W09GR00928	Gamma Energy Analysis-grd H2O
40147	6	40575	45135	SAMPLE	W09GR00929	Gamma Energy Analysis-grd H2O
40147	7	40575	45135	SAMPLE	W09GR00930	Gamma Energy Analysis-grd H2O
40147	8	40575	45135	SAMPLE	W09GR00931	Gamma Energy Analysis-grd H2O
40147	9	40575	45135	SAMPLE	W09GR00936	Gamma Energy Analysis-grd H2O
40147	10	40575	45135	SAMPLE	W09GR00937	Gamma Energy Analysis-grd H2O
40151	1	40579	45137	BLANK		Plutonium Isotopics by AEA
40151	2	40579	45137	LCS		Plutonium Isotopics by AEA
40151	3	40579	45137	DUP	W09GR00933	Plutonium Isotopics by AEA
40151	4	40579	45137	SAMPLE	W09GR00933	Plutonium Isotopics by AEA
40151	5	40579	45137	SURR	W09GR00933	Plutonium Isotopics by AEA
40151	6	40579	45137	SAMPLE	W09GR00934	Plutonium Isotopics by AEA
40151	7	40579	45137	SURR	W09GR00934	Plutonium Isotopics by AEA
40151	8	40579	45137	SAMPLE	W09GR00935	Plutonium Isotopics by AEA
40151	9	40579	45137	SURR	W09GR00935	Plutonium Isotopics by AEA
40151	10	40579	45137	SAMPLE	W09GR00936	Plutonium Isotopics by AEA
40151	11	40579	45137	SURR	W09GR00936	Plutonium Isotopics by AEA
40151	12	40579	45137	SAMPLE	W09GR00937	Plutonium Isotopics by AEA
40151	13	40579	45137	SURR	W09GR00937	Plutonium Isotopics by AEA
40152	1	40580	45138	BLANK		Americium by AEA
40152	2	40580	45138	LCS		Americium by AEA
40152	3	40580	45138	DUP	W09GR00933	Americium by AEA
40152	4	40580	45138	SAMPLE	W09GR00933	Americium by AEA
40152	5	40580	45138	SURR	W09GR00933	Americium by AEA
40152	6	40580	45138	SAMPLE	W09GR00934	Americium by AEA
40152	7	40580	45138	SURR	W09GR00934	Americium by AEA
40152	8	40580	45138	SAMPLE	W09GR00935	Americium by AEA
40152	9	40580	45138	SURR	W09GR00935	Americium by AEA
40152	10	40580	45138	SAMPLE	W09GR00936	Americium by AEA
40152	11	40580	45138	SURR	W09GR00936	Americium by AEA
40152	12	40580	45138	SAMPLE	W09GR00937	Americium by AEA
40152	13	40580	45138	SURR	W09GR00937	Americium by AEA
40158	1	40586	45139	BLANK		Plutonium Isotopics by AEA
40158	2	40586	45139	LCS		Plutonium Isotopics by AEA
40158	3	40586	45139	DUP	W09GR00926	Plutonium Isotopics by AEA
40158	4	40586	45139	SAMPLE	W09GR00926	Plutonium Isotopics by AEA
40158	5	40586	45139	SURR	W09GR00926	Plutonium Isotopics by AEA

