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FINAL REPORT FOR THE SAMPLES RECEIVED IN MARCH, 2010, FOR SAF F10-079

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222-S LABORATORY

FINAL REPORT FOR THE SAMPLES RECEIVED IN MARCH, 2010 FOR SAF F10-079

1.0 INTRODUCTION

This final report presents the results for two ground water samples taken on February 14, 2010. The samples were analyzed in accordance with Sampling Authorization Form F10-079; *100K Orphan Drum Characterization-Other liquid* (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
Attachment 4	Issue resolution Form
Attachment 5	VOA Surrogates and MS/MSD Recoveries
Attachment 6	Analytical Data –Analysis performed on 03/10/10.

2.0 SAMPLE RECEIPT AND HANDLING

The samples were received on March 10, 2010, with adequate paperwork. The measured temperature of the outside of the sample container was 2 °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 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.
- "J" 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 Volatile Organic Analysis

The VOA analysis was performed on direct aliquots of the sample. All requirements in the SAF and QAPP were met, except the holding time requirement. This was due to a near completely expired holding time upon receipt of samples at the laboratory. The samples were received when there was less than one day remaining of the holding time period (see Attachment 4).

Since the Chain of Custody (COC) indicated that the samples were possibly concentrated waste, they were initially analyzed by using only 0.1mL. This analysis was performed on 03/10/2010, which met holding time requirement. However, due to failure of the auto sampler, only one sample was analyzed at this time (see Attachment 6). Samples could not be reanalyzed until 03/21/2010.

The following analytes were detected in the blank at a level below the estimated quantitation limit (EQL): Styrene, 1,3-Dichlorobenzene, and 1,2-Dichlorobenzene. However, these analytes were not detected in the samples. In addition, Methylene Chloride was detected in the samples, but was not detected in the blank or LCS standard.

Table 1 lists the analytical procedures used for analysis of these samples.

Table 1. Analytical Procedures.

Analysis	Preparation Method	Analysis Procedure
VOC-GC/MS	N/A	SW846-8260B

4.0 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 F10-079; *100K Orphan Drum Characterization-Other Liquid*, CH2M Hill, Plateau Remediation Company, Richland, Washington.

