



**EBERLINE**  
SERVICES

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April 23, 2010

Mr. Michael Neely  
CH2M Hill Plateau Remediation Company  
P.O. Box 1600  
Mail Stop – B6-06  
Richland, WA 99352

Reference: **P.O. #33677**  
**Eberline Analytical S0-04-034-7819, SDG H4203**

Dear Mr. Neely:

Enclosed is a data report for five solid (soil) samples designated under SAF No. F10-060. The samples were received at Eberline Analytical on April 8, 2010. The samples were analyzed according to the accompanying chain-of-custody documents.

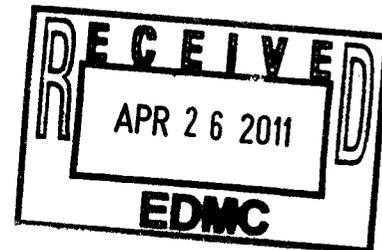
Please call if you have any questions concerning this report.

Sincerely,

N. Joseph Verville  
Client Services Manager

NJV/jag

Enclosure: Data Package



## 1.0 GENERAL

CH2M Hill Plateau Remediation Company (CHPRC) Sample Delivery Group H4203 was composed of five solid (soil) samples designated under SAF No. F10-060 with a Project Designation of: 200-CW-1 Model Group 5 Sampling – Large Area Ponds – Soil Sampling.

The samples were received as stated on the chain-of-custody documents. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist.

## 2.0 ANALYSIS NOTES

### 2.1 Total Strontium Analysis

No problems were encountered during the course of the analyses.

### 2.2 Technetium-99 Analysis

The results for both the original and duplicate analyses were less than their respective MDA's, therefore no RPD is calculated, and there is no associated control limit. No problems were encountered during the course of the analyses.

### 2.3 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

### 2.4 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

### 2.5 Neptunium-237 Analysis

The results for both the original and duplicate analyses were less than their respective MDA's, therefore no RPD is calculated, and there is no associated control limit. No problems were encountered during the course of the analyses.

### 2.6 Americium-241 Analysis

The relative percent difference (RPD) in the original and duplicate results was 46%, greater than the control limit of 25%, however per DOE QSAS, Rev. 2.5, "When either the DER or the RPD pass, then the duplicate is acceptable." In this case, the DER was 1.1, less than the control limit of 3.0. No other problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

"I 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 obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."



\_\_\_\_\_  
N. Joseph Verville  
Client Services Manager

4/23/10

\_\_\_\_\_  
Date

EBRLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H4203

SDG 7819  
Contact N. Joseph Verville

Client CHPRC  
Contract No. 33677  
Case no SDG\_H4203

S U M M A R Y   D A T A   S E C T I O N

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Prepared by



Reviewed by



Lab id EBRLNE  
Protocol CHPRC  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 04/23/10

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H4203

SDG 7819  
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC  
Contract No. 33677  
Case no SDG\_H4203

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES

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SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol CHPRC  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 04/23/10

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H4203

SDG 7819  
Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC  
Contract No. 33677  
Case no SDG\_H4203

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

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Lab id EBRLNE  
Protocol CHPRC  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 04/23/10

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H4203

**LAB SAMPLE SUMMARY**

SDG 7819  
 Contact N. Joseph Verville

Client CHPRC  
 Contract No. 33677  
 Case no SDG H4203

LAB						CHAIN OF	
SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CUSTODY	COLLECTED
S004034-01	B243T0	216U10Pond;CS766;I002DUP	SOLID		F10-060	F10-060-029	04/02/10 09:12
S004034-02	B243T2	216U10Pond;CS766;I-002	SOLID		F10-060	F10-060-032	04/02/10 09:12
S004034-03	B243T3	216U10Pond;CS767;I-001	SOLID		F10-060	F10-060-035	04/01/10 09:54
S004034-04	B243T4	216U10Pond;CS767;I-002	SOLID		F10-060	F10-060-038	04/01/10 10:45
S004034-05	B243T6	216U10Pond;CS768;I-002	SOLID		F10-060	F10-060-044	04/05/10 08:40
S004034-06	Lab Control Sample		SOLID		F10-060		
S004034-07	Method Blank		SOLID		F10-060		
S004034-08	Duplicate (S004034-01)	216U10Pond;CS766;I002DUP	SOLID		F10-060		04/02/10 09:12

LAB SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE  
 Protocol CHPRC  
 Version Ver 1.0  
 Form DVD-LS  
 Version 3.05  
 Report date 04/23/10

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4203

SDG 7819  
 Contact N. Joseph Verville

QC SUMMARY

Client CHPRC  
 Contract No. 33677  
 Case no SDG H4203

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7819	F10-060-029	B243T0	SOLID	90.8	131 g		04/08/10	6	S004034-01	7819-001
	F10-060-032	B243T2	SOLID	91.0	140 g		04/08/10	6	S004034-02	7819-002
	F10-060-035	B243T3	SOLID	93.6	161 g		04/08/10	7	S004034-03	7819-003
	F10-060-038	B243T4	SOLID	94.1	143 g		04/08/10	7	S004034-04	7819-004
	F10-060-044	B243T6	SOLID	94.0	113 g		04/08/10	3	S004034-05	7819-005
		Method Blank	SOLID						S004034-07	7819-007
		Lab Control Sample	SOLID						S004034-06	7819-006
		Duplicate (S004034-01)	SOLID	90.8	131 g		04/08/10	6	S004034-08	7819-008

QC SUMMARY

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SUMMARY DATA SECTION

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 Form DVD-QS  
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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H4203

SDG 7819  
 Contact N. Joseph Verville

**PREP BATCH SUMMARY**

Client CHPRC  
 Contract No. 33677  
 Case no SDG H4203

TEST	MATRIX	METHOD	PREPARATION ERROR			PLANCHETS ANALYZED			QUALI-
			BATCH	2σ %	CLIENT MORE	RE BLANK	LCS	DUP/ORIG MS/ORIG	
<b>Alpha Spectroscopy</b>									
AM	SOLID	Americium 241 in Solids	7252-025	8.0	5	1	1	1/1	
NP	SOLID	Neptunium in Solids	7252-025	14.8	5	1	1	1/1	
PU	SOLID	Plutonium, Isotopic in Solids	7252-025	8.0	5	1	1	1/1	
U	SOLID	Uranium, Isotopic in Solids	7252-025	8.0	5	1	1	1/1	
<b>Beta Counting</b>									
SR	SOLID	Total Strontium in Solids	7252-025	10.4	5	1	1	1/1	
TC	SOLID	Technetium 99 in Solids	7252-025	13.2	5	1	1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.  
 Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

