

**FINAL REPORT FOR THE SAMPLES RECEIVED IN  
FEBRUARY, 2010 FROM PROJECT ID RCRA10**

**Document No.: 20100093  
SDG: 222S20100093**

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 2-12-2010  
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## 222-S LABORATORY

### FINAL REPORT FOR THE SAMPLES RECEIVED IN FEBRUARY, 2010 FROM PROJECT ID RCRA10

#### 1.0 INTRODUCTION

This final report presents the results for the four ground water samples taken on February 1, 2010. The samples were analyzed in accordance with Sampling Authorization Form W10-001; *RCRA Ground Water Sampling* (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

A total of four samples were received on February 2, 2010 with adequate paperwork. The samples were not in a cooler and did not show evidence of cooling and the client was informed.

#### 3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for those analytes requested in the SAF. 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 on direct aliquots of all samples. All requirements in the SAF and QAPP were met. Nitrate was detected below the quantitation level in two of the continuing calibration blanks. Since these concentrations were less than 5% of the lowest sample result, the data quality was not affected and reanalysis not required. The nitrate, nitrite, and phosphate holding time of 48 hours was missed for all samples. This was due to the late receipt of the samples at the 222S Laboratory caused by an unscheduled ventilation outage at

the primary laboratory. Since the holding times were only missed by 2 to 5 hours, it is the laboratory's opinion that the final results were not affected.

#### 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	SW846-9056

#### 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 W10-001; *RCRA Ground Water Sampling*, 2009, CH2M Hill, Plateau Remediation Company, Richland, Washington

Attachment 1

DATA SUMMARY REPORT

**WSCF Rad Screens  
 Data Summary of All Results**

**Sample Group: 20100093**

**Customer Group or SDG Number: 222S20100093**

**Customer Sample ID: B23D27**

**Sample Portion: Total**

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000059			16984-48-8	Fluoride	ug/mL	95.6	<6.16E-03	1.13	n/a	n/a	n/a	n/a	6.16E-03	n/a	
S10M000059			16887-00-6	Chloride	ug/mL	102	<3.10E-03	47.1	n/a	n/a	n/a	n/a	0.127	n/a	
S10M000059			14797-65-0	Nitrite	ug/mL	93.2	<0.0400	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
S10M000059			24959-67-9	Bromide	ug/mL	102	<0.0237	0.506	n/a	n/a	n/a	n/a	0.0237	n/a	
S10M000059			14797-55-8	Nitrate	ug/mL	101	<0.0162	89.2	n/a	n/a	n/a	n/a	0.664	n/a	
S10M000059			14265-44-2	Phosphate	ug/mL	99.4	<0.0381	<0.0381	n/a	n/a	n/a	n/a	0.0381	n/a	U
S10M000059			14808-79-8	Sulfate	ug/mL	101	<0.0219	65.5	n/a	n/a	n/a	n/a	0.898	n/a	

NA = Not Analyzed, ND = Not Detected

U - Less Than Detection Limit

**WSCF Rad Screens  
Data Summary of All Results**

**Sample Group: 20100093**

**Customer Group or SDG Number: 222S20100093**

**Customer Sample ID: B23D35**

**Sample Portion: Total**

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000061			16984-48-8	Fluoride	ug/mL	95.6	<6.16E-03	0.665	0.663	0.664	0.283	94.9	6.16E-03	n/a	
S10M000061			16887-00-6	Chloride	ug/mL	102	<3.10E-03	17.9	17.8	17.9	0.502	94.5	0.0341	n/a	
S10M000061			14797-65-0	Nitrite	ug/mL	93.2	<0.0400	<0.440	<0.440	n/a	n/a	95.8	0.440	n/a	U
S10M000061			24959-67-9	Bromide	ug/mL	102	<0.0237	0.299	0.283	0.291	5.61	100	0.0237	n/a	
S10M000061			14797-55-8	Nitrate	ug/mL	101	<0.0162	120	119	120	0.692	106	0.178	n/a	
S10M000061			14265-44-2	Phosphate	ug/mL	99.4	<0.0381	<0.419	<0.419	n/a	n/a	106	0.419	n/a	U
S10M000061			14808-79-8	Sulfate	ug/mL	101	<0.0219	35.5	35.0	35.3	1.45	104	0.241	n/a	