Attachment 1

DATA SUMMARY REPORT

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100268

Customer Group or SDG Number: 222S20100268

Customer Sample ID: B23F80

Customer Sample ID: B23F80

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000164			540-59-0	1,2-Dichloroethylene	ug/L	n/a	<0.0790	<0.0878	n/a	n/a	n/a	n/a	0.0878	n/a	U
S10M000164			1330-20-7	Xylenes (total)	ug/L	n/a	<0.0940	0.114	n/a	n/a	n/a	n/a	0.104	n/a	J
S10M000164			THM	Total Trihalomethanes	ug/L	n/a	<0.0670	<0.0744	n/a	n/a	n/a	n/a	0.0744	n/a	U
S10M000164			74-87-3	Chloromethane	ug/L	n/a	<0.0275	<0.0306	n/a	n/a	n/a	n/a	0.0306	n/a	U
S10M000164			75-01-4	Vinyl chloride	ug/L	n/a	<0.0486	<0.0540	n/a	n/a	n/a	n/a	0.0540	n/a	U
S10M000164			74-83-9	Bromomethane	ug/L	n/a	<0.231	<0.256	n/a	n/a	n/a	n/a	0.256	n/a	U
S10M000164			75-00-3	Chloroethane	ug/L	n/a	<0.104	<0.116	n/a	n/a	n/a	n/a	0.116	n/a	U
S10M000164			75-35-4	1,1-Dichloroethene	ug/L	96.8	<0.172	<0.191	n/a	n/a	n/a	89.7	0.191	n/a	U
S10M000164			67-64-1	Acetone	ug/L	118	<0.573	4.76	n/a	n/a	n/a	98.8	0.637	n/a	J
S10M000164			75-15-0	Carbon disulfide	ug/L	n/a	<0.0211	1.58	n/a	n/a	n/a	n/a	0.0234	n/a	
S10M000164			75-09-2	Methylenechloride	ug/L	n/a	<0.0396	0.284	n/a	n/a	n/a	n/a	0.0440	n/a	J
S10M000164			75-34-3	1,1-Dichloroethane	ug/L	n/a	<0.0297	<0.0330	n/a	n/a	n/a	n/a	0.0330	n/a	U
S10M000164			78-93-3	2-Butanone	ug/L	93.0	<0.458	1.92	n/a	n/a	n/a	96.2	0.509	n/a	J
S10M000164			67-66-3	Chloroform	ug/L	n/a	<0.0414	<0.0460	n/a	n/a	n/a	n/a	0.0460	n/a	U
S10M000164			56-23-5	Carbon tetrachloride	ug/L	n/a	<0.0479	<0.0532	n/a	n/a	n/a	n/a	0.0532	n/a	U
S10M000164			109-99-9	Tetrahydrofuran	ug/L	n/a	<0.275	<0.306	n/a	n/a	n/a	n/a	0.306	n/a	U
S10M000164			71-55-6	1,1,1-Trichloroethane	ug/L	n/a	<0.0433	<0.0481	n/a	n/a	n/a	n/a	0.0481	n/a	U
S10M000164			71-36-3	1-Butanol	ug/L	104	<1.15	<1.28	n/a	n/a	n/a	120	1.28	n/a	U
S10M000164			71-43-2	Benzene	ug/L	100	<0.0163	0.0920	n/a	n/a	n/a	97.4	0.0181	n/a	J
S10M000164			107-06-2	1,2-Dichloroethane	ug/L	n/a	<0.0243	<0.0270	n/a	n/a	n/a	n/a	0.0270	n/a	U
S10M000164			79-01-6	Trichloroethene	ug/L	101	<0.0378	<0.0420	n/a	n/a	n/a	96.4	0.0420	n/a	U
S10M000164			107-87-9	2-Pentanone	ug/L	n/a	<0.476	<0.529	n/a	n/a	n/a	n/a	0.529	n/a	U
S10M000164			78-87-5	1,2-Dichloropropane	ug/L	n/a	<0.0603	<0.0670	n/a	n/a	n/a	n/a	0.0670	n/a	U
S10M000164			75-27-4	Bromodichloromethane	ug/L	n/a	<0.0241	<0.0268	n/a	n/a	n/a	n/a	0.0268	n/a	U
S10M000164			108-10-1	Hexone	ug/L	110	<0.453	<0.503	n/a	n/a	n/a	113	0.503	n/a	U
S10M000164			10061-01-5	cis-1,3-Dichloropropene	ug/L	n/a	<0.0500	<0.0556	n/a	n/a	n/a	n/a	0.0556	n/a	U
S10M000164			108-88-3	Toluene	ug/L	111	<0.0522	0.200	n/a	n/a	n/a	104	0.0580	n/a	J
S10M000164			591-78-6	2-Hexanone	ug/L	108	<0.454	<0.505	n/a	n/a	n/a	114	0.505	n/a	U
S10M000164			10061-02-6	trans-1,3-Dichloropropene	ug/L	n/a	<0.0591	<0.0657	n/a	n/a	n/a	n/a	0.0657	n/a	U

NA = Not Analyzed, ND = Not Detectec

J - Estimated

U - < Det Limit

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100268

Customer Group or SDG Number: 222S20100268

Customer Sample ID: B23F80

Customer Sample ID: B23F80

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000164			127-18-4	Tetrachloroethene	ug/L	n/a	<0.0583	<0.0648	n/a	n/a	n/a	n/a	0.0648	n/a	U
S10M000164			79-00-5	1,1,2-Trichloroethane	ug/L	n/a	<0.0230	<0.0256	n/a	n/a	n/a	n/a	0.0256	n/a	U
S10M000164			124-48-1	Dibromochloromethane	ug/L	n/a	<0.0225	<0.0250	n/a	n/a	n/a	n/a	0.0250	n/a	U
S10M000164			100-41-4	Ethylbenzene	ug/L	n/a	<0.0334	<0.0371	n/a	n/a	n/a	n/a	0.0371	n/a	U
S10M000164			108-90-7	Chlorobenzene	ug/L	106	<0.0320	<0.0356	n/a	n/a	n/a	102	0.0356	n/a	U
S10M000164			100-42-5	Styrene	ug/L	n/a	0.162	<0.0438	n/a	n/a	n/a	n/a	0.0438	n/a	U
S10M000164			75-25-2	Bromoform	ug/L	n/a	<0.0299	<0.0332	n/a	n/a	n/a	n/a	0.0332	n/a	U
S10M000164			79-34-5	1,1,2,2-Tetrachloroethane	ug/L	n/a	<0.0203	<0.0226	n/a	n/a	n/a	n/a	0.0226	n/a	U
S10M000164			541-73-1	1,3-Dichlorobenzene	ug/L	n/a	0.116	<0.0276	n/a	n/a	n/a	n/a	0.0276	n/a	U
S10M000164			106-46-7	1,4-Dichlorobenzene	ug/L	n/a	<0.0487	<0.0541	n/a	n/a	n/a	n/a	0.0541	n/a	U
S10M000164			95-50-1	1,2-Dichlorobenzene	ug/L	n/a	0.116	<0.0506	n/a	n/a	n/a	n/a	0.0506	n/a	U
S10M000164			120-82-1	1,2,4-Trichlorobenzene	ug/L	n/a	<0.0566	<0.0629	n/a	n/a	n/a	n/a	0.0629	n/a	U
S10M000164			1868-53-7	Dibromofluoromethane	ug/L	96.3	9.75	10.8	n/a	n/a	n/a	95.2	0.0592	n/a	
S10M000164			17060-07-0	1,2-Dichloroethane-d4	ug/L	95.6	9.70	11.2	n/a	n/a	n/a	97.0	0.166	n/a	
S10M000164			2037-26-5	Toluene-d8	ug/L	104	10.7	11.9	n/a	n/a	n/a	98.3	0.0774	n/a	
S10M000164			460-00-4	4-Bromofluorobenzene	ug/L	103	10.4	11.4	n/a	n/a	n/a	104	0.0906	n/a	

