RECEIVED MARCH 10, 2010 REVISION 1

EBERLINE SERVICES
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February 8, 2010 (original)
March 10, 2010 (revised)

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 S0-01-021-7558, SDG H4123

Dear Mr. Neely:

Enclosed is a data report for six water samples designated under SAF No. X10-010 received at Eberline Analytical on January 7, 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

Eberline Analytical
W.O. No. S0-01-021-7558

CH2M Hill Plateau Remediation Company
SDG H4123

Case Narrative

1.0 GENERAL

CH2M Hill Plateau Remediation Company (CHPRC) Sample Delivery Group H4123 was composed of six water samples designated under SAF No. X10-010 with a Project Designation of: 200-BP-5 Depth Discrete 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 Tritium Analysis

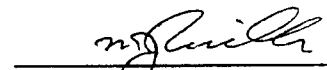
The tritium QC MS analysis data sheet denotes an "X" qualifier, which indicates that some data was manually entered and may need to be double checked; in this case the "added amount' was manually entered, and subsequently double checked. No problems were encountered during the course of the analyses.

2.2 Technetium-99 Analysis

No 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."



3/10/10

N. Joseph Verville
Client Services Manager

Date

Problem and Discrepancy Report

Eberline

SDG H4123

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1. The data package has the following issues:

a) Narrative states "The results for both the original and duplicate analyses were less than their respective MDAs. Therefore, no RPD is calculated." This statement is incorrect for both tritium and technetium-99. Please remove.

Resolution: *Provide correction.*

Lab Response: **Correction provided.**

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

E B E R L I N E A N A L Y T I C A L / R I C H M O N D
SAMPLE DELIVERY GROUP H4123

SDG	7558
Contact	N. Joseph Verville

Client	CHPRC
Contract	No. 33677
Case no	SDG H4123

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

T A B L E O F C O N T E N T S

Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	02/04/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

SDG 7558
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4123

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.

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.

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

LAB SAMPLE SUMMARY

SDG 7558
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Case no SDG H4123

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
S001021-01	B22W39	HNF-N-506 28/31	WATER		X10-010	X10-010-87	01/05/10 10:25
S001021-02	B22W40	HNF-N-506 28/31	WATER		X10-010	X10-010-88	01/05/10 11:34
S001021-03	B22W51	HNF-N-506 28/30	WATER		X10-010	X10-010-99	01/04/10 10:00
S001021-04	B22W52	HNF-N-506 28/30	WATER		X10-010	X10-010-100	01/04/10 12:19
S001021-05	B22W53	HNF-N-506 28/30	WATER		X10-010	X10-010-101	01/04/10 13:24
S001021-06	B22W54	HNF-N-506	WATER		X10-010	X10-010-102	01/04/10 08:00
S001021-07	Lab Control Sample		WATER		X10-010		
S001021-08	Method Blank		WATER		X10-010		
S001021-09	Duplicate (S001021-01)	HNF-N-506 28/31	WATER		X10-010		01/05/10 10:25
S001021-10	Spike (S001021-02)	HNF-N-506 28/31	WATER		X10-010		01/05/10 11:34

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 02/04/10

EBERLINE ANALYTICAL/RICHMOND

REVISION 1

SDG 7558
Contact N. Joseph Verville

SAMPLE DELIVERY GROUP H4123

QC SUMMARY

Client CHPRC
Contract No. 33677
Case no SDG H4123

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS RECEIVED	DAYS COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7558	X10-010-100	B22W52	WATER		0.145 L		01/07/10	3	S001021-04	7558-004
	X10-010-101	B22W53	WATER		0.145 L		01/07/10	3	S001021-05	7558-005
	X10-010-102	B22W54	WATER		0.145 L		01/07/10	3	S001021-06	7558-006
	X10-010-87	B22W39	WATER		0.145 L		01/07/10	2	S001021-01	7558-001
	X10-010-88	B22W40	WATER		0.145 L		01/07/10	2	S001021-02	7558-002
	X10-010-99	B22W51	WATER		0.145 L		01/07/10	3	S001021-03	7558-003
		Method Blank	WATER						S001021-08	7558-008
		Lab Control Sample	WATER						S001021-07	7558-007
		Duplicate (S001021-01)	WATER		0.145 L		01/07/10	2	S001021-09	7558-009
		Spike (S001021-02)	WATER		0.145 L		01/07/10	2	S001021-10	7558-010