NA = Not Analyzed, ND = Not Detected

U - Less Than Detection Limit

**WSCF Rad Screens  
 Data Summary of All Results**

**Sample Group: 20100093**

**Customer Group or SDG Number: 222S20100093**

**Customer Sample ID: B23D53**

**Sample Portion: Total**

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000062			16984-48-8	Fluoride	ug/mL	95.6	<6.16E-03	0.607	n/a	n/a	n/a	n/a	6.16E-03	n/a	
S10M000062			16887-00-6	Chloride	ug/mL	102	<3.10E-03	10.7	n/a	n/a	n/a	n/a	0.0186	n/a	
S10M000062			14797-65-0	Nitrite	ug/mL	93.2	<0.0400	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
S10M000062			24959-67-9	Bromide	ug/mL	102	<0.0237	<0.0237	n/a	n/a	n/a	n/a	0.0237	n/a	U
S10M000062			14797-55-8	Nitrate	ug/mL	101	<0.0162	44.9	n/a	n/a	n/a	n/a	0.0972	n/a	
S10M000062			14265-44-2	Phosphate	ug/mL	99.4	<0.0381	<0.0381	n/a	n/a	n/a	n/a	0.0381	n/a	U
S10M000062			14808-79-8	Sulfate	ug/mL	101	<0.0219	22.3	n/a	n/a	n/a	n/a	0.131	n/a	

NA = Not Analyzed, ND = Not Detected

U - Less Than Detection Limit

**WSCF Rad Screens  
 Data Summary of All Results**

**Sample Group: 20100093**

**Customer Group or SDG Number: 222S20100093**

**Customer Sample ID: B23DN8**

**Sample Portion: Total**

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000060			16984-48-8	Fluoride	ug/mL	95.6	<6.16E-03	0.839	n/a	n/a	n/a	n/a	6.16E-03	n/a	
S10M000060			16887-00-6	Chloride	ug/mL	102	<3.10E-03	18.5	n/a	n/a	n/a	n/a	0.0341	n/a	
S10M000060			14797-65-0	Nitrite	ug/mL	93.2	<0.0400	<0.0400	n/a	n/a	n/a	n/a	0.0400	n/a	U
S10M000060			24959-67-9	Bromide	ug/mL	102	<0.0237	0.292	n/a	n/a	n/a	n/a	0.0237	n/a	
S10M000060			14797-55-8	Nitrate	ug/mL	101	<0.0162	118	n/a	n/a	n/a	n/a	0.178	n/a	
S10M000060			14265-44-2	Phosphate	ug/mL	99.4	<0.0381	<0.0381	n/a	n/a	n/a	n/a	0.0381	n/a	U
S10M000060			14808-79-8	Sulfate	ug/mL	101	<0.0219	35.7	n/a	n/a	n/a	n/a	0.241	n/a	

NA = Not Analyzed, ND = Not Detected

U - Less Than Detection Limit

Attachment 2

HOLDING TIME REPORT

**Hold Time Report - IC Anions**

<b>Client Sample ID</b>	<b>Sample Group</b>	<b>Sample</b>	<b>Matrix</b>	<b>Method</b>	<b>Sample Date</b>	<b>Received Date</b>	<b>Analysis Date</b>	<b>Lapse Time (hours)</b>	<b>Holding Time Missed</b>
B23D27	20100093	S10M000059	LIQUID	SW846-9056	02/01/10 09:39	02/02/10 15:40	2/3/2010 14:27	53	Y
B23DN8	20100093	S10M000060	LIQUID	SW846-9056	02/01/10 10:42	02/02/10 15:40	2/3/2010 15:00	52	Y
B23D35	20100093	S10M000061	LIQUID	SW846-9056	02/01/10 12:37	02/02/10 15:40	2/3/2010 15:11	51	Y
B23D53	20100093	S10M000062	LIQUID	SW846-9056	02/01/10 14:26	02/02/10 15:40	2/3/2010 16:20	50	Y

Attachment 3

RECEIPT PAPERWORK

<b>ATL</b>	<b>SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST</b>	LO-090-101 Rev <u>DD-1</u>
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Date Samples Received: 2-2-10 Group #: 222520100093  
 Number of Samples: 7  
 Sample Custodian: Tu=Colloc