40158	6	40586	45139	SAMPLE	W09GR00928	Plutonium Isotopics by AEA
40158	7	40586	45139	SURR	W09GR00928	Plutonium Isotopics by AEA
40158	8	40586	45139	SAMPLE	W09GR00929	Plutonium Isotopics by AEA
40158	9	40586	45139	SURR	W09GR00929	Plutonium Isotopics by AEA
40158	10	40586	45139	SAMPLE	W09GR00930	Plutonium Isotopics by AEA
40158	11	40586	45139	SURR	W09GR00930	Plutonium Isotopics by AEA
40158	12	40586	45139	SAMPLE	W09GR00931	Plutonium Isotopics by AEA
40158	13	40586	45139	SURR	W09GR00931	Plutonium Isotopics by AEA
40158	14	40586	45139	SAMPLE	W09GR00932	Plutonium Isotopics by AEA
40158	15	40586	45139	SURR	W09GR00932	Plutonium Isotopics by AEA
40159	1	40587	45140	BLANK		Americium by AEA
40159	2	40587	45140	LCS		Americium by AEA
40159	3	40587	45140	DUP	W09GR00926	Americium by AEA
40159	4	40587	45140	SAMPLE	W09GR00926	Americium by AEA
40159	5	40587	45140	SURR	W09GR00926	Americium by AEA
40159	6	40587	45140	SAMPLE	W09GR00928	Americium by AEA
40159	7	40587	45140	SURR	W09GR00928	Americium by AEA
40159	8	40587	45140	SAMPLE	W09GR00929	Americium by AEA
40159	9	40587	45140	SURR	W09GR00929	Americium by AEA
40159	10	40587	45140	SAMPLE	W09GR00930	Americium by AEA
40159	11	40587	45140	SURR	W09GR00930	Americium by AEA
40159	12	40587	45140	SAMPLE	W09GR00931	Americium by AEA
40159	13	40587	45140	SURR	W09GR00931	Americium by AEA
40159	14	40587	45140	SAMPLE	W09GR00932	Americium by AEA
40159	15	40587	45140	SURR	W09GR00932	Americium by AEA
40156	1	40584	45142	BLANK		Strontium 89/90
40156	2	40584	45142	LCS		Strontium 89/90
40156	3	40584	45142	DUP	W09GR00926	Strontium 89/90
40156	4	40584	45142	SAMPLE	W09GR00926	Strontium 89/90
40156	5	40584	45142	SURR	W09GR00926	Strontium 89/90
40156	6	40584	45142	SAMPLE	W09GR00928	Strontium 89/90
40156	7	40584	45142	SURR	W09GR00928	Strontium 89/90
40156	8	40584	45142	SAMPLE	W09GR00929	Strontium 89/90
40156	9	40584	45142	SURR	W09GR00929	Strontium 89/90
40156	10	40584	45142	SAMPLE	W09GR00930	Strontium 89/90
40156	11	40584	45142	SURR	W09GR00930	Strontium 89/90
40156	12	40584	45142	SAMPLE	W09GR00931	Strontium 89/90
40156	13	40584	45142	SURR	W09GR00931	Strontium 89/90
40156	14	40584	45142	SAMPLE	W09GR00932	Strontium 89/90
40156	15	40584	45142	SURR	W09GR00932	Strontium 89/90
40155	1	40583	45144	BLANK		Strontium 89/90
40155	2	40583	45144	LCS		Strontium 89/90
40155	3	40583	45144	DUP	W09GR00933	Strontium 89/90
40155	4	40583	45144	SAMPLE	W09GR00933	Strontium 89/90
40155	5	40583	45144	SURR	W09GR00933	Strontium 89/90
40155	6	40583	45144	SAMPLE	W09GR00934	Strontium 89/90
40155	7	40583	45144	SURR	W09GR00934	Strontium 89/90
40155	8	40583	45144	SAMPLE	W09GR00935	Strontium 89/90
40155	9	40583	45144	SURR	W09GR00935	Strontium 89/90
40155	10	40583	45144	SAMPLE	W09GR00936	Strontium 89/90
40155	11	40583	45144	SURR	W09GR00936	Strontium 89/90
40155	12	40583	45144	SAMPLE	W09GR00937	Strontium 89/90
40155	13	40583	45144	SURR	W09GR00937	Strontium 89/90

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

HEIS ALPHA_GPC	GROSS ALPHA GPC
HEIS BETA_GPC	GROSS BETA GPC
HEIS SRTOT_SEP_PRECIP_GPC	Strontium 89/90

LA-508-471 LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP

HEIS PUISO_IE_PRECIP_AEA	Plutonium by Alpha Energy Analysis
HEIS RAISO_AEA	Radium-226