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 Protocol CHPRC  
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 Form DVD-PBS  
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4203

LAB WORK SUMMARY

SDG 7819

Contact N. Joseph Verville

Client CHPRC

Contract No. 33677

Case no SDG H4203

LAB SAMPLE	CLIENT SAMPLE ID				SUF-					
COLLECTED	LOCATION	MATRIX			FIX	ANALYZED	REVIEWED	BY	METHOD	
RECEIVED	CUSTODY	SAF No	PLANCHET	TEST						
S004034-01	B243T0		7819-001	AM		04/19/10	04/19/10	BW	Americium 241 in Solids	
04/02/10	216U10Pond;C5766;I002DUP	SOLID	7819-001	NP		04/21/10	04/22/10	BW	Neptunium in Solids	
04/08/10	F10-060-029	F10-060	7819-001	PU		04/16/10	04/19/10	BW	Plutonium, Isotopic in Solids	
			7819-001	SR		04/16/10	04/20/10	BW	Total Strontium in Solids	
			7819-001	TC		04/20/10	04/20/10	BW	Technetium 99 in Solids	
			7819-001	U		04/16/10	04/16/10	BW	Uranium, Isotopic in Solids	
S004034-02	B243T2		7819-002	AM		04/19/10	04/19/10	BW	Americium 241 in Solids	
04/02/10	216U10Pond;C5766;I-002	SOLID	7819-002	NP		04/20/10	04/22/10	BW	Neptunium in Solids	
04/08/10	F10-060-032	F10-060	7819-002	PU		04/16/10	04/19/10	BW	Plutonium, Isotopic in Solids	
			7819-002	SR		04/16/10	04/20/10	BW	Total Strontium in Solids	
			7819-002	TC		04/17/10	04/20/10	BW	Technetium 99 in Solids	
			7819-002	U		04/16/10	04/16/10	BW	Uranium, Isotopic in Solids	
S004034-03	B243T3		7819-003	AM		04/19/10	04/19/10	BW	Americium 241 in Solids	
04/01/10	216U10Pond;C5767;I-001	SOLID	7819-003	NP		04/20/10	04/22/10	BW	Neptunium in Solids	
04/08/10	F10-060-035	F10-060	7819-003	PU		04/16/10	04/19/10	BW	Plutonium, Isotopic in Solids	
			7819-003	SR		04/16/10	04/20/10	BW	Total Strontium in Solids	
			7819-003	TC		04/19/10	04/20/10	BW	Technetium 99 in Solids	
			7819-003	U		04/16/10	04/16/10	BW	Uranium, Isotopic in Solids	
S004034-04	B243T4		7819-004	AM		04/19/10	04/19/10	BW	Americium 241 in Solids	
04/01/10	216U10Pond;C5767;I-002	SOLID	7819-004	NP		04/20/10	04/22/10	BW	Neptunium in Solids	
04/08/10	F10-060-038	F10-060	7819-004	PU		04/17/10	04/19/10	BW	Plutonium, Isotopic in Solids	
			7819-004	SR		04/16/10	04/20/10	BW	Total Strontium in Solids	
			7819-004	TC		04/19/10	04/20/10	BW	Technetium 99 in Solids	
			7819-004	U		04/16/10	04/16/10	BW	Uranium, Isotopic in Solids	
S004034-05	B243T5		7819-005	AM		04/19/10	04/19/10	BW	Americium 241 in Solids	
04/05/10	216U10Pond;C5768;I-002	SOLID	7819-005	NP		04/21/10	04/22/10	BW	Neptunium in Solids	
04/08/10	F10-060-044	F10-060	7819-005	PU		04/16/10	04/19/10	BW	Plutonium, Isotopic in Solids	
			7819-005	SR		04/16/10	04/20/10	BW	Total Strontium in Solids	
			7819-005	TC		04/19/10	04/20/10	BW	Technetium 99 in Solids	
			7819-005	U		04/16/10	04/16/10	BW	Uranium, Isotopic in Solids	

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EBRLNE

Protocol CHPRC

Version Ver 1.0

Form DVD-LWS

Version 3.06

Report date 04/23/10

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H4203

**WORK SUMMARY, cont.**

SDG 7819  
Contact N. Joseph Verville

Client CHPRC  
Contract No. 33677  
Case no SDG H4203

LAB SAMPLE	CLIENT SAMPLE ID				SUF-				
COLLECTED	LOCATION	MATRIX			FIX	ANALYZED	REVIEWED	BY	METHOD
RECEIVED	CUSTODY	SAF No	PLANCHET	TEST					
S004034-06	Lab Control Sample		7819-006	AM		04/19/10	04/19/10	BW	Americium 241 in Solids
		SOLID	7819-006	NP		04/20/10	04/22/10	BW	Neptunium in Solids
		F10-060	7819-006	PU		04/16/10	04/19/10	BW	Plutonium, Isotopic in Solids
			7819-006	SR		04/16/10	04/20/10	BW	Total Strontium in Solids
			7819-006	TC		04/16/10	04/20/10	BW	Technetium 99 in Solids
			7819-006	U		04/16/10	04/16/10	BW	Uranium, Isotopic in Solids
S004034-07	Method Blank		7819-007	AM		04/19/10	04/19/10	BW	Americium 241 in Solids
		SOLID	7819-007	NP		04/20/10	04/22/10	BW	Neptunium in Solids
		F10-060	7819-007	PU		04/15/10	04/19/10	BW	Plutonium, Isotopic in Solids
			7819-007	SR		04/16/10	04/20/10	BW	Total Strontium in Solids
			7819-007	TC		04/17/10	04/20/10	BW	Technetium 99 in Solids
			7819-007	U		04/16/10	04/16/10	BW	Uranium, Isotopic in Solids
S004034-08	Duplicate (S004034-01)		7819-008	AM		04/19/10	04/19/10	BW	Americium 241 in Solids
04/02/10	216U10Pond;C5766;I002DUP	SOLID	7819-008	NP		04/20/10	04/22/10	BW	Neptunium in Solids
04/08/10		F10-060	7819-008	PU		04/16/10	04/19/10	BW	Plutonium, Isotopic in Solids
			7819-008	SR		04/16/10	04/20/10	BW	Total Strontium in Solids
			7819-008	TC		04/20/10	04/20/10	BW	Technetium 99 in Solids
			7819-008	U		04/16/10	04/16/10	BW	Uranium, Isotopic in Solids