**Sample Custodian to Complete:**

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

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

**PM to Complete:**

Samples acceptable for release? yes PM Initials dpr Date 2/2/2010  
 If No, comment on communication and resolution:  
  
 Other Comments:

<b>CHPRC</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>		C.O.C. # <b>W10-001-472</b>
				Page 1 of 1
Collector <b>S.J. Southerland CHPRC</b>	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650		
SAF No. W10-001	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20		
Project Title RCRA JANUARY 2010	Logbook No: HNF-N-506 <b>28145</b>	Ice Chest No. N/A		
Shipped To (Lab) Waste Sampling & Characterization <b>2225</b>	Method of Shipment Government Vehicle	Bill of Lading/Air Bill No. N/A		
Protocol RCRA <b>MR 2-17-10</b>	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 Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647		
222520100093		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B23D27	19 N	W	2-1-10	0939	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	28 Days/48 Hours	Cool-4C
<del>                             S10m00059                               2/1/10                              R. Wall                         </del>								

Relinquished By <b>S.J. Southerland CHPRC</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>FEB 01 2010 1510</b>	Received By <b>MD Kessler MD Zamboni</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>FEB 01 2010 1510</b>	Matrix * S = Soil                      DS = Drum Solid SF = Sediment            DL = Drum Lioni SO = Solid                    T = Tissue SL = Sludge                 WI = Wine W = Water                    L = Lioniid O = Oil                        V = Vegetation A = Air                         X = Other
Relinquished By <b>MD Kessler MD Zamboni</b>			Date/Time <b>FEB 02 2010 1530</b>	Received By <b>RD Julian CHPRC</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>FEB 02 2010 1530</b>	
Relinquished By <b>RD Julian CHPRC</b>			Date/Time <b>FEB 02 2010 1540</b>	Received By <b>[Signature]</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time <b>FEB 02 2010 1540</b>	
Relinquished By			Date/Time	Received By			Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	





<b>CHPRC</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>		C.O.C. # <b>W10-001-485</b>
		Page <u>1</u> of <u>1</u>		
<b>Collector</b> S.J. Southernland CHPRC	<b>Contact/Requester</b> Karen Waters-Husted	<b>Telephone No.</b> 509-376-4650		
<b>SAF No.</b> W10-001	<b>Sampling Origin</b> Hanford Site	<b>Purchase Order/Charge Code</b> 300071ES20		
<b>Project Title</b> RCRA JANUARY 2010	<b>Logbook No:</b> HNF-N-506 <u>28, 45</u>	<b>Ice Chest No.</b> N/A		
<b>Shipped To (Lab)</b> Waste Sampling & Characterization <u>2225</u>	<b>Method of Shipment</b> Government Vehicle	<b>Bill of Lading/Air Bill No.</b> N/A		
<b>Protocol</b> RCRA <u>per 2-12-10</u>	<b>Priority:</b> 45 Days	<b>Offsite Property No.</b> 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 Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647		
		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	
B23D53	22	N	W	2-10	1426	1x500-mL P	300.0_ANIONS_IC: List-1 (5)	28 Days/48 Hours	Cool~4C
<div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; border: 1px solid black; transform: rotate(-45deg); opacity: 0.5;"> <p style="font-size: 2em; margin: 0;">2225 20100093</p> <p style="font-size: 2em; margin: 0;">510m00 0062</p> <p style="font-size: 2em; margin: 0;">2/1/10</p> <p style="font-size: 2em; margin: 0;">R. Wall</p> </div>									

Relinquished By S.J. Southernland CHPRC	Date/Time FEB 01 2010	Received By MD Kessler/WJ Kuhn	Date/Time FEB 01 2010	Matrix * S = Soil                      DS = Drum Solid SF = Sediment              DL = Drum Lini SO = Solid                    T = Tissue SL = Sludge                  WI = Wine W = Water                    L = Liquid O = Oil                        V = Vegetation A = Air                        X = Other	
Relinquished By MD Kessler/WJ Kuhn	Date/Time FEB 02 2010 1530	Received By RD Julian CHPRC	Date/Time FEB 02 2010 1530		
Relinquished By RD Julian CHPRC	Date/Time FEB 02 2010 1540	Received By T. Truboch	Date/Time FEB 02 2010 1540		
Relinquished By	Date/Time	Received By	Date/Time		
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By	Date/Time