

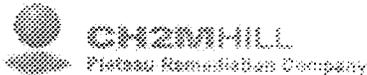
**REISSUE FINAL REPORT FOR THE SAMPLES
RECEIVED IN FEBRUARY, 2010 FROM PROJECT ID 100
BC DECISION UNIT**

**Document No.: 20100109 Reissue 1
SDG: 222S20100109**

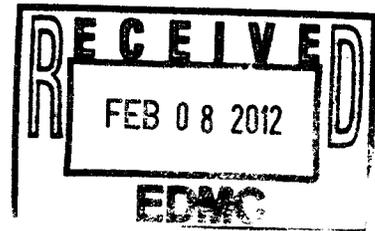
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222-S LABORATORY

REISSUE FINAL REPORT FOR THE SAMPLES RECEIVED IN
FEBRUARY, 2010 FROM PROJECT ID 100 BC DECISION UNIT

1.0 INTRODUCTION

This report has been reissued in order to correct the data qualifier flag, E, used in Attachment 1. This correction was requested by the client in a Problem and Discrepancy Report (see Attachment 4). The "E" flag has been replaced with the "B" flag as requested.

This final report presents the results for the three ground water samples taken on February 1, 2010. The samples were analyzed in accordance with Sampling Authorization Form W10-001; *RCRA Ground Water Sampling (SAF)* and ATL-MP-1011; *ATL Quality Assurance Project Plan for 222-S Laboratory (QAPP)*. The following attachments are included in this report.

Attachment 1	Data Summary Report
Attachment 2	Holding Time Report
Attachment 3	Receipt Paperwork
Attachment 4	Problem And Discrepancy Report

2.0 SAMPLE RECEIPT AND HANDLING

A total of three samples were received on February 2, 2010 with adequate paperwork. The samples were not in a cooler and did not show evidence of cooling and the client was informed.

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for those analytes requested in the SAF. The "Det Limit" column in Attachment 1 contains the method detection limit (MDL).

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For analysis without a preparation step, this column is left blank.

The "Qual Flags" column in Attachment 1 contains data qualifier flags that are defined as follows:

- "U" indicates that the reported result is less than the calculated method detection limit.
- "B" indicates that the result was below the quantitation limit.

Manual calculations using rounded results from the Data Summary Report or result calculation forms may differ slightly from the actual results derived from the raw data.

3.1 ANALYSES

3.1.1 Anions by Ion Chromatography

The ion chromatography analysis for anions was performed on direct aliquots of all samples. All requirements in the SAF and QAPP were met. Nitrate was detected below the quantitation level in two of the continuing calibration blanks. Since the concentrations were less than 5% of the lowest sample result, the data quality was not affected and reanalysis not required. The sample duplicate and matrix spike sample for the batch containing these samples was from a different sample delivery group (222S20100093). This sample has been included in Attachment 1 to demonstrate batch precision and accuracy. The nitrate, nitrite, and phosphate holding time of 48 hours was missed for all samples. This was due to the late receipt of the samples at the 222S Laboratory caused by an unscheduled ventilation outage at the primary laboratory. Since the holding times were only missed by 2 to 5 hours, it is the laboratory's opinion that the final results were not affected.

4.0 PROCEDURES

Table 1 lists the analytical procedures used for analysis of these samples.

Table 1. Analytical Procedures.

Analysis	Preparation Method	Analysis Procedure
Anions by Ion Chromatography	NA	SW846-9056

5.0 REFERENCES

ATL-MP-1011, 2009, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Rev. 9, Applied Technologies and Laboratories International, Inc., Richland, Washington.

Sampling Authorization Form W10-001; *RCRA Ground Water Sampling*, 2009, CH2M Hill, Plateau Remediation Company, Richland, Washington

Attachment 1

DATA SUMMARY REPORT

Data Summary of All Results

Sample Group: 20100109
 Customer Group or SDG Number: 222S20100109
 Customer Sample ID: B22FL2