**COUNTS OF TESTS BY SAMPLE TYPE**

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
AM	F10-060	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	5			1	1	1		8
NP	F10-060	Neptunium in Solids	NP237_LLE_PLATE_AEA	5			1	1	1		8
PU	F10-060	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	5			1	1	1		8
SR	F10-060	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	5			1	1	1		8
TC	F10-060	Technetium 99 in Solids	TC99_TR_SEP_GPC	5			1	1	1		8
U	F10-060	Uranium, Isotopic in Solids	UIISO_PLATE_AEA	5			1	1	1		8
<b>TOTALS</b>				30			6	6	6		48

WORK SUMMARY

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Form DVD-LWS  
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EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H4203

7819-007

Method Blank

METHOD BLANK

SDG <u>7819</u>	Client/Case no <u>CHPRC</u>	<u>SDG H4203</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S004034-07</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7819-007</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>F10-060</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	-0.084	0.10	0.238	1.00	U	SR
Technetium 99	14133-76-7	-0.030	0.12	0.427	15.0	U	TC
Uranium 233/234	U-233/234	0	0.066	0.252	1.00	U	U
Uranium 235	15117-96-1	0	0.080	0.306	1.00	U	U
Uranium 238	U-238	0	0.066	0.252	1.00	U	U
Neptunium 237	13994-20-2	0.043	0.085	0.128	1.00	U	NP
Americium 241	14596-10-2	-0.040	0.079	0.265	1.00	U	AM
Plutonium 238	13981-16-3	-0.049	0.049	0.233	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.049	0.186	1.00	U	PU

QC-BLANK #72928

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H4203

7819-006

Lab Control Sample

**LAB CONTROL SAMPLE**

SDG <u>7819</u>	Client/Case no <u>CHPRC</u> <span style="float:right">SDG <u>H4203</u></span>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>
Lab sample id <u>S004034-06</u>	Client sample id <u>Lab Control Sample</u>
Dept sample id <u>7819-006</u>	Material/Matrix <u>SOLID</u>
	SAF No <u>F10-060</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	3σ LMTS	PROTOCOL
	pCi/g	(COUNT)	pCi/g	pCi/g	FIERS TEST	pCi/g	pCi/g	%	(TOTAL)	LIMITS
Total Strontium	10.5	0.56	0.228	1.00	SR	9.81	0.39	107	80-120	80-120
Technetium 99	119	2.2	0.372	15.0	TC	109	4.4	109	77-123	80-120
Uranium 233/234	9.60	1.4	0.746	1.00	U	9.66	0.39	99	74-126	80-120
Uranium 235	7.91	1.2	0.263	1.00	U	7.84	0.31	101	73-127	80-120
Uranium 238	10.7	1.5	0.719	1.00	U	10.5	0.42	102	75-125	80-120
Neptunium 237	9.11	1.3	0.336	1.00	NP	9.92	0.40	92	71-129	80-120
Americium 241	11.9	1.5	0.313	1.00	AM	10.1	0.40	118	73-127	80-120
Plutonium 238	12.3	1.4	0.259	1.00	PU	13.8	0.55	89	80-120	80-120
Plutonium 239/240	15.7	1.7	0.179	1.00	PU	15.8	0.63	99	79-121	80-120

QC-LCS #72927

LAB CONTROL SAMPLES

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Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>04/23/10</u>

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H4203

7819-008

B243T0

**DUPLICATE**

SDG <u>7819</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4203</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
<b>DUPLICATE</b>	<b>ORIGINAL</b>	
Lab sample id <u>S004034-08</u>	Lab sample id <u>S004034-01</u>	Client sample id <u>B243T0</u>
Dept sample id <u>7819-008</u>	Dept sample id <u>7819-001</u>	Location/Matrix <u>216U10Pond;C5766;I002DUP SOLID</u>
	Received <u>04/08/10</u>	Collected/Weight <u>04/02/10 09:12 131 g</u>
% solids <u>90.8</u>	% solids <u>90.8</u>	Custody/SAF No <u>F10-060-029 F10-060</u>

ANALYTE	DUPLICATE		MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ORIGINAL		MDA pCi/g	QUALI- FIERS	RPD %	3σ TOT	DER σ
	pCi/g	2σ ERR (COUNT)					pCi/g	2σ ERR (COUNT)					
Total Strontium	5.90	0.43	0.240	1.00		SR	6.31	0.43	0.224		7	27	0.8
Technetium 99	0.279	0.15	0.384	15.0	U	TC	0.113	0.14	0.383	U	-		1.6
Uranium 233/234	6.96	1.1	0.282	1.00		U	6.70	1.0	0.300		4	37	0.3
Uranium 235	0.571	0.29	0.273	1.00		U	0.591	0.27	0.251		3	104	0.1
Uranium 238	6.37	1.0	0.282	1.00		U	7.24	1.1	0.260		13	37	1.0
Neptunium 237	0	0.086	0.129	1.00	U	NP	-0.032	0.063	0.241	U	-		0.6
Americium 241	0.312	0.21	0.256	1.00		AM	0.496	0.24	0.226		46	120	1.1
Plutonium 238	0.260	0.26	0.359	1.00	U	PU	0.096	0.19	0.462	U	-		1.0
Plutonium 239/240	0.357	0.26	0.248	1.00		PU	0.289	0.29	0.369	U	21	182	0.3

QC-DUP#1 72929

200-CW-1 Model Group 5 Sampling - Large Area Ponds -  
Soil Sampling

Lab id EBRLNE  
Protocol CHPRC  
Version Ver 1.0  
Form DVD-DUP  
Version 3.06  
Report date 04/23/10

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H4203**

7819-001

B243T0

**DATA SHEET**

SDG <u>7819</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4203</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S004034-01</u>	Client sample id <u>B243T0</u>	
Dept sample id <u>7819-001</u>	Location/Matrix <u>216U10Pond;C5766;I002DUP SOLID</u>	
Received <u>04/08/10</u>	Collected/Weight <u>04/02/10 09:12</u> <u>131 g</u>	
% solids <u>90.8</u>	Custody/SAF No <u>F10-060-029</u> <u>F10-060</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	6.31	0.43	0.224	1.00		SR
Technetium 99	14133-76-7	0.113	0.14	0.383	15.0	U	TC
Uranium 233/234	U-233/234	6.70	1.0	0.300	1.00		U
Uranium 235	15117-96-1	0.591	0.27	0.251	1.00		U
Uranium 238	U-238	7.24	1.1	0.260	1.00		U
Neptunium 237	13994-20-2	-0.032	0.063	0.241	1.00	U	NP
Americium 241	14596-10-2	0.496	0.24	0.226	1.00		AM
Plutonium 238	13981-16-3	0.096	0.19	0.462	1.00	U	PU
Plutonium 239/240	PU-239/240	0.289	0.29	0.369	1.00	U	PU