LA-508-481 LA-508-481: GAMMA ENERGY ANALYSIS USING PROCOUNT SOFTWARE

HEIS GAMMA_GS	Gamma Emmision Spectrometry

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 # W09GR00926
Client ID: B22CP0 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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	0.0210	pCi/g	+-0.0166	pCi/g	1.00	0.022		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		3.90	pCi/g			1.00	0.011		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		4.49	pCi/g	+-0.601	pCi/g	1.00	0.026		10/27/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	-3.80e-03	pCi/g	+-0.0313	pCi/g	1.00	0.058		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	0.0190	pCi/g	+-0.0169	pCi/g	1.00	0.023		10/28/09
Pu-242	13982-10-0	LA-508-471		6.10	pCi/g			1.00	0.023		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		6.50	pCi/g	+-1.30	pCi/g	1.00	0.37		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		90.2	Percent			1.00	0.0		10/28/09

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 # W09GR00928
Client ID: B22CP1 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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		0.420	pCi/g	+-0.256	pCi/g	1.00	0.28		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		64.0	pCi/g			1.00	0.064		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		819	pCi/g	+-108	pCi/g	1.00	0.37		10/26/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0640	pCi/g	+-0.551	pCi/g	1.00	0.97		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.600	pCi/g	+-0.330	pCi/g	1.00	0.23		10/28/09
Pu-242	13982-10-0	LA-508-471		99.0	pCi/g			1.00	0.41		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		690	pCi/g	+-82.8	pCi/g	1.00	8.5		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		94.0	Percent			1.00	0.0		10/28/09

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00929
Client ID: B22CP2 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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	+-0.0403	pCi/g	1.00	0.033		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		9.90	pCi/g			1.00	0.027		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		250	pCi/g	+-33.1	pCi/g	1.00	0.20		10/26/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	-0.0290	pCi/g	+-0.0713	pCi/g	1.00	0.14		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.0730	pCi/g	+-0.0445	pCi/g	1.00	0.036		10/28/09
Pu-242	13982-10-0	LA-508-471		15.0	pCi/g			1.00	0.052		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		450	pCi/g	+-54.0	pCi/g	1.00	0.88		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		95.0	Percent			1.00	0.0		10/28/09

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DF = Dilution Factor
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00930
Client ID: B22CN1 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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		3.50	pCi/g	+-1.26	pCi/g	1.00	0.20		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		190	pCi/g			1.00	0.20		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		889	pCi/g	+-117	pCi/g	1.00	0.54		10/26/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	-0.180	pCi/g	+-1.40	pCi/g	1.00	2.5		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		4.60	pCi/g	+-1.75	pCi/g	1.00	0.65		10/28/09
Pu-242	13982-10-0	LA-508-471		300	pCi/g			1.00	0.82		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		2.60e+03	pCi/g	+-338	pCi/g	1.00	38		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		84.1	Percent			1.00	0.0		10/28/09

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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 # W09GR00931
Client ID: B22CN3 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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	+-0.0445	pCi/g	1.00	0.068		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		16.0	pCi/g			1.00	0.046		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		304	pCi/g	+-40.2	pCi/g	1.00	0.22		10/27/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0800	pCi/g	+-0.0928	pCi/g	1.00	0.14		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.100	pCi/g	+-0.0680	pCi/g	1.00	0.074		10/28/09
Pu-242	13982-10-0	LA-508-471		26.0	pCi/g			1.00	0.022		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		100	pCi/g	+-13.0	pCi/g	1.00	2.0		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		83.3	Percent			1.00	0.0		10/28/09

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 # W09GR00932
Client ID: B22CN4 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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		2.80	pCi/g	+-1.62	pCi/g	1.00	1.7		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		380	pCi/g			1.00	1.5		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		5.35e+03	pCi/g	+-613	pCi/g	1.00	28		10/27/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471		4.30	pCi/g	+-2.54	pCi/g	1.00	2.8		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471	U	-0.190	pCi/g	+-1.66	pCi/g	1.00	3.2		10/28/09
Pu-242	13982-10-0	LA-508-471		600	pCi/g			1.00	3.6		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		3.90e+03	pCi/g	+-507	pCi/g	1.00	7.6e+04		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		85.7	Percent			1.00	0.0		10/28/09

