DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- In accordance with NC General Statutes Chapter 89C and 89E and NC Solid Waste Management Rules 15A NCAC 13B, be sure to affix a seal to the bottom of this page, when applicable.
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Trevor J. Benton, P.G. Phone: 864-288-1265

E-mail: trevor@blecorp.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Closed Francis Farms Landfill	Francis Farm Road Haywood County, North Carolina	44-03	.1600	August 25, 2008

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☒ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify)

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Trevor J. Benton, P.G.	Hydrogeologist	864-288-1265
Facility Representative Name (Print)	Title	(Area Code) Telephone Number
Signature	01/20/09 Date	Affix NC Licensed/ Professional Geologist/Engineer Seal here:

NORTH CAROLINA LICENSED SEAL 2025 GEOLOGIST TREVOR J. BENTON

Revised 01/2007

BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

REPORT OF GROUNDWATER QUALITY RESULTS & STATISTICAL ANALYSIS

SECOND SEMI-ANNUAL SAMPLING EVENT OF 2008

CLOSED FRANCIS FARM LANDFILL
PERMIT NUMBER: 44-03
HAYWOOD COUNTY, NORTH CAROLINA

Prepared for:

HAYWOOD COUNTY SOLID WASTE MANAGEMENT
278 Recycle Road
Clyde, North Carolina 28721

Prepared By:

BUNNELL-LAMMONS ENGINEERING, INC.
6004 Ponder Court
Greenville, South Carolina 29615

January 16, 2009

BLE Project Number J08-1957-05

BLE INC.
BUNNELL-LAMMONS ENGINEERING, INC.
GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

January 16, 2009

Haywood County Solid Waste Management
278 Recycle Road
Clyde, NC 28721

Attention: Mr. Stephen King
Solid Waste Director

Subject: **Report of Groundwater Quality Results & Statistical Analysis**
Second Semi-Annual Sampling Event of 2008
Closed Francis Farm Landfill
Permit Number: 44-03
Haywood County, North Carolina
BLE Project Number J08-1957-05

Dear Mr. King:

As authorized, Bunnell-Lammons Engineering, Inc. (BLE) has performed the statistical analysis of groundwater quality data obtained from the subject site. The enclosed report describes the work performed and presents the results obtained with our conclusions. The purpose of this work was to statistically compare the laboratory analytical results of groundwater samples from the background monitoring wells to the downgradient monitoring wells at the subject closed municipal solid waste (MSW) landfill in accordance with Title 15A NCAC 13B .1632 (g), (h), and (i). This report of the sampling and statistical analysis has been prepared for submittal to the North Carolina Division of Waste Management (NCDWM) in accordance with Rule 15A NCAC 13B .1632 (j).

We appreciate the opportunity to serve as your geological consultant on this project and look forward to working with you on future projects. If you have any questions, please contact us at (864) 288-1265.

Sincerely,
BUNNELL-LAMMONS ENGINEERING, INC.

Trevor J. Benton, P.G.
Project Geologist
Registered, North Carolina No. 2025

NORTH CAROLINA LICENSED SEAL 2025 GEOLOGIST TREVOR J. BENTON 1/16/09

Mark S. Preddy, P.G.
Senior Geologist
Registered, North Carolina No. 1043

NORTH CAROLINA LICENSED SEAL 1043 GEOLOGIST MARK S. PREDDY 1/16/09

c.c: Mr. Ervin Lane – NC DENR Solid Waste Section, 401 Oberlin Road, Ste. 150, Raleigh, NC 27605

6004 PONDERS COURT
GREENVILLE, SOUTH CAROLINA 29615

PHONE (864) 288-1265
FAX (864) 288-4430

PROJECT INFORMATION

The subject closed municipal solid waste landfill site is located in Haywood County, North Carolina, approximately two miles northeast of Waynesville on Francis Farm Road (Figure 1). The landfill has five groundwater monitoring wells consisting of two upgradient (MW-4 and MW-5) and three downgradient wells (MW-1A, MW-2A, and MW-3A). Additionally, there are three surface water sampling locations consisting of one upgradient (SW-1) and two downgradient (SW-2 and Blanton Branch) sampling points.

BLE was retained by Haywood County to prepare the semi-annual sampling reports for 2008. Historical data from multiple sources and in multiple formats had to be gathered and synthesized into this report.

This report presents data from the second semi-annual sampling event in 2008 for the site. The water samples were collected and analyzed as required in North Carolina's regulations for operation of municipal solid waste landfills. This report incorporates the eighteen sampling events between February 1999 and August 2008.

FIELD ACTIVITIES, SAMPLING, AND ANALYSIS

Groundwater and surface water samples were collected for the second semi-annual sampling event of 2008 by personnel from Pace Analytical Services, Inc. (Pace) of Asheville, North Carolina on August 25. Groundwater samples were collected from four of the five well locations (well MW-3A was dry) and each of the three surface water locations at the site. Summary tables of analytical results are attached in Appendix A (groundwater) and Appendix B (surface water). The samples were analyzed in the laboratory for North Carolina's *Appendix I* list of volatile organic compounds (VOCs), the RCRA metals, and in the field for pH, specific conductance, and temperature. A copy of the Pace laboratory and field data is included in Appendix C.

The water level data collected during the groundwater sampling is presented in Table 1. A water table surface elevation contour map is presented as Figure 2 along with generalized groundwater flow directions. Data required to calculate groundwater flow velocities is currently unavailable for the site. We have recommended to Haywood County that this data be collected and reported.

SUMMARY OF LABORATORY RESULTS

Groundwater

Total metal detections in groundwater during the current sampling event included total barium (MW-1A, MW-2A, MW-4 and MW-5) and total selenium (MW-2A). VOC detections in groundwater included benzene (MW-4 and MW-5), chlorobenzene (MW-1A), chloroethane (MW-1A, MW-2A, MW-4, and MW-5), 1,2-dichlorobenzene (MW-2A), 1,4-dichlorobenzene (MW-2A and MW-4), 1,1-dichloroethane (MW-1A, MW-2A, MW-4, and MW-5), 1,2-dichloroethane (MW-4), cis-1,2-dichloroethene (MW-1A, MW-2A, MW-4 and MW-5), ethylbenzene (MW-4), dichloromethane (MW-4), tetrachloroethene (MW-4 and MW-5), toluene (MW-4), trichloroethene (MW-4 and MW-5), and total xylenes (MW-4).

The concentrations of benzene (MW-4 and MW-5), 1,4-dichlorobenzene (MW-2A and MW-4), 1,2-dichloroethane (MW-4), dichloromethane (MW-4), tetrachloroethene (MW-4 and MW-5), and trichloroethene (MW-4 and MW-5), were detected above North Carolina's maximum contaminant levels[1] (MCLs). A summary of the detected concentrations is included in Appendix A.

Surface Water

Total barium was detected in each of the surface water samples during the current sampling event, but North Carolina has not established a surface water[2] MCL for this constituent. No VOCs were detected in the surface water samples. A summary of the detected concentrations is included in Appendix B.

STATISTICAL METHODS PERFORMED

The purpose of performing statistical analysis of groundwater quality data is to determine if a release of leachate has occurred from the landfill cells to the groundwater at the site. The US EPA has prepared guidance documents for evaluating groundwater quality data, which include the *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Interim Final Guidance* (April 1989) and the *Addendum to the Interim Final Guidance* (July 1992). The procedures and methodology used for data analysis of this project are consistent with these US EPA guidance documents, and meet or exceed the performance criteria specified in the North Carolina solid waste management rules Title 15A NCAC 13B .1632(g-i). Five methods of statistical analysis were performed depending on the number of detected concentrations and the distribution of the data for a specific compound, as follows:

1. If greater than 90% of the data were not detected, Poisson Tolerance Limits were performed. Additionally, Wilcoxon rank-sum tests were performed for those compounds that failed the initial Poisson Tolerance Limits test;

2. If 15% to 90% of the data were not detected, the one-way non-parametric analysis of variance (ANOVA) Kruskal-Wallis rank-sum test was performed;

3. If less than 15% of the data were not detected, and if the data was normally distributed and homogeneous, then one-way parametric ANOVA was performed. If the data were not normally distributed and homogeneous, then a non-parametric type test was used (Kruskal-Wallis);

4. Alternatively, if greater than 50% of the data were not detected, Poisson Prediction Limits may be performed, or if less than 50% of the data were not detected, Normal Prediction Limits may be performed.

5. Intrawell comparisons were performed, if necessary, using Shewhart-CUSUM control charts.

---

[1] North Carolina Department of Environment and Natural Resources, Classifications of Water Quality Standards, Section 15A NCAC 2L.202, December 1, 2005.

[2] North Carolina Department of Environment and Natural Resources, "Redbook", Surface Waters and Wetlands Standards, Section 15A