200-CW-1 Model Group 5 Sampling - Large Area Ponds -  
 Soil Sampling

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/10</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H4203**

7819-002

B243T2

**D A T A   S H E E T**

SDG <u>7819</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4203</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S004034-02</u>	Client sample id <u>B243T2</u>	
Dept sample id <u>7819-002</u>	Location/Matrix <u>216U10Pond;C5766;I-002</u>	<u>SOLID</u>
Received <u>04/08/10</u>	Collected/Weight <u>04/02/10 09:12</u>	<u>140 g</u>
% solids <u>91.0</u>	Custody/SAF No <u>F10-060-032</u>	<u>F10-060</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	6.84	0.44	0.211	1.00		SR
Technetium 99	14133-76-7	0.244	0.12	0.354	15.0	U	TC
Uranium 233/234	U-233/234	6.93	1.1	0.242	1.00		U
Uranium 235	15117-96-1	0.345	0.23	0.293	1.00		U
Uranium 238	U-238	6.48	1.1	0.242	1.00		U
Neptunium 237	13994-20-2	0	0.086	0.130	1.00	U	NP
Americium 241	14596-10-2	0.365	0.22	0.238	1.00		AM
Plutonium 238	13981-16-3	0.091	0.18	0.436	1.00	U	PU
Plutonium 239/240	PU-239/240	0.091	0.091	0.348	1.00	U	PU

200-CW-1 Model Group 5 Sampling - Large Area Ponds -  
Soil Sampling

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/10</u>

**EBERLINE SERVICES / RICHMOND**  
**SAMPLE DELIVERY GROUP H4203**

7819-003

B243T3

**DATA SHEET**

SDG <u>7819</u>	Client/Case no <u>CHPRC</u>	<u>SDG H4203</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S004034-03</u>	Client sample id <u>B243T3</u>	
Dept sample id <u>7819-003</u>	Location/Matrix <u>216U10Pond;C5767;I-001</u>	<u>SOLID</u>
Received <u>04/08/10</u>	Collected/Weight <u>04/01/10 09:54</u>	<u>161 g</u>
% solids <u>93.6</u>	Custody/SAF No <u>F10-060-035</u>	<u>F10-060</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	2.34	0.27	0.218	1.00		SR
Technetium 99	14133-76-7	0.162	0.14	0.324	15.0	U	TC
Uranium 233/234	U-233/234	1.79	0.53	0.274	1.00		U
Uranium 235	15117-96-1	0.087	0.087	0.332	1.00	U	U
Uranium 238	U-238	1.40	0.45	0.274	1.00		U
Neptunium 237	13994-20-2	0	0.096	0.144	1.00	U	NP
Americium 241	14596-10-2	0.033	0.13	0.316	1.00	U	AM
Plutonium 238	13981-16-3	0	0.061	0.235	1.00	U	PU
Plutonium 239/240	PU-239/240	0.153	0.12	0.235	1.00	U	PU

200-CW-1 Model Group 5 Sampling - Large Area Ponds -  
 Soil Sampling

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/10</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H4203

7819-004

B243T4

DATA SHEET

SDG <u>7819</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4203</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S004034-04</u>	Client sample id <u>B243T4</u>	
Dept sample id <u>7819-004</u>	Location/Matrix <u>216U10Pond;C5767;I-002</u>	<u>SOLID</u>
Received <u>04/08/10</u>	Collected/Weight <u>04/01/10 10:45</u>	<u>143 g</u>
% solids <u>94.1</u>	Custody/SAF No <u>F10-060-038</u>	<u>F10-060</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	16.9	0.70	0.224	1.00		SR
Technetium 99	14133-76-7	0.155	0.15	0.386	15.0	U	TC
Uranium 233/234	U-233/234	3.02	0.75	0.366	1.00		U
Uranium 235	15117-96-1	0.278	0.19	0.354	1.00	U	U
Uranium 238	U-238	3.06	0.75	0.366	1.00		U
Neptunium 237	13994-20-2	0	0.11	0.162	1.00	U	NP
Americium 241	14596-10-2	0.025	0.10	0.275	1.00	U	AM
Plutonium 238	13981-16-3	-0.031	0.12	0.293	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.061	0.234	1.00	U	PU

200-CW-1 Model Group 5 Sampling - Large Area Ponds -  
Soil Sampling

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/10</u>

EBERLINE SERVICES / RICHMOND  
SAMPLE DELIVERY GROUP H4203

7819-005

B243T6

DATA SHEET

SDG <u>7819</u>	Client/Case no <u>CHPRC</u>	SDG <u>H4203</u>
Contact <u>N. Joseph Verville</u>	Contract No. <u>33677</u>	
Lab sample id <u>S004034-05</u>	Client sample id <u>B243T6</u>	
Dept sample id <u>7819-005</u>	Location/Matrix <u>216U10Pond;C5768;I-002</u>	<u>SOLID</u>
Received <u>04/08/10</u>	Collected/Weight <u>04/05/10 08:40</u>	<u>113 g</u>
% solids <u>94.0</u>	Custody/SAF No <u>F10-060-044</u>	<u>F10-060</u>

ANALYTE	CAS NO	RESULT pCi/g	2 $\sigma$ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	3.74	0.33	0.203	1.00		SR
Technetium 99	14133-76-7	0.091	0.12	0.332	15.0	U	TC
Uranium 233/234	U-233/234	0.950	0.44	0.404	1.00		U
Uranium 235	15117-96-1	0.128	0.13	0.489	1.00	U	U
Uranium 238	U-238	1.11	0.54	0.404	1.00		U
Neptunium 237	13994-20-2	0.038	0.15	0.292	1.00	U	NP
Americium 241	14596-10-2	0.464	0.31	0.428	1.00		AM
Plutonium 238	13981-16-3	0.033	0.13	0.312	1.00	U	PU
Plutonium 239/240	PU-239/240	0.913	0.34	0.250	1.00		PU