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 # W09GR00933
Client ID: B22CN5 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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	1.70	pCi/g	+-3.64	pCi/g	1.00	6.3		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		480	pCi/g			1.00	2.6		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		8.25e+03	pCi/g	+-937	pCi/g	1.00	31		10/27/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	1.10	pCi/g	+-4.20	pCi/g	1.00	7.6		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		3.20	pCi/g	+-2.37	pCi/g	1.00	3.0		10/28/09
Pu-242	13982-10-0	LA-508-471		740	pCi/g			1.00	1.7		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		6.60e+03	pCi/g	+-858	pCi/g	1.00	1.2e+02		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		90.7	Percent			1.00	0.0		10/28/09

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

Attention: Steve Trent
SAF Number: F09-047
Sample # W09GR00934
Client ID: B22CN6 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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	0.800	pCi/g	+-4.04	pCi/g	1.00	7.0		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		450	pCi/g			1.00	3.6		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		2.29e+03	pCi/g	+-271	pCi/g	1.00	24		10/28/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	2.00	pCi/g	+-4.36	pCi/g	1.00	7.3		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		3.70	pCi/g	+-2.11	pCi/g	1.00	1.6		10/28/09
Pu-242	13982-10-0	LA-508-471		700	pCi/g			1.00	2.0		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		4.80e+03	pCi/g	+-576	pCi/g	1.00	46		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		89.5	Percent			1.00	0.0		10/28/09

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 # W09GR00935
Client ID: B22CN7 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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	1.30	pCi/g	+-3.94	pCi/g	1.00	6.7		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		450	pCi/g			1.00	4.0		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		5.05e+03	pCi/g	+-577	pCi/g	1.00	30		10/28/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	1.50	pCi/g	+-3.88	pCi/g	1.00	6.8		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		4.00	pCi/g	+-2.16	pCi/g	1.00	0.60		10/28/09
Pu-242	13982-10-0	LA-508-471		710	pCi/g			1.00	2.4		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		4.60e+03	pCi/g	+-552	pCi/g	1.00	50		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		82.0	Percent			1.00	0.0		10/28/09

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 # W09GR00936
Client ID: B22CN8 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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	0.350	pCi/g	+-0.444	pCi/g	1.00	0.72		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		50.0	pCi/g			1.00	0.51		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		568	pCi/g	+-75.0	pCi/g	1.00	0.34		10/26/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	0.0230	pCi/g	+-0.230	pCi/g	1.00	0.66		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		0.510	pCi/g	+-0.286	pCi/g	1.00	0.28		10/28/09
Pu-242	13982-10-0	LA-508-471		77.0	pCi/g			1.00	0.22		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		820	pCi/g	+-107	pCi/g	1.00	11		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		84.2	Percent			1.00	0.0		10/28/09

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 # W09GR00937
Client ID: B22CN9 GPP TRENT WSCF
Matrix: SOIL

Group #: WSCF20091071
Department: Radiochemistry
Sampled: 10/23/09
Received: 10/23/09

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	1.00	pCi/g	+-0.940	pCi/g	1.00	1.5		10/28/09
Am-243 tracer by AEA	AM243	LA-508-471		97.0	pCi/g			1.00	0.70		10/28/09
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481		3.09e+03	pCi/g	+-408	pCi/g	1.00	1.0		10/27/09
Plutonium Isotopics by AEA											
Plutonium-238	13981-16-3	LA-508-471	U	-1.90	pCi/g	+-1.90	pCi/g	1.00	2.0		10/28/09
Pu-239/240 by AEA	PU-239/240	LA-508-471		2.10	pCi/g	+-0.882	pCi/g	1.00	0.58		10/28/09
Pu-242	13982-10-0	LA-508-471		150	pCi/g			1.00	0.45		10/28/09
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		2.10e+03	pCi/g	+-252	pCi/g	1.00	18		10/28/09
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		95.0	Percent			1.00	0.0		10/28/09

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 LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091071
Matrix: SOLID
Test: Americium by AEA

