

**FINAL REPORT FOR THE SAMPLES RECEIVED IN  
FEBRUARY, 2010 FOR SAF S10-012**

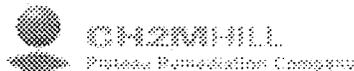
**Document No.: 20100188 Reissue 1  
SDG: 222S20100188**

**Carolina S. Menjivar**  
Advanced Technologies and Laboratories International, Inc.

**Date Published**  
September 2, 2010

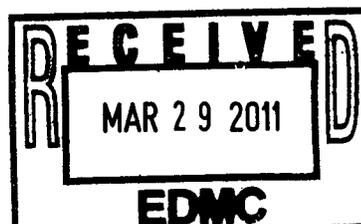
**Prepared for:**

**Prepared by:**



<b>Mike Neely</b>	<b>ATL, Inc.</b>
<b>CH2M Hill Plateau Remediation Co.</b>	<b>P.O. Box 250</b>
<b>P.O. Box 850</b>	<b>Richland, WA 99352-0250</b>
<b>Richland, WA 99352</b>	<b>509-372-2742</b>
<b>509-373-0654</b>	

  
C. S. Menjivar, Project Manager



**222-S LABORATORY****FINAL REPORT FOR THE SAMPLES RECEIVED IN FEBRUARY, 2010  
FOR SAF S10-012****1.0 INTRODUCTION**

This report has been reissued in order to remove a statement from this narrative referring to a qualifier flag for chloride that was not applied and not required. In addition, a qualifier flag was removed from original results of nitrate in Attachment 5 as requested by customer in a problem and discrepancy report (see Attachment 4).

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 S10-012 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	Correspondence
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 18.8 °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 SGD.

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 lower than the estimated quantitation limit (EQL).

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. 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 and bromide (see Attachment 5).
- Due to an oversight of our analytical staff, reanalysis was not performed until 04/05/2010. Detection limits were met; however, the analysis time lapse exceeded the holding time requirements (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, Advanced Technologies and Laboratories International, Inc., Richland, Washington.

Sampling Authorization Form S10-012; CH2M Hill, Plateau Remediation Company, Richland, Washington.

Attachment 1

DATA SUMMARY REPORT

WSCF - Anions & HexCr  
 Data Summary Report

Sample Group: 20100188  
 Customer Group or SDG Number: 222S2010188  
 Customer Sample ID: B23198  
 Customer Sample ID: B23198

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000099			16984-48-8	Fluoride	ug/mL	93.0	<6.16E-03	0.224	0.252	0.238	11.7	99.9	0.0678	n/a	B
S10M000099			16887-00-6	Chloride	ug/mL	101	0.0365	3.38	3.32	3.35	1.79	102	0.0341	n/a	
S10M000099			14797-65-0	Nitrite	ug/mL	91.7	<0.0400	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
S10M000099			24959-67-9	Bromide	ug/mL	93.9	<0.0237	0.184	n/a	n/a	n/a	n/a	0.0237	n/a	B
S10M000099			14797-55-8	Nitrate	ug/mL	101	<0.0162	3.37	3.42	3.39	1.65	105	0.178	n/a	
S10M000099			14265-44-2	Phosphate	ug/mL	96.5	<0.0381	<0.419	<0.419	n/a	n/a	101	0.419	n/a	U
S10M000099			14808-79-8	Sulfate	ug/mL	101	<0.0219	23.6	23.6	23.6	0.319	105	0.241	n/a	

U - < Det Limit

B - Estimated

NA = Not Analyzed, ND = Not Detectec

Attachment 2

HOLDING TIME REPORT

Hold Time Report      SDG222S20100188

Customer Sample ID	Sample Group	Laboratory Sample ID	Method	Sample Date	Received Date	Analysis Date	Analysis Lapse Time	Missed Holding Time
B23198	20100188	S10M000099	IC - ANIONS	02/25/10 14:02	02/25/10 15:00	02/26/10 02:49	13 hours	N
B23198	20100188	S10M000099	IC - ANIONS	02/25/10 14:02	02/25/10 15:00	04/05/10 20:24	39 days	Yes, NO2, Br

Attachment 3

RECEIPT PAPERWORK

<b>ATL</b>	<b>SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST</b>	LO-090-101 Rev <u>P.D. 1</u>
Date Samples Received: <u>2-25-10</u>		Group #: <del>20100188</del> <sup>JSB</sup> <u>4/21/10</u>
Number of Samples: <u>4</u>		<u>20100188</u>
Sample Custodian: <u>R. L. L. L.</u>		
<b>Sample Custodian to Complete:</b>		
Action	OK? (Y/N)	N/A
Comments		
RSA/COC provided?	✓	
RSR provided?		✓
Verify GKI is complete		↓
Check that outer custody seal is intact, if present		↓
Record cooler temperature in centigrade, as appropriate	✓	<input checked="" type="checkbox"/> Check if no cooler and/or no ice <u>18.8°C</u>
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.)		
<b>PM to Complete:</b>		
Samples acceptable for release? <u>yes</u>	PM Initials <u>APR</u>	Date <u>2-25-2010</u>
If No, comment on communication and resolution:		
Other Comments: <u>Sample in bag, no cooling</u>		



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? [X] 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: U Codes: K Codes: F Codes: F001 - F005

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.
D001: [ ] FP <100°F [ ] FP ≥100 <140°F [ ] DOT Oxidizer
D002: [ ] pH ≤2 [ ] pH ≥12.5 [ ] Solid Corrosive (WSC2)
D003: [ ] Cyanide [ ] Sulfide [ ] Water Reactive [ ] Other
D004-D043 (Identify applicable waste codes and concentrations):

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 [X] No [ ] Unknown
WT02: [ ] Yes [X] No [ ] Unknown
W001: [ ] Yes [X] No [ ] Unknown
List constituents and concentrations:
WP01: [ ] Yes [X] No [ ] Unknown
WP02: [ ] Yes [X] No [ ] Unknown
WP03: [ ] Yes [X] No [ ] Unknown
F003:\* [ ] Yes [X] No [ ] Unknown

4. Is this material TSCA regulated for PCBs? [ ] Yes [X] 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 [X] 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/AA Date 12/3/07

Attachment 4

CORRESPONDENCE

8/12/2010

**Problem and Discrepancy Report****222S****SDG 222S20100188**

---

**1. The data package has the following issues:**

- a) The Narrative, 3.1.1, Last paragraph states "C" flag was applied for Chloride. "C" Flag was not applied and not required. No C qualifier was applied to the electronic results.

**Resolution:** *Please check the qualifier and revise narrative.*

**Lab Response:**

- b) The Data Summary report for Original Results analyzed on 2/26/2010, Nitrate needs "C" Flag removed since it does not fit flagging criteria.

**Resolution:** *The electronic results that were submitted do not have the C qualifier applied. Please check the qualifier for Nitrate and make necessary changes.*

**Lab Response:**

- c) Electronic results are missing for nitrite on sample number B23198.

**Resolution:** *provide missing results.*

**Lab Response:**

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

Provide a resolution to each issue noted on the report

Page 1 of 1

## 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**

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.

**PROPOSED RESOLUTION**

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	<b>222S20100190</b>	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

<b>SAF</b>	<b>SDG</b>	<b>HEIS #</b>	<b>LAB ID</b>
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- ORIGINAL RESULTS- ANALYSIS DATE: 02/26/2010 SDG222520100188  
 CUSTOMER SAMPLE ID: B23C74

Laboratory sample ID	A	CAS #	Analyte	Result	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Qual Flags	Analysis date
S10M000099		14797-65-0	Nitrite	ug/mL	90.2	<0.0400	<0.440	<0.440	n/a	n/a	93.3	0.440	U	02/26/10 02:49
S10M000099		16887-00-6	Chloride	ug/mL	101	0.0365	3.38	3.32	3.35	1.79	102	0.0341		02/26/10 02:49
S10M000099		16984-48-8	Fluoride	ug/mL	93.0	<6.16E-03	0.224	0.252	0.238	11.7	99.9	0.0678	B	02/26/10 02:49
S10M000099		14797-55-8	Nitrate	ug/mL	101	<0.0162	3.37	3.42	3.39	1.65	105	0.178		02/26/10 02:49
S10M000099		24959-67-9	Bromide	ug/mL	102	<0.0237	<0.261	<0.261	n/a	n/a	104	0.261	U	02/26/10 02:49
S10M000099		14808-79-8	Sulfate	ug/mL	101	<0.0219	23.6	23.6	23.6	0.319	105	0.241		02/26/10 02:49
S10M000099		14265-44-2	Phosphate	ug/mL	96.5	<0.0381	<0.419	<0.419	n/a	n/a	101	0.419	U	02/26/10 02:49