NA = Not Analyzed, ND = Not Detectec

J - Estimated

U - < Det Limit

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100268

Customer Group or SDG Number: 222S20100268

Customer Sample ID: B23F80-A

Customer Sample ID: B23F80-A

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000163			540-59-0	1,2-Dichloroethylene	ug/L	n/a	<0.0790	<0.0878	n/a	n/a	n/a	n/a	0.0878	n/a	U
S10M000163			1330-20-7	Xylenes (total)	ug/L	n/a	<0.0940	<0.104	n/a	n/a	n/a	n/a	0.104	n/a	U
S10M000163			THM	Total Trihalomethanes	ug/L	n/a	<0.0670	<0.0744	n/a	n/a	n/a	n/a	0.0744	n/a	U
S10M000163			74-87-3	Chloromethane	ug/L	n/a	<0.0275	<0.0306	n/a	n/a	n/a	n/a	0.0306	n/a	U
S10M000163			75-01-4	Vinyl chloride	ug/L	n/a	<0.0486	<0.0540	n/a	n/a	n/a	n/a	0.0540	n/a	U
S10M000163			74-83-9	Bromomethane	ug/L	n/a	<0.231	<0.256	n/a	n/a	n/a	n/a	0.256	n/a	U
S10M000163			75-00-3	Chloroethane	ug/L	n/a	<0.104	<0.116	n/a	n/a	n/a	n/a	0.116	n/a	U
S10M000163			75-35-4	1,1-Dichloroethene	ug/L	96.8	<0.172	<0.191	n/a	n/a	n/a	n/a	0.191	n/a	U
S10M000163			67-64-1	Acetone	ug/L	118	<0.573	1.65	n/a	n/a	n/a	n/a	0.637	n/a	J
S10M000163			75-15-0	Carbon disulfide	ug/L	n/a	<0.0211	<0.0234	n/a	n/a	n/a	n/a	0.0234	n/a	U
S10M000163			75-09-2	Methylenechloride	ug/L	n/a	<0.0396	0.585	n/a	n/a	n/a	n/a	0.0440	n/a	
S10M000163			75-34-3	1,1-Dichloroethane	ug/L	n/a	<0.0297	<0.0330	n/a	n/a	n/a	n/a	0.0330	n/a	U
S10M000163			78-93-3	2-Butanone	ug/L	93.0	<0.458	<0.509	n/a	n/a	n/a	n/a	0.509	n/a	U
S10M000163			67-66-3	Chloroform	ug/L	n/a	<0.0414	<0.0460	n/a	n/a	n/a	n/a	0.0460	n/a	U
S10M000163			56-23-5	Carbon tetrachloride	ug/L	n/a	<0.0479	<0.0532	n/a	n/a	n/a	n/a	0.0532	n/a	U
S10M000163			109-99-9	Tetrahydrofuran	ug/L	n/a	<0.275	<0.306	n/a	n/a	n/a	n/a	0.306	n/a	U
S10M000163			71-55-6	1,1,1-Trichloroethane	ug/L	n/a	<0.0433	<0.0481	n/a	n/a	n/a	n/a	0.0481	n/a	U
S10M000163			71-36-3	1-Butanol	ug/L	104	<1.15	<1.28	n/a	n/a	n/a	n/a	1.28	n/a	U
S10M000163			71-43-2	Benzene	ug/L	100	<0.0163	0.0667	n/a	n/a	n/a	n/a	0.0181	n/a	J
S10M000163			107-06-2	1,2-Dichloroethane	ug/L	n/a	<0.0243	<0.0270	n/a	n/a	n/a	n/a	0.0270	n/a	U
S10M000163			79-01-6	Trichloroethene	ug/L	101	<0.0378	<0.0420	n/a	n/a	n/a	n/a	0.0420	n/a	U
S10M000163			107-87-9	2-Pentanone	ug/L	n/a	<0.476	<0.529	n/a	n/a	n/a	n/a	0.529	n/a	U
S10M000163			78-87-5	1,2-Dichloropropane	ug/L	n/a	<0.0603	<0.0670	n/a	n/a	n/a	n/a	0.0670	n/a	U
S10M000163			75-27-4	Bromodichloromethane	ug/L	n/a	<0.0241	<0.0268	n/a	n/a	n/a	n/a	0.0268	n/a	U
S10M000163			108-10-1	Hexone	ug/L	110	<0.453	<0.503	n/a	n/a	n/a	n/a	0.503	n/a	U
S10M000163			10061-01-5	cis-1,3-Dichloropropene	ug/L	n/a	<0.0500	<0.0556	n/a	n/a	n/a	n/a	0.0556	n/a	U
S10M000163			108-88-3	Toluene	ug/L	111	<0.0522	0.147	n/a	n/a	n/a	n/a	0.0580	n/a	J
S10M000163			591-78-6	2-Hexanone	ug/L	108	<0.454	1.03	n/a	n/a	n/a	n/a	0.505	n/a	J
S10M000163			10061-02-6	trans-1,3-Dichloropropene	ug/L	n/a	<0.0591	<0.0657	n/a	n/a	n/a	n/a	0.0657	n/a	U

