



July 8, 2010

0839-650609.1000

Ms. Jackie Drummond  
Department of Environment and Natural Resources  
Division of Waste Management  
Solid Waste Section  
401 Oberlin Road, Suite 150  
Raleigh, North Carolina 27605  
919-733-4996

**RE: LEACHATE SEEP SAMPLING INVESTIGATION  
CLOSED HENDERSON COUNTY LANDFILL, PERMIT NO. 45-01  
HENDERSON COUNTY, NORTH CAROLINA**

Dear Jackie:

On behalf of Henderson County (County), Golder Associates NC, Inc. (Golder) is submitting the results of soil and surface water sampling that was performed on June 3, 2010. This investigation was conducted in response to the discovery of leachate seeps at the closed municipal solid waste (MSW) landfill and closed construction and demolition (C&D) landfill at the above-referenced facility.

According to information provided by the County, leachate seeps were noted at one location at the closed C&D landfill and six locations at the closed MSW landfill in May 2010. Some of the leachate seeps were discovered during an inspection by North Carolina Department of Environment and Natural Resources (NC DENR) on March 10, 2010. Other leachate seeps were discovered by the County while repairing existing leachate seeps and further inspection of the landfill units. The locations of the seeps are shown on the attached drawing (Drawing 1).

At the request of the County, a representative of Golder visited the Henderson County Landfill on June 3, 2010, to examine and locate the leachate seeps to determine if leachate may have entered drainages or left the landfill property. Golder also collected soil and surface water samples from areas of concern. Sampling locations were chosen to encompass the area that might contain potentially impacted sediments and/or surface water downgradient of the area of the leachate seeps. A site map showing the leachate seep locations and the surface water and soil sample collection points is presented as Drawing 1.

A summary of surface water and soil analytical results are presented in Tables 1 and 2, respectively. Laboratory certificates of analysis and field sampling forms are also attached.

## **VISUAL INSPECTION OF THE LEACHATE SEEP LOCATIONS**

A Golder representative visited the Henderson County Landfill on June 3, 2010, and inspected each leachate seep location. Each leachate seep location was recorded with a Trimble GeoXT handheld GPS and is presented on Drawing 1. Of the seven discovered leachate seeps, four (C&D-1, MSW-1, MSW-2, and MSW-3) were determined to have been unlikely to have traveled outside the limits of waste based on topography, staining from the releases, and the amount of flow observed by County personnel. Two leachate seeps (MSW-4 and MSW-5) were determined to have potentially migrated outside the limits of waste, and one leachate seep (MSW-6) was observed flowing into a sediment trap. Flow from MSW-4 and MSW-5 may have also entered the same sediment trap.

At the time of the inspection, repairs to the leachate seep locations were underway and had been completed in many areas. Photographs of the seep locations are attached.

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**Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America**

## SURFACE WATER SAMPLING AND ANALYTICAL RESULTS

As shown on Drawing 1, surface water samples were collected from the sediment trap (Sample 4), the sediment pond (Sample 3) into which the aforementioned sediment trap discharges, and the receiving stream (downstream of the sediment pond (Sample 1) and further downstream at the property line (Sample 2)). Surface water samples were analyzed for the following leachate indicator parameters: biological oxygen demand (BOD), chemical oxygen demand (COD), and NC Appendix I volatile organic compounds (VOCs). These parameters were agreed upon in a telephone conversation with NC DENR on May 25, 2010. Field parameters measured at the time of sample collection include pH, specific conductance, temperature, turbidity, and oxidation reduction potential.

As shown on Table 1, acetone was detected in three of the surface water samples (Sample 1, Sample 3, and Sample 4) at estimated concentrations below the Solid Waste Section Limit (SWSL). Acetone was not detected in Sample 2, which was collected at the property line. The concentrations of acetone are below the applicable surface water standard. Though all detected concentrations of acetone are estimated, attenuation is likely occurring since concentrations decreased downstream and were non-detect at the property line. The location of Sample 2 is near the compliance surface water sampling point BR-3, which historically has not had detections of NC Appendix I VOCs.

BOD was only detected in Sample 3 and COD was detected in all four surface water samples. The concentration of COD was similar in Sample 1, Sample 2, and Sample 4, but was elevated in Sample 3.

## SOIL SAMPLING AND ANALYTICAL RESULTS

A soil sample (Pond 1-Soil) was collected from the sediment pond at the location presented on Drawing 1. The soil sample was analyzed for NC Appendix I VOCs as agreed upon in a telephone conversation with NC DENR on May 25, 2010.

As shown on Table 2, four NC Appendix I VOCs were detected sample Pond 1-Soil. Acetone, 2-butanone, and toluene were detected in the soil sample at quantifiable concentrations. Carbon disulfide was detected in sample Pond 1-Soil at an estimated concentration. The Solid Waste Section does not have established soil standards; however, for comparison purposes, protection of groundwater standards established by the Inactive Hazardous Sites Branch are shown on Table 2. The concentrations of VOCs detected in soil samples are orders of magnitude below these standards and therefore do not pose a significant risk for future surface water impacts.

## SUMMARY

Based on the surface water data obtained as part of this investigation, the leachate seeps do not appear to have had a significant (concentrations above applicable standards) impact on surface water quality at the facility. The concentrations and types of VOCs detected during this investigation indicate a potential temporary impact to surface water quality. The concentrations of detected VOCs are well below established surface water standards for aquatic life. Based on low concentrations of VOCs in soil samples collected in the sediment pond, no further action is recommended. If you have any questions, please contact the undersigned at 336-852-4903.

### GOLDER ASSOCIATES NC, INC.



David "Dusty" Y. Reedy II, P.G.  
Senior Project Hydrogeologist



Charles Hiner  
Associate and Senior Consultant

Attachments: Table 1 and 2  
Drawing 1  
Figures 1 through 3  
Laboratory Certificates-of-Analysis  
Field Sample Logs

C: Marcus Jones, P.E., Director of Engineering, Henderson County, 802 Stoney Mountain Road, Hendersonville, NC 28791. 828-697-4505. [majones@hendersoncountync.org](mailto:majones@hendersoncountync.org)

Natalie Berry, P.E., Assistant County Engineer, Henderson County, 100 North King Street, Hendersonville, NC 28792. 828-697-4535. [nberry@hendersoncountync.org](mailto:nberry@hendersoncountync.org) (electronic copy)

Rachel P. Kirkman, P.G., Senior Geologist, Golder Associates NC, Inc., 4900 Koger Boulevard, Suite 140, Greensboro, NC 27407. 336-852-4903. [rkirkman@golder.com](mailto:rkirkman@golder.com)

*g:\projects\henderson county\leachate seep sampling\2010.06.03.sampling event\2010.07.08.final\_henderson\_leachate\_seep\_sampling\_report.docx*

**Table 1**  
**Summary of Detected Constituents - Surface Water Samples**  
**Henderson County Landfill**

Sample Identification	Sampling Date	Detected Constituent	Units	SWSL	Concentration	SW Standard
Sample 1	6/3/2010	Acetone	ug/L	100	3.6 J	2000
Sample 1	6/3/2010	COD	mg/L	NE	23	NE
Sample 2	6/3/2010	COD	mg/L	NE	23	NE
Sample 3	6/3/2010	Acetone	ug/L	100	11 J	2000
Sample 3	6/3/2010	BOD	mg/L	NE	7.8	NE
Sample 3	6/3/2010	COD	mg/L	NE	200	NE
Sample 4	6/3/2010	Acetone	ug/L	100	11 J	2000
Sample 4	6/3/2010	COD	mg/L	NE	33	NE

**Notes:**

NC SWSL = North Carolina Solid Waste Section Limit

J = estimated value below SWSL

ug/L = micrograms per liter

mg/L = milligrams per liter

SW Standards = National EPA Criteria Standards (no NC Freshwater Aquatic Life Standards for these analytes defined in 15A NCAC 2B)

NE = no standard established

BOD = biological oxygen demand

COD = chemical oxygen demand

**Table 2**  
**Summary of Detected Constituents - Soil Sample**  
**Henderson County Landfill**

Sample Identification	Sampling Date	Detected Constituent	Units	MRL	Concentration	Protection of GW PSRG (mg/kg)
Pond 1 - Soil	6/3/2010	Acetone	mg/kg	0.003	0.18	24
Pond 1 - Soil	6/3/2010	2-Butanone	mg/kg	0.001	0.044	16
Pond 1 - Soil	6/3/2010	Carbon Disulfide	mg/kg	0.0005	0.001 J	3.8
Pond 1 - Soil	6/3/2010	Toluene	mg/kg	0.003	0.007	5.5

**Notes:**

J = estimated value below MRL

mg/kg = milligrams per kilogram

MRL = method reporting limit

Protection of Groundwater PSRGs are based on the NC Inactive Hazardous Sites Branch Soil Remediation Goals (January 2010).





Photograph 1. Leachate Seep C&D-1



Photograph 2. Leachate Seep MSW-1



DATE: 06/03/10  
Project #: 0839-650609  
Prepared By:  
Reviewed By:

Title:  
**LEACHATE SEEP LOCATIONS  
CLOSED HENDERSON COUNTY LANDFILL**

**Figure  
No.  
1**



Photograph 3. Leachate Seep MSW-2



Photograph 4. Leachate Seep MSW-3



DATE: 06/03/10  
Project #: 0839-650609  
Prepared By:  
Reviewed By:

Title:  
**LEACHATE SEEP LOCATIONS  
CLOSED HENDERSON COUNTY LANDFILL**

**Figure  
No.  
2**



Photograph 5. Leachate Seeps MSW-4 and MSW-5



Photograph 6. Leachate Seep MSW-6



DATE: 06/03/10  
 Project #: 0839-650609  
 Prepared By:  
 Reviewed By:

Title:  
**LEACHATE SEEP LOCATIONS  
 CLOSED HENDERSON COUNTY LANDFILL**

**Figure  
 No.  
 3**

**Environmental Conservation Laboratories, Inc.**

102-A Woodwinds Industrial Court

Cary NC, 27511

Phone: 919.467.3090 FAX: 919.467.3515



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Wednesday, June 16, 2010

Golder Associates, Inc. (G0007)

Attn: Dusty Reedy

The Wingate Building 4900 Koger Blvd., Suite 140

Greensboro, NC 27407

**RE: Laboratory Results for**

**Project Number: 08396506009.200, Project Name/Desc: Henderson County LF**

**ENCO Workorder: C006325**

Dear Dusty Reedy,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, June 4, 2010.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Stephanie Franz', with a stylized flourish at the end.

Stephanie Franz

Project Manager

Enclosure(s)



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## **PROJECT NARRATIVE**

Date: 16 June 2010  
Client: Golder Associates, Inc. (GO007)  
Project: Henderson County LF  
Lab ID: C006325

### Overview

Environmental Conservation Laboratories, Inc. (ENCO) analyzed all submitted samples in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling by ENCO are discussed in the QC Remarks section below.

### Quality Control Samples

No Comments

### Quality Control Remarks

No Comments

### Other Comments

All samples received under this work order arrived in acceptable conditions. The samples were not checked for residual chlorine, as it is not required. Samples Pond 1-Water, Pond 2-Water, and Pond 2- Soil were not received.

The analytical data presented in this report are consistent with the methods as referenced in the analytical report. Any exceptions or deviations are noted in the QC remarks section of this narrative or in the Flags/Notes and Definitions section of the report.

Released By:  
Environmental Conservation Laboratories, Inc.

Stephanie Franz  
Project Manager



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**SAMPLE SUMMARY/LABORATORY CHRONICLE**

Client ID:	Sample 1	Lab ID: C006325-02	Sampled: 06/03/10 13:00	Received: 06/04/10 10:30
Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)	
EPA 8260B	06/17/10	06/08/10 07:58	6/8/2010 14:48	
SM 5210B	06/05/10 13:00	06/04/10 16:13	6/4/2010 16:13	
SM 5220D	07/01/10	06/11/10 14:16	6/11/2010 18:37	

Client ID:	Sample 2	Lab ID: C006325-03	Sampled: 06/03/10 13:35	Received: 06/04/10 10:30
Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)	
EPA 8260B	06/17/10	06/08/10 07:58	6/8/2010 19:19	
SM 5210B	06/05/10 13:35	06/04/10 16:13	6/4/2010 16:13	
SM 5220D	07/01/10	06/11/10 14:16	6/11/2010 18:37	

Client ID:	Sample 3	Lab ID: C006325-04	Sampled: 06/03/10 14:25	Received: 06/04/10 10:30
Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)	
EPA 8260B	06/17/10	06/08/10 07:58	6/8/2010 19:49	
SM 5210B	06/05/10 14:25	06/04/10 16:13	6/4/2010 16:13	
SM 5220D	07/01/10	06/07/10 11:57	6/7/2010 15:31	

Client ID:	Sample 4	Lab ID: C006325-05	Sampled: 06/03/10 14:10	Received: 06/04/10 10:30
Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)	
EPA 8260B	06/17/10	06/09/10 09:34	6/9/2010 12:59	
SM 5210B	06/05/10 14:10	06/04/10 16:13	6/4/2010 16:13	
SM 5220D	07/01/10	06/07/10 11:57	6/7/2010 15:31	



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### NORTH CAROLINA SWS SAMPLE DETECTION SUMMARY

**Client ID: Sample 1** **Lab ID: C006325-02**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Acetone	3.6	J	1	1.5	5.0	100	ug/L	EPA 8260B	
Chemical Oxygen Demand	23		1	2.8	10	NE	mg/L	SM 5220D	

**Client ID: Sample 2** **Lab ID: C006325-03**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Chemical Oxygen Demand	23		1	2.8	10	NE	mg/L	SM 5220D	

**Client ID: Sample 3** **Lab ID: C006325-04**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Acetone	11	J	1	1.5	5.0	100	ug/L	EPA 8260B	
Biochemical Oxygen Demand	7.8		1	2.0	2.0	NE	mg/L	SM 5210B	
Chemical Oxygen Demand	200		1	2.8	10	NE	mg/L	SM 5220D	

**Client ID: Sample 4** **Lab ID: C006325-05**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Acetone	11	J	1	1.5	5.0	100	ug/L	EPA 8260B	
Chemical Oxygen Demand	33		1	2.8	10	NE	mg/L	SM 5220D	



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### ANALYTICAL RESULTS

**Description:** Sample 1  
**Matrix:** Surface Water  
**Project:** Henderson County LF

**Lab Sample ID:** C006325-02  
**Sampled:** 06/03/10 13:00  
**Sampled By:** Dusty Reedy

**Received:** 06/04/10 10:30  
**Work Order:** C006325

#### Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.091	U	ug/L	1	0.091	1.0	5	EPA 8260B	06/08/10 14:48	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.085	U	ug/L	1	0.085	1.0	3	EPA 8260B	06/08/10 14:48	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.068	U	ug/L	1	0.068	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
1,1-Dichloroethane [75-34-3] ^	0.050	U	ug/L	1	0.050	1.0	5	EPA 8260B	06/08/10 14:48	JKG	
1,1-Dichloroethene [75-35-4] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	06/08/10 14:48	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	06/08/10 14:48	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.052	U	ug/L	1	0.052	1.0	5	EPA 8260B	06/08/10 14:48	JKG	
1,2-Dichloroethane [107-06-2] ^	0.082	U	ug/L	1	0.082	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
1,2-Dichloropropane [78-87-5] ^	0.098	U	ug/L	1	0.098	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	06/08/10 14:48	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	06/08/10 14:48	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	06/08/10 14:48	JKG	
<b>Acetone [67-64-1] ^</b>	<b>3.6</b>	<b>J</b>	ug/L	1	1.5	5.0	100	EPA 8260B	06/08/10 14:48	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	06/08/10 14:48	JKG	
Benzene [71-43-2] ^	0.050	U	ug/L	1	0.050	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Bromochloromethane [74-97-5] ^	0.11	U	ug/L	1	0.11	1.0	3	EPA 8260B	06/08/10 14:48	JKG	
Bromodichloromethane [75-27-4] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Bromoform [75-25-2] ^	0.20	U	ug/L	1	0.20	1.0	3	EPA 8260B	06/08/10 14:48	JKG	
Bromomethane [74-83-9] ^	0.28	U	ug/L	1	0.28	1.0	10	EPA 8260B	06/08/10 14:48	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	06/08/10 14:48	JKG	
Carbon tetrachloride [56-23-5] ^	0.082	U	ug/L	1	0.082	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Chlorobenzene [108-90-7] ^	0.069	U	ug/L	1	0.069	1.0	3	EPA 8260B	06/08/10 14:48	JKG	
Chloroethane [75-00-3] ^	0.18	U	ug/L	1	0.18	1.0	10	EPA 8260B	06/08/10 14:48	JKG	
Chloroform [67-66-3] ^	0.083	U	ug/L	1	0.083	1.0	5	EPA 8260B	06/08/10 14:48	JKG	
Chloromethane [74-87-3] ^	0.050	U	ug/L	1	0.050	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.075	U	ug/L	1	0.075	1.0	5	EPA 8260B	06/08/10 14:48	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.073	U	ug/L	1	0.073	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Dibromochloromethane [124-48-1] ^	0.067	U	ug/L	1	0.067	1.0	3	EPA 8260B	06/08/10 14:48	JKG	
Dibromomethane [74-95-3] ^	0.13	U	ug/L	1	0.13	1.0	10	EPA 8260B	06/08/10 14:48	JKG	
Ethylbenzene [100-41-4] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	06/08/10 14:48	JKG	
Methylene chloride [75-09-2] ^	0.070	U	ug/L	1	0.070	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Styrene [100-42-5] ^	0.082	U	ug/L	1	0.082	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Tetrachloroethene [127-18-4] ^	0.099	U	ug/L	1	0.099	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Toluene [108-88-3] ^	0.053	U	ug/L	1	0.053	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.11	U	ug/L	1	0.11	1.0	5	EPA 8260B	06/08/10 14:48	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.080	U	ug/L	1	0.080	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	06/08/10 14:48	JKG	
Trichloroethene [79-01-6] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	06/08/10 14:48	JKG	



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Description: Sample 1  
Matrix: Surface Water  
Project: Henderson County LF

Lab Sample ID: C006325-02  
Sampled: 06/03/10 13:00  
Sampled By: Dusty Reedy

Received: 06/04/10 10:30  
Work Order: C006325

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	06/08/10 14:48	JKG	
Vinyl chloride [75-01-4] ^	0.083	U	ug/L	1	0.083	1.0	1	EPA 8260B	06/08/10 14:48	JKG	
Xylenes (Total) [1330-20-7] ^	0.22	U	ug/L	1	0.22	1.0	5	EPA 8260B	06/08/10 14:48	JKG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	39	1	50.0	77 %	51-122	0F08006	EPA 8260B	06/08/10 14:48	JKG	
Dibromofluoromethane	41	1	50.0	82 %	68-117	0F08006	EPA 8260B	06/08/10 14:48	JKG	
Toluene-d8	42	1	50.0	85 %	69-110	0F08006	EPA 8260B	06/08/10 14:48	JKG	



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**Description:** Sample 1  
**Matrix:** Surface Water  
**Project:** Henderson County LF

**Lab Sample ID:** C006325-02  
**Sampled:** 06/03/10 13:00  
**Sampled By:** Dusty Reedy

**Received:** 06/04/10 10:30  
**Work Order:** C006325

**Classical Chemistry Parameters**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>NC SWSL</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Biochemical Oxygen Demand [ECL-0017] ^	2.0	U	mg/L	1	2.0	2.0	NE	SM 5210B	06/04/10 16:13	JOC	
Chemical Oxygen Demand [ECL-0035] ^	23		mg/L	1	2.8	10	NE	SM 5220D	06/11/10 18:37	JOC	



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Description: Sample 2

Lab Sample ID: C006325-03

Received: 06/04/10 10:30

Matrix: Surface Water

Sampled: 06/03/10 13:35

Work Order: C006325

Project: Henderson County LF

Sampled By: Dusty Reedy

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.091	U	ug/L	1	0.091	1.0	5	EPA 8260B	06/08/10 19:19	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.085	U	ug/L	1	0.085	1.0	3	EPA 8260B	06/08/10 19:19	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.068	U	ug/L	1	0.068	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
1,1-Dichloroethane [75-34-3] ^	0.050	U	ug/L	1	0.050	1.0	5	EPA 8260B	06/08/10 19:19	JKG	
1,1-Dichloroethene [75-35-4] ^	0.15	U	ug/L	1	0.15	1.0	5	EPA 8260B	06/08/10 19:19	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	06/08/10 19:19	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.052	U	ug/L	1	0.052	1.0	5	EPA 8260B	06/08/10 19:19	JKG	
1,2-Dichloroethane [107-06-2] ^	0.082	U	ug/L	1	0.082	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
1,2-Dichloropropane [78-87-5] ^	0.098	U	ug/L	1	0.098	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	06/08/10 19:19	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	06/08/10 19:19	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	06/08/10 19:19	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	06/08/10 19:19	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	06/08/10 19:19	JKG	
Benzene [71-43-2] ^	0.050	U	ug/L	1	0.050	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Bromochloromethane [74-97-5] ^	0.11	U	ug/L	1	0.11	1.0	3	EPA 8260B	06/08/10 19:19	JKG	
Bromodichloromethane [75-27-4] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Bromoform [75-25-2] ^	0.20	U	ug/L	1	0.20	1.0	3	EPA 8260B	06/08/10 19:19	JKG	
Bromomethane [74-83-9] ^	0.28	U	ug/L	1	0.28	1.0	10	EPA 8260B	06/08/10 19:19	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	06/08/10 19:19	JKG	
Carbon tetrachloride [56-23-5] ^	0.082	U	ug/L	1	0.082	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Chlorobenzene [108-90-7] ^	0.069	U	ug/L	1	0.069	1.0	3	EPA 8260B	06/08/10 19:19	JKG	
Chloroethane [75-00-3] ^	0.18	U	ug/L	1	0.18	1.0	10	EPA 8260B	06/08/10 19:19	JKG	
Chloroform [67-66-3] ^	0.083	U	ug/L	1	0.083	1.0	5	EPA 8260B	06/08/10 19:19	JKG	
Chloromethane [74-87-3] ^	0.050	U	ug/L	1	0.050	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.075	U	ug/L	1	0.075	1.0	5	EPA 8260B	06/08/10 19:19	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.073	U	ug/L	1	0.073	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Dibromochloromethane [124-48-1] ^	0.067	U	ug/L	1	0.067	1.0	3	EPA 8260B	06/08/10 19:19	JKG	
Dibromomethane [74-95-3] ^	0.13	U	ug/L	1	0.13	1.0	10	EPA 8260B	06/08/10 19:19	JKG	
Ethylbenzene [100-41-4] ^	0.10	U	ug/L	1	0.10	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	06/08/10 19:19	JKG	
Methylene chloride [75-09-2] ^	0.070	U	ug/L	1	0.070	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Styrene [100-42-5] ^	0.082	U	ug/L	1	0.082	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Tetrachloroethene [127-18-4] ^	0.099	U	ug/L	1	0.099	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Toluene [108-88-3] ^	0.053	U	ug/L	1	0.053	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.11	U	ug/L	1	0.11	1.0	5	EPA 8260B	06/08/10 19:19	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.080	U	ug/L	1	0.080	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	06/08/10 19:19	JKG	
Trichloroethene [79-01-6] ^	0.13	U	ug/L	1	0.13	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Trichlorofluoromethane [75-69-4] ^	0.15	U	ug/L	1	0.15	1.0	1	EPA 8260B	06/08/10 19:19	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	06/08/10 19:19	JKG	
Vinyl chloride [75-01-4] ^	0.083	U	ug/L	1	0.083	1.0	1	EPA 8260B	06/08/10 19:19	JKG	



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Description: Sample 2  
Matrix: Surface Water  
Project: Henderson County LF

Lab Sample ID: C006325-03  
Sampled: 06/03/10 13:35  
Sampled By: Dusty Reedy

Received: 06/04/10 10:30  
Work Order: C006325

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>NC SWSL</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Xylenes (Total) [1330-20-7] ^	0.22	U	ug/L	1	0.22	1.0	5	EPA 8260B	06/08/10 19:19	JKG	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
4-Bromofluorobenzene	38	1	50.0	77 %	51-122	0F08006	EPA 8260B	06/08/10 19:19	JKG		
Dibromofluoromethane	42	1	50.0	84 %	68-117	0F08006	EPA 8260B	06/08/10 19:19	JKG		
Toluene-d8	44	1	50.0	87 %	69-110	0F08006	EPA 8260B	06/08/10 19:19	JKG		



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**Description:** Sample 2  
**Matrix:** Surface Water  
**Project:** Henderson County LF

**Lab Sample ID:** C006325-03  
**Sampled:** 06/03/10 13:35  
**Sampled By:** Dusty Reedy

**Received:** 06/04/10 10:30  
**Work Order:** C006325

**Classical Chemistry Parameters**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>NC SWSL</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Biochemical Oxygen Demand [ECL-0017] ^	2.0	U	mg/L	1	2.0	2.0	NE	SM 5210B	06/04/10 16:13	JOC	
Chemical Oxygen Demand [ECL-0035] ^	23		mg/L	1	2.8	10	NE	SM 5220D	06/11/10 18:37	JOC	



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Description: Sample 3

Lab Sample ID: C006325-04

Received: 06/04/10 10:30

Matrix: Surface Water

Sampled: 06/03/10 14:25

Work Order: C006325

Project: Henderson County LF

Sampled By: Dusty Reedy

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Table with 11 columns: Analyte [CAS Number], Results, Flag, Units, DF, MDL, MRL, NC SWSL, Method, Analyzed, By, Notes. It lists various chemical compounds and their corresponding test results.



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Description: Sample 3  
Matrix: Surface Water  
Project: Henderson County LF

Lab Sample ID: C006325-04  
Sampled: 06/03/10 14:25  
Sampled By: Dusty Reedy

Received: 06/04/10 10:30  
Work Order: C006325

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>NC SWSL</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Xylenes (Total) [1330-20-7] ^	0.22	U	ug/L	1	0.22	1.0	5	EPA 8260B	06/08/10 19:49	JKG	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
4-Bromofluorobenzene	39	1	50.0	79 %	51-122	0F08006	EPA 8260B	06/08/10 19:49	JKG		
Dibromofluoromethane	42	1	50.0	84 %	68-117	0F08006	EPA 8260B	06/08/10 19:49	JKG		
Toluene-d8	44	1	50.0	88 %	69-110	0F08006	EPA 8260B	06/08/10 19:49	JKG		



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**Description:** Sample 3  
**Matrix:** Surface Water  
**Project:** Henderson County LF

**Lab Sample ID:** C006325-04  
**Sampled:** 06/03/10 14:25  
**Sampled By:** Dusty Reedy

**Received:** 06/04/10 10:30  
**Work Order:** C006325

**Classical Chemistry Parameters**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>NC SWSL</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Biochemical Oxygen Demand [ECL-0017] ^	7.8		mg/L	1	2.0	2.0	NE	SM 5210B	06/04/10 16:13	JOC	
Chemical Oxygen Demand [ECL-0035] ^	200		mg/L	1	2.8	10	NE	SM 5220D	06/07/10 15:31	JOC	



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Description: Sample 4
Matrix: Surface Water
Project: Henderson County LF

Lab Sample ID: C006325-05
Sampled: 06/03/10 14:10
Sampled By: Dusty Reedy

Received: 06/04/10 10:30
Work Order: C006325

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Table with 11 columns: Analyte [CAS Number], Results, Flag, Units, DF, MDL, MRL, NC SWSL, Method, Analyzed, By, Notes. Contains 45 rows of chemical analysis data.



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Description: Sample 4

Lab Sample ID: C006325-05

Received: 06/04/10 10:30

Matrix: Surface Water

Sampled: 06/03/10 14:10

Work Order: C006325

Project: Henderson County LF

Sampled By: Dusty Reedy

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>NC SWSL</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Xylenes (Total) [1330-20-7] ^	0.22	U	ug/L	1	0.22	1.0	5	EPA 8260B	06/09/10 12:59	JKG	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
4-Bromofluorobenzene	38	1	50.0	77 %	51-122	0F09013	EPA 8260B	06/09/10 12:59	JKG		
Dibromofluoromethane	40	1	50.0	81 %	68-117	0F09013	EPA 8260B	06/09/10 12:59	JKG		
Toluene-d8	42	1	50.0	85 %	69-110	0F09013	EPA 8260B	06/09/10 12:59	JKG		



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**Description:** Sample 4  
**Matrix:** Surface Water  
**Project:** Henderson County LF

**Lab Sample ID:** C006325-05  
**Sampled:** 06/03/10 14:10  
**Sampled By:** Dusty Reedy

**Received:** 06/04/10 10:30  
**Work Order:** C006325

**Classical Chemistry Parameters**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>NC SWSL</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Biochemical Oxygen Demand [ECL-0017] ^	2.0	U	mg/L	1	2.0	2.0	NE	SM 5210B	06/04/10 16:13	JOC	
Chemical Oxygen Demand [ECL-0035] ^	33		mg/L	1	2.8	10	NE	SM 5220D	06/07/10 15:31	JOC	



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**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 0F08006 - EPA 5030B\_MS

Blank (0F08006-BLK1)

Prepared: 06/08/2010 07:58 Analyzed: 06/08/2010 09:48

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2-Butanone	1.0	U	5.0	ug/L							
2-Hexanone	0.69	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.5	U	5.0	ug/L							
Acrylonitrile	2.1	U	10	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon disulfide	0.54	U	5.0	ug/L							
Carbon tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Iodomethane	0.52	U	5.0	ug/L							
Methylene chloride	0.070	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.54	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl acetate	0.98	U	5.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	40			ug/L	50.0		80	51-122			



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**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 0F08006 - EPA 5030B\_MS

**Blank (0F08006-BLK1) Continued**

Prepared: 06/08/2010 07:58 Analyzed: 06/08/2010 09:48

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	43			ug/L	50.0		86	68-117			
Surrogate: Toluene-d8	44			ug/L	50.0		89	69-110			

**LCS (0F08006-BS1)**

Prepared: 06/08/2010 07:58 Analyzed: 06/08/2010 10:17

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/L	20.0		102	75-133			
Benzene	22		1.0	ug/L	20.0		109	81-134			
Chlorobenzene	19		1.0	ug/L	20.0		95	83-117			
Toluene	18		1.0	ug/L	20.0		92	71-118			
Trichloroethene	20		1.0	ug/L	20.0		102	75-115			

**Matrix Spike (0F08006-MS1)**

Prepared: 06/08/2010 07:58 Analyzed: 06/08/2010 10:47

Source: C006470-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/L	20.0	0.15 U	101	75-133			
Benzene	22		1.0	ug/L	20.0	0.050 U	111	81-134			
Chlorobenzene	19		1.0	ug/L	20.0	0.069 U	96	83-117			
Toluene	19		1.0	ug/L	20.0	0.053 U	94	71-118			
Trichloroethene	21		1.0	ug/L	20.0	0.13 U	104	75-115			

**Matrix Spike Dup (0F08006-MSD1)**

Prepared: 06/08/2010 07:58 Analyzed: 06/08/2010 11:17

Source: C006470-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/L	20.0	0.15 U	98	75-133	4	20	
Benzene	21		1.0	ug/L	20.0	0.050 U	105	81-134	6	17	
Chlorobenzene	18		1.0	ug/L	20.0	0.069 U	91	83-117	5	16	
Toluene	18		1.0	ug/L	20.0	0.053 U	90	71-118	4	17	
Trichloroethene	20		1.0	ug/L	20.0	0.13 U	98	75-115	6	18	

Batch 0F09013 - EPA 5030B\_MS

**Blank (0F09013-BLK1)**

Prepared: 06/09/2010 09:34 Analyzed: 06/09/2010 09:58

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.091	U	1.0	ug/L							
1,1,1-Trichloroethane	0.15	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.085	U	1.0	ug/L							
1,1,2-Trichloroethane	0.068	U	1.0	ug/L							
1,1-Dichloroethane	0.050	U	1.0	ug/L							
1,1-Dichloroethene	0.15	U	1.0	ug/L							
1,2,3-Trichloropropane	0.15	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.052	U	1.0	ug/L							



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**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 0F09013 - EPA 5030B\_MS

**Blank (0F09013-BLK1) Continued**

Prepared: 06/09/2010 09:34 Analyzed: 06/09/2010 09:58

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	0.082	U	1.0	ug/L							
1,2-Dichloropropane	0.098	U	1.0	ug/L							
1,4-Dichlorobenzene	0.10	U	1.0	ug/L							
2-Butanone	1.0	U	5.0	ug/L							
2-Hexanone	0.69	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.5	U	5.0	ug/L							
Acrylonitrile	2.1	U	10	ug/L							
Benzene	0.050	U	1.0	ug/L							
Bromochloromethane	0.11	U	1.0	ug/L							
Bromodichloromethane	0.10	U	1.0	ug/L							
Bromoform	0.20	U	1.0	ug/L							
Bromomethane	0.28	U	1.0	ug/L							
Carbon disulfide	0.54	U	5.0	ug/L							
Carbon tetrachloride	0.082	U	1.0	ug/L							
Chlorobenzene	0.069	U	1.0	ug/L							
Chloroethane	0.18	U	1.0	ug/L							
Chloroform	0.083	U	1.0	ug/L							
Chloromethane	0.050	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.075	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.073	U	1.0	ug/L							
Dibromochloromethane	0.067	U	1.0	ug/L							
Dibromomethane	0.13	U	1.0	ug/L							
Ethylbenzene	0.10	U	1.0	ug/L							
Iodomethane	0.52	U	5.0	ug/L							
Methylene chloride	0.070	U	1.0	ug/L							
Styrene	0.082	U	1.0	ug/L							
Tetrachloroethene	0.099	U	1.0	ug/L							
Toluene	0.053	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.11	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.080	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.54	U	1.0	ug/L							
Trichloroethene	0.13	U	1.0	ug/L							
Trichlorofluoromethane	0.15	U	1.0	ug/L							
Vinyl acetate	0.98	U	5.0	ug/L							
Vinyl chloride	0.083	U	1.0	ug/L							
Xylenes (Total)	0.22	U	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	38			ug/L	50.0		77	51-122			
Surrogate: Dibromofluoromethane	42			ug/L	50.0		84	68-117			
Surrogate: Toluene-d8	44			ug/L	50.0		88	69-110			

**LCS (0F09013-BS1)**

Prepared: 06/09/2010 09:34 Analyzed: 06/09/2010 10:28

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/L	20.0		99	75-133			
Benzene	21		1.0	ug/L	20.0		107	81-134			
Chlorobenzene	19		1.0	ug/L	20.0		96	83-117			
Toluene	19		1.0	ug/L	20.0		93	71-118			



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**QUALITY CONTROL**

**Volatile Organic Compounds by GCMS - Quality Control**

Batch 0F09013 - EPA 5030B\_MS

**LCS (0F09013-BS1) Continued**

Prepared: 06/09/2010 09:34 Analyzed: 06/09/2010 10:28

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Trichloroethene	20		1.0	ug/L	20.0		102	75-115			

**Matrix Spike (0F09013-MS1)**

Prepared: 06/09/2010 09:34 Analyzed: 06/09/2010 10:58

Source: C006671-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.15 U	96	75-133			
Benzene	21		1.0	ug/L	20.0	0.050 U	104	81-134			
Chlorobenzene	18		1.0	ug/L	20.0	0.069 U	92	83-117			
Toluene	18		1.0	ug/L	20.0	0.053 U	90	71-118			
Trichloroethene	20		1.0	ug/L	20.0	0.13 U	101	75-115			

**Matrix Spike Dup (0F09013-MSD1)**

Prepared: 06/09/2010 09:34 Analyzed: 06/09/2010 11:29

Source: C006671-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.15 U	93	75-133	3	20	
Benzene	20		1.0	ug/L	20.0	0.050 U	102	81-134	2	17	
Chlorobenzene	18		1.0	ug/L	20.0	0.069 U	89	83-117	3	16	
Toluene	17		1.0	ug/L	20.0	0.053 U	86	71-118	4	17	
Trichloroethene	20		1.0	ug/L	20.0	0.13 U	99	75-115	2	18	

**Classical Chemistry Parameters - Quality Control**

Batch 0F04020 - NO PREP

**Blank (0F04020-BLK1)**

Prepared & Analyzed: 06/04/2010 16:13

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Biochemical Oxygen Demand	2.0	U	2.0	mg/L							

**LCS (0F04020-BS1)**

Prepared & Analyzed: 06/04/2010 16:13

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Biochemical Oxygen Demand	190		2.0	mg/L	198		94	85-115			

**Duplicate (0F04020-DUP1)**

Prepared & Analyzed: 06/04/2010 16:13

Source: C006134-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Biochemical Oxygen Demand	17		2.0	mg/L		16			5	25	

Batch 0F07011 - NO PREP

**Blank (0F07011-BLK1)**

Prepared: 06/07/2010 11:57 Analyzed: 06/07/2010 15:31

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**QUALITY CONTROL**

**Classical Chemistry Parameters - Quality Control**

Batch 0F07011 - NO PREP

**Blank (0F07011-BLK1) Continued**

Prepared: 06/07/2010 11:57 Analyzed: 06/07/2010 15:31

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chemical Oxygen Demand	2.8	U	10	mg/L							

**LCS (0F07011-BS1)**

Prepared: 06/07/2010 11:57 Analyzed: 06/07/2010 15:31

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chemical Oxygen Demand	520		10	mg/L	500		104	90-110			

**Matrix Spike (0F07011-MS1)**

Prepared: 06/07/2010 11:57 Analyzed: 06/07/2010 15:31

Source: C003811-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chemical Oxygen Demand	550		10	mg/L	500	29	105	90-110			

**Matrix Spike Dup (0F07011-MSD1)**

Prepared: 06/07/2010 11:57 Analyzed: 06/07/2010 15:31

Source: C003811-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chemical Oxygen Demand	550		10	mg/L	500	29	103	90-110	1	10	

Batch 0F11024 - Same

**Blank (0F11024-BLK1)**

Prepared: 06/11/2010 14:16 Analyzed: 06/11/2010 18:37

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chemical Oxygen Demand	2.8	U	10	mg/L							

**LCS (0F11024-BS1)**

Prepared: 06/11/2010 14:16 Analyzed: 06/11/2010 18:37

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chemical Oxygen Demand	520		10	mg/L	500		105	90-110			

**Matrix Spike (0F11024-MS1)**

Prepared: 06/11/2010 14:16 Analyzed: 06/11/2010 18:37

Source: C006223-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chemical Oxygen Demand	740		10	mg/L	500	220	104	90-110			

**Matrix Spike Dup (0F11024-MSD1)**

Prepared: 06/11/2010 14:16 Analyzed: 06/11/2010 18:37

Source: C006223-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chemical Oxygen Demand	720		10	mg/L	500	220	101	90-110	2	10	

**FLAGS/NOTES AND DEFINITIONS**

- B The analyte was detected in the associated method blank.
- D The sample was analyzed at dilution.
- J The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
- U The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
- MRL Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.



**ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD**

10775 Central Port Dr.  
Orlando, FL 32824  
(407) 828-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211  
Jacksonville, FL 32216-6069  
(904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct.  
Cary, NC 27511  
(919) 467-3090 Fax (919) 467-3515

Page 1 of 1

Client Name <b>Golder Associates, Inc. (G0007)</b>	Project Number <b>08396506009.200</b>
Address <b>The Wingate Building 4900 Kogler Blvd., Suite 140 Greensboro, NC 27407</b>	Project Name/Desc <b>Henderson County LF</b>
Tel <b>(336) 852-4903</b>	PO # / Billing Info
Fax <b>(336) 852-4904</b>	Reporting Contact <b>Dusty Reedy</b>
Sampler(s) Name, Affiliation (Print) <b>Dusty Reedy, Golder</b>	Billing Account <b>Accounts Payable</b>
Sampler(s) Signature <i>Dusty Reedy</i>	Facility # (if required)

Requested Analyses	Preservation (See Codes) (Combine as necessary)
8260B Appendix 1	% Solids
BOD SM5210B	
COD SM5220D	

Requested Turnaround Times

Note: Rush requests subject to acceptance by the facility

Standard  
 Expedited

Due      /      /     

Lab Workorder  
**C006325**

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	Sample Comments
	Pond 1 - Water				SW	5	X X X - DR
	Pond 2 - Water				SW	5	X X X - DR
	Pond 1 - Soil	6-3-10	14:50	G	SO	4	X X X - DR
	Pond 2 - Soil				SO	4	X X X - DR
	Sample 1	6-3-10	17:00	G	SW	5	X X X X X
	Sample 2	6-3-10	13:35	G	SW	5	X X X X X
	Sample 3	6-3-10	14:25	G	SW	5	X X X X X
	Sample 4	6-3-10	14:10	G	SW	5	X X X X X

Sample Kit Prepared By <b>BJG</b>	Date/Time <b>5/28/10</b>	Relinquished By <i>Dusty Reedy</i>	Date/Time <b>6-3-10/1945</b>	Received By <i>[Signature]</i>	Date/Time <b>6-4-10 10:30</b>
Comments <b>Unit rates per Bid's Ord. No. 3 Agreement for Lab Services dated Apr. 19, 2004 and the 2010 Unit Price sheet</b>		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
Cooler #'s & Temps on Receipt <b>0-158 2.6°C</b>			Condition Upon Receipt <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable		

Matrix: GW-Groundwater SO-Soil SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)

Note: All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless your written agreement says otherwise.

**L.O.A per Dusty Reedy [Signature] Approved by [Signature]**



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C006325

ENCO Cary

Sample Receipt Conditions

<b>Client:</b> Golder Associates, Inc. (GO007)	<b>Lab Project Mgr:</b> Stephanie Franz
<b>Project:</b> Henderson County LF	<b>Project Number:</b> 08396506009.200
<b>PO #:</b>	

<b>Report To:</b>	<b>Invoice To:</b>
Golder Associates, Inc. (GO007)	Golder Associates, Inc. (GO007)
Dusty Reedy	Accounts Payable
The Wingate Building 4900 Koger Blvd., Suite 140	The Wingate Building 4900 Koger Blvd., Suite 140
Greensboro, NC 27407	Greensboro, NC 27407
Phone: (336) 852-4903	Phone : (804) 358-7900
Fax: (336) 852-4904	Fax: 804-358-2900

Received By: John C King	Date Received: 04-Jun-10 10:30
Logged In By: Briana J Gregory	Date Logged In: 04-Jun-10 11:29

Work Order Comments:

C-158 received at 2.6°C

Containers Intact	Y	Containers Properly Preserved	Y	Proper Containers Received	Y	All Samples in PreLog Received	N	COC/Labels Agree	Y
Custody Seals Intact	Y	Volatile Containers Preserved	Y	Volatile Containers Headspace Free	Y	Aqueous Samples Checked for Residual Cl	N	Received On Ice	Y



*Project Name:* Henderson County Landfill – Surface Water

*Project Reference Number:* 0839-650609.1000

*Sampling Event Date:* June 3, 2010

*Review Date:* June 21, 2010

*Initials:* DR

*Report #:* C006325

**Person(s) performing the review are to initial each item on this form as acknowledgement of data acceptance, or as acknowledgement of a review issue. In the case of the latter, a brief explanation should follow the applicable item.**

Golder Associates Inc. has reviewed the laboratory certificates of analysis, chain-of-custody form, and laboratory provided sample group quality assurance and quality control data for the above referenced sample group to identify potential bias or inaccuracy, in general accordance with the following United States Environmental Protection Agency documents:

- Region III Modifications to Functional Guidelines for Organic Data Review Multi-Media, Multi-Concentration, September 1994;
- Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, April 1993; and
- Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, July 1998.

**COMPLIANCE ANALYTE LIST(S) (check all that apply)**

NC Closed Facility List (.500 Rules)

NC C & D List (New Rules)

NC Appendix I

NC Appendix I + Detects

NC Appendix II

NC Subtitle D Leachate List

Other: NC Appendix I organics, BOD, and COD

**1.0 CHAIN OF CUSTODY (COC) REVIEW**

COC was properly signed by all parties.

Correct project name and number are on the form.

***Should be Phase 1000 instead of Phase 200.***

Sample receipt condition at laboratory was acceptable.

Each sample and blank submitted for analysis appears in the report.



**2.0 SAMPLE HOLDING TIMES**

Holding times for extraction and/or analysis were met for each analytical Method (see below for reference).

<b>Review Criteria</b>		
<b>Method</b>	<b>Analytes</b>	<b>Holding Time</b>
SW-846 Method 8260 and 8011	VOCs	14 days
SW-846 Methods 8270, 8080, 8081, 8082, and 8151	SVOCs, PCBs, pesticides and herbicides	7 days for extraction, 40 days from extraction for analysis
SW-846 Methods 6000 and 7000 Series	Metals except mercury	6 months (no temperature requirements)
SW-846 Method 7470	Mercury	28 days
SW-846 Method 376.1	Sulfide	7 days
SW-846 Method 9010	Cyanide	14 days
EPA Method 300	Nitrate/Sulfate	48 hours/28 days
EPA Method 405.1	BOD	48 hours
EPA Method 410.4	COD	28 days
EPA Method 365.4	Phosphorous	28 days

**3.0 LABORATORY QUALITY CONTROL REVIEW**

Laboratory analyzed at least one internal blank for each method, where applicable.

Laboratory blank is interference-free.

Surrogate recoveries are provided for each analytical method, where applicable.

Surrogate recoveries for each method are within the acceptable limits (i.e., at least 50% of the surrogates were within range).

MS/MSD/LCS data results are provided for each analytical method.

MS/MSD/LCS recoveries for each method are within the acceptable limits (i.e., at least 1 of the 3 were within range).

**4.0 ANALYTE LISTS/METHODS**

The proper number of constituents are present for each analyte list as identified above (including detects where applicable).

Proper EPA SW-846 analytical methods were used for analysis.



## **5.0 DATA REPORTING**

- All analytical reporting associated with the event was performed by the contracted lab.
  
- Trip, field and/or equipment, and laboratory blank results have all been reported. All detects for blanks are listed below by constituent. All laboratory method blanks, if any, have been 'flagged' with a 'B' where detected in other samples as appropriate and a laboratory narrative was provided. If the sample was flagged by the laboratory and is not within 5X of the concentration in the blank (or 10X for commonly detected laboratory contaminants-acetone, methylene chloride and phthalates), list below with explanation if flags should be removed. If flags need to be added for samples, also list below.
  
- It is clear from the laboratory report that samples have or have not been diluted during analysis, and if the samples have been diluted, the result is reported as a multiple of the dilution (e.g., a sample diluted 10x resulting in an analytical detection of 1.0 should be reported as 10). Those that have been diluted are listed below with the dilution factor.
  
- The report provides the reporting limit for each constituent.
  
- The results were reported at or below their proper reporting limits (i.e., MDLs with SWSLs reported). Those that are not reported correctly are listed below (by constituent) with the proper reporting limit listed beside them. State if the reporting limit error is due to dilutions.
  
- No organic constituents were reported above their respective SWSLs, and no inorganic or organic constituents were reported above their respective NC 2L Drinking Water Standards/GWPS in wells, or field/equipment/trip blanks, or above applicable surface water standards in surface water points.
  
- NA** No inorganic and organic constituents were detected in a well or surface water point at concentrations outside of their historical range (more than 5X previous concentrations or first-time detections).
  
- Other report issues/Communications with laboratory/etc.:

**Environmental Conservation Laboratories, Inc.**

102-A Woodwinds Industrial Court

Cary NC, 27511

Phone: 919.467.3090 FAX: 919.467.3515



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Wednesday, June 16, 2010

Golder Associates, Inc. (G0007)

Attn: Dusty Reedy

The Wingate Building 4900 Koger Blvd., Suite 140

Greensboro, NC 27407

**RE: Laboratory Results for**

**Project Number: 08396506009.200, Project Name/Desc: Henderson County LF**

**ENCO Workorder: C006325**

Dear Dusty Reedy,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, June 4, 2010.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Stephanie Franz', with a stylized flourish at the end.

Stephanie Franz

Project Manager

Enclosure(s)



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## **PROJECT NARRATIVE**

Date: 16 June 2010  
Client: Golder Associates, Inc. (GO007)  
Project: Henderson County LF  
Lab ID: C006325

### Overview

Environmental Conservation Laboratories, Inc. (ENCO) analyzed all submitted samples in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling by ENCO are discussed in the QC Remarks section below.

### Quality Control Samples

No Comments

### Quality Control Remarks

No Comments

### Other Comments

All samples received under this work order arrived in acceptable conditions. The samples were not checked for residual chlorine, as it is not required. Samples Pond 1-Water, Pond 2-Water, and Pond 2- Soil were not received.

The analytical data presented in this report are consistent with the methods as referenced in the analytical report. Any exceptions or deviations are noted in the QC remarks section of this narrative or in the Flags/Notes and Definitions section of the report.

Released By:  
Environmental Conservation Laboratories, Inc.

Stephanie Franz  
Project Manager



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**SAMPLE SUMMARY/LABORATORY CHRONICLE**

<b>Client ID:</b> Pond 1- Soil	<b>Lab ID:</b> C006325-01	<b>Sampled:</b> 06/03/10 14:50	<b>Received:</b> 06/04/10 10:30
<b>Parameter</b>	<b>Hold Date/Time(s)</b>	<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8260B	06/17/10	06/14/10 10:30	6/14/2010 17:40



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### SAMPLE DETECTION SUMMARY

Client ID: Pond 1- Soil		Lab ID: C006325-01					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
2-Butanone	0.044		0.001	0.013	mg/kg dry	EPA 8260B	
Acetone	0.18		0.003	0.013	mg/kg dry	EPA 8260B	
Carbon disulfide	0.001	J	0.0005	0.013	mg/kg dry	EPA 8260B	
Toluene	0.007		0.0003	0.003	mg/kg dry	EPA 8260B	



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**ANALYTICAL RESULTS**

**Description:** Pond 1- Soil

**Lab Sample ID:** C006325-01

**Received:** 06/04/10 10:30

**Matrix:** Soil

**Sampled:** 06/03/10 14:50

**Work Order:** C006325

**Project:** Henderson County LF

**Sampled By:** Dusty Reedy

**% Solids:** 42.7

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.0005	U	mg/kg dry	1	0.0005	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.0004	U	mg/kg dry	1	0.0004	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.0005	U	mg/kg dry	1	0.0005	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,1-Dichloroethane [75-34-3] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,1-Dichloroethene [75-35-4] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.001	U	mg/kg dry	1	0.001	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.002	U	mg/kg dry	1	0.002	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,2-Dibromoethane [106-93-4] ^	0.0004	U	mg/kg dry	1	0.0004	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.0004	U	mg/kg dry	1	0.0004	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,2-Dichloroethane [107-06-2] ^	0.0005	U	mg/kg dry	1	0.0005	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,2-Dichloropropane [78-87-5] ^	0.0004	U	mg/kg dry	1	0.0004	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
<b>2-Butanone [78-93-3] ^</b>	<b>0.044</b>		mg/kg dry	1	0.001	0.013	0F14020	EPA 8260B	06/14/10 17:40	JKG	
2-Hexanone [591-78-6] ^	0.0009	U	mg/kg dry	1	0.0009	0.013	0F14020	EPA 8260B	06/14/10 17:40	JKG	
4-Methyl-2-pentanone [108-10-1] ^	0.0008	U	mg/kg dry	1	0.0008	0.013	0F14020	EPA 8260B	06/14/10 17:40	JKG	
<b>Acetone [67-64-1] ^</b>	<b>0.18</b>		mg/kg dry	1	0.003	0.013	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Acrylonitrile [107-13-1] ^	0.002	U	mg/kg dry	1	0.002	0.027	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Benzene [71-43-2] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Bromochloromethane [74-97-5] ^	0.0007	U	mg/kg dry	1	0.0007	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Bromodichloromethane [75-27-4] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Bromoform [75-25-2] ^	0.0005	U	mg/kg dry	1	0.0005	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Bromomethane [74-83-9] ^	0.0006	U	mg/kg dry	1	0.0006	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
<b>Carbon disulfide [75-15-0] ^</b>	<b>0.001</b>	J	mg/kg dry	1	0.0005	0.013	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Carbon tetrachloride [56-23-5] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Chlorobenzene [108-90-7] ^	0.0004	U	mg/kg dry	1	0.0004	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Chloroethane [75-00-3] ^	0.0006	U	mg/kg dry	1	0.0006	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Chloroform [67-66-3] ^	0.0004	U	mg/kg dry	1	0.0004	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Chloromethane [74-87-3] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Dibromochloromethane [124-48-1] ^	0.0005	U	mg/kg dry	1	0.0005	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Dibromomethane [74-95-3] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Ethylbenzene [100-41-4] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Iodomethane [74-88-4] ^	0.001	U	mg/kg dry	1	0.001	0.013	0F14020	EPA 8260B	06/14/10 17:40	JKG	
m,p-Xylenes [108-38-3/106-42-3] ^	0.0006	U	mg/kg dry	1	0.0006	0.005	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Methylene chloride [75-09-2] ^	0.0006	U	mg/kg dry	1	0.0006	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
o-Xylene [95-47-6] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Styrene [100-42-5] ^	0.0004	U	mg/kg dry	1	0.0004	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Tetrachloroethene [127-18-4] ^	0.0006	U	mg/kg dry	1	0.0006	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
<b>Toluene [108-88-3] ^</b>	<b>0.007</b>		mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.0008	U	mg/kg dry	1	0.0008	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Trichloroethene [79-01-6] ^	0.0005	U	mg/kg dry	1	0.0005	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Trichlorofluoromethane [75-69-4] ^	0.0003	U	mg/kg dry	1	0.0003	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Vinyl acetate [108-05-4] ^	0.0007	U	mg/kg dry	1	0.0007	0.013	0F14020	EPA 8260B	06/14/10 17:40	JKG	
Vinyl chloride [75-01-4] ^	0.0004	U	mg/kg dry	1	0.0004	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	



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Description: Pond 1- Soil

Lab Sample ID: C006325-01

Received: 06/04/10 10:30

Matrix: Soil

Sampled: 06/03/10 14:50

Work Order: C006325

Project: Henderson County LF

Sampled By: Dusty Reedy

% Solids: 42.7

**Volatile Organic Compounds by GCMS**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Xylenes (Total) [1330-20-7] ^	0.0008	U	mg/kg dry	1	0.0008	0.003	0F14020	EPA 8260B	06/14/10 17:40	JKG	
<b>Surrogates</b>	<b>Results</b>	<b>DF</b>	<b>Spike Lvl</b>	<b>% Rec</b>	<b>% Rec Limits</b>		<b>Batch</b>	<b>Method</b>	<b>Analyzed</b>	<b>By</b>	<b>Notes</b>
4-Bromofluorobenzene	47	1	50.0	94 %	61-118		0F14020	EPA 8260B	06/14/10 17:40	JKG	
Dibromofluoromethane	42	1	50.0	84 %	66-114		0F14020	EPA 8260B	06/14/10 17:40	JKG	
Toluene-d8	47	1	50.0	95 %	63-118		0F14020	EPA 8260B	06/14/10 17:40	JKG	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



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### QUALITY CONTROL

#### Volatile Organic Compounds by GCMS - Quality Control

Batch 0F14020 - EPA 5035\_MS

Blank (0F14020-BLK1)

Prepared: 06/14/2010 10:06 Analyzed: 06/14/2010 11:48

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.0002	U	0.001	mg/kg wet							
1,1,1-Trichloroethane	0.0001	U	0.001	mg/kg wet							
1,1,2,2-Tetrachloroethane	0.0002	U	0.001	mg/kg wet							
1,1,2-Trichloroethane	0.0002	U	0.001	mg/kg wet							
1,1-Dichloroethane	0.0001	U	0.001	mg/kg wet							
1,1-Dichloroethene	0.0001	U	0.001	mg/kg wet							
1,2,3-Trichloropropane	0.0004	U	0.001	mg/kg wet							
1,2-Dibromo-3-chloropropane	0.0008	U	0.001	mg/kg wet							
1,2-Dibromoethane	0.0002	U	0.001	mg/kg wet							
1,2-Dichlorobenzene	0.0001	U	0.001	mg/kg wet							
1,2-Dichloroethane	0.0002	U	0.001	mg/kg wet							
1,2-Dichloropropane	0.0002	U	0.001	mg/kg wet							
1,4-Dichlorobenzene	0.0001	U	0.001	mg/kg wet							
2-Butanone	0.0004	U	0.005	mg/kg wet							
2-Hexanone	0.0003	U	0.005	mg/kg wet							
4-Methyl-2-pentanone	0.0003	U	0.005	mg/kg wet							
Acetone	0.001	U	0.005	mg/kg wet							
Acrylonitrile	0.0008	U	0.010	mg/kg wet							
Benzene	0.0001	U	0.001	mg/kg wet							
Bromochloromethane	0.0002	U	0.001	mg/kg wet							
Bromodichloromethane	0.0001	U	0.001	mg/kg wet							
Bromoform	0.0002	U	0.001	mg/kg wet							
Bromomethane	0.0002	U	0.001	mg/kg wet							
Carbon disulfide	0.0002	U	0.005	mg/kg wet							
Carbon tetrachloride	0.0001	U	0.001	mg/kg wet							
Chlorobenzene	0.0002	U	0.001	mg/kg wet							
Chloroethane	0.0002	U	0.001	mg/kg wet							
Chloroform	0.0001	U	0.001	mg/kg wet							
Chloromethane	0.0001	U	0.001	mg/kg wet							
cis-1,2-Dichloroethene	0.0001	U	0.001	mg/kg wet							
cis-1,3-Dichloropropene	0.0001	U	0.001	mg/kg wet							
Dibromochloromethane	0.0002	U	0.001	mg/kg wet							
Dibromomethane	0.0001	U	0.001	mg/kg wet							
Ethylbenzene	0.0001	U	0.001	mg/kg wet							
Iodomethane	0.0004	U	0.005	mg/kg wet							
m,p-Xylenes	0.0002	U	0.002	mg/kg wet							
Methylene chloride	0.0002	U	0.001	mg/kg wet							
o-Xylene	0.0001	U	0.001	mg/kg wet							
Styrene	0.0002	U	0.001	mg/kg wet							
Tetrachloroethene	0.0002	U	0.001	mg/kg wet							
Toluene	0.0001	U	0.001	mg/kg wet							
trans-1,2-Dichloroethene	0.0001	U	0.001	mg/kg wet							
trans-1,3-Dichloropropene	0.0001	U	0.001	mg/kg wet							
trans-1,4-Dichloro-2-butene	0.0003	U	0.001	mg/kg wet							
Trichloroethene	0.0002	U	0.001	mg/kg wet							
Trichlorofluoromethane	0.0001	U	0.001	mg/kg wet							
Vinyl acetate	0.0003	U	0.005	mg/kg wet							
Vinyl chloride	0.0002	U	0.001	mg/kg wet							
Xylenes (Total)	0.0003	U	0.001	mg/kg wet							



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**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 0F14020 - EPA 5035\_MS

**Blank (0F14020-BLK1) Continued**

Prepared: 06/14/2010 10:06 Analyzed: 06/14/2010 11:48

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	46			ug/L	50.0		93	61-118			
Surrogate: Dibromofluoromethane	41			ug/L	50.0		83	66-114			
Surrogate: Toluene-d8	47			ug/L	50.0		93	63-118			

**LCS (0F14020-BS1)**

Prepared: 06/14/2010 10:06 Analyzed: 06/14/2010 12:35

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	20		1.0	ug/L	20.0		98	64-133			
Benzene	19		1.0	ug/L	20.0		96	79-129			
Chlorobenzene	20		1.0	ug/L	20.0		101	79-121			
Toluene	21		1.0	ug/L	20.0		105	77-120			
Trichloroethene	20		1.0	ug/L	20.0		102	78-118			
Surrogate: 4-Bromofluorobenzene	47			ug/L	50.0		94	61-118			
Surrogate: Dibromofluoromethane	43			ug/L	50.0		85	66-114			
Surrogate: Toluene-d8	46			ug/L	50.0		93	63-118			

**Matrix Spike (0F14020-MS1)**

Prepared: 06/14/2010 10:06 Analyzed: 06/14/2010 13:06

Source: C007048-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	19		1.0	ug/L	20.0	0.10 U	95	64-133			
Benzene	19		1.0	ug/L	20.0	0.11 U	94	79-129			
Chlorobenzene	19		1.0	ug/L	20.0	0.16 U	97	79-121			
Toluene	20		1.0	ug/L	20.0	0.12 U	100	77-120			
Trichloroethene	21		1.0	ug/L	20.0	0.18 U	103	78-118			
Surrogate: 4-Bromofluorobenzene	45			ug/L	50.0		91	61-118			
Surrogate: Dibromofluoromethane	44			ug/L	50.0		88	66-114			
Surrogate: Toluene-d8	46			ug/L	50.0		92	63-118			

**Matrix Spike Dup (0F14020-MSD1)**

Prepared: 06/14/2010 10:06 Analyzed: 06/14/2010 16:30

Source: C007048-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	18		1.0	ug/L	20.0	0.10 U	88	64-133	8	23	
Benzene	18		1.0	ug/L	20.0	0.11 U	88	79-129	7	23	
Chlorobenzene	18		1.0	ug/L	20.0	0.16 U	91	79-121	7	25	
Toluene	19		1.0	ug/L	20.0	0.12 U	96	77-120	4	23	
Trichloroethene	19		1.0	ug/L	20.0	0.18 U	94	78-118	9	24	
Surrogate: 4-Bromofluorobenzene	45			ug/L	50.0		90	61-118			
Surrogate: Dibromofluoromethane	42			ug/L	50.0		84	66-114			
Surrogate: Toluene-d8	48			ug/L	50.0		96	63-118			

**FLAGS/NOTES AND DEFINITIONS**

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.



**ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD**

10775 Central Port Dr.  
Orlando, FL 32824  
(407) 828-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211  
Jacksonville, FL 32216-6069  
(904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct.  
Cary, NC 27511  
(919) 467-3090 Fax (919) 467-3515

Page 1 of 1

Client Name <b>Golder Associates, Inc. (G0007)</b>	Project Number <b>08396506009.200</b>
Address <b>The Wingate Building 4900 Kogler Blvd., Suite 140 Greensboro, NC 27407</b>	Project Name/Desc <b>Henderson County LF</b>
Tel <b>(336) 852-4903</b>	PO # / Billing Info
Fax <b>(336) 852-4904</b>	Reporting Contact <b>Dusty Reedy</b>
Sampler(s) Name, Affiliation (Print) <b>Dusty Reedy, Golder</b>	Billing Account <b>Accounts Payable</b>
Sampler(s) Signature <i>Dusty Reedy</i>	Facility # (if required)

Requested Analyses	Requested Turnaround Times
8260B Appendix 1	Note: Rush requests subject to acceptance by the facility
BOD SM5210B	<input checked="" type="checkbox"/> Standard
COD SM5220D	<input type="checkbox"/> Expedited
	Due <u>  </u> / <u>  </u> / <u>  </u>
	Lab Workorder <b>C006325</b>

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	Preservation (See Codes) (Combine as necessary)				Sample Comments
							% Solids	8260B Appendix 1	BOD SM5210B	COD SM5220D	
	Pond 1 - Water				SW	5	X	X	X	ARC	
	Pond 2 - Water				SW	5	X	X	X	ARC	
	Pond 1 - Soil	6-3-10	14:50	G	SO	4	X				
	Pond 2 - Soil				SO	4	X			ARC	
	Sample 1	6-3-10	17:00	G	SW	5	X	X	X		
	Sample 2	6-3-10	13:35	G	SW	5	X	X	X		
	Sample 3	6-3-10	14:25	G	SW	5	X	X	X		
	Sample 4	6-3-10	14:10	G	SW	5	X	X	X		

Sample Kit Prepared By <b>BJG</b>	Date/Time <b>5/28/10</b>	Relinquished By <i>Dusty Reedy</i>	Date/Time <b>6-3-10/1945</b>	Received By <i>[Signature]</i>	Date/Time <b>6-4-10 10:30</b>
Comments <b>Unit rates per Bid's Ord. No. 1 Agreement for Lab Services dated Apr. 19, 2004 and the 2010 Unit Price sheet</b>		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
Cooler #'s & Temps on Receipt <b>0-158 2.6°C</b>			Condition Upon Receipt <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Unacceptable		

Matrix: GW-Groundwater SO-Soil SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)

Note: All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless your written agreement says otherwise.

L.O.A per Dusty Reedy *[Signature]* Approved by *[Signature]*



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**GOLDER ASSOCIATES INC.  
QUALITY ASSURANCE & QUALITY CONTROL  
LABORATORY DATA REVIEW**

Page 1 of 3



*Project Name:* Henderson County Landfill – Soil Sample

*Project Reference Number:* 0839-650610.1000

*Sampling Event Date:* June 3, 2010

*Review Date:* June 21, 2010

*Initials:* DR

*Report #:* C006325

**Person(s) performing the review are to initial each item on this form as acknowledgement of data acceptance, or as acknowledgement of a review issue. In the case of the latter, a brief explanation should follow the applicable item.**

Golder Associates Inc. has reviewed the laboratory certificates of analysis, chain-of-custody form, and laboratory provided sample group quality assurance and quality control data for the above referenced sample group to identify potential bias or inaccuracy, in general accordance with the following United States Environmental Protection Agency documents:

- Region III Modifications to Functional Guidelines for Organic Data Review Multi-Media, Multi-Concentration, September 1994;
- Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, April 1993; and
- Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, July 1998.

## **ANALYTE LIST(S)**

NC Appendix I organic compounds

### **1.0 CHAIN OF CUSTODY (COC) REVIEW**

COC was properly signed by all parties.

Correct project name and number are on the form.

***Should be Phase 1000 instead of Phase 200.***

Sample receipt condition at laboratory was acceptable.

Each sample and blank submitted for analysis appears in the report.

### **2.0 SAMPLE HOLDING TIMES**

Holding times for extraction and/or analysis were met for each analytical Method (see lab manual for holding times).

### **3.0 LABORATORY QUALITY CONTROL REVIEW**

Laboratory analyzed at least one internal blank for each method, where applicable.



- Laboratory blank is interference-free.
- Surrogate recoveries are provided for each analytical method, where applicable.
- Surrogate recoveries for each method are within the acceptable limits (i.e., at least 50% of the surrogates were within range).
- MS/MSD/LCS data results are provided for each analytical method.
- MS/MSD/LCS recoveries for each method are within the acceptable limits (i.e., at least 1 of the 3 were within range).

#### **4.0 ANALYTE LISTS/METHODS**

- The proper number of constituents are present for each analyte list as identified above (including detects where applicable).
- Proper analytical methods were used for analysis.

#### **5.0 DATA REPORTING**

- All analytical reporting associated with the event was performed by the contracted lab.
- Trip, field and/or equipment, and laboratory blank results have all been reported. All detects for blanks are listed below by constituent. All laboratory method blanks, if any, have been 'flagged' with a 'B' where detected in other samples as appropriate and a laboratory narrative was provided. If the sample was flagged by the laboratory and is not within 5X of the concentration in the blank (or 10X for commonly detected laboratory contaminants-acetone, methylene chloride and phthalates), list below with explanation if flags should be removed. If flags need to be added for samples, also list below.
- It is clear from the laboratory report that samples have or have not been diluted during analysis, and if the samples have been diluted, the result is reported as a multiple of the dilution (e.g., a sample diluted 10x resulting in an analytical detection of 1.0 should be reported as 10). Those that have been diluted are listed below with the dilution factor.
- The report provides the reporting limit for each constituent.
- The results were reported at or below their proper reporting limits (e.g., MDLs, MRLs, PQLs, etc.). Those that are not reported correctly are listed below (by constituent) with the proper reporting limit listed beside them. State if the reporting limit error is due to dilutions.



No inorganic and organic constituents were reported above their respective NC 2L Drinking Water Standards in wells, surface points, or field/equipment/trip blanks.

***Results compared to NC Inactive Hazardous Sites Branch Soil Remediation Goals (January 2010. There were no exceedances.***

For sites with historical data, no inorganic and organic constituents were detected in a well or surface water point at concentrations outside of their historical range (more than 5X previous concentrations or first-time detections).

Other report issues/Communications with laboratory/etc.:



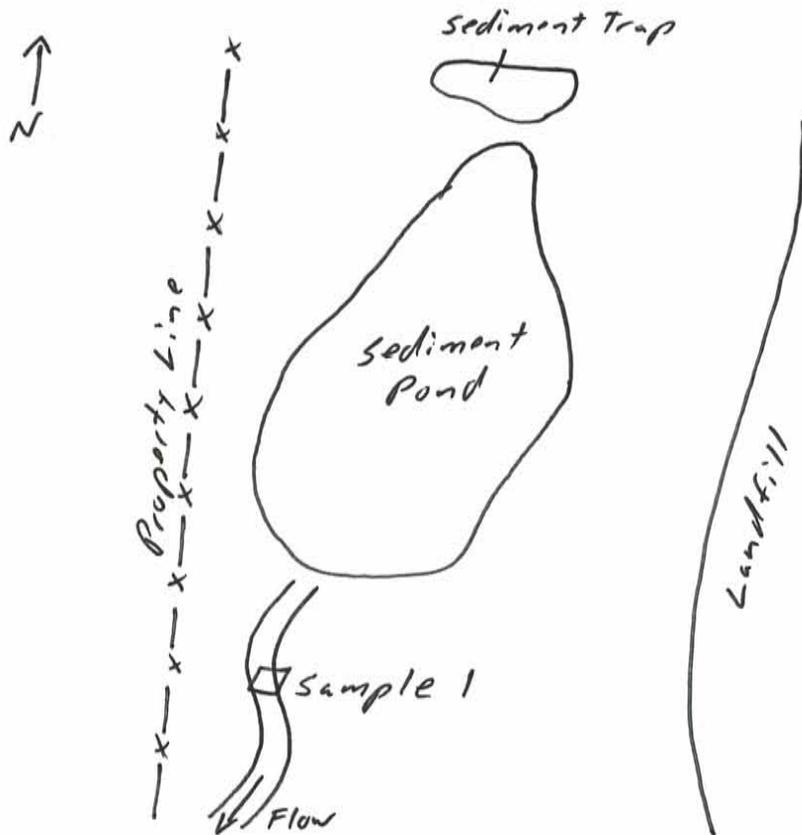
DATE: 6/3/2010

**SURFACE WATER SAMPLING LOG**

Project Name: Henderson County Project No./Phase No.: 0839-650609.1000  
 Sample ID: Sample 1 Sampler(s): D. Reedy  
 Sampling Location: In stream immediately downstream of the sediment pond  
 Equipment: YSIS 556, Hach 2100P

Time	13:00
pH s.u.	6.33
Cond. uS/cm	599
Turb. ntu	17.1
Dis. O <sub>2</sub> mg/L	--
Temp. °C	17.45
ORP mv	3.0

Surface Water Sampling Location Sketch



**Comments (sample methodology, weather conditions, color, silt, etc.):**

*Weather - Mean Temp: 85°F, Average Humidity: 81%, No Wind, Clear*

Signature: *D. Reedy*

Date: 6-3-10

QA/QC Sign Off: *Reuel Kiri*

Date: 6-24-10

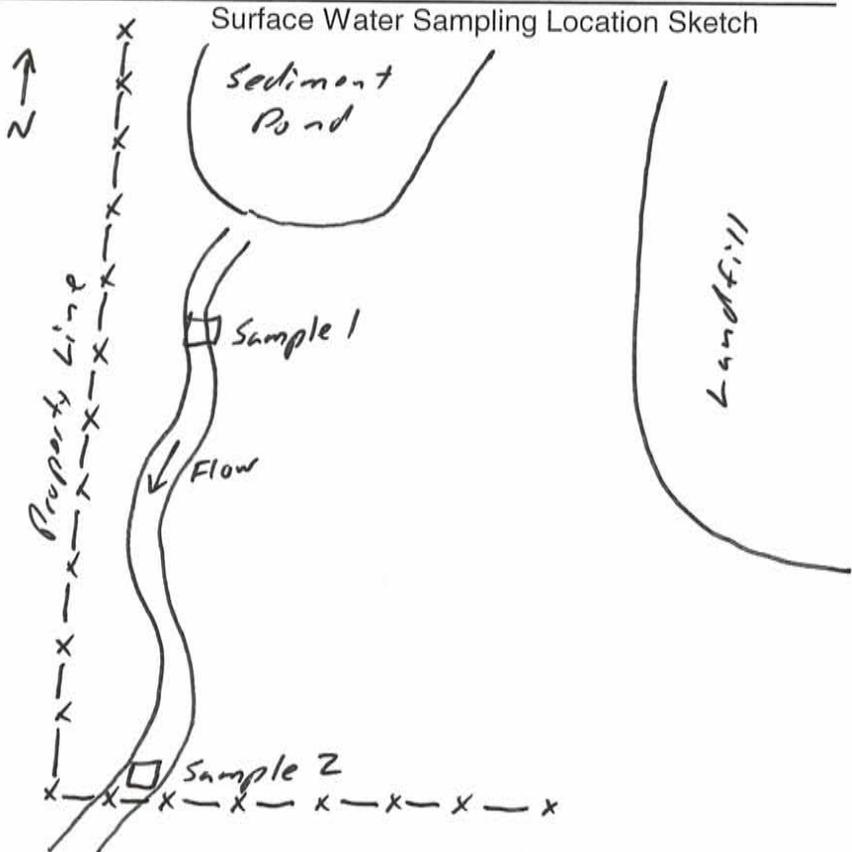


DATE: 6/3/2010

**SURFACE WATER SAMPLING LOG**

Project Name: Henderson County Project No./Phase No.: 0839-650609.1000  
 Sample ID: Sample 2 Sampler(s): D. Reedy  
 Sampling Location: In stream at the property line  
 Equipment: YSIS 556, Hach 2100P

Time	13:35
pH s.u.	6.73
Cond. uS/cm	1420
Turb. ntu	23.2
Dis. O <sub>2</sub> mg/L	--
Temp. °C	18.10
ORP mv	-5.2



**Comments (sample methodology, weather conditions, color, silt, etc.):**

Weather - Mean Temp: 85°F, Average Humidity: 81%, No Wind, Clear

Signature: *D. Reedy*

Date: 6-3-10

QA/QC Sign Off: *Samuel Kim*

Date: 6-24-10



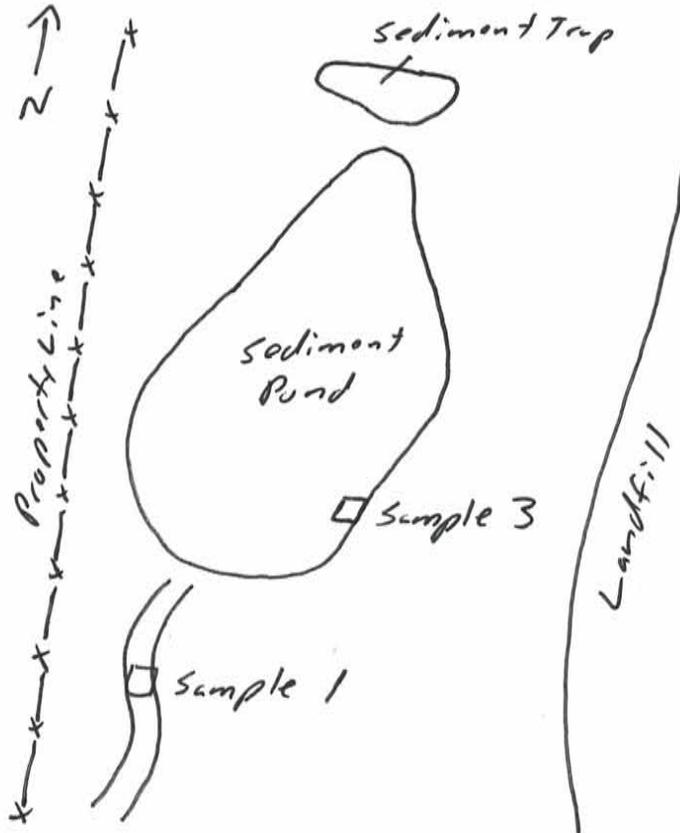
DATE: 6/3/2010

**SURFACE WATER SAMPLING LOG**

Project Name: Henderson County Project No./Phase No.: 0839-650609.1000  
 Sample ID: Sample 3 Sampler(s): D. Reedy  
 Sampling Location: From sediment pond  
 Equipment: YSIS 556, Hach 2100P

Surface Water Sampling Location Sketch

Time	14:25
pH s.u.	7.21
Cond. uS/cm	779
Turb. ntu	260
Dis. O <sub>2</sub> mg/L	--
Temp. °C	29.51
ORP mv	-73.7



**Comments (sample methodology, weather conditions, color, silt, etc.):**

*Weather - Mean Temp: 85°F, Average Humidity: 81%, No Wind, Clear*

*Pond 1-Soil sample was taken from same location*

Signature: *D. Reedy*

Date: 6-3-10

QA/QC Sign Off: *Karen*

Date: 6-24-10



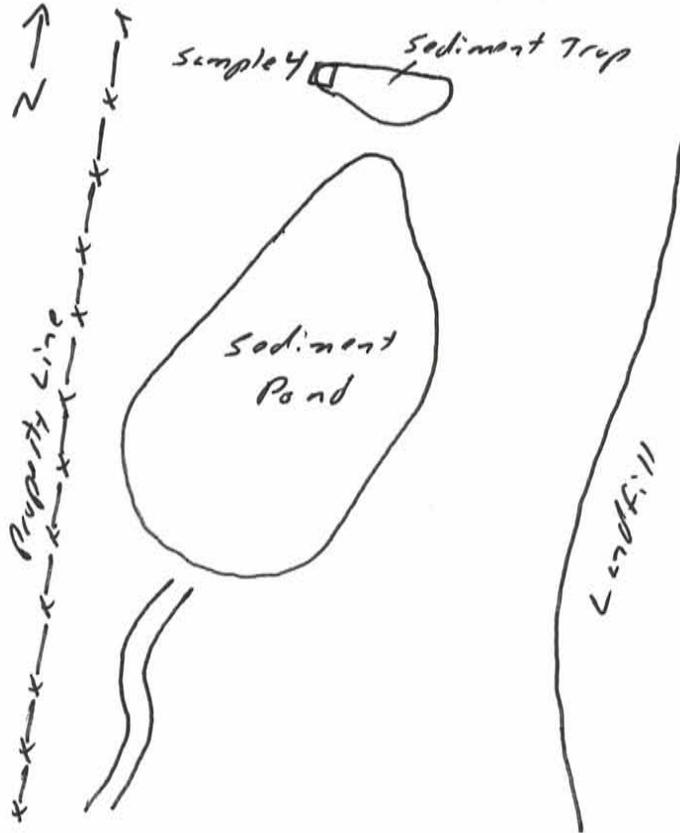
DATE: 6/3/2010

**SURFACE WATER SAMPLING LOG**

Project Name: Henderson County Project No./Phase No.: 0839-650609.1000  
 Sample ID: Sample 4 Sampler(s): D. Reedy  
 Sampling Location: From sediment trap  
 Equipment: YSIS 556, Hach 2100P

Surface Water Sampling Location Sketch

Time	14:10
pH s.u.	6.73
Cond. uS/cm	685
Turb. ntu	52.7
Dis. O <sub>2</sub> mg/L	--
Temp. °C	29.46
ORP mv	102.3



**Comments (sample methodology, weather conditions, color, silt, etc.):**

*Weather - Mean Temp: 85°F, Average Humidity: 81%, No Wind, Clear*

Signature: *D. Reedy*

Date: 6-3-10

QA/QC Sign Off: *Kevin King*

Date: 6-24-10