Sample Date: 10/23/09
Receive Date:10/23/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00933											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Americium-241	14596-10-2	5.8		RPD			n/a	20.000		10/28/09
DUP	Am-243 tracer by AEA	AM243	476.4	83.160	% Recov	30.000	105.000				10/28/09
SURR	Am-243 tracer by AEA	AM243	476.4	92.060	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00934											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	448.7	90.560	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00935											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	454.8	83.450	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00936											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	49.53	83.450	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00937											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	96.58	81.930	% Recov	30.000	105.000				10/28/09
BATCH QC											
BLANK	Americium-241	14596-10-2	U-0.75	n/a	pCi/g	-10.000	1000.000				10/28/09
BLANK	Am-243 tracer by AEA	AM243	50.03	93.110	% Recov	30.000	105.000				10/28/09
LCS	Americium-241	14596-10-2	12	101.266	% Recov	80.000	120.000				10/28/09
LCS	Am-243 tracer by AEA	AM243	11.11	92.280	% Recov	30.000	105.000				10/28/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20091071
Matrix: SOLID
Test: Americium by AEA

Sample Date: 10/23/09
Receive Date:10/23/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00926											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Americium-241	14596-10-2	U1.8e-2		RPD			n/a	20.000		10/28/09
DUP	Am-243 tracer by AEA	AM243	3.947	98.720	% Recov	30.000	105.000				10/28/09
SURR	Am-243 tracer by AEA	AM243	3.939	96.730	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00928											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	63.65	92.470	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00929											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	9.946	93.830	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00930											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	193.2	97.310	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00931											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	16.48	88.390	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00932											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Am-243 tracer by AEA	AM243	383.3	86.810	% Recov	30.000	105.000				10/28/09
BATCH QC											
BLANK	Americium-241	14596-10-2	U-2.4e-2	n/a	pCi/g	-10.000	1000.000				10/28/09
BLANK	Am-243 tracer by AEA	AM243	4.002	86.970	% Recov	30.000	105.000				10/28/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20091071
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	Americium-241	14596-10-2	12.27	103.544	% Recov	80.000	120.000				10/28/09
LCS	Am-243 tracer by AEA	AM243	11.11	88.500	% Recov	30.000	105.000				10/28/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20091071
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

Sample Date: 10/23/09
Receive Date:10/23/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00932											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Cesium-137	10045-97-3	5274		RPD			1.487	20.000		10/27/09
BATCH QC											
BLANK	Cesium-137	10045-97-3	U-4.226e-2	n/a	pCi/g	-10.000	1000.000				10/28/09
LCS	Cesium-137	10045-97-3	6440	106.623	% Recov	80.000	120.000				10/28/09
Lab ID: W09GR00926											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Cesium-137	10045-97-3	4.351		RPD			3.122	20.000		10/27/09
BATCH QC											
BLANK	Cesium-137	10045-97-3	U4.612e-4	n/a	pCi/g	-10.000	1000.000				10/28/09
LCS	Cesium-137	10045-97-3	6394	105.861	% Recov	80.000	120.000				10/28/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091071
Matrix: SOLID
Test: Plutonium Isotopics by AEA

Sample Date: 10/23/09
Receive Date:10/23/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00933											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Plutonium-238	13981-16-3	U2.2		RPD			n/a	20.000		10/28/09
DUP	Pu-239/240 by AEA	PU-239/240	4		RPD			22.222	20.000 *		10/28/09
DUP	Pu-242	13982-10-0	742.1	88.610	% Recov	30.000	105.000				10/28/09
SURR	Pu-242	13982-10-0	742.1	88.250	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00934											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	698.9	90.330	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00935											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	708.4	86.600	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00936											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	77.15	89.580	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00937											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	150.4	89.010	% Recov	30.000	105.000				10/28/09
BATCH QC											
BLANK	Plutonium-238	13981-16-3	U-0.35	n/a	pCi/g	-10.000	1000.000				10/28/09
BLANK	Pu-239/240 by AEA	PU-239/240	0.28	0.280	pCi/g	-10.000	1000.000				10/28/09
BLANK	Pu-242	PU242	77.93	87.210	% Recov	30.000	105.000				10/28/09
LCS	Pu-239/240 by AEA	PU-239/240	14.23	110.782	% Recov	80.000	120.000				10/28/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20091071
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
LCS	Pu-242	PU242	17.3	84.640	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00926											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Plutonium-238	13981-16-3	U3.7e-3		RPD			n/a	20.000		10/28/09
DUP	Pu-239/240 by AEA	PU-239/240	2.9e-2		RPD			n/a	20.000		10/28/09
DUP	Pu-242	13982-10-0	6.148	92.540	% Recov	30.000	105.000				10/28/09
SURR	Pu-242	13982-10-0	6.136	89.740	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00928											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	99.14	85.310	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00929											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	15.49	90.080	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00930											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	300.9	90.210	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00931											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	25.67	89.610	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00932											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Pu-242	13982-10-0	597.1	86.500	% Recov	30.000	105.000				10/28/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20091071
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	U2e-2	n/a	pCi/g	-10.000	1000.000				10/28/09
BLANK	Pu-239/240 by AEA	PU-239/240	U7.8e-3	n/a	pCi/g	-10.000	1000.000				10/28/09
BLANK	Pu-242	PU242	6.234	86.200	% Recov	30.000	105.000				10/28/09
LCS	Pu-239/240 by AEA	PU-239/240	14.88	115.843	% Recov	80.000	120.000				10/28/09
LCS	Pu-242	PU242	17.3	88.230	% Recov	30.000	105.000				10/28/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091071
Matrix: SOLID
Test: Strontium 89/90

