FINAL REPORT FOR THE SAMPLES RECEIVED IN FEBRUARY, 2010 FOR SAF F10-043

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SDG: 222S20100186

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5/3/10

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222-S LABORATORY

FINAL REPORT FOR THE SAMPLES RECEIVED IN FEBRUARY, 2010 FOR SAF F10-043

1.0 INTRODUCTION

This final report presents the results for one water sample taken on February 25, 2010. The sample was analyzed in accordance with Sampling Authorization Form F10-043; *299-E28-30 Characterization Saturated Zone –Groundwater ("M" Well)* 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	Issue Resolution Form
Attachment 5	Original Analysis Results/Analysis Time

2.0 SAMPLE RECEIPT AND HANDLING

One sample was received on February 25, 2010 with adequate paperwork. The measured temperature of the outside of the sample container was 13 °C. This was reported to the client on the laboratory's sample receipt check list (see Attachment 3).

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results . The "Det Limit" column in Attachment 1 contains the method detection limit (MDL). In order to demonstrate batch precision and accuracy, Attachment 1 also contains the matrix spikes and duplicates associated with the analysis of the samples in this SDG, even if they were from a different SDG.

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 reported result is greater than the method detection limit (MDL), but less than 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 by preparing dilutions of the sample. All requirements in the SAF and QAPP were met, except the holding time requirement of 48 hours for Nitrite, and Phosphate. This was due to following reasons:

- A dilution of the sample was prepared on 02/26/2010. Holding time requirement was met; however, this dilution did not provide results with required detection limits for nitrite, phosphate, and bromide (see Attachment 5).

- Due to an oversight of our analytical staff, reanalysis was not performed until 04/05/2010. This time detections limits were met; however, the analysis time lapse exceeded the holding time requirements, as discussed in Issue Resolution Form 10-092 (see Attachment 4)

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	SW846-9056A

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 F10-043; CH2M Hill, Plateau Remediation Company, Richland, Washington.

Attachment 1

DATA SUMMARY REPORT

22 - Apr - 2010 13:41:38
DSRHardcopyWOLimits 2.7.26a
DSR.Jar v. 2.7.26c

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100186
Customer Group or SDG Number: 222S20100186
Customer Sample ID: B24DP5
Customer Sample ID: B24DP5

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000096			16984-48-8	Fluoride	ug/mL	93.0	<6.16E-03	0.165	n/a	n/a	n/a	n/a	0.129	n/a	B
S10M000096			16887-00-6	Chloride	ug/mL	101	0.0365	7.16	n/a	n/a	n/a	n/a	0.0651	n/a	
S10M000096			14797-65-0	Nitrite	ug/mL	91.7	<0.0400	<0.240	n/a	n/a	n/a	n/a	0.240	n/a	U
S10M000096			24959-67-9	Bromide	ug/mL	93.9	<0.0237	<0.142	n/a	n/a	n/a	n/a	0.142	n/a	U
S10M000096			14797-55-8	Nitrate	ug/mL	101	<0.0162	181	n/a	n/a	n/a	n/a	0.340	n/a	
S10M000096			14265-44-2	Phosphate	ug/mL	94.3	<0.0381	<0.229	n/a	n/a	n/a	n/a	0.229	n/a	U
S10M000096			14808-79-8	Sulfate	ug/mL	101	<0.0219	23.3	n/a	n/a	n/a	n/a	0.460	n/a	

NA = Not Analyzed, ND = Not Detectec

U - < Det Limit

B - Estimated

29 - Apr - 2010 13:06:39
DSRHardcopyWOLimits 2.7.26a
DSR.Jar v. 2.7.26c

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100176
Customer Group or SDG Number: 222S20100176
Customer Sample ID: B23CT9
Customer Sample ID: B23CT9