NA = Not Analyzed, ND = Not Detectec

J - Estimated

U - < Det Limit

WSCF - Anions & HexCr
Data Summary of All Results

Sample Group: 20100268

Customer Group or SDG Number: 222S20100268

Customer Sample ID: B23F80-A

Customer Sample ID: B23F80-A

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S10M000163		127-18-4	Tetrachloroethene	ug/L	n/a	<0.0583	<0.0648	n/a	n/a	n/a	n/a	0.0648	n/a	U
S10M000163		79-00-5	1,1,2-Trichloroethane	ug/L	n/a	<0.0230	<0.0256	n/a	n/a	n/a	n/a	0.0256	n/a	U
S10M000163		124-48-1	Dibromochloromethane	ug/L	n/a	<0.0225	<0.0250	n/a	n/a	n/a	n/a	0.0250	n/a	U
S10M000163		100-41-4	Ethylbenzene	ug/L	n/a	<0.0334	<0.0371	n/a	n/a	n/a	n/a	0.0371	n/a	U
S10M000163		108-90-7	Chlorobenzene	ug/L	106	<0.0320	<0.0356	n/a	n/a	n/a	n/a	0.0356	n/a	U
S10M000163		100-42-5	Styrene	ug/L	n/a	0.162	<0.0438	n/a	n/a	n/a	n/a	0.0438	n/a	U
S10M000163		75-25-2	Bromoform	ug/L	n/a	<0.0299	<0.0332	n/a	n/a	n/a	n/a	0.0332	n/a	U
S10M000163		79-34-5	1,1,2,2-Tetrachloroethane	ug/L	n/a	<0.0203	<0.0226	n/a	n/a	n/a	n/a	0.0226	n/a	U
S10M000163		541-73-1	1,3-Dichlorobenzene	ug/L	n/a	0.116	<0.0276	n/a	n/a	n/a	n/a	0.0276	n/a	U
S10M000163		106-46-7	1,4-Dichlorobenzene	ug/L	n/a	<0.0487	<0.0541	n/a	n/a	n/a	n/a	0.0541	n/a	U
S10M000163		95-50-1	1,2-Dichlorobenzene	ug/L	n/a	0.116	<0.0506	n/a	n/a	n/a	n/a	0.0506	n/a	U
S10M000163		120-82-1	1,2,4-Trichlorobenzene	ug/L	n/a	<0.0566	<0.0629	n/a	n/a	n/a	n/a	0.0629	n/a	U
S10M000163		1868-53-7	Dibromofluoromethane	ug/L	96.3	9.75	11.2	n/a	n/a	n/a	n/a	0.0592	n/a	
S10M000163		17060-07-0	1,2-Dichloroethane-d4	ug/L	95.6	9.70	11.9	n/a	n/a	n/a	n/a	0.166	n/a	
S10M000163		2037-26-5	Toluene-d8	ug/L	104	10.7	11.6	n/a	n/a	n/a	n/a	0.0774	n/a	
S10M000163		460-00-4	4-Bromofluorobenzene	ug/L	103	10.4	11.3	n/a	n/a	n/a	n/a	0.0906	n/a	