200-CW-1 Model Group 5 Sampling - Large Area Ponds -  
Soil Sampling

Lab id <u>EBRLNE</u>
Protocol <u>CHPRC</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>04/23/10</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4203

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Test AM Matrix SOLID

SDG 7819

Contact N. Joseph Verville

Client CHPRC

Contract No. 33677

Contract SDG H4203

RESULTS

LAB RAW SUP- Americium  
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID 241

Preparation batch 7252-025

S004034-01	7819-001	B243T0	0.496
S004034-02	7819-002	B243T2	0.365
S004034-03	7819-003	B243T3	U
S004034-04	7819-004	B243T4	U
S004034-05	7819-005	B243T6	0.464
S004034-06	7819-006	Lab Control Sample	ok
S004034-07	7819-007	Method Blank	U
S004034-08	7819-008	Duplicate (S004034-01)	ok

Nominal values and limits from method RDLs (pCi/g) 1.00

METHOD PERFORMANCE

LAB RAW SUP- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-  
SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g g FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7252-025 2σ prep error 8.0 % Reference Lab Notebook No. 7251 pg.025

S004034-01	B243T0	0.226	0.500	77	119	17	04/19/10	04/19	SS-028
S004034-02	B243T2	0.238	0.500	87	119	17	04/19/10	04/19	SS-029
S004034-03	B243T3	0.316	0.500	72	121	18	04/19/10	04/19	SS-031
S004034-04	B243T4	0.275	0.500	92	121	18	04/19/10	04/19	SS-032
S004034-05	B243T6	0.428	0.500	53	121	14	04/19/10	04/19	SS-033
S004034-06	Lab Control Sample	0.313	0.500	72	121		04/19/10	04/19	SS-034
S004034-07	Method Blank	0.265	0.500	96	120		04/19/10	04/19	SS-035
S004034-08	Duplicate (S004034-01)	0.256	0.500	93	121	17	04/19/10	04/19	SS-036

Nominal values and limits from method 1.00 0.500 30-110 100 100 180

PROCEDURES REFERENCE AMCMISO\_IE\_PLATE\_AEA  
SPP-071 Soil Dissolution, > 1.0g Aliquot, rev 1  
CP-963 Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6  
CP-008 Heavy Element Electroplating, rev 13

AVERAGES ± 2 SD MDA 0.290 ± 0.129  
FOR 8 SAMPLES YIELD 80 ± 29

METHOD SUMMARIES

Page 1

SUMMARY DATA SECTION

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Lab id EBRLNE  
Protocol CHPRC  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 04/23/10

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H4203

Test NP Matrix SOLID  
 SDG 7819  
 Contact N. Joseph Verville

**LAB METHOD SUMMARY**

NEPTUNIUM IN SOLIDS  
 ALPHA SPECTROSCOPY

Client CHPRC  
 Contract No. 33677  
 Contract SDG H4203

**RESULTS**

LAB RAW SUF- Neptunium  
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID 237

Preparation batch 7252-025

S004034-01	7819-001	B243T0	U
S004034-02	7819-002	B243T2	U
S004034-03	7819-003	B243T3	U
S004034-04	7819-004	B243T4	U
S004034-05	7819-005	B243T6	U
S004034-06	7819-006	Lab Control Sample	ok
S004034-07	7819-007	Method Blank	U
S004034-08	7819-008	Duplicate (S004034-01)	- U

Nominal values and limits from method RDLs (pCi/g) 1.00

**METHOD PERFORMANCE**

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-  
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g g FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7252-025 2σ prep error 14.8 % Reference Lab Notebook No. 7251 pg.025

S004034-01	B243T0	0.241	0.500	54	127	19	04/20/10	04/21	SS-028
S004034-02	B243T2	0.130	0.500	53	102	18	04/20/10	04/20	SS-062
S004034-03	B243T3	0.144	0.500	47	102	19	04/20/10	04/20	SS-063
S004034-04	B243T4	0.162	0.500	44	102	19	04/20/10	04/20	SS-064
S004034-05	B243T6	0.292	0.500	46	127	16	04/20/10	04/21	SS-029
S004034-06	Lab Control Sample	0.336	0.500	46	116		04/20/10	04/20	SS-062
S004034-07	Method Blank	0.128	0.500	46	116		04/20/10	04/20	SS-063
S004034-08	Duplicate (S004034-01)	0.129	0.500	48	116	18	04/20/10	04/20	SS-064

Nominal values and limits from method 1.00 0.500 30-110 100 180

PROCEDURES REFERENCE NP237\_LLE\_PLATE\_AEA  
 SPP-071 Soil Dissolution, > 1.0g Aliquot, rev 1  
 CP-930 Neptunium from Solids and Water by Extraction Chromatography, rev 5  
 CP-008 Heavy Element Electroplating, rev 13

AVERAGES ± 2 SD MDA 0.195 ± 0.166  
 FOR 8 SAMPLES YIELD 48 ± 7

Lab id EBRLNE  
 Protocol CHPRC  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 04/23/10

METHOD SUMMARIES

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SUMMARY DATA SECTION

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H4203

Test PU Matrix SOLID  
SDG 7819  
Contact N. Joseph Verville

Client CHPRC  
Contract No. 33677  
Contract SDG H4203

**LAB METHOD SUMMARY**

PLUTONIUM, ISOTOPIC IN SOLIDS  
ALPHA SPECTROSCOPY

**RESULTS**

LAB	RAW	SUF-		Plutonium	Plutonium
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	238	239/240
Preparation batch 7252-025					
S004034-01		7819-001	B243T0	U	U
S004034-02		7819-002	B243T2	U	U
S004034-03		7819-003	B243T3	U	U
S004034-04		7819-004	B243T4	U	U
S004034-05		7819-005	B243T6	U	0.913
S004034-06		7819-006	Lab Control Sample	ok	ok
S004034-07		7819-007	Method Blank	U	U
S004034-08		7819-008	Duplicate (S004034-01)	- U	ok
Nominal values and limits from method					
			RDLs (pCi/g)	1.00	1.00

