

**FINAL REPORT FOR THE SAMPLES RECEIVED IN  
MARCH, 2010, FOR SAF S10-002**

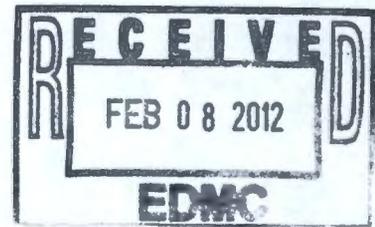
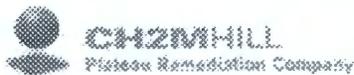
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SDG: 222S20100245**

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

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Prepared for:

Prepared by:



Mike Neely  
CH2M Hill Plateau Remediation Co.  
P.O. Box 850  
Richland, WA 99352  
509-373-0654

ATL, Inc.  
P.O. Box 250  
Richland, WA 99352-0250  
509-372-2525

*C. S. Menjivar* 04/13/2010  
C. S. Menjivar, Project Manager

**222-S LABORATORY****FINAL REPORT FOR THE SAMPLES RECEIVED IN MARCH, 2010  
FOR SAF S10-002**

## 1.0 INTRODUCTION

This final report presents the results for one water sample taken on March 8, 2010. The sample was analyzed in accordance with Sampling Authorization Form S10-002 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

## 2.0 SAMPLE RECEIPT AND HANDLING

One sample was received on March 9, 2010 with adequate paperwork. The measured temperature of the outside of the sample container was 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 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.

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 Nitrate, Nitrite, and Phosphate. This was due to following reasons:

- A dilution of the sample was prepared on 03/10/2010; however, this dilution was not suitable. The sample was analyzed at a later time by preparing two more additional dilutions on 03/11/2010 (Run #1) and 03/12/2010 (Run # 2). Chloride, Nitrate, and Sulfate were reported from the Run # 1 and Fluoride, Nitrite, Bromide, and Phosphate were reported from Run # 2 ( See Attachment 2).
- Partially expired holding time upon receipt of samples (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 S10-002; CH2M Hill, Plateau Remediation Company, Richland, Washington.

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Attachment 1

DATA SUMMARY REPORT

WSCF - Anions & HexCr  
 Data Summary of All Results

Sample Group: 20100245

Customer Group or SDG Number: 222S20100245

Customer Sample ID: B23WJ8

Customer Sample ID: B23WJ8

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000133			16984-48-8	Fluoride	ug/mL	94.6	<6.16E-03	0.396	n/a	n/a	n/a	n/a	6.16E-03	n/a	
S10M000133			16887-00-6	Chloride	ug/mL	99.6	<3.10E-03	28.3	n/a	n/a	n/a	n/a	0.0341	n/a	
S10M000133			14797-65-0	Nitrite	ug/mL	91.2	<0.0400	1.50	n/a	n/a	n/a	n/a	0.0400	n/a	
S10M000133			24959-67-9	Bromide	ug/mL	93.3	<0.0237	0.447	n/a	n/a	n/a	n/a	0.0237	n/a	
S10M000133			14797-55-8	Nitrate	ug/mL	91.9	<0.0162	37.3	n/a	n/a	n/a	n/a	0.178	n/a	
S10M000133			14265-44-2	Phosphate	ug/mL	95.1	<0.0381	<0.0381	n/a	n/a	n/a	n/a	0.0381	n/a	U
S10M000133			14808-79-8	Sulfate	ug/mL	91.7	<0.0219	146	n/a	n/a	n/a	n/a	0.241	n/a	

NA = Not Analyzed, ND = Not Detected

U - < Det Limit

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Attachment 2

HOLDING TIME REPORT

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**Hold Time Report**

**SDG 222S20100245**

Client Sample ID	Sample Group	Lab Sample ID	Method	Sample Date	Received Date	Run #	Analysis Date	Analysis Time Lapse (hours)	Missed Holding Time
B23WJ8	20100245	S10M000133	SW846-9056	03/08/10 13:00	03/09/10 09:30	1	03/11/10 01:28	60	Yes, for NO3
B23WJ8	20100245	S10M000133	SW846-9056	03/08/10 13:00	03/09/10 09:30	2	03/12/10 06:53	90	Yes, for NO2, PO4