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000093			16984-48-8	Fluoride	ug/mL	93.0	<6.16E-03	0.210	0.308	0.259	38.1	93.0	0.129	n/a	B
S10M000093			16887-00-6	Chloride	ug/mL	101	0.0365	32.4	32.1	32.2	0.975	90.8	0.0651	n/a	
S10M000093			14797-65-0	Nitrite	ug/mL	91.7	<0.0400	<0.240	<0.240	n/a	n/a	101	0.240	n/a	U
S10M000093			24959-67-9	Bromide	ug/mL	93.9	<0.0237	<0.142	<0.142	n/a	n/a	96.5	0.142	n/a	U
S10M000093			14797-55-8	Nitrate	ug/mL	101	<0.0162	41.3	41.4	41.4	0.351	104	0.340	n/a	
S10M000093			14265-44-2	Phosphate	ug/mL	94.3	<0.0381	<0.229	<0.229	n/a	n/a	101	0.229	n/a	U
S10M000093			14808-79-8	Sulfate	ug/mL	101	<0.0219	23.4	23.8	23.6	1.71	104	0.460	n/a	

NA = Not Analyzed, ND = Not Detectec

U - < Det Limit

B - Estimated

29 - Apr - 2010 10:00:06
DSRHardcopyWOLimits 2.7.26a
DSR.Jar v. 2.7.26c

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100176
Customer Group or SDG Number: 222S20100176
Customer Sample ID: B23CT9
Customer Sample ID: B23CT9

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000093		16984-48-8	Fluoride	ug/mL	93.0	<6.16E-03	0.210	0.308	0.259	38.1	93.0	0.129	n/a	B
S10M000093		16887-00-6	Chloride	ug/mL	101	0.0365	32.4	32.1	32.2	0.975	90.8	0.0651	n/a	
S10M000093		14797-65-0	Nitrite	ug/mL	91.7	<0.0400	<0.240	<0.240	n/a	n/a	101	0.240	n/a	U
S10M000093		24959-67-9	Bromide	ug/mL	93.9	<0.0237	<0.142	<0.142	n/a	n/a	96.5	0.142	n/a	U
S10M000093		14797-55-8	Nitrate	ug/mL	101	<0.0162	41.3	41.4	41.4	0.351	104	0.340	n/a	
S10M000093		14265-44-2	Phosphate	ug/mL	94.3	<0.0381	<0.229	<0.229	n/a	n/a	101	0.229	n/a	U
S10M000093		14808-79-8	Sulfate	ug/mL	101	<0.0219	23.4	23.8	23.6	1.71	104	0.460	n/a	

NA = Not Analyzed, ND = Not Detectec

U - < Det Limit

B - Estimated

Attachment 2

HOLDING TIME REPORT

HOLD TIME REPORT SDG222S2010186

Customer Sample ID	Sample Group	Laboratory Sample ID	Method	Sample Date	Received Date	Analysis Date	Analysis Time Lapse	Missed Holding Time
B24DP5	20100186	S10M000096	SW846-9056A	02/25/10 08:30	02/25/10 10:00	02/26/10 01:39	17 hours	N
B24DP5	20100186	S10M000096	SW846-9056A	02/25/10 08:30	02/25/10 10:00	04/05/10 19:14	39 days	**Yes,** for NO2, PO4, Br

Attachment 3

RECEIPT PAPERWORK

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev D.D.1

Date Samples Received: 2.25.10 Group #: D.D.T ~~20100180~~ cm 4/21/10

Number of Samples: 2 20100186

Sample Custodian: RLH

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?		✓	
Verify GKI is complete	✓		on file
Check that outer custody seal is intact, if present		✓	
Record cooler temperature in centigrade, as appropriate	✓		☐ Check if no cooler and/or no ice 13°C
Samples are intact and in good condition	✓		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	✓		
• Date and time of sampling	✓		
• Sampling location or origin			
• Container type, size, and number			
• Analysis request is clear			
• Signature of persons relinquishing and receiving samples			
• Date and/or time of sample custody exchange			
Verify that sample numbers on containers match the COC and/or RSA			
Samples stored properly (e.g., refrigeration)	✓		

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

PM to Complete:

Samples acceptable for release? DPR PM Initials LPM Date 2/25/2010

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F10-043-016	PAGE 1 OF 1
COLLECTOR Rosane Rust	**COMPANY CONTACT** DYEKMAN, DL	**TELEPHONE NO.** 373-2530	**PROJECT COORDINATOR** DYEKMAN, DL	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION C7515 (299-E28-30); I-178	**PROJECT DESIGNATION** 299-E28-30 Characterization Saturated Zone - Groundwater ("M" Well)		**SAF NO.** F10-043	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-491-5 Pg 67	**ACTUAL SAMPLE DEPTH** 351.0'	**COA** 301396ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE	
SHIPPED TO ~~Waste Sampling & Characterization~~ 222-S K3 2/25/10	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	P
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24DP5	WATER	2-25-10	0830	✓
S10M000096				