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 02/04/10

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SAMPLE DELIVERY GROUP H4123

PREP BATCH SUMMARY

SDG 7558
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Case no SDG H4123

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
TC	WATER	Technetium 99 in Water	7240-009	13.2	6			1	1	1/1		
Liquid Scintillation Counting												
H	WATER	Tritium in Water	7240-009	10.0	6			1	1	1/1	1/1	X

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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SAMPLE DELIVERY GROUP H4123

LAB WORK SUMMARY

SDG 7558
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Case no SDG H4123

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S001021-01	B22W39			7558-001	H		01/26/10	02/03/10	BW	Tritium in Water
01/05/10	HNF-N-506 28/31		WATER	7558-001	TC		02/02/10	02/03/10	BW	Technetium 99 in Water
01/07/10	X10-010-87	X10-010								
S001021-02	B22W40			7558-002	H		01/26/10	02/03/10	BW	Tritium in Water
01/05/10	HNF-N-506 28/31		WATER	7558-002	TC		01/30/10	02/03/10	BW	Technetium 99 in Water
01/07/10	X10-010-88	X10-010								
S001021-03	B22W51			7558-003	H		01/26/10	02/03/10	BW	Tritium in Water
01/04/10	HNF-N-506 28/30		WATER	7558-003	TC		01/30/10	02/03/10	BW	Technetium 99 in Water
01/07/10	X10-010-99	X10-010								
S001021-04	B22W52			7558-004	H		01/26/10	02/03/10	BW	Tritium in Water
01/04/10	HNF-N-506 28/30		WATER	7558-004	TC		01/30/10	02/03/10	BW	Technetium 99 in Water
01/07/10	X10-010-100	X10-010								
S001021-05	B22W53			7558-005	H		01/26/10	02/03/10	BW	Tritium in Water
01/04/10	HNF-N-506 28/30		WATER	7558-005	TC		01/30/10	02/03/10	BW	Technetium 99 in Water
01/07/10	X10-010-101	X10-010								
S001021-06	B22W54			7558-006	H		01/26/10	02/03/10	BW	Tritium in Water
01/04/10	HNF-N-506		WATER	7558-006	TC		02/01/10	02/03/10	BW	Technetium 99 in Water
01/07/10	X10-010-102	X10-010								
S001021-07	Lab Control Sample			7558-007	H		01/26/10	02/03/10	BW	Tritium in Water
			WATER	7558-007	TC		01/30/10	02/03/10	BW	Technetium 99 in Water
		X10-010								
S001021-08	Method Blank			7558-008	H		01/26/10	02/03/10	BW	Tritium in Water
			WATER	7558-008	TC		01/30/10	02/03/10	BW	Technetium 99 in Water
		X10-010								
S001021-09	Duplicate (S001021-01)			7558-009	H		01/26/10	02/03/10	BW	Tritium in Water
01/05/10	HNF-N-506 28/31		WATER	7558-009	TC		01/30/10	02/03/10	BW	Technetium 99 in Water
01/07/10		X10-010								
S001021-10	Spike (S001021-02)			7558-010	H		01/26/10	02/03/10	BW	Tritium in Water
01/05/10	HNF-N-506 28/31		WATER							
01/07/10		X10-010								

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 02/04/10

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SAMPLE DELIVERY GROUP H4123

SDG 7558
Contact N. Joseph Verville

WORK SUMMARY, cont.