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Attachment 3

RECEIPT PAPERWORK

<b>ATL</b>	<b>SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST</b>	LO-090-101 Rev <u>D.P.1</u>
Date Samples Received: <u>3.9.10</u>		Group #: <u>20100 238, 239, 240,</u> <u>241, 242, 243, 244,</u> <u>(245) 246, 247</u>
Number of Samples: <u>31</u>		
Sample Custodian: <u>[Signature]</u>		
<b>Sample Custodian to Complete:</b>		
Action	OK? (Y/N)	N/A
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	<u>8°C</u>	
		<input type="checkbox"/> Check if no cooler and/or no ice
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)	✓	<u>2B REF # 4</u>
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>RB</u>	Date <u>3-9-10</u>
If No, comment on communication and resolution:		<u>For J.R. Ritenour</u>
Other Comments:		

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C.O.C. #

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CHPRC		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>	
Collector <i>AP McIntyre</i>	Contact/Requester	Telephone No.	
SAF No. S10-002	Sampling Origin	Purchase Order/Charge Code 300071ES20	
Project Title SURV February 2010	Logbook No: HNF-N-506 <i>31 / 20</i>	Ice Chest No. N/A	
Shipped To (Lab) <i>222-S</i>	Method of Shipment Government Vehicle	Bill of Lading/Air Bill No. N/A	
Protocol SURV	Priority: 45 Days	Offsite Property No. N/A	
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** 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)		<b>SPECIAL INSTRUCTIONS</b> Hold Time <i>Site wide 6 KI OR per telephone w/ R. Waters 3/9/10</i>	
** ** 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)		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

*S10M0001B3*

*CRP# 20100245*

Sample No	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B23WJ8	N	W	3-8-10	1300	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	28 Days/48 Hours	Cool-4C
<i>SS 3-8-10</i>								

Relinquished By <i>AP McIntyre</i>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time MAR 08 2010 1530	Received By <i>[Signature]</i>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time MAR 09 2010 1530	Matrix * S = Soil DS = Drum Solid SE = Sediment DI = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>[Signature]</i>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 3/9/10 0815	Received By L.D. Wall CHPRC	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 3/9/10 0815	
Relinquished By L.D. Wall CHPRC	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time MAR 09 2010 930	Received By <i>[Signature]</i>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time MAR 09 2010 930	
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	

**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:  
Sitewide 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: _____	_____	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
U Codes: _____	_____	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
K Codes: _____	_____	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
F Codes: <u>F001 - F005; F039</u>	_____	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Unknown

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

D001: <input type="checkbox"/> FP <100°F	<input type="checkbox"/> FP ≥100 <140°F	<input type="checkbox"/> DOT Oxidizer	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
D002: <input type="checkbox"/> pH ≤2	<input type="checkbox"/> pH ≥12.5	<input type="checkbox"/> Solid Corrosive (WSC2)	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
D003: <input type="checkbox"/> Cyanide	<input type="checkbox"/> Sulfide	<input type="checkbox"/> Water Reactive	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Unknown
D004-D043 (Identify applicable waste codes and concentrations):		<input type="checkbox"/> Other _____ (i.e., peroxide former, explosive, air reactive)	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> 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) (\*State mixture rule for ignitability)

WT01: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	WP01: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown
WT02: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	WP02: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown
W001: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	WP03: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown
List constituents and concentrations:	F003: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown

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)

<input type="checkbox"/> PCB Liquid Waste	<input type="checkbox"/> PCB Bulk Product Waste	<input type="checkbox"/> PCB Transformer ≥500 ppm	<input type="checkbox"/> Unknown
<input type="checkbox"/> PCB Remediation Waste	<input type="checkbox"/> PCB R&D Waste	<input type="checkbox"/> PCB contaminated electrical equipment (capacitor/ballast) <500 ppm	
<input type="checkbox"/> PCB Spill Material	<input type="checkbox"/> PCB Item	<input type="checkbox"/> 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 SAJ/BA / SJ TRENT Date 12/9/07