Sample Date: 10/23/09
Receive Date:10/23/09

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W09GR00926											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	93.3	93.300	% Recov	30.000	105.000				10/28/09
DUP	Strontium-89/90	SR-RAD	6.6		RPD			1.527	20.000		10/28/09
SURR	Sr-85 Tracer by Beta Counting	SR85	90.2	90.200	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00928											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	94.0	94.000	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00929											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	95.0	95.000	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00930											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	84.1	84.100	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00931											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	83.3	83.300	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00932											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	85.7	85.700	% Recov	30.000	105.000				10/28/09
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	79.4	79.400	% Recov	30.000	105.000				10/28/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20091071
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
BLANK	Strontium-89/90	10098-97-2	U0.04	n/a	pCi/g	-10.000	300.000				10/28/09
LCS	Sr-85 Tracer by Beta Counting	SR85	71.2	71.200	% Recov	30.000	105.000				10/28/09
LCS	Strontium-89/90	10098-97-2	66.9	95.571	% Recov	80.000	120.000				10/28/09
Lab ID: W09GR00933											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	79.3	79.300	% Recov	30.000	105.000				10/28/09
DUP	Strontium-89/90	SR-RAD	8000		RPD			19.178	20.000		10/28/09
SURR	Sr-85 Tracer by Beta Counting	SR85	90.7	90.700	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00934											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	89.5	89.500	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00935											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	82.0	82.000	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00936											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	84.2	84.200	% Recov	30.000	105.000				10/28/09
Lab ID: W09GR00937											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	95.0	95.000	% Recov	30.000	105.000				10/28/09
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	85.7	85.700	% Recov	30.000	105.000				10/28/09
BLANK	Strontium-89/90	10098-97-2	U-4.5E+01	n/a	pCi/g	-10.000	300.000				10/28/09
LCS	Sr-85 Tracer by Beta Counting	SR85	84.6	84.600	% Recov	30.000	105.000				10/28/09

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20091071
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	Strontium-89/90	10098-97-2	67.1	95.857	% Recov	80.000	120.000				10/28/09

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F09-047

Group #: WSCF20091071
Department: Radiochemistry

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		W09GR00933-937/Pu239 batch dup is flagged however, the sample activity is low level. RPD does not apply. lmh

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
TENTATIVELY IDENTIFIED PEAK REPORT

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

Group #: WSCF20091071
Department: Radiochemistry

Sample #	Client ID			Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	AC-228				0.64	pCi/g
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	AC-228 Count Error				32	%
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-212				0.67	pCi/g
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-212 Count Error				32	%
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214				0.76	pCi/g
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error				17	%
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40				14	pCi/g
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				13	%
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-212				0.72	pCi/g
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-212 Count Error				14	%
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-214				0.76	pCi/g
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-214 Count Error				40	%
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-226				0.63	pCi/g
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-226 Count Error				18	%
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228				0.74	pCi/g
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228 Count Error				20	%
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	TL-208				0.21	pCi/g
W09GR00926	B22CP0	GPP	TRENT	Gamma Energy Analysis-grd H2O	TL-208 Count Error				19	%
W09GR00928	B22CP1	GPP	TRENT	Gamma Energy Analysis-grd H2O	AC-228				0.97	pCi/g
W09GR00928	B22CP1	GPP	TRENT	Gamma Energy Analysis-grd H2O	AC-228 Count Error				42	%
W09GR00928	B22CP1	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214				0.87	pCi/g
W09GR00928	B22CP1	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error				33	%
W09GR00928	B22CP1	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40				13	pCi/g
W09GR00928	B22CP1	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				15	%
W09GR00928	B22CP1	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228				0.97	pCi/g

