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**FINAL REPORT FOR THE SAMPLES RECEIVED IN
MARCH, 2010, FOR SAF S10-003**

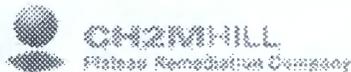
**Document No.: 20100272
SDG: 222S20100272**

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222-S LABORATORY**FINAL REPORT FOR THE SAMPLES RECEIVED IN MARCH, 2010
FOR SAF S10-003**

1.0 INTRODUCTION

This final report presents the results for one water sample taken on March 10, 2010. The sample was analyzed in accordance with Sampling Authorization Form S10-003, 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 March 10, 2010 with adequate paperwork. The measured temperature of the outside of the sample container was 12 °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 less 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, and phosphate. This was due to following reasons:

- Two dilutions of the sample were prepared on 03/11/2010 and 03/23/2010. Holding time requirement was met; however, these dilutions did not provide results with required detection limits for nitrite and phosphate (see Attachment 5).
- Due to an oversight of our analytical staff, reanalysis was not performed until 04/08/2010. Detection limits were achieved; 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, Applied Technologies and Laboratories International, Inc., Richland, Washington.

Sampling Authorization Form S10-003; CH2M Hill, Plateau Remediation Company, Richland, Washington.

Attachment 1

DATA SUMMARY REPORT

**WSCF - Anions & HexCr
 Data Summary of All Results**

Sample Group: 20100272

Customer Group or SDG Number: 222S20100272

Customer Sample ID: B24FL9

Customer Sample ID: B24FL9

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000180			16984-48-8	Fluoride	ug/mL	95.1	<6.16E-03	0.330	n/a	n/a	n/a	n/a	6.16E-03	n/a	
S10M000180			16887-00-6	Chloride	ug/mL	99.6	<3.10E-03	12.1	n/a	n/a	n/a	n/a	0.313	n/a	
S10M000180			24959-67-9	Bromide	ug/mL	95.6	<0.0237	0.253	n/a	n/a	n/a	n/a	0.0237	n/a	
S10M000180			14797-55-8	Nitrate	ug/mL	91.9	<0.0162	30.3	n/a	n/a	n/a	n/a	1.64	n/a	
S10M000180			14808-79-8	Sulfate	ug/mL	91.7	<0.0219	30.2	n/a	n/a	n/a	n/a	2.21	n/a	
S10M000180			14797-65-0	Nitrite	ug/mL	97.1	<0.0192	<0.0192	n/a	n/a	n/a	n/a	0.0192	n/a	U
S10M000180			14265-44-2	Phosphate	ug/mL	98.9	<0.0167	0.0539	n/a	n/a	n/a	n/a	0.0167	n/a	B

NA = Not Analyzed, ND = Not Detected

U - < Det Limit

B - Estimated

**WSCF - Anions & HexCr
 Data Summary of All Results**

Sample Group: 20100241

Customer Group or SDG Number: 222S20100241

Customer Sample ID: B23C74

Customer Sample ID: B23C74

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000127			16984-48-8	Fluoride	ug/mL	94.6	<6.16E-03	0.361	0.252	n/a	n/a	92.4	6.16E-03	n/a	
S10M000127			16887-00-6	Chloride	ug/mL	99.6	<3.10E-03	21.5	21.0	21.2	2.40	90.2	0.0341	n/a	
S10M000127			14797-65-0	Nitrite	ug/mL	91.2	<0.0400	<0.0400	<0.440	n/a	n/a	92.8	0.0400	n/a	U
S10M000127			24959-67-9	Bromide	ug/mL	93.3	<0.0237	0.243	<0.261	n/a	n/a	91.8	0.0237	n/a	
S10M000127			14797-55-8	Nitrate	ug/mL	91.9	<0.0162	128	145	n/a	n/a	141	1.64	n/a	
S10M000127			14265-44-2	Phosphate	ug/mL	95.1	<0.0381	<0.0381	<0.419	n/a	n/a	101	0.0381	n/a	U
S10M000127			14808-79-8	Sulfate	ug/mL	91.7	<0.0219	32.2	32.0	32.1	0.672	96.5	0.241	n/a	

NA = Not Analyzed, ND = Not Detected

U - < Det Limit

B - Estimated

**WSCF - Anions & HexCr
 Data Summary of All Results**

Sample Group: 20100269

Customer Group or SDG Number: 222S20100269

Customer Sample ID: B23PW8

Customer Sample ID: B23PW8

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000160			16984-48-8	Fluoride	ug/mL	94.6	<6.16E-03	<6.16E-03	<6.16E-03	n/a	n/a	97.2	6.16E-03	n/a	U
S10M000160			16887-00-6	Chloride	ug/mL	99.6	<3.10E-03	0.0183	0.0196	0.0189	6.81	95.7	3.10E-03	n/a	B
S10M000160			14797-65-0	Nitrite	ug/mL	91.2	<0.0400	<0.0400	<0.0400	n/a	n/a	89.1	0.0400	n/a	U
S10M000160			24959-67-9	Bromide	ug/mL	93.3	<0.0237	<0.0237	<0.0237	n/a	n/a	83.6	0.0237	n/a	U
S10M000160			14797-55-8	Nitrate	ug/mL	91.9	<0.0162	<0.0162	<0.0162	n/a	n/a	105	0.0162	n/a	U
S10M000160			14265-44-2	Phosphate	ug/mL	95.1	<0.0381	<0.0381	<0.0381	n/a	n/a	91.3	0.0381	n/a	U
S10M000160			14808-79-8	Sulfate	ug/mL	91.7	<0.0219	<0.0219	<0.0219	n/a	n/a	89.7	0.0219	n/a	U

NA = Not Analyzed, ND = Not Detected

U - < Det Limit

B - Estimated

**WSCF - Anions & HexCr
 Data Summary of All Results**

Sample Group: 20100247

Customer Group or SDG Number: 222S20100247

Customer Sample ID: B24B34

Customer Sample ID: B24B34

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000173			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	0.124	0.124	0.124	0.202	103	1.61E-03	n/a	
S10M000173			14797-65-0	Nitrite	ug/mL	94.8	<0.0192	<0.0192	<0.0192	n/a	n/a	97.3	0.0192	n/a	U
S10M000173			14808-79-8	Sulfate	ug/mL	103	<0.0187	73.6	74.0	73.8	0.532	75.6	0.0187	n/a	
S10M000173			24959-67-9	Bromide	ug/mL	107	<0.0580	0.185	0.186	0.186	0.630	99.0	0.0580	n/a	
S10M000173			14797-55-8	Nitrate	ug/mL	100	<0.0208	21.8	21.9	21.9	0.259	90.1	0.0208	n/a	
S10M000173			14265-44-2	Phosphate	ug/mL	97.0	<0.0167	0.0734	0.0626	0.0680	15.9	95.7	0.0167	n/a	B

NA = Not Analyzed, ND = Not Detected

U - < Det Limit

B - Estimated

Attachment 2

HOLDING TIME REPORT

HOLD TIME REPORT**SDG20100272**

Customer Sample ID	Customer sample ID	Laboratory Sample ID	Method	Sample Date	Received Date	Analysis Date	Analysis Lapse Time	Missed Holding Time
B24FL9	B24FL9	S10M000180	SW846-9056A	03/10/10 11:04	03/10/10 14:15	03/11/10 23:55	37 hours	N
B24FL9	B24FL9	S10M000180	SW846-9056A	03/10/10 11:04	03/10/10 14:15	03/24/10 23:59	15 days	N
B24FL9	B24FL9	S10M000180	SW846-9056A	03/10/10 11:04	03/10/10 14:15	04/08/10 11:10	29 days	Yes, NO2, PO4

Attachment 3

RECEIPT PAPERWORK

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev <u>D.D.1</u>
Date Samples Received: <u>3/10/10</u>		Group #: <u>20100272</u>
Number of Samples: <u>6</u>		
Sample Custodian: <u>Cheryl Edwards</u>		
Sample Custodian to Complete:		
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 <u>5°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. <u>refrigeration</u>)	✓	
Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)		
PM to Complete:		
Samples acceptable for release? <u>yes</u>	PM Initials _____	Date <u>3/10/10</u>
If No, comment on communication and resolution: <u>per CR</u>		
Other Comments:		

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
WTC2: <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 2A / SJ TRENT Date 12/9/07

Attachment 4

ISSUE RESOLUTION FORM

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-119

Date : 04/27/2010 SAF No.: S10-003

SDG: 222S20100272

LOGIN No.: S10M000180

TEST: IC Anions

Sample No.(s) : B24FL9

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 required detection limit for nitrite and phosphate was missed. Samples were reanalyzed; however, reanalysis was performed far out of the holding time in order to obtain the required detection limit.

PROPOSED RESOLUTION

Report the reanalysis with the lower detection limit and provide a table in report with original analysis results and analysis time.

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

Heidi Hampt 4/28/10

Signature and Date

Attachment 5

ORIGINAL ANALYSIS RESULTS/ ANALYSIS DATE

DATA SUMMARY REPORT- ORIGINAL RESULTS- ANALYSIS DATE SDG222S20100272

Customer Sample ID	Laboratory Sample ID	A	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spik Rec	Det Limit	Qual Flags	Analysis Date
B24FL9	S10M000180		24959-67-9	Bromide	ug/mL	95.6	<0.0237	0.253	n/a	n/a	n/a	n/a	0.0237		03/11/10 23:55
B24FL9	S10M000180		16887-00-6	Chloride	ug/mL	99.6	<3.10E-03	12.1	n/a	n/a	n/a	n/a	0.313		03/11/10 23:55
B24FL9	S10M000180		14797-65-0	Nitrite	ug/mL	91.2	<0.0400	<4.04	n/a	n/a	n/a	n/a	4.04	U	03/11/10 23:55
B24FL9	S10M000180		16984-48-8	Fluoride	ug/mL	95.1	<6.16E-03	0.330	n/a	n/a	n/a	n/a	6.16E-03		03/11/10 23:55
B24FL9	S10M000180		14797-55-8	Nitrate	ug/mL	91.9	<0.0162	30.3	n/a	n/a	n/a	n/a	1.64		03/11/10 23:55
B24FL9	S10M000180		14265-44-2	Phosphate	ug/mL	95.1	<0.0381	<3.85	n/a	n/a	n/a	n/a	3.85	U	03/11/10 23:55
B24FL9	S10M000180		14808-79-8	Sulfate	ug/mL	91.7	<0.0219	30.2	n/a	n/a	n/a	n/a	2.21		03/11/10 23:55