**METHOD PERFORMANCE**

LAB	RAW	SUF-		MAX MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID		pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR
Preparation batch 7252-025														
			2σ prep error	8.0 %	Reference Lab Notebook No. 7251 pg.025									
S004034-01		B243T0		0.462	0.500			50		102			14 04/16/10	04/16 SS-033
S004034-02		B243T2		0.436	0.500			58		106			14 04/16/10	04/16 SS-038
S004034-03		B243T3		0.235	0.500			72		103			15 04/16/10	04/16 SS-051
S004034-04		B243T4		0.293	0.500			77		100			16 04/16/10	04/17 SS-061
S004034-05		B243T6		0.312	0.500			68		103			11 04/16/10	04/16 SS-055
S004034-06		Lab Control Sample		0.259	0.500			89		114			04/16/10	04/16 SS-061
S004034-07		Method Blank		0.233	0.500			84		114			04/16/10	04/16 SS-062
S004034-08		Duplicate (S004034-01)		0.359	0.500			62		114			14 04/16/10	04/16 SS-063
Nominal values and limits from method														
				1.00	0.500			30-110		100	100		180	

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 1
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 12
	CP-008	Heavy Element Electroplating, rev 13

AVERAGES ± 2 SD	MDA	<u>0.324 ± 0.176</u>
FOR 8 SAMPLES	YIELD	<u>70 ± 26</u>

Lab id EBRLNE  
Protocol CHPRC  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 04/23/10

METHOD SUMMARIES

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4203

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Test U Matrix SOLID  
SDG 7819  
Contact N. Joseph Verville

Client CHPRC  
Contract No. 33677  
Contract SDG H4203

RESULTS

LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	CLIENT SAMPLE ID	1: Uranium	2: Uranium	3: Uranium	RESULT RATIOS (%)				
				233/234	235	238	1+3	2σ	2+3	2σ	
Preparation batch 7252-025											
S004034-01		7819-001	B243T0	6.70	0.591	7.24	93	20	8	4	
S004034-02		7819-002	B243T2	6.93	0.345	6.48	107	25	5	4	
S004034-03		7819-003	B243T3	1.79	U	1.40	128	56	6	7	
S004034-04		7819-004	B243T4	3.02	U	3.06	99	34	9	7	
S004034-05		7819-005	B243T6	0.950	U	1.11	86	57	12	13	
S004034-06		7819-006	Lab Control Sample	ok	ok	ok					
S004034-07		7819-007	Method Blank	U	U	U					
S004034-08		7819-008	Duplicate (S004034-01)	ok	ok	ok	109	24	9	5	
Nominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
								Averages	103		8

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST FIX	SUF- CLIENT SAMPLE ID	MAX pCi/g	MDA g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL-			
														PREPARED	YZED	DETECTOR	
Preparation batch 7252-025														2σ prep error 8.0 %		Reference Lab Notebook No. 7251 pg.025	
S004034-01		B243T0	0.300	0.500				75	105			14	04/16/10	04/16	SS-028		
S004034-02		B243T2	0.293	0.500				66	105			14	04/16/10	04/16	SS-029		
S004034-03		B243T3	0.332	0.500				77	102			15	04/16/10	04/16	SS-031		
S004034-04		B243T4	0.366	0.500				69	102			15	04/16/10	04/16	SS-032		
S004034-05		B243T6	0.489	0.500				52	102			11	04/16/10	04/16	SS-034		
S004034-06		Lab Control Sample	0.746	0.500				77	105				04/16/10	04/16	SS-035		
S004034-07		Method Blank	0.306	0.500				68	106				04/16/10	04/16	SS-036		
S004034-08		Duplicate (S004034-01)	0.282	0.500				76	106			14	04/16/10	04/16	SS-037		
Nominal values and limits from method			1.00	0.500				30-110	100	100		180					

METHOD SUMMARIES

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Lab id EBRLE  
Protocol CHPRC  
Version Ver 1.0  
Form DVD-IMS  
Version 3.06  
Report date 04/23/10

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H4203

LAB METHOD SUMMARY, cont.

URANIUM, ISOTOPIC IN SOLIDS  
ALPHA SPECTROSCOPY

Test U        Matrix SOLID  
SDG 7819  
Contact N. Joseph Verville

Client CHPRC  
Contract No. 33677  
Contract SDG H4203

PROCEDURES	REFERENCE	UIISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 1
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 5
	CP-008	Heavy Element Electroplating, rev 13

AVERAGES $\pm$ 2 SD	MDA	<u>0.389</u> $\pm$ <u>0.318</u>
FOR 8 SAMPLES	YIELD	<u>70</u> $\pm$ <u>17</u>

METHOD SUMMARIES

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Protocol	<u>CHPRC</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-LMS</u>
Version	<u>3.06</u>
Report date	<u>04/23/10</u>

**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H4203

Test SR Matrix SOLID  
 SDG 7819  
 Contact N. Joseph Verville

**LAB METHOD SUMMARY**

TOTAL STRONTIUM IN SOLIDS  
 BETA COUNTING

Client CHPRC  
 Contract No. 33677  
 Contract SDG H4203

**RESULTS**

LAB	RAW	SUF-		Total
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Strontium
Preparation batch 7252-025				
S004034-01		7819-001	B243T0	6.31
S004034-02		7819-002	B243T2	6.84
S004034-03		7819-003	B243T3	2.34
S004034-04		7819-004	B243T4	16.9
S004034-05		7819-005	B243T6	3.74
S004034-06		7819-006	Lab Control Sample	ok
S004034-07		7819-007	Method Blank	U
S004034-08		7819-008	Duplicate (S004034-01)	ok

Nominal values and limits from method      RDLs (pCi/g)      1.00

**METHOD PERFORMANCE**

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD PREPARED	YZED DETECTOR
Preparation batch 7252-025      2σ prep error 10.4 %      Reference Lab Notebook No. 7251 pg.025													
S004034-01		B243T0	0.224	1.00			97	100	14	04/16/10	04/16	GRB-231	
S004034-02		B243T2	0.211	1.00			96	100	14	04/16/10	04/16	GRB-232	
S004034-03		B243T3	0.218	1.00			100	100	15	04/16/10	04/16	GRB-201	
S004034-04		B243T4	0.224	1.00			99	100	15	04/16/10	04/16	GRB-217	
S004034-05		B243T6	0.203	1.00			98	100	11	04/16/10	04/16	GRB-202	
S004034-06		Lab Control Sample	0.228	1.00			88	100		04/16/10	04/16	GRB-217	
S004034-07		Method Blank	0.238	1.00			93	100		04/16/10	04/16	GRB-232	
S004034-08		Duplicate (S004034-01)	0.240	1.00			99	100	14	04/16/10	04/16	GRB-201	

Nominal values and limits from method      1.00      1.00      40-110      100      180