Client CHPRC
Contract No. 33677
Case no SDG H4123

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
H	X10-010	Tritium in Water	906.0_H3_LSC	6			1	1	1	1	10
TC	X10-010	Technetium 99 in Water	TC99_TR_SEP_GPC	6			1	1	1		9
TOTALS				12			2	2	2	1	19

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 02/04/10

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SAMPLE DELIVERY GROUP H4123

7558-008 Method Blank

METHOD BLANK

SDG	7558	Client/Case no	CHPRC SDG H4123
Contact	N. Joseph Verville	Contract	No. 33677
Lab sample id	S001021-08	Client sample id	Method Blank
Dept sample id	7558-008	Material/Matrix	WATER
		SAF No	X10-010

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	66.1	83	136	400	U	H
Technetium 99	14133-76-7	2.53	7.2	10.7	15.0	U	TC

QC-BLANK #71987

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 02/04/10

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SAMPLE DELIVERY GROUP H4123

7558-007

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7558 Client/Case no CHPRC SDG H4123

Contact N. Joseph Verville Contract No. 33677

Lab sample id S001021-07 Client sample id Lab Control Sample

Dept sample id 7558-007 Material/Matrix WATER

SAF No X10-010

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	2260	130	135	400		H	2360	94	96	82-118	80-120
Technetium 99	2410	48	11.0	15.0		TC	2180	87	111	77-123	80-120

QC-LCS #71986

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 02/04/10

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SAMPLE DELIVERY GROUP H4123

7558-009 B22W39

DUPLICATE

SDG 7558 Client/Case no CHPRC SDG H4123

Contact N. Joseph Verville Contract No. 33677

DUPLICATE	ORIGINAL	
Lab sample id S001021-09	Lab sample id S001021-01	Client sample id B22W39
Dept sample id 7558-009	Dept sample id 7558-001	Location/Matrix HNF-N-506 28/31 WATER
	Received 01/07/10	Collected/Volume 01/05/10 10:25 0.145 L
		Custody/SAF No X10-010-87 X10-010

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
Tritium	10300	240	136	400		H	10100	240	137		2	22	0.3
Technetium 99	161	16	8.30	15.0		TC	160	8.4	8.53		1	33	0.1

QC-DUP#1 71988

200-BP-5 Depth Discrete Sampling

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 02/04/10

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

7558-010 B22W40

MATRIX SPIKE

SDG 7558 Client/Case no CHPRC SDG H4123

Contact N. Joseph Verville Contract No. 33677

MATRIX SPIKE ORIGINAL

Lab sample id S001021-10 Lab sample id S001021-02 Client sample id B22W40

Dept sample id 7558-010 Dept sample id 7558-002 Location/Matrix HNF-N-506 28/31 WATER

Received 01/07/10 Collected/Volume 01/05/10 11:34 0.145 L

Custody/SAF No X10-010-88 X10-010

ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	33700	420	140	400	X	H	24000	960	10600	240	96	77-123	60-140

QC-MS#2 71989

200-BP-5 Depth Discrete Sampling

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-MS
Version 3.06
Report date 02/04/10

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

7558-001 B22W39

DATA SHEET

SDG	7558	Client/Case no	CHPRC SDG H4123
Contact	N. Joseph Verville	Contract	No. 33677
Lab sample id	S001021-01	Client sample id	B22W39
Dept sample id	7558-001	Location/Matrix	HNF-N-506 28/31 WATER
Received	01/07/10	Collected/Volume	01/05/10 10:25 0.145 L
		Custody/SAF No	X10-010-87 X10-010

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	10100	240	137	400		H
Technetium 99	14133-76-7	160	8.4	8.53	15.0		TC

200-BP-5 Depth Discrete Sampling

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
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SAMPLE DELIVERY GROUP H4123

7558-002 B22W40

DATA SHEET

SDG	7558	Client/Case no	CHPRC SDG H4123
Contact	N. Joseph Verville	Contract	No. 33677
Lab sample id	S001021-02	Client sample id	B22W40
Dept sample id	7558-002	Location/Matrix	HNF-N-506 28/31 WATER
Received	01/07/10	Collected/Volume	01/05/10 11:34 0.145 L
		Custody/SAF No	X10-010-88 X10-010

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	10600	240	140	400		H
Technetium 99	14133-76-7	156	6.2	3.89	15.0		TC

200-BP-5 Depth Discrete Sampling

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/04/10

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

7558-003 B22W51

DATA SHEET

SDG	7558	Client/Case no	CHPRC	SDG H4123	
Contact	N. Joseph Verville	Contract	No. 33677		
Lab sample id	S001021-03	Client sample id	B22W51		
Dept sample id	7558-003	Location/Matrix	HNF-N-506 28/30	WATER	
Received	01/07/10	Collected/Volume	01/04/10 10:00	0.145 L	
		Custody/SAF No	X10-010-99	X10-010	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	10000	240	139	400		H
Technetium 99	14133-76-7	91.1	4.4	3.96	15.0		TC

200-BP-5 Depth Discrete Sampling

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/04/10

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SAMPLE DELIVERY GROUP H4123

7558-004 B22W52

DATA SHEET

SDG	7558	Client/Case no	CHPRC SDG H4123
Contact	N. Joseph Verville	Contract	No. 33677
Lab sample id	S001021-04	Client sample id	B22W52
Dept sample id	7558-004	Location/Matrix	HNF-N-506 28/30 WATER
Received	01/07/10	Collected/Volume	01/04/10 12:19 0.145 L
		Custody/SAF No	X10-010-100 X10-010

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	9380	230	139	400		H
Technetium 99	14133-76-7	346	11	3.98	15.0		TC

200-BP-5 Depth Discrete Sampling

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/04/10

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

7558-005 B22W53

DATA SHEET

SDG	7558	Client/Case no	CHPRC	SDG H4123	
Contact	N. Joseph Verville	Contract	No. 33677		
Lab sample id	S001021-05	Client sample id	B22W53		
Dept sample id	7558-005	Location/Matrix	HNF-N-506 28/30	WATER	
Received	01/07/10	Collected/Volume	01/04/10 13:24	0.145 L	
		Custody/SAF No	X10-010-101	X10-010	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	8120	220	139	400		H
Technetium 99	14133-76-7	12300	110	7.84	15.0		TC

200-BP-5 Depth Discrete Sampling

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/04/10

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

7558-006 B22W54

DATA SHEET

SDG	7558	Client/Case no	CHPRC	SDG	H4123
Contact	N. Joseph Verville	Contract	No. 33677		
Lab sample id	S001021-06	Client sample id	B22W54		
Dept sample id	7558-006	Location/Matrix	HNF-N-506		WATER
Received	01/07/10	Collected/Volume	01/04/10 08:00	0.145 L	
		Custody/SAF No	X10-010-102	X10-010	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Tritium	10028-17-8	60.0	84	139	400	U	H
Technetium 99	14133-76-7	0.621	2.8	4.44	15.0	U	TC

200-BP-5 Depth Discrete Sampling

Lab id	EBRLNE
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Version	3.06
Report date	02/04/10

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EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

Test TC Matrix WATER
SDG 7558
Contact N. Joseph Verville

LAB METHOD SUMMARY

TECHNETIUM 99 IN WATER

BETA COUNTING

Client CHPRC
Contract No. 33677
Contract SDG H4123

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Technetium 99
Preparation batch 7240-009					
S001021-01			7558-001	B22W39	160
S001021-02			7558-002	B22W40	156
S001021-03			7558-003	B22W51	91.1
S001021-04			7558-004	B22W52	346
S001021-05			7558-005	B22W53	12300
S001021-06			7558-006	B22W54	U
S001021-07			7558-007	Lab Control Sample	ok
S001021-08			7558-008	Method Blank	U
S001021-09			7558-009	Duplicate (S001021-01)	ok
Nominal values and limits from method				RDLs (pCi/L)	15.0

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7240-009			2σ prep error 13.2 % Reference Lab Notebook No. 7241 pg 09													
S001021-01			B22W39	8.53	0.0500			88	88				28	01/27/10	02/02	GRB-202
S001021-02			B22W40	3.89	0.100			93	100				25	01/27/10	01/30	GRB-221
S001021-03			B22W51	3.96	0.100			89	100				26	01/27/10	01/30	GRB-222
S001021-04			B22W52	3.98	0.100			90	100				26	01/27/10	01/30	GRB-223
S001021-05			B22W53	7.84	0.0500			89	100				26	01/27/10	01/30	GRB-224
S001021-06			B22W54	4.44	0.100			84	100				28	01/27/10	02/01	GRB-204
S001021-07			Lab Control Sample	11.0	0.0500			88	100					01/27/10	01/30	GRB-226
S001021-08			Method Blank	10.7	0.0500			69	100					01/27/10	01/30	GRB-227
S001021-09			Duplicate (S001021-01)	8.30	0.0500			84	100				25	01/27/10	01/30	GRB-228
Nominal values and limits from method				15.0	0.0500			30-110		50			180			

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 02/04/10

REVISION 1

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

LAB METHOD SUMMARY, cont.

TECHNETIUM 99 IN WATER

BETA COUNTING

Test TC Matrix WATER
SDG 7558
Contact N. Joseph Verville

Client CHPRC
Contract No. 33677
Contract SDG H4123

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

AVERAGES ± 2 SD FOR 9 SAMPLES
MDA 6.96 ± 5.87
YIELD 86 ± 14

Lab id EBRLNE
Protocol CHPRC
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 02/04/10

REVISION 1

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

Test H	Matrix WATER
SDG 7558	
Contact N. Joseph Verville	

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client CHPRC	
Contract No. 33677	
Contract SDG H4123	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7240-009						
S001021-01			7558-001	B22W39	10100	
S001021-02			7558-002	B22W40	10600	
S001021-03			7558-003	B22W51	10000	
S001021-04			7558-004	B22W52	9380	
S001021-05			7558-005	B22W53	8120	
S001021-06			7558-006	B22W54	U	
S001021-07			7558-007	Lab Control Sample	ok	
S001021-08			7558-008	Method Blank	U	
S001021-09			7558-009	Duplicate (S001021-01)	ok	
S001021-10			7558-010	Spike (S001021-02)	ok	X
Nominal values and limits from method				RDLs (pCi/L)	400	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7240-009			2σ prep error 10.0 %	Reference Lab Notebook No. 7241 pg 09												
S001021-01			B22W39	137	0.0100			100		200			21	01/25/10	01/26	LSC-006
S001021-02			B22W40	140	0.0100			100		200			21	01/25/10	01/26	LSC-006
S001021-03			B22W51	139	0.0100			100		200			22	01/25/10	01/26	LSC-006
S001021-04			B22W52	139	0.0100			100		200			22	01/25/10	01/26	LSC-006
S001021-05			B22W53	139	0.0100			100		200			22	01/25/10	01/26	LSC-006
S001021-06			B22W54	139	0.0100			100		200			22	01/25/10	01/26	LSC-006
S001021-07			Lab Control Sample	135	0.100			10		200				01/25/10	01/26	LSC-006
S001021-08			Method Blank	136	0.100			10		200				01/25/10	01/26	LSC-006
S001021-09			Duplicate (S001021-01)	136	0.0100			100		200			21	01/25/10	01/26	LSC-006
S001021-10			Spike (S001021-02)	140	0.0300			33		200			21	01/25/10	01/26	LSC-006
Nominal values and limits from method				400	0.0100					25			180			

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	02/04/10

REVISION 1

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

LAB METHOD SUMMARY, cont.

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H	Matrix WATER
SDG 7558	
Contact N. Joseph Verville	

Client CHPRC	
Contract No. 33677	
Contract SDG H4123	

PROCEDURES	REFERENCE	906.0_H3_LSC
	CP-210	Tritium in Water Samples by Distillation, rev 11

AVERAGES ± 2 SD	MDA	138	± 3.65
FOR 10 SAMPLES	YIELD	75	± 81

Lab id	EBRLNE
Protocol	CHPRC
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	02/04/10

SDG 7558
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4123

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.

SDG 7558
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4123

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.

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

SDG 7558
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4123

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.

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

SDG 7558
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4123

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).

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.

SDG 7558
Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC
Contract No. 33677
Case no SDG H4123

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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SAMPLE DELIVERY GROUP H4123

SDG 7558
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4123

LAB CONTROL SAMPLE

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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SAMPLE DELIVERY GROUP H4123

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REPORT GUIDE

Client CHPRC
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Case no SDG H4123

DUPLICATE

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.

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.

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

SDG 7558
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4123

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

SDG 7558
Contact N. Joseph Verville

GUIDE, cont.

Client CHPRC
Contract No. 33677
Case no SDG H4123

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.

EBERLINE ANALYTICAL/RICHMOND

SAMPLE DELIVERY GROUP H4123

SDG 7558
Contact N. Joseph Verville

REPORT GUIDE

Client CHPRC
Contract No. 33677
Case no SDG H4123

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'

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.

* Prepareation 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.

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

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.

CHPRC

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X10-010-87**

Page 1 of 1

Collector **Josh Herrick**	Contact/Requester DYEKMAN, DL	Telephone No. 373-2530
SAF No. X10-010	Sampling Origin Hanford Site	Purchase Order/Charge Code 301396ES20
Project Title 200-BP-5 Depth Discrete Sampling	Logbook No: HNF-N-506 28 /31	Ice Chest No. ~~3585~~ GWSC-99
Shipped To (Lab) Eberline Services	Method of Shipment Commercial Carrier H4123(7558)	Bill of Lading/Air Bill No. 7982 7821 8307
Protocol SURV	Priority: 45 Days	Offsite Property No. 00605

POSSIBLE SAMPLE HAZARDS/REMARKS
** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time**
Do not combine X SAF samples with other sets. Need SDG to be stand alone. Site-Wide Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B22W39	N	W	1/5/10	1025	1x20-mL P	Activity Scan {No CAS}	6 Months	None
B22W39	N	W	1/5/10	1025	1x125-mL G/P	Technetium-99 {Technetium-99}	6 Months	HCl to pH <2
B22W39	N	W	1/5/10	1025	1x60-mL P	Tritium - H3 {Tritium}	6 Months	None

RAJ 1/5/2010

Relinquished By	Date/Time	Received By	Date/Time
Josh Herrick [signature]	JAN 05 2010 1300	SSU #1	JAN 05 2010 1300
SSU #1	JAN 06 2010 1030	RD Julian CHPRC [signature]	JAN 06 2010 1030
RD Julian CHPRC [signature]	JAN 06 2010 1400	Fed Ex	
Fed Ex		TF. WATANABE [signature] 01/07/10	0920

Matrix *
S = Soil, SE = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air, DS = Drum Solid, DL = Drum Liqui, T = Tissue, WI = Wine, L = Liquid, V = Vegetation, X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

REVISION 1

CHPRC	**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**	C.O.C. # **X10-010-88**
		Page 1 of 1

Collector JP Herrick CHPRC	**Contact/Requester** DYEKMAN, DL	**Telephone No.** 373-2530
SAF No. X10-010	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code** 301396ES20
Project Title 200-BP-5 Depth Discrete Sampling	**Logbook No:** HNF-N-506 28131	**Ice Chest No.** ~~5583~~ 6WSC-99
Shipped To (Lab) Eberline Services	**Method of Shipment** Commercial Carrier H4123 (7558)	**Bill of Lading/Air Bill No.** 7982 7821 8307
Protocol SURV	**Priority:** 45 Days	**Offsite Property No.** 00605

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time**
Do not combine X SAF samples with other sets. Need SDG to be stand alone.
Site-Wide Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B22W40	N	W	1/5/10	1134	1x20-mL P	Activity Scan {No CAS}	6 Months	None
B22W40	N	W	1/5/10	1134	1x125-mL G/P	Technetium-99 {Technetium-99}	6 Months	HCl to pH <2
B22W40	N	W	1/5/10	1134	1x60-mL P	Tritium - H3 {Tritium}	6 Months	None

Relinquished By JP Herrick CHPRC	Print / Sign	Date/Time JAN 05 2010 1300	Received By SSU #1 Print / Sign	Date/Time JAN 05 2010 1300
Relinquished By SSU #1		Date/Time JAN 05 2010 1030	Received By RD Julian CHPRC	Date/Time JAN 05 2010 1030
Relinquished By RD Julian CHPRC		Date/Time JAN 05 2010 1400	Received By Fed Ex	Date/Time
Relinquished By FED EX		Date/Time	Received By F. DEATHERAGE	Date/Time 01/07/10 0920
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liq	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

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CHPRC

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X10-010-99**

Page 1 of 1

Collector: K. Hulse	Contact/Requester: DYEKMAN, DL	Telephone No.: 373-2530
SAF No.: X10-010	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 301396ES20
Project Title: 200-BP-5 Depth Discrete Sampling	Logbook No: HNF-N-506 28 / 30	Ice Chest No.: GWSC-99
Shipped To (Lab): Eberline Services	Method of Shipment: Commercial Carrier H4123 (7558)	Bill of Lading/Air Bill No.: 7982 7821 8307
Protocol: SURV	Priority: 45 Days	Offsite Property No.: 00605

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time**
Do not combine X SAF samples with other sets. Need SDG to be stand alone.
Site-Wide Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B22W51	N	W	1-4-10	1000	1x20-mL P	Activity Scan {No CAS}	6 Months	None
B22W51	N	W	↓	↓	1x125-mL G/P	Technetium-99 {Technetium-99}	6 Months	HCl to pH <2
B22W51	N	W	↓	↓	1x60-mL P	Tritium - H3 {Tritium}	6 Months	None

1-4-10

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
K6 Hulse	[signature]	JAN 04 2010 1500	SSO#1		JAN 04 2010 1500
SSO#1		JAN 05 2010 1030	RD Jullan CHPRC	[signature]	JAN 05 2010 1030
RD Jullan CHPRC	[signature]	JAN 05 2010 1400	Fed Ex		
	FED EX		M. Wathowski [signature]		01/07/10 0920

Matrix *
S = Soil; SE = Sediment; SO = Solid; SL = Sludge; W = Water; O = Oil; A = Air; DS = Drum Solids; DL = Drum Liquids; T = Tissue; WI = Wine; L = Liquid; V = Vegetation; X = Other

FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time

CHPRC

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # X10-010-100

Page 1 of 1

Collector: K. Hulse	Contact/Requester: DYEKMAN, DL	Telephone No.: 373-2530
SAF No.: X10-010	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 301396ES20
Project Title: 200-BP-5 Depth Discrete Sampling	Logbook No: HNF-N-506 28/30	Ice Chest No.: GWSC-99
Shipped To (Lab): Eberline Services	Method of Shipment: Commercial Carrier H4123 (7558)	Bill of Lading/Air Bill No.: 7982 7821 8307
Protocol: SURV	Priority: 45 Days	Offsite Property No.: 00605

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time**
Do not combine X SAF samples with other sets. Need SDG to be stand alone.
Site-Wide Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B22W52	N	W	1-4-10	1219	1x20-mL P	Activity Scan {No CAS}	6 Months	None
B22W52	N	W	↓	↓	1x125-mL G/P	Technetium-99 {Technetium-99}	6 Months	HCl to pH <2
B22W52	N	W	↓	↓	1x60-mL P	Tritium - H3 {Tritium}	6 Months	None

1-4-10

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K. Hulse	JS Dalen		JAN 04 2010 1500	SSU#1			JAN 04 2010 1500
SSU#1			JAN 05 2010 1030	RD Julian CHPRC			JAN 05 2010 1030
RD Julian CHPRC			JAN 05 2010 1400	Fed Ex			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Fed Ex				MF-MATAWATAN			01/07/10 0920

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time

Matrix *

S = Soil		DS = Drum Solids	
SE = Sediment		DL = Drum Liquids	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

REVISION 1

CHPRC

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # X10-010-101

Page 1 of 1

Collector: K. Hulse	Contact/Requester: DYEKMAN, DL	Telephone No.: 373-2530
SAF No.: X10-010	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 301396ES20
Project Title: 200-BP-5 Depth Discrete Sampling	Logbook No: HNF-N-506 28/30	Ice Chest No.: GWSC-99
Shipped To (Lab): Eberline Services	Method of Shipment: Commercial Carrier H4123(7558)	Bill of Lading/Air Bill No.: 7982 7821 8307
Protocol: SURV	Priority: 45 Days	Offsite Property No.: 00605

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time**
Do not combine X SAF samples with other sets. Need SDG to be stand alone.
Site-Wide Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B22W53	N	W	1-4-10	1324	1x20-mL P	Activity Scan {No CAS}	6 Months	None
B22W53	N	W	↓	↓	1x125-mL G/P	Technetium-99 {Technetium-99}	6 Months	HCl to pH <2
B22W53	N	W	↓	↓	1x60-mL P	Tritium - H3 {Tritium}	6 Months	None

1-4-10

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
K. Hulse	K. Hulse	JAN 04 2010 1500	SSU#1	SSU#1	JAN 04 2010 1500
SSU#1	SSU#1	JAN 05 2010 1030	RD Julian CHPRC	RD Julian	JAN 05 2010 1030
RD Julian CHPRC	RD Julian	JAN 05 2010 1400	FED EX	FED EX	Date/Time
FED EX	FED EX	Date/Time	M. MATHWAMAN	M. MATHWAMAN	01/07/10 0920

Disposed By: Date/Time

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Matrix *

S = Soil	SE = Sediment	SO = Solid	SL = Sludge
W = Water	O = Oil	A = Air	DS = Drum Solid
DL = Drum Liquid	T = Tissue	WI = Wine	L = Liquid
V = Vegetation	X = Other		

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CHPRC

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # X10-010-102

Page 1 of 1

Collector K. Hulse	**Contact/Requester** DYEKMAN, DL	**Telephone No.** 373-2530
SAF No. X10-010	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code** 301396ES20
Project Title 200-BP-5 Depth Discrete Sampling	**Logbook No:** HNF-N-506 /	**Ice Chest No.** GWSC-99
Shipped To (Lab) Eberline Services	**Method of Shipment** Commercial Carrier H4123 (7558)	**Bill of Lading/Air Bill No.** 7982 7821 8307
Protocol SURV	**Priority:** 45 Days	**Offsite Property No.** 00605

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time**
Do not combine X SAF samples with other sets. Need SDG to be stand alone.
Site-Wide Generator Knowledge Information Form applies.

Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B22W54	N	W	1-4-10	0800	1x20-mL P	Activity Scan {No CAS}	6 Months	None
B22W54	N	W	↓	↓	1x125-mL G/P	Technetium-99 {Technetium-99}	6 Months	HCl to pH <2
B22W54	N	W	↓	↓	1x60-mL P	Tritium - H3 {Tritium}	6 Months	None

1-4-10

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K Hulse			1-4-10 1500	SSO #1			1-4-10 1500
SSO #1			JAN 06 2010 1030	RD Julian CHPRC			JAN 06 2010 1030
RD Julian CHPRC			JAN 06 2010 1400	FedEx			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
FedEx				F. MATAWAN		01/07/10	0920

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) — Disposed By — Date/Time

Matrix *

S = Soil		DS = Drum Solids	
SE = Sediment		DL = Drum Liquids	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

REVISION 1

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EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

REVISION 1 1/7/10

Client: CHPRC City MCHLAND State WA

Date/Time received 01/07/10 0920 CoC No. X10-010-87,88,99,100,101,102

Container I.D. No. GWSC-99 Requested TAT (Days) 45 P.O. Received Yes [ ] No [ ]

INSPECTION

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

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by _____ Date: 01/07/10 Time: 12:30

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
All Samples	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 10048 Calibration date 05 Aug 09

Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"