RQ=Result Qualifier

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WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

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

Group #: WSCF20091071
Department: Radiochemistry

Sample #	Client ID			Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W09GR00928	B22CP1	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228 Count Error				42	%
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	AC-228				0.88	pCi/g
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	AC-228 Count Error				30	%
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214				0.74	pCi/g
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error				40	%
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40				15	pCi/g
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				14	%
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-212				0.94	pCi/g
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	PB-212 Count Error				42	%
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-226				0.92	pCi/g
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-226 Count Error				48	%
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228				0.88	pCi/g
W09GR00929	B22CP2	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228 Count Error				30	%
W09GR00930	B22CN1	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40				8.9	pCi/g
W09GR00930	B22CN1	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				19	%
W09GR00931	B22CN3	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214				0.73	pCi/g
W09GR00931	B22CN3	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error				29	%
W09GR00931	B22CN3	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40				14	pCi/g
W09GR00931	B22CN3	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				14	%
W09GR00931	B22CN3	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228				0.62	pCi/g
W09GR00931	B22CN3	GPP	TRENT	Gamma Energy Analysis-grd H2O	RA-228 Count Error				32	%
W09GR00936	B22CN8	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214				0.80	pCi/g
W09GR00936	B22CN8	GPP	TRENT	Gamma Energy Analysis-grd H2O	BI-214 Count Error				33	%
W09GR00936	B22CN8	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40				15	pCi/g
W09GR00936	B22CN8	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				15	%

RQ=Result Qualifier

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WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

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

Group #: WSCF20091071
Department: Radiochemistry

Sample #	Client ID			Test Name	Peak Name	CAS#	RT	RQ	Result	Units
W09GR00937	B22CN9	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40				13	pCi/g
W09GR00937	B22CN9	GPP	TRENT	Gamma Energy Analysis-grd H2O	K-40 Count Error				17	%

RQ=Result Qualifier

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M4W41-SLF-09-279

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 13 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
VI
10/29/09

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program

Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 302222/ES10
Group#: 20091071
Project#: F09-047
Proj Mgr: Steve Trent
Phone: 373-5869

The following samples were received from you on 10/23/09. 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
W09GR00926	B22CP0	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00928	B22CP1	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00929	B22CP2	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00930	B22CN1	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00931	B22CN3	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00932	B22CN4	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00933	B22CN5	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00934	B22CN6	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00935	B22CN7	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00936	B22CN8	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09
W09GR00937	B22CN9	GPP @AEA-30 @AEA-31 @GEA-GPP @SR89_90	TRENT Solid, or handle as if solid	10/23/09

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

10/29/09

F09-047-039

COLLECTOR: KJ Young	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-L3-08	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: 1"-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
N/A

20091071

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

N/A 10/23/09 AA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CP0 W0968009	SOIL	10/23/09	0940	X	X	X

N/A 10/23/09 AA

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: KJ Young	DATE/TIME: 1130 10/23/09	RECEIVED BY/STORED IN: Victor Sikes	DATE/TIME: 1130 10/23/09
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}

ORIGINAL

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

F09-047-040

COLLECTOR: KJ Young	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-L3-09
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: 1" - 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
N/A

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

N/A 10/23/09 AD

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CP1 W0962000928	SOIL	OCT 23 2009	0953	X	X	X

N/A 10/23/09 AD

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	OCT 23 2009 1130	Victor Sims	OCT 23 2009 1130

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

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

F09-047-041

COLLECTOR: KJ Young	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-L3-10
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: 1"-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
N/A

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	

N/A 10/23/09

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CP2 W0962W0929	SOIL	10/23/09	0948	X	X	X

