

**FINAL REPORT FOR THE SAMPLES RECEIVED IN  
MARCH, 2010, FOR SAF F09-070**

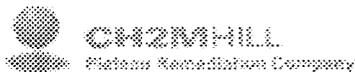
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SDG: 222S20100265**

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Advanced Technologies and Laboratories International, Inc.

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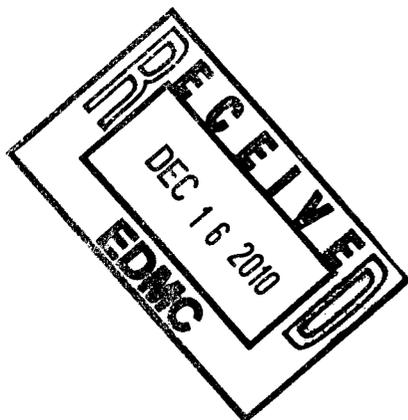
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**222-S LABORATORY****FINAL REPORT FOR SAMPLES RECEIVED IN MARCH, 2010,  
FOR SAF F09-070**

## 1.0 INTRODUCTION

This final report presents the result for one ground water sample taken on March 10, 2010. The sample was analyzed in accordance with Sampling Authorization Form F09-070; *ARRA-HR-3 Remedial Process Optimization Wells-QC (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

## 2.0 SAMPLE RECEIPT AND HANDLING

The sample was received on March 10, 2010, with adequate paperwork. The sample did not show evidence of cooling. The measured temperature of the outside of the sample container was 18 °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:

- "B" indicates that the reported result is greater than the method detection limit (MDL) and 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 Hexavalent Chromium by Spectrophotometric Determination**

The hexavalent chromium analysis was performed on direct aliquots of the sample. All requirements in the SAF and QAPP were met. The result for sample B23PW9 was above the detection limit but less than estimated quantitation limit. A "B" flag was applied to the sample

result. The result for the sample duplicate was less than the detection limit. Therefore, the RPD calculation is not applicable.

#### 4.0 PROCEDURES

Table 1 lists the analytical procedure used for analysis of this sample.

**Table 1. Analytical Procedures.**

Analysis	Preparation Method	Analysis Procedure
Hexavalent Chromium Analysis by Spectrophotometric Determination	NA	SW846-7196A

#### 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 F09-070, *ARRA 100-HR-3 Remedial Process Optimization Wells-QC*, 2009, 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: 20100265  
 Customer Group or SDG Number: 222S2010265  
 Customer Sample ID: B23PW9  
 Customer Sample ID: B23PW9

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000161			18540-29-9	Hexavalent Chromium	ug/mL	99.8	<9.00E-03	1.09E-02	<9.68E-03	n/a	n/a	111	9.68E-03	n/a	B

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Attachment 2

HOLDING TIME REPORT

20100265

Holding Time Report      SDG No 222S20100265

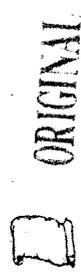
Sample Group	Sample	Matrix	Method	Sample Date	Received Date	Analysis Date	Missed Holding Time
20100265	S10M000161	LIQUID	SW846-7196A	03/10/10 08:45	03/10/10 09:15	03/10/10 18:32	N

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Attachment 3

RECEIPT PAPERWORK

ATL	<b>SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST</b>		LO-090-101 Rev <u>D.P.1</u>
Date Samples Received: <u>3.10.10</u>		Group #: <u>201000265</u>	
Number of Samples: <u>2</u>			
Sample Custodian: <u>[Signature]</u>			
<b>Sample Custodian to Complete:</b>			
Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?		✓	
Verify GKI is complete	✓		<u>on file</u>
Check that outer custody seal is intact, if present			
Record cooler temperature in centigrade, as appropriate	<u>18°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> )			<u>ZB 4# REF</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>RA</u>	Date <u>3-10-10</u>
If No, comment on communication and resolution: <u>For JR Ritenow</u>			
Other Comments:			

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY SAMPLE ANALYSIS REQUEST		F09-070-022	PAGE 1 OF 1
COLLECTOR <i>Choron</i>	COMPANY CONTACT DYEKMAN, DL	TELEPHONE NO. 373-2530	PROJECT COORDINATOR DYEKMAN, DL	PRICE CODE 1A	DATA TURNAROUND 24 Hours / 15 Days
SAMPLING LOCATION C7590 (199-D5-130); 1-001EB	PROJECT DESIGNATION ARRA 100-HR-3 Remedial Process Optimization Wells - QC	SAF NO. F09-070	COA 302160ES10	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE
ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH <i>N/A</i>	BILL OF LADING/AIR BILL NO. <i>N/A</i>		
SHIPPED TO <i>Waste Sampling &amp; Characterization</i>	OFFSITE PROPERTY NO. <i>N/A</i>				
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water Wf=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) <i>8°C</i>	PRESERVATION <i>Cool-1C</i>			
SPECIAL HANDLING AND/OR STORAGE	TYPE OF CONTAINER <i>ag</i>	NO. OF CONTAINER(S) <i>1</i>			
	VOLUME <i>500ml</i>				
	SAMPLE ANALYSIS <i>Chromium Hex-7/36 (hexavalent Chromium)</i>				
SAMPLE NO. B23PW9	MATRIX* WATER	SAMPLE DATE <i>3/10/10</i>	SAMPLE TIME <i>0845</i>		
<i>Group # 201000265</i>					
<i>Sample # 3101000161</i>					
CHAIN OF POSSESSION	SIGN/ PRINT NAMES	DATE/TIME	DATE/TIME	SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Hickins / Labella</i>	RECEIVED BY/STORED IN <i>[Signature]</i>	DATE/TIME <i>3/10/10</i>	DATE/TIME <i>9:15</i>	** The CACN for all analytical work at WSCF laboratory is 401649ES20.	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME	** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GK1 applies to this SAF.	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

20100265

222-S

WRPS, P. O. Box 850

Richland, WA

Phone: (509) 376-5029 / FAX: (509) 372-1878

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Sample Group: 20100265 - CACN/COA 75A/401649

Specification Entity: WSCF - Anions & HexCr

The following samples were received from you on 03/10/2010. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using 222-S.

Sample	Customer Sample ID	Matrix	Sample Date
Tests Scheduled			
S10M000160 <del>IC ANIONS</del>	B23PW8 <i>Cancelled 10K 3-17-10</i>	LIQUID	03/10/2010
S10M000161 CHROMIUM VI	B23PW9	LIQUID	03/10/2010

Test Acronym Description

Test Acronym	Description
CHROMIUM VI	Chromium (VI) by Spec.
IC - ANIONS	Anions by IC SW846

**GENERATOR KNOWLEDGE INFORMATION**

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

2. List generator knowledge or description of process that produced sample. Or list description of sample source:  
100 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: _____	_____	<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: _____	_____	<input type="radio"/> Yes	<input checked="" 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: SJ TRENT / [Signature] Date 12/3/07