NA = Not Analyzed, ND = Not Detectec

J - Estimated

U - < Det Limit

Attachment 2

HOLDING TIME REPORT

Hold Time Report **SDG 222S20100268**

Customer Sample ID	Sample Group	Laboratory Sample ID	Method	Sample Date	Received Date	Analysis Date	Missed Holding Time
B23F80-A	20100268	S10M000163	SW846-8260B	02/24/10 11:20	03/10/10 11:00	03/21/10 11:10	**Y**
B23F80	20100268	S10M000164	SW846-8260B	02/24/10 11:20	03/10/10 11:00	03/21/10 11:38	**Y**

Attachment 3

RECEIPT PAPERWORK

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev D.D.1

Date Samples Received: 5/10/10 Group #: 20100241, 268

Number of Samples: 6

Sample Custodian: [illegible]

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	✓		☐ Check if no cooler and/or no ice 2°C
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.)

PM to Complete:

Samples acceptable for release? yes PM Initials JSB for J.R. Ritenour Date 5/10/10

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

20100268

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				
COLLECTOR: KC Patterson CHPRC	COMPANY CONTACT: AYRES, DE	TELEPHONE NO.: 373-5582	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: 9C	DATA TURNAROUND: 15 Days / 15 Days
SAMPLING LOCATION: Orphan 55-gal drum	PROJECT DESIGNATION: 100K Orphan Drum Characterization - Other Liquid		SAF NO.: F10-079	AIR QUALITY ☐	
ICE CHEST NO.: QWS-001	FIELD LOGBOOK NO.: HNF-N-	ACTUAL SAMPLE DEPTH: NA	COA: 302259ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=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)

SPECIAL HANDLING AND/OR STORAGE
~~20100291~~ cm 4/15/10

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	None	None						
TYPE OF CONTAINER	aGs*	aG	aG	aGs*	Square Bottle - Poly						
NO. OF CONTAINER(S)	3	1	3	1	1						
VOLUME	40mL	250mL	1000mL	20mL	500mL						
SAMPLE ANALYSIS	VOA - 8260B (TCL); Shipped 2 to 2225 3/10/10	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	Ignitability - 1010;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS						

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B23F80 W10GR00514	OTHER LIQUID	FEB 24 2010	1120						NA				NA
									TCLP W10GR00514				

08 2-24-10

Group # 2225201002 68
Sample # S10M000164

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: KC Patterson CHPRC	DATE/TIME: FEB 24 2010 1350	RECEIVED BY/STORED IN: Victor [signature]	DATE/TIME: FEB 24 2010 1350
RELINQUISHED BY/REMOVED FROM: MDKesslen MD [signature]	DATE/TIME: 3-10-10 1040	RECEIVED BY/STORED IN: KB Hulse [signature]	DATE/TIME: 3-10-10 1040
RELINQUISHED BY/REMOVED FROM: KB Hulse [signature]	DATE/TIME: 3-10-10 1100	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 3/10/10 1100
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
** WSCF will perform the analyze for Ignitability first. In addition, the Metals and SVOA are to be analyzed using the TCLP extract.
(1)Semi-VOA - 8270B (TCL); Metals by ICP (TCLP) - 1311/200.8 {Arsenic, Lead, Barium, Chromium, Cadmium, Silver, Selenium} 200.8_HG (TCLP) {Mercury}
(2)Gamma Spectroscopy {Europium-155, Cesium-137, Europium-154, Europium-152, Cobalt-60} Gamma Spec - Add-on {Radium-226, Radium-228, Antimony-125} Gross Alpha {Gross alpha} Gross Beta {Gross beta}

ORIGINAL COPY

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A 6003-618(01/06)

20100268

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				
COLLECTOR: KC Patterson CHPRC	COMPANY CONTACT: AYRES, DE	TELEPHONE NO.: 373-5582	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: 9C	DATA TURNAROUND: 15 Days / 15 Days
SAMPLING LOCATION: Orphan 55-gal drum; DUP	PROJECT DESIGNATION: 100K Orphan Drum Characterization - Other Liquid		SAF NO.: F10-079	AIR QUALITY: ☐	
ICE CHEST NO.: GWS-001	FIELD LOGBOOK NO.: HNF-N-507-4	ACTUAL SAMPLE DEPTH: NA	COA: 302259ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	Cool~4C	None	None
TYPE OF CONTAINER	aGs*	aG	aG	aGs*	Square Bottle Poly
NO. OF CONTAINER(S)	3	1	3	1	1
VOLUME	40mL	250mL	1000mL	20mL	500mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	Ignitability - 1010;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

Shipped 2 to 2225 3/10/10.