N/A 10/23/09

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	10/23/09 1130	Victor Sims	10/23/09 1130

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

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

F09-047-005

COLLECTOR: KJ Young	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 8B	DATA TURNAROUND: 7 Days / 15 Days		
SAMPLING LOCATION: ZA-L3-01	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: 1"—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
N/A

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

N/A 10/23/09

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CN1 W0462009 30	SOIL	10/23/09	0905	X	X	X

N/A 10/23/09

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	10/23/09 1130	Victor Sims	10/23/09 1130

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

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

F09-047-032 PAGE 1 OF 1

COLLECTOR: KJ Young	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-L3-02
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: 1" - 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
N/A

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

N/A 10/23/09 NN

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CN3 W0962K0931	SOIL	10/23/09	0857	X	X	X

N/A 10/23/09 NN

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	10-23-09 1130	Victor Sims	10-23-09 1130
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

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}

ORIGINAL

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

F09-047-033

COLLECTOR: KJ Young	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-L3-03
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: 1"-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
N/A

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

N/A 10/23/09

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CN4 WW46W632	SOIL	10/23/09	0910	X	X	X

N/A 10/23/09

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	10/23/09 1130	Victor Stiles	10/23/09 1130

SPECIAL INSTRUCTIONS

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

ORIGINAL

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

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F09-047-034

COLLECTOR: KJ Young	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-L3-04
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: 1" - 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
N/A

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

N/A 10/23/09 AD

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CN5 W0916200933	SOIL	~~OCT 23 2009~~ OCT 23 2009	0916	X	X	X

N/A 10/23/09 AD

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	OCT 23 2009 1130	V. Ortiz Simms	OCT 23 2009 1130

SIGN/ PRINT NAMES

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

ORIGINAL

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

F09-047-035

COLLECTOR: KJ Young	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 8B	DATA TURNAROUND: 7 Days / 15 Days		
SAMPLING LOCATION: ZA-L3-04DUP	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: 1" - 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
N/A

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

N/A 10/23/09 [initials]

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CN6 W076KW 934	SOIL	10/23/09	0916	X	X	X

N/A 10/23/09 [initials]

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young [signature]	10/23/09 1130	V. [signature]	10/23/09 1130

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

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

ORIGINAL

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

F09-047-036

COLLECTOR: KJ Young	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 8B	DATA TURNAROUND: 7 Days / 15 Days		
SAMPLING LOCATION: ZA-L3-05	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: 1" - 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
N/A

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

N/A 10/23/09 [initials]

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CN7 W09 6NOD 935	SOIL	OCT 23 2009	0932	X	X	X

N/A 10/23/09 [initials]

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young [signature]	OCT 23 2009 1130	Victor J Gilmore [signature]	OCT 23 2009 1130

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}

ORIGINAL

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

F09-047-037

COLLECTOR KJ Young	COMPANY CONTACT WIDRIG, DL	TELEPHONE NO. 373-5869	PROJECT COORDINATOR WIDRIG, DL
PRICE CODE 88	DATA TURNAROUND 7 Days / 15 Days	AIR QUALITY ☐	
SAMPLING LOCATION ZA-L3-06	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 1" – 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
N/A

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

N/A 10/23/09 MM

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CN8 (was B22CN93)	SOIL	10/23/09	0921	X	X	X

N/A 10/23/09 MM

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KJ Young	1130 10/23/09	Victor Sims	1130 10/23/09

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}

ORIGINAL

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

F09-047-038

COLLECTOR: KJ Young	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: 8B
				DATA TURNAROUND: 7 Days / 15 Days
SAMPLING LOCATION: ZA-L3-07	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: 1" - 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
N/A

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

N/A 10/23/09 NN

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B22CN9 WOCGN 437	SOIL	OCT 23 2009	0927	X	X	X

N/A 10/23/09 NN

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: KJ Young	DATE/TIME: OCT 23 2009 1130	RECEIVED BY/STORED IN: Victor Jones	DATE/TIME: OCT 23 2009 1130
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 QKI applies to this SAF.
(1)Americium-241 {Americium-241} Isotopic Plutonium {Plutonium-239/240, Plutonium-238}

ORIGINAL

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

A-6003-618(01/06)