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Lacy Rosane Lacy Rosane	2-25-10/ 1000	R Hall R Steele	2-25-10 1400

SPECIAL INSTRUCTIONS
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)IC Anions - 300.0 {Chloride, Nitrogen in Nitrite, Nitrogen in Nitrate, Sulfate}

13°C

ORIGINAL

222S20100186

20100175 AP 2/26/2010

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

A-6003-618(01/06)

GENERATOR KNOWLEDGE INFORMATION

1. Chain of Custody Number NA CACN/COA NA Customer Identification Number NA

2. List generator knowledge or description of process that produced sample. Or list description of sample source:
200 Area S&GRP Characterization and Monitoring Sampling and Analysis

MSDS Available? (•) No ( ) Yes Hanford MSDS No. _____

3. List all waste codes and constituents associated with the waste or media that was sampled, regardless of CERCLA status.

a) Does the sample contain any of the following listed waste codes?

By checking "unknown" the customer understands that no knowledge is available following a careful search.

	List Federal Waste Code(s):	List Constituent(s):			
P Codes:			( ) Yes	(•) No	( ) Unknown
U Codes:			( ) Yes	(•) No	( ) Unknown
K Codes:			( ) Yes	(•) No	( ) Unknown
F Codes:	F001 - F005		(•) Yes	( ) No	( ) Unknown

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.

D001:	☐ FP <100°F	☐ FP ≥100 <140°F	☐ DOT Oxidizer	( ) Yes	(•) No	( ) Unknown
D002:	☐ pH ≤2	☐ pH ≥12.5	☐ Solid Corrosive (WSC2)	( ) Yes	(•) No	( ) Unknown
D003:	☐ Cyanide	☐ Sulfide	☐ Water Reactive ☐ Other _____ (i.e., peroxide former, explosive, air reactive)	( ) Yes	(•) No	( ) Unknown
D004-D043 (Identify applicable waste codes and concentrations):				( ) Yes	(•) No	( ) Unknown

N/A

c) If characteristic, list any known underlying hazardous constituents (UHCs) reasonably expected to be present, and their concentrations that may be present above the LDR treatment standard (40 CFR 268.48):

N/A

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):

N/A

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated)

WT01:	( ) Yes	(•) No	( ) Unknown		WP01:	( ) Yes	(•) No	( ) Unknown
WT02:	( ) Yes	(•) No	( ) Unknown		WP02:	( ) Yes	(•) No	( ) Unknown
W001:	( ) Yes	(•) No	( ) Unknown		WP03:	( ) Yes	(•) No	( ) Unknown
List constituents and concentrations:					F003:*	( ) Yes	(•) No	( ) Unknown

(*State mixture rule for ignitability)

N/A

4. Is this material TSCA regulated for PCBs? ( ) Yes (•) No ( ) Unknown ( ) Analysis Requested

List concentration if applicable: _____

If yes, what is the source of the PCBs? (see TSCA PCB Hanford Site User Guide, DOE/RL-2001-50)

☐ PCB Liquid Waste ☐ PCB Bulk Product Waste ☐ PCB Transformer ≥500 ppm ☐ Unknown
☐ PCB Remediation Waste ☐ PCB R&D Waste ☐ PCB contaminated electrical equipment (capacitor/ballast) <500 ppm
☐ PCB Spill Material ☐ PCB Item ☐ Other PCB Waste (list) _____

5. Is this material TRU? ( ) Yes (•) No ( ) Unknown

6. ACCURACY OF INFORMATION

Based on my inquiry of those individuals immediately responsible for obtaining this information, that to the best of my knowledge, the information entered in this document is true, accurate, and complete.

Print & Sign SJ TRENT/SA JOSA Date 12/3/07

A-6002-990 (08/03)

Attachment 4

ISSUE RESOLUTION FORM

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-092 (revision 1)

Date : **4/27/10** SAF No.: **See table**

SDG: **See table**
LOGIN No.: **See attached table**
TEST: **IC -Anions**
Sample No.(s) **See table**

Submitted By: C. S. Menjivar
Phone No: 372-2525
Fax No.: 373-4884

Submitted To: Heidi Hampt
Phone No. 376-4319
Fax No. 373-1788

ISSUE	**PROPOSED RESOLUTION**
The table below displays the samples for which the required reporting limit for nitrite, phosphate, bromide, and fluoride was missed. In most cases, samples were reanalyzed far out of holding time in order to obtain the required RL.	Report the reanalysis with the lower detection limit and provide table in report with original analysis result (if applicable) and report analysis time. Explain in narrative.

CHPRC/BHI/WMH/PNNL COMMENTS
Accept proposed resolution.

Heidi Hampt 4/28/10
Signature and Date

SAF	SDG	HEIS #	LAB ID
F10-065	222S20100176	B23CT9	S10M000093
F10-043	222S20100186	B24DP5	S10M000096
W10-001	222S20100187	B23D19	S10M000097
W10-001	222S20100187	B23D20	S10M000098
S10-012	222S2010188	B23198	S10M000099
W10-022	**222S20100190**	B23X46	S10M000100
X10-036	222S20100191	B248F0	S10M000101
X10-036	222S20100191	B248F3	S10M000102
X10-036	222S20100191	B248F6	S10M000103
F10-065	222S20100176	B23CV0	S10M000110
W10-002	222S20100243	B23X10	S10M000129
X10-033	222S20100244	B24CJ1	S10M000130
X10-034	222S20100247	B248T7	S10M000135
X10-034	222S20100247	B248R8	S10M000136
X10-034	222S20100247	B249H9	S10M000137
X10-034	222S20100247	B24B04	S10M000138
X10-034	222S20100247	B24B14	S10M000139
X10-034	222S20100247	B24B17	S10M000140
X10-034	222S20100247	B24B20	S10M000141
X10-034	222S20100247	B24B47	S10M000143
X10-033	222S20100244	B24CJ9	S10M000144
S10-012	222S20100253	B22YX7	S10M000145
S10-001	222S20100255	B23FC9	S10M000146

SAF	SDG	HEIS #	LAB ID
X10-034	222S20100247	B24B34	S10M000173
X10-034	222S20100247	B24B43	S10M000174
S10-003	222S20100271	B24FL9	S10M000180
X10-033	222S20100244	B24CH0	S10M000181
X10-033	222S20100244	B24CH1	S10M000182
X10-033	222S20100244	B24CH6	S10M000183
X10-033	222S20100244	B24CH8	S10M000185
X10-033	222S20100244	B24CF8	S10M000186
X10-033	222S20100244	B24CF9	S10M000187
F10-119	222S20100242	B243T9	S10M000189
F10-119	222S20100242	B243V0	S10M000190

Attachment 5

ORIGINAL ANALYSIS RESULTS/ ANALYSIS DATE

Data Summary Report for Original Results - Analysis Date : 02/26/2010 SDG222S20100186

Laboratory Sample ID	A	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Qual Flags	Analysis Time
S10M000096		16887-00-6	Chloride	ug/mL	101	0.0365	7.16	n/a	n/a	n/a	n/a	0.0651		02/26/10 01:39
S10M000096		16984-48-8	Fluoride	ug/mL	93.0	<6.16E-03	0.165	n/a	n/a	n/a	n/a	0.129	B	02/26/10 01:39
S10M000096		24959-67-9	Bromide	ug/mL	102	<0.0237	<0.498	n/a	n/a	n/a	n/a	0.498	U	02/26/10 01:39
S10M000096		14808-79-8	Sulfate	ug/mL	101	<0.0219	23.3	n/a	n/a	n/a	n/a	0.460		02/26/10 01:39
S10M000096		14797-55-8	Nitrate	ug/mL	101	<0.0162	181	n/a	n/a	n/a	n/a	0.340		02/26/10 01:39
S10M000096		14797-65-0	Nitrite	ug/mL	90.2	<0.0400	<0.840	n/a	n/a	n/a	n/a	0.840	U	02/26/10 01:39
S10M000096		14265-44-2	Phosphate	ug/mL	96.5	<0.0381	<0.800	n/a	n/a	n/a	n/a	0.800	U	02/26/10 01:39