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B23F80-A W10G1200516	OTHER LIQUID	FEB 24 2010	1120	✓	✓	✓	✓	✓	NA				NA
								TCLP	W10G1200517				
Group# 2225 20100268													
Sample# S10M000163													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: KC Patterson CHPRC	DATE/TIME: FEB 24 2010 1350	RECEIVED BY/STORED IN: Victor Sims	DATE/TIME: FEB 24 2010 1350
RELINQUISHED BY/REMOVED FROM: MDKessler	DATE/TIME: 3-10-10 1040	RECEIVED BY/STORED IN: RB Hulse	DATE/TIME: 3-10-10 1040
RELINQUISHED BY/REMOVED FROM: RB Hulse	DATE/TIME: 3-10-10 1100	RECEIVED BY/STORED IN:	DATE/TIME: 3/10/10 1100
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** WSCF will perform the analyze for Ignitability first. In addition, the Metals and SVOA are to be analyzed using the TCLP extract.
(1)Semi-VOA - 8270B (TCL); Metals by ICP (TCLP) - 1311/200.8 {Arsenic, Lead, Barium, Chromium, Cadmium, Silver, Selenium} 200.8_HG (TCLP) {Mercury}
(2)Gamma Spectroscopy {Europium-155, Cesium-137, Europium-154, Europium-152, Cobalt-60} Gamma Spec - Add-on {Radium-226, Radium-228, Antimony-125} Gross Alpha {Gross alpha} Gross Beta {Gross beta}

ORIGINAL COPY

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

GENERATOR KNOWLEDGE INFORMATION

1. Chain of Custody Number _____ CACN/COA _____ Customer Identification Number _____

2. List generator knowledge or description of process that produced sample. Or list description of sample source:
Waste was from an unknown liquid in a 55 gallon drum. At the time of the sample the material was clear like water but had a heavier consistency and was in one phase.

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:			○ Yes	◉ No	○ Unknown
U Codes:			○ Yes	◉ No	○ Unknown
K Codes:			○ Yes	◉ No	○ Unknown
F Codes:			○ Yes	◉ No	○ Unknown

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

D001:	☐ FP <100°F	☐ FP ≥100 <140°F	☐ DOT Oxidizer	○ Yes	○ No	◉ Unknown
D002:	☐ pH ≤2	☐ pH ≥12.5	☐ Solid Corrosive (WSC2)	○ Yes	○ No	◉ Unknown
D003:	☐ Cyanide	☐ Sulfide	☐ Water Reactive ☐ Other _____ (i.e., peroxide former, explosive, air reactive)	○ Yes	○ No	◉ Unknown
D004-D043 (Identify applicable waste codes and concentrations):				○ Yes	○ No	◉ Unknown

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):

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated)

WT01:	○ Yes	○ No	◉ Unknown
WT02:	○ Yes	○ No	◉ Unknown
W001:	○ Yes	○ No	◉ Unknown

List constituents and concentrations:

(*State mixture rule for ignitability)

WP01:	○ Yes	○ No	◉ Unknown
WP02:	○ Yes	○ No	◉ Unknown
WP03:	○ Yes	○ No	◉ Unknown
F003:*	○ Yes	◉ No	○ Unknown

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)

☐ 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 ◉ 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 _____ Date _____

A-6002-990 (08/03)

03/10/2010 12:27

222-S
WRPS, P. O. Box 850
Richland, WA
Phone: (509) 376-5029 / FAX: (509) 372-1878

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Sample Group: 20100268

Specification Entity: WSCF - Anions & HexCr - CACN/COA 75A/401647

The following samples were received from you on03/10/2010. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using222-S.

Sample Tests Scheduled	Customer Sample ID	Matrix	Sample Date
S10M000163 VOA 222S	B23F80-A	LIQUID	02/24/2010
S10M000164 VOA 222S	B23F80	LIQUID	02/24/2010

Test Acronym Description

Test Acronym	Description
VOA 222S	VOA for 222S

Attachment 4

ISSUE RESOLUTION FORM

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-096

Date : **04/08/10** SAF No.: **F10-079**

SDG: **20100268**
LOGIN No.: **see table.**
TEST: **VOA**
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	PROPOSED RESOLUTION
The table below displays the samples for which the holding time for VOAs were missed. This was due to partially expired holding times upon receipt of samples at the laboratory.	Analyze and note in narrative.