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Attachment 4

ISSUE RESOLUTION FORM

20100245  
ISSUE RESOLUTION FORM

**CHPRC TRACKING NUMBER:** 10-091

Date : 3/14/10      SAF No.: See table

SDG: See table

LOGIN No.: See attached table

TEST: IC Anion: Nitrate, Nitrite, Phosphate

Sample No.(s) See table

Submitted By: G. P. Ritenour

Phone No: 372-2742

Fax No.: 373-4884

Submitted To: Hedi Hampt

Phone No. 376-4319

Fax No. 373-1788

<u>ISSUE</u>	<u>PROPOSED RESOLUTION</u>
<p>The table below displays the samples for which the holding time for NO3, NO2, and PO4 were missed. This was due to an instrument failure, limited capacity, and partially expired holding times upon receipt. The instrument column was replaced and calibrated and the analysis was completed</p>	<p>Analyze and note in narrative.</p>

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

Heidi Hampt 4/8/10  
Signature and Date

SDG	SAF	Lab ID	Client ID	Analysis	Sample Date/Time	Analysis Time Lapse	Anion
20100241	F10-065	S10M000127	B23C74	IC - ANIONS	3/8/2010 9:16	56	NO3
20100241	F10-065	S10M000127	B23C74	IC - ANIONS	3/8/2010 9:16	92	NO2, PO4
20100242	F10-119	S10M000128	B243V3	IC - ANIONS	3/8/2010 10:15	91	NO3,NO2,PO4
20100243	W10-002	S10M000129	B23X10	IC - ANIONS	3/8/2010 11:34	61	NO3,NO2,PO4
20100244	X10-033	S10M000130	B24CJ1	IC - ANIONS	3/8/2010 8:59	63	NO3,NO2,PO4
20100244	X10-033	S10M000131	B24CJ5	IC - ANIONS	3/8/2010 11:19	91	NO3,NO2,PO4
20100244	X10-033	S10M000132	B24CJ7	IC - ANIONS	3/8/2010 11:59	91	NO3,NO2,PO4
20100245	S10-002	S10M000133	B23WJ8	IC - ANIONS	3/8/2010 13:00	90	NO3,NO2,PO4
20100246	L10-008	S10M000134	B24942	IC - ANIONS	3/7/2010 23:41	74	NO3,NO2,PO4
20100247	X10-034	S10M000135	B248T7	IC - ANIONS	3/8/2010 13:56	60	NO3,NO2,PO4
20100247	X10-034	S10M000136	B248R8	IC - ANIONS	3/8/2010 13:56	60	NO3,NO2,PO4
20100247	X10-034	S10M000137	B249H9	IC - ANIONS	3/8/2010 10:37	64	NO3,NO2,PO4
20100247	X10-034	S10M000138	B24B04	IC - ANIONS	3/8/2010 9:28	65	NO3,NO2,PO4
20100247	X10-034	S10M000139	B24B14	IC - ANIONS	3/8/2010 13:52	61	NO3,NO2,PO4
20100247	X10-034	S10M000140	B24B17	IC - ANIONS	3/8/2010 12:14	63	NO3,NO2,PO4
20100247	X10-034	S10M000141	B24B20	IC - ANIONS	3/8/2010 10:23	65	NO3,NO2,PO4
20100247	X10-034	S10M000142	B24B23	IC - ANIONS	3/8/2010 7:55	95	NO3,NO2,PO4
20100247	X10-034	S10M000143	B24B47	IC - ANIONS	3/8/2010 12:23	64	NO3,NO2,PO4
20100244	X10-033	S10M000144	B24CJ9	IC - ANIONS	3/8/2010 10:55	66	NO3,NO2,PO4