PROCEDURES      REFERENCE      SRTOT\_SEP\_PRECIP\_GPC  
 SPP-071      Soil Dissolution, > 1.0g Aliquot, rev 1  
 CP-383      Strontium in Dissolved Solid of < 5.0g Aliquot,  
 rev 4

AVERAGES ± 2 SD      MDA 0.223 ± 0.025  
 FOR 8 SAMPLES      YIELD 96 ± 8

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METHOD SUMMARIES

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**EBERLINE SERVICES/RICHMOND**

SAMPLE DELIVERY GROUP H4203

**LAB METHOD SUMMARY**

TECHNETIUM 99 IN SOLIDS

BETA COUNTING

Test TC Matrix SOLID  
 SDG 7819  
 Contact N. Joseph Verville

Client CHPRC  
 Contract No. 33677  
 Contract SDG H4203

**RESULTS**

LAB	RAW	SUF-	Technetium	
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	99
Preparation batch 7252-025				
S004034-01		7819-001	B243T0	U
S004034-02		7819-002	B243T2	U
S004034-03		7819-003	B243T3	U
S004034-04		7819-004	B243T4	U
S004034-05		7819-005	B243T6	U
S004034-06		7819-006	Lab Control Sample	ok
S004034-07		7819-007	Method Blank	U
S004034-08		7819-008	Duplicate (S004034-01)	- U

Nominal values and limits from method      RDLs (pCi/g)      15.0

**METHOD PERFORMANCE**

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/g	g	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7252-025      2σ prep error 13.2 %      Reference Lab Notebook No. 7251 pg.025															
S004034-01		B243T0	0.383	1.04			89	100	18	04/13/10	04/20	GRB-220			
S004034-02		B243T2	0.354	1.16			87	100	15	04/13/10	04/17	GRB-220			
S004034-03		B243T3	0.324	1.15			92	100	18	04/13/10	04/19	GRB-222			
S004034-04		B243T4	0.386	1.02			91	100	18	04/13/10	04/19	GRB-223			
S004034-05		B243T6	0.332	1.13			93	100	14	04/13/10	04/19	GRB-224			
S004034-06		Lab Control Sample	0.372	1.00			94	100		04/13/10	04/16	GRB-224			
S004034-07		Method Blank	0.427	1.00			86	100		04/13/10	04/17	GRB-232			
S004034-08		Duplicate (S004034-01)	0.384	1.04			91	100	18	04/13/10	04/20	GRB-230			

Nominal values and limits from method      15.0      1.00      30-110      50      180

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LAB METHOD SUMMARY, cont.

TECHNETIUM 99 IN SOLIDS

BETA COUNTING

Test TC Matrix SOLID

SDG 7819

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PROCEDURES	REFERENCE	TC99_TR_SEP_GPC
	SPP-062	Sample Aliquoting, rev 1
	CP-021	Preparation of Tc-99m Tracer, rev 6
	CP-431	Technetium-99 Purification of Soil or Resin by Extraction Chromatography, rev 8
	CP-008	Heavy Element Electroplating, rev 13

AVERAGES  $\pm$  2 SD MDA 0.370  $\pm$  0.066

FOR 8 SAMPLES YIELD 90  $\pm$  6

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SDG 7819  
 Contact N. Joseph Verville

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REPORT GUIDE

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- \* LAB SAMPLE ID is the lab's primary identification for a sample.
- \* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- \* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- \* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- \* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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SDG 7819  
 Contact N. Joseph Verville

REPORT GUIDE

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PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- \* The preparation batches are shown in the same order as the Method Summary Reports are printed.
- \* Only analyses of planchets relevant to the SDG are included.
- \* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- \* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- \* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- \* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- \* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- \* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- \* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- \* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- \* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- \* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- \* ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- \* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- \* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity).

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DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
  - B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
  - H Similar to 'L' except the recovery was high.
  - P The RESULT is 'preliminary'.
  - X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
  - 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- \* An MDA is underlined if it is bigger than its RDL.

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DATA SHEET

- \* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- \* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- \* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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R E P O R T G U I D E

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L A B C O N T R O L S A M P L E

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- \* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- \* The first, computed limits for the recovery reflect:
  1. The error of RESULT, including that introduced by rounding the result prior to printing.
 

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
  2. The error of ADDED.
  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- \* The second limits are protocol defined upper and lower QC limits for the recovery.
- \* The recovery is underlined if it is outside either of these ranges.

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D U P L I C A T E

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- \* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- \* The second limit for the RPD is the larger of:
  1. A fixed percentage specified in the protocol.

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- \* The RPD is underlined if it is greater than either limit.
- \* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- \* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- \* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- \* The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- \* The second limits are protocol defined upper and lower QC limits

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MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

\* The recovery is underlined (out of spec) if it is outside either of these ranges.

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METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- \* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- \* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- \* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- \* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- \* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- \* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
  - \* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.
- MDAs are underlined if greater than the printed RDL.
- \* Aliquots are underlined if less than the nominal value specified for the method.
  - \* Preparation factors are underlined if greater than the nominal value specified for the method.
  - \* Dilution factors are underlined if greater than the nominal value specified for the method.
  - \* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
  - \* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
  - \* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

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METHOD SUMMARY

- \* Count times are underlined if less than the nominal value specified for the method.
- \* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- \* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- \* Days Held are underlined if greater than the holding time specified in the protocol.
- \* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

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SUMMARY DATA SECTION

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Lab id EBRLNE  
 Protocol CHPRC  
 Version Ver 1.0  
 Form DVD-RG  
 Version 3.06  
 Report date 04/23/10

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H4203

SDG 7819  
 Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC  
 Contract No. 33677  
 Case no SDG\_H4203

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES

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Lab id EBRLNE  
 Protocol CHPRC  
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 Report date 04/23/10



COMPANY CONTACT: BAMBERGER, MA **H4203** TELEPHONE NO. **(7819)** PROJECT COORDINATOR: WIDRIG, DL PRICE CODE: 8C DATA TURNAROUND: 15 Days / 15 Days

PROJECT DESIGNATION: 200-CW-1 Model Group 5 Sampling - Large Area Ponds - Soil Sampling SAF NO. F10-060 AIR QUALITY:  METHOD OF SHIPMENT: FEDERAL EXPRESS

FIELD LOGBOOK NO. **HAF-N-507-5** ACTUAL SAMPLE DEPTH: **6.5-10.5** COA: 302427ES10

OFFSITE PROPERTY NO. **6WS-2010** BILL OF LADING/AIR BILL NO. **798547603370**

SEE PTR **SEE PTR 20047110**

PRESERVATION	None	None
TYPE OF CONTAINER	GIP	GIP
NO. OF CONTAINER(S)	1	1
VOLUME	60mL	60mL
SAMPLE ANALYSIS	Regulation-237: 2 in Specific Instructivity	See Iron

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
3243T2	SOIL	4-2-10	0912

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
<i>Isabel</i>	4-2-10 1450	<i>SSU #1</i>	4-2-10 1450
<i>SSU #1</i>	APR 07 2010 1100	<i>LD. WALL (D. WALL)</i>	APR 07 2010 1100
<i>LD. WALL (D. WALL)</i>	APR 07 2010 1400	<i>FED EX</i>	APR 07 2010 1400
<i>FED EX</i>	APR 07 2010 1400	<i>Alex Keleny</i>	APR 07 2010 1400
<i>Alex Keleny</i>	APR 07 2010 1400	<i>KELENSON</i>	4/8/10 1020
<i>KELENSON</i>	APR 07 2010 1400		
<i>KELENSON</i>	APR 07 2010 1400		
<i>KELENSON</i>	APR 07 2010 1400		
<i>KELENSON</i>	APR 07 2010 1400		

LABORATORY SECTION: RECEIVED BY: DATE/TIME: **ORIGINAL**

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD: DATE/TIME:

<b>CH2M Hill Plateau Remediation Company</b> <b>COLLECTOR</b> <i>KB Hulse</i>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b> <b>COMPANY CONTACT</b> <i>H4203</i> <b>TELEPHONE NO.</b> <i>(7819)</i> <b>PROJECT COORDINATOR</b> WDRIG, DL		<b>F10-060-035</b> <b>PRICE CODE</b> BC <b>AIR QUALITY</b> <input type="checkbox"/> <b>METHOD OF SHIPMENT</b> FEDERAL EXPRESS	<b>PAGE 1 OF 1</b> <b>DATA TURNAROUND</b> 15 Days / 15 Days
<b>SAMPLING LOCATION</b> 216-U-10 Pond; C5767; I-001 MAT <b>ICE CHEST NO.</b> <i>6WS-2010</i>		<b>PROJECT DESIGNATION</b> 200-CW-1 Model Group 5 Sampling - Large Area Ponds - Soil Sampling <b>FIELD LOGBOOK NO.</b> <i>BNF-N-507-5</i> <b>ACTUAL SAMPLE DEPTH</b> <i>2.6'-5'</i>		<b>SAF NO.</b> F10-060 <b>COA</b> 302427E510 <b>BILL OF LADING/AIR BILL NO.</b> <i>1798547603370</i>	
<b>SHIPPED TO</b> Eberline Services		<b>OFFSITE PROPERTY NO.</b> <i>SEE PTR</i> <b>SEE PTR</b> <i>4-1-10</i> <b>SEPTR</b> <i>26-4-1-1</i>		<b>SAF NO.</b> F10-060 <b>COA</b> 302427E510	
<b>MATRIX*</b> A=Air DL=Drum L=Liquid DS=Drum S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		<b>PRESERVATION</b> None <b>TYPE OF CONTAINER</b> G/P <b>NO. OF CONTAINER(S)</b> 1 <b>VOLUME</b> 60ml		<b>DATE/TIME</b> 4/1/10 0954 X X	
<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>SAMPLE ANALYSIS</b> Neptunium-237; (2) Specie Instructions		<b>SPECIAL INSTRUCTIONS</b> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. (2) Americium-241; Isotopic Plutonium 2 Pu-239/2403 Isotopic Uranium {4-238} STRONTIUM-89, 90 Total Sr; Technetium-99	
<b>SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO:</b> <i>824334</i>		<b>SAMPLE DATE</b> <i>4/1/10</i> <b>SAMPLE TIME</b> <i>0954</i>		<b>RECEIVED BY/STORED IN</b> <i>SSU-1</i> <b>DATE/TIME</b> <i>4-1-10/1530</i>	
<b>SAMPLE NO.</b> B24373 <b>MATRIX*</b> SOIL		<b>RECEIVED BY/STORED IN</b> <i>LD. WALL</i> <b>DATE/TIME</b> <i>APR 07 2010</i>		<b>RECEIVED BY/STORED IN</b> <i>FEDEX</i> <b>DATE/TIME</b> <i>4/2/10</i>	
<b>CHAIN OF POSSESSION</b>		<b>RECEIVED BY/STORED IN</b> <i>FEDEX</i> <b>DATE/TIME</b> <i>4/2/10</i>		<b>RECEIVED BY/STORED IN</b> <i>FEDEX</i> <b>DATE/TIME</b> <i>4/2/10</i>	
<b>RELINQUISHED BY/REMOVED FROM</b> <i>KB Hulse</i> <b>DATE/TIME</b> <i>4-1-10/1530</i>		<b>RELINQUISHED BY/REMOVED FROM</b> <i>LD. WALL</i> <b>DATE/TIME</b> <i>APR 07 2010</i>		<b>RELINQUISHED BY/REMOVED FROM</b> <i>FEDEX</i> <b>DATE/TIME</b> <i>4/2/10</i>	
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# RICHMOND, CA LABORATORY

## SAMPLE RECEIPT CHECKLIST

Client: CHPRC City RICHLAND State WA

Date/Time received 4/8/10 10:00 CoC No. F10-060-029, 032, 035, 038, 044

Container I.D. No. GWS-2010 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

### INSPECTION

1. Custody seals on shipping container intact? Yes [  ] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [  ] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [  ] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [  ] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [ ] N/A
6. Number of samples in shipping container: 5 Sample Matrix SOIL
7. Number of containers per sample: 2 (Or see CoC \_\_\_\_\_)
8. Samples are in correct container Yes [  ] No [ ]
9. Paperwork agrees with samples? Yes [  ] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [  ]
11. Samples are: In good condition [  ] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [  ] pH \_\_\_\_\_ Preservative \_\_\_\_\_
13. Describe any anomalies: NO 4/12/10

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date \_\_\_\_\_

15. Inspected by JR Date: 4/8/10 Time: 11:30

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>ALL Samples</u>	<u>&lt; 60</u>						

Ion Chamber Ser. No. \_\_\_\_\_

Calibration date \_\_\_\_\_

Alpha Meter Ser. No. \_\_\_\_\_

Calibration date \_\_\_\_\_

Beta/Gamma Meter Ser. No. 100482

Calibration date 5 aug 2009