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

Heidi Hampt 4/12/10
Signature and Date

Customer Sample ID	SDG	Laboratory Sample ID	Matrix	Sample Date	Received Date
B23F80-A	20100268	S10M000163	LIQUID	02/24/10	03/10/10
B23F80	20100268	S10M000164	LIQUID	02/24/10	03/10/10

Attachment 5

VOA SURROGATES AND MS/MSD RECOVERIES

20100268

VOA 222S Analysis Matrix Spike/Matrix Spike Duplicate Summary for WSCF - Anions & HexCr

Client Sample Id	Sample Id	Analyte	MS Recovery %	MSD Recovery %	Lower Limit	Upper Limit	RPD %	RPD Limit
B23F80	S10M000164	1,1-Dichloroethene	89.7	95.8	62	151	6.67	30
		1-Butanol	120	113	73	140	5.71	30
		2-Butanone	96.2	93.6	60	146	2.72	30
		2-Hexanone	114	114	71	141	0.438	30
		4-Methyl-2-pentanone	113	113	75	137	0.150	30
		Acetone	98.8	124	55	139	23.0	30
		Benzene	97.4	100	83	120	2.78	30
		Chlorobenzene	102	105	88	113	2.60	30
		Toluene	104	110	83	118	5.49	30
		Trichloroethene	96.4	98.0	71	128	1.57	30

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: 100321_WSCF

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	CCB	98	97	107	104	0
02	LCS	96	96	104	102	0
03	S10M000163	101	107	105	102	0
04	S10M000164	97	101	107	103	0
05	S10M000164MS	95	97	98	104	0
06	S10M000164MS	96	104	103	104	0
07						
08						
09						
10						
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27						
28						
29						
30						

		QC LIMITS (LCS, BK)	Limit (MS)
SMC1	= Dibromofluoromethane	(85-123)	(73-136)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(83-123)	(77-132)
SMC3 (TOL)	= Toluene-d8	(82-121)	(86-119)
OTHER (BFB)	= Bromofluorobenzene	(82-126)	(82-128)

Column to be used to flag recovery values

* Values outside of contract required QC limits

Surrogate recovery limits listed on this form apply only to the CCB and LCS standards. Surrogate limits for sample matrix are listed on separate FORM II's -MJD 3/27/10

Attachment 6

ANALYTICAL RESULTS

Analysis performed 03/10/10

Macro: upload2lims.mac, Revision: 0.2
Report Date: 04/15/2010

Data File: //Apwscf02/slab/chem/Ohura.i/data/V100310WSCF.b/10031010.D
Method File: \\apwscf02\slab\chem\Ohura.i\data\V100310WSCF.b\8260100223.m

LIMS Upload Report

Lab Sample ID:	S10M000163	Instrument ID:	Ohura.i
Client Sample ID:	S10M000163	Analyst:	awg
SDG:	100304_WSCF	Analysis Date:	10-MAR-2010 16:41
Lab Prep Batch:	V100304o	ALS Bottle:	10
Protocol:	@222VOA	Replicate:	0
Sample Fraction:	VOA	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/L
Matrix:	WATER	Matrix Type:	LIQUID
Actual Sample Size:	0.1	Expected Sample Size:	10
Actual Units:	mL	Expected Units:	mL

For a VOA, LOW Conc., LIQUID sample,
the Method formula used was: Conc. = Amount * DF * Uf * 1/Vo.