Sample Portion: Total

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000056			16984-48-8	Fluoride	ug/mL	95.6	<6.16E-03	0.177	n/a	n/a	n/a	n/a	6.16E-03	n/a	
S10M000056			16887-00-6	Chloride	ug/mL	102	<3.10E-03	11.1	n/a	n/a	n/a	n/a	0.0186	n/a	
S10M000056			14797-65-0	Nitrite	ug/mL	93.2	<0.0400	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
S10M000056			24959-67-9	Bromide	ug/mL	102	<0.0237	0.0914	n/a	n/a	n/a	n/a	0.0237	n/a	B
S10M000056			14797-55-8	Nitrate	ug/mL	101	<0.0162	10.4	n/a	n/a	n/a	n/a	0.0972	n/a	
S10M000056			14265-44-2	Phosphate	ug/mL	99.4	<0.0381	<0.0381	n/a	n/a	n/a	n/a	0.0381	n/a	U
S10M000056			14808-79-8	Sulfate	ug/mL	101	<0.0219	44.7	n/a	n/a	n/a	n/a	0.131	n/a	

NA = Not Analyzed, ND = Not Detected

B - Estimated

U - < Det Limit

Data Summary of All Results

Sample Group: 20100109
 Customer Group or SDG Number: 222S20100109
 Customer Sample ID: B22FL3

Sample Portion: Total

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M0000058			16984-48-8	Fluoride	ug/mL	95.6	<6.16E-03	0.143	n/a	n/a	n/a	n/a	6.16E-03	n/a	n/a
S10M0000058			16887-00-6	Chloride	ug/mL	102	<3.10E-03	9.29	n/a	n/a	n/a	n/a	0.0186	n/a	n/a
S10M0000058			14797-65-0	Nitrite	ug/mL	93.2	<0.0400	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	n/a U
S10M0000058			24959-67-9	Bromide	ug/mL	102	<0.0237	0.0834	n/a	n/a	n/a	n/a	0.0237	n/a	n/a B
S10M0000058			14797-55-8	Nitrate	ug/mL	101	<0.0162	9.88	n/a	n/a	n/a	n/a	0.0162	n/a	n/a
S10M0000058			14265-44-2	Phosphate	ug/mL	99.4	<0.0381	<0.0381	n/a	n/a	n/a	n/a	0.0381	n/a	n/a U
S10M0000058			14808-79-8	Sulfate	ug/mL	101	<0.0219	40.7	n/a	n/a	n/a	n/a	0.131	n/a	n/a

U - < Det Limit

B - Estimated

NA = Not Analyzed, ND = Not Detected

Data Summary of All Results

Sample Group: 20100109

Customer Group or SDG Number: 222S20100109

Customer Sample ID: B22FL4

Sample Portion: Total

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000057			16984-48-8	Fluoride	ug/mL	95.6	<6.16E-03	0.133	n/a	n/a	n/a	n/a	6.16E-03	n/a	
S10M000057			16887-00-6	Chloride	ug/mL	102	<3.10E-03	9.32	n/a	n/a	n/a	n/a	0.0186	n/a	
S10M000057			14797-65-0	Nitrite	ug/mL	93.2	<0.0400	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
S10M000057			24959-67-9	Bromide	ug/mL	102	<0.0237	0.0827	n/a	n/a	n/a	n/a	0.0237	n/a	B
S10M000057			14797-55-8	Nitrate	ug/mL	101	<0.0162	9.88	n/a	n/a	n/a	n/a	0.0162	n/a	
S10M000057			14265-44-2	Phosphate	ug/mL	99.4	<0.0381	<0.0381	n/a	n/a	n/a	n/a	0.0381	n/a	U
S10M000057			14808-79-8	Sulfate	ug/mL	101	<0.0219	40.9	n/a	n/a	n/a	n/a	0.131	n/a	

U - < Det Limit

B - Estimated

NA = Not Analyzed, ND = Not Detected

Data Summary of All Results

Batch QC Sample

Sample Group: 20100093
 Customer Group or SDG Number: 222S20100093
 Customer Sample ID: B23D35
 Sample Portion: Total

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000061			16984-48-8	Fluoride	ug/mL	95.6	<6.16E-03	0.665	0.663	0.664	0.283	94.9	6.16E-03	n/a	
S10M000061			16887-00-6	Chloride	ug/mL	102	<3.10E-03	17.9	17.8	17.9	0.502	94.5	0.0341	n/a	
S10M000061			14797-65-0	Nitrite	ug/mL	93.2	<0.0400	<0.440	<0.440	n/a	n/a	95.8	0.440	n/a	U
S10M000061			24959-67-9	Bromide	ug/mL	102	<0.0237	0.299	0.283	0.291	5.61	100	0.0237	n/a	
S10M000061			14797-55-8	Nitrate	ug/mL	101	<0.0162	120	119	120	0.692	106	0.178	n/a	
S10M000061			14265-44-2	Phosphate	ug/mL	99.4	<0.0381	<0.419	<0.419	n/a	n/a	106	0.419	n/a	U
S10M000061			14808-79-8	Sulfate	ug/mL	101	<0.0219	35.5	35.0	35.3	1.45	104	0.241	n/a	

E - Estimated

U - Less Than Detection Limit

Attachment 2

HOLDING TIME REPORT

Hold Time Report - Anions

Client Sample ID	Sample Group	Lab Sample ID	Matrix	Method	Sample Date	Received Date	Analysis Date	Lapse Time (hours)	Missed Holding Time
B22FL2	20100109	S10M000056	LIQUID	SW846-9056	02/01/10 09:05	02/02/10 15:40	2/3/2010 14:13	53	Y
B22FL4	20100109	S10M000057	LIQUID	SW846-9056	02/01/10 13:30	02/02/10 15:40	2/3/2010 15:53	50	Y
B22FL3	20100109	S10M000058	LIQUID	SW846-9056	02/01/10 13:30	02/02/10 15:40	2/3/2010 16:06	51	Y

Attachment 3

RECEIPT PAPERWORK

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev <u>DD-1</u>
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Date Samples Received: 2-2-10 Group #: ~~222520100109~~ 222520100109 2/8/10
 Number of Samples: 7
 Sample Custodian: TM Colloc

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	Y		
RSR provided?		N	
Verify GKI is complete		N	
Check that outer custody seal is intact, if present	Y		
Record cooler temperature in centigrade, as appropriate	N		<input checked="" type="checkbox"/> Check if no cooler and/or no ice
Samples are intact and in good condition	Y		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	Y		
• Date and time of sampling	Y		
• Sampling location or origin	Y		
• Container type, size, and number	Y		
• Analysis request is clear	Y		
• Signature of persons relinquishing and receiving samples	Y		
• Date and/or time of sample custody exchange	Y		
Verify that sample numbers on containers match the COC and/or RSA	Y		
Samples stored properly (e.g., refrigeration)	Y		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials DPR Date 2/2/2010

If No, comment on communication and resolution:

Other Comments:

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F09-067-364	PAGE 1 OF 1
COLLECTOR <i>A Emerson</i>	COMPANY CONTACT DYEKMAN, DL	TELEPHONE NO. 373-2530	PROJECT COORDINATOR DYEKMAN, DL	PRICE CODE 7N	DATA TURNAROUND 45 Days / 45 Days	
SAMPLING LOCATION C7665; I-012	PROJECT DESIGNATION 100-BC Decision Unit-Groundwater		SAF NO. F09-067	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
ICE CHEST NO. <i>N/A</i>	FIELD LOGBOOK NO. <i>HAF-N-585-13</i>	ACTUAL SAMPLE DEPTH <i>75</i>	COA 30080ES10			
SHIPPED TO <i>2285 112 2-12-15</i>	OFFSITE PROPERTY NO. <i>N/A</i>		BILL OF LADING/AIR BILL NO. <i>N/A</i>			
MATRIX* A=Air DL=Drum L=Liquid DS=Drum S=Soil O=Oil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION HCl or H2SO4 to pH <2 / Cool-4C aGS*	HNO3 to pH <2 G/P	HNO3 to pH <2 G/P	HNO3 to pH <2 G/P	Cool-4C
<i>2285201001039</i>	<i>22852010013-2/10</i>	TYPE OF CONTAINER 3	1	1	1	P
		NO. OF CONTAINER(S)	500mL	500mL	500mL	500mL
		VOLUME	40mL	500mL	500mL	500mL
		SAMPLE ANALYSIS	VDA - B260 TCL 100 Area RI/FS)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (100 Area RI/FS)	Gross Alpha (Gross Alpha) (Gross Beta) (Gross Beta)
		SPECIAL HANDLING AND/OR STORAGE				Tritium - Top Ex (Triguany)
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	SPECIAL INSTRUCTIONS		
B22FL2	WATER	<i>2/1/10</i>	<i>0905</i>	** The CACN for all analytical work at WSCF laboratory is 401640ES20. ** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.		
<i>5107000052</i>				** The laboratories must meet prior requested and confirmed turnaround times and hrs of sample receipt if/when this requirement can not be met.		
				** Sample Management will provide copies of data to both the Task Manager, the Requester, and Mary Hartman. In addition please send copies of data to Tessa Buswell, per Greg Kaszas request.		
				(1)ICP Metals - 6010 (100 Area RI/FS); ICP/MS - 200.8 (100 Area RI/FS);		
CHAIN OF POSSESSION	SIGN/ PRINT NAMES	RECEIVED BY/STORED IN				
RELINQUISHED BY/REMOVED FROM <i>Adam Emerson</i>	<i>2/1/10 1525</i>	DATE/TIME	<i>2/1/10 1525</i>	DATE/TIME	RECEIVED BY/STORED IN <i>MDK 2/1/10 1530</i>	
RELINQUISHED BY/REMOVED FROM <i>MDK 2/1/10 1530</i>	<i>2/3/10 1530</i>	DATE/TIME	<i>2/3/10 1530</i>	DATE/TIME	RECEIVED BY/STORED IN <i>MDK 2/3/10 1530</i>	
RELINQUISHED BY/REMOVED FROM <i>MDK 2/3/10 1540</i>	<i>2/3/10 1540</i>	DATE/TIME	<i>2/3/10 1540</i>	DATE/TIME	RECEIVED BY/STORED IN <i>MDK 2/3/10 1540</i>	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		DATE/TIME	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		DATE/TIME	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		DATE/TIME	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		DATE/TIME	RECEIVED BY/STORED IN	
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME	ORIGINAL		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME			

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F09-067-366	PAGE 1 OF 1
COLLECTOR <i>A Emerson</i>	COMPANY CONTACT DYEKMAN, DL	TELEPHONE NO. 373-2530	PROJECT COORDINATOR DYEKMAN, DL		PRICE CODE 7N	DATA TURNAROUND 45 Days / 45 Days	
SAMPLING LOCATION C7665; I-013D	PROJECT DESIGNATION 100-BC Decision Unit-Groundwater	SAF NO. F09-067		AIR QUALITY	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
ICE CHEST NO. N/A	FIELD LOGBOOK NO. HNF-N-585-13	ACTUAL SAMPLE DEPTH 80 ft.	COA 300080ES10	BILL OF LADING/AIR BILL NO. N/A			
SHIPPED TO -Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	PRESERVATION					
MATRIX* A=Air DL=Drum L=Liquid S=Soil SE=Sediment T=Tissue V=Vegetation W=Water X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	HCl or H2SO4 to pH <2 / Cool-AC	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool-AC	
		AgS*	G/P	G/P	G		
		3	1	1	1		
		40mL	500mL	500mL	250mL	500mL	
		VOLUME					
		SAMPLE ANALYSIS	VDA - 8260 (CL SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (100 Area RI/FS);	Gross Alpha (Gross Alpha) Gross Beta (Gross beta)	Tribium - Ion Ex (Tritium) IC Anions - 300.0 (100 Area RI/FS);	
		SPECIAL HANDLING AND/OR STORAGE					
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	SPECIAL INSTRUCTIONS			
B22FL4	WATER	2/1/10	1330	** The CACN for all analytical work at WSCF laboratory is 401640ES20. ** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. ** The laboratories must meet prior requested and confirmed turnaround times and RDLS. The laboratories must notify the SM Project Coordinator in writing within 24 hrs of sample receipt if/when this requirement can not be met. ** Sample Management will provide copies of data to both the Task Manager, the Requester, and Mary Hartman. In addition please send copies of data to Tessa Buswell, per Greg Kaszas request. (1)ICP Metals - 6010 (100 Area RI/FS); ICP/MS - 200.8 (100 Area RI/FS);			
510M00057				ORIGINAL			
CHAIN OF POSSESSION		SIGN/ PRINT NAMES		DATE/TIME			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME			
<i>Adam Emerson</i>	2/1/10 1535	<i>MD Kessler</i>	2/1/10 1535				
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME			
<i>MD Kessler</i>	FEB 02 2010 1530	<i>RD Julian</i>	FEB 02 2010 1530				
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME			
<i>RD Julian</i>	FEB 02 2010 1540	<i>RD Julian</i>	FEB 02 2010 1540				
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME			
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME			
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME			

Attachment 4

PROBLEM AND DISCREPENCY REPORT

Problem and Discrepancy Report**222S****SDG 222S20100109**

1. The data package has the following issues:

- a) For inorganic analysis, a qualifier of B needs to replace the E currently used to identify a result between the RDL and MDL.

Resolution: *Provide qualifier correction.*

Lab Response:

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