The Macro formula used was: Conc. = Amount * DF * Uf * 1/Vo,
where DF = 1 UF = 1, and Vo = 0.1.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
M	540-59-0	Total 1,2-Dichloroethe			7.900000	79	ND	U	
M	1330-20-7	Total Xylenes			9.399999	94	ND	U	
M	THM	Total Trihalomethanes			6.700000	67	ND	U	
	74-87-3	Chloromethane			2.750000	27.5	ND	U	
	75-01-4	Vinyl Chloride			4.860000	48.6	ND	U	
	74-83-9	Bromomethane			23.05999	230.6	ND	U	
	75-00-3	Chloroethane			10.44000	104.4	ND	U	
	75-35-4	1,1-Dichloroethene			17.18000	171.8	ND	U	
	67-64-1	Acetone			57.31999	573.2	ND	U	
	75-15-0	Carbon Disulfide			2.109999	21.1	ND	U	
	75-09-2	Methylene Chloride			3.959999	39.6	ND	U	
	75-34-3	1,1-Dichloroethane			2.969999	29.7	ND	U	
	78-93-3	2-Butanone			45.81999	458.2	ND	U	
	67-66-3	Chloroform			4.140000	41.4	ND	U	
	56-23-5	Carbon Tetrachloride	10.59638		4.790000	47.9	12.208	J	
	109-99-9	Tetrahydrofuran			27.53000	275.3	ND	U	
	71-55-6	1,1,1-Trichloroethane			4.329999	43.3	ND	U	
	71-36-3	n-Butanol			114.8900	1148.9	ND	U	
	71-43-2	Benzene			1.630000	16.3	ND	U	
	107-06-2	1,2-Dichloroethane			2.430000	24.3	ND	U	
	79-01-6	Trichloroethene			3.779999	37.8	ND	U	
	107-87-9	2-Pentanone			47.61000	476.1	ND	U	
	78-87-5	1,2-Dichloropropane			6.029999	60.3	ND	U	
	75-27-4	Bromodichloromethane			2.409999	24.1	ND	U	
	108-10-1	Methyl Isobutyl Ketone			45.28999	452.9	ND	U	
	10061-01-5	cis-1,3-dichloropropen			5	50	ND	U	
	108-88-3	Toluene	13.1713		5.220000	52.2	19.73	J	
	591-78-6	2-Hexanone			45.43000	454.3	ND	U	
	10061-02-6	trans-1,3-Dichloroprop			5.910000	59.1	ND	U	
	127-18-4	Tetrachloroethene			5.830000	58.3	ND	U	
	79-00-5	1,1,2-Trichloroethane			2.300000	23	ND	U	
	124-48-1	Dibromochloromethane			2.249999	225	ND	U	
	100-41-4	Ethylbenzene			3.339999	33.4	ND	U	
	108-90-7	Chlorobenzene			3.199999	32	ND	U	
	100-42-5	Styrene			3.939999	39.4	ND	U	
	75-25-2	Bromoform			2.989999	29.9	ND	U	

	79-34-5	1,1,2,2-Tetrachloroeth			2.029999	20.3	ND	U	
	541-73-1	1,3-Dichlorobenzene			2.479999	24.8	ND	U	
	106-46-7	1,4-Dichlorobenzene			4.869999	48.7	ND	U	
	95-50-1	1,2-Dichlorobenzene			4.550000	45.5	ND	U	
	110 54 3	Hexane			6.890000	68.9	ND	U	
	141-78-6	Ethyl Acetate			18.33999	183.4	ND	U	
	67-72-1	Hexachloroethane			11.10000	111	ND	U	
	75-71-8	Dichlorodifluoromethan			17.68000	500	ND	U	
	75-69-4	Trichlorofluoromethane			4.580000	45.8	ND	U	
	60-29-7	Diethyl ether			4.230000	42.3	ND	U	
	76-13-1	Freon 113			3.959999	39.6	ND	U	
	79-20-9	Methyl Acetate			9.929999	99.3	ND	U	
	1634-04-4	tert-Butyl-Methyl Ethe			5.090000	50.9	ND	U	
	156-60-5	trans-1,2-Dichloroethe			7.519999	75.2	ND	U	
	110-82-7	Cyclohexane			3.190000	31.9	ND	U	
	156-59-2	cis-1,2-Dichloroethene			5.820000	58.2	ND	U	
	108-87-2	Methylcyclohexane			4.760000	47.6	ND	U	
	79-46-9	2-Nitropropane			26.51000	265.1	ND	U	
	106-93-4	1,2-Dibromoethane			3.389999	33.9	ND	U	
	108-38-3	m,p-Xylene			7.030000	70.3	ND	U	
	98-82-8	Isopropylbenzene			2.989999	29.9	ND	U	
	104-51-8	n-Butylbenzene			8.899999	89	ND	U	
	96-12-8	1,2-Dibromo-3-Chloropr			37.36000	373.6	ND	U	
	120-82-1	1,2,4-Trichlorobenzene			5.659999	55.6	ND	U	
	95-47-6	o-Xylene			3.249999	32.5	ND	U	
$	1868-53-7	Dibromofluoromethane	10.58583	1000	5.329999	53.3	993.08		99.30842
$	17060-07-0	1,2-Dichloroethane-d4	11.21901	1000	14.91000	149.1	988.22		98.82233
$	2037-26-5	Toluene-d8	13.11853	1000	6.967999	69.68	1101.8		110.1758
$	460-00-4	Bromofluorobenzene	15.69345	1000	8.149999	81.5	1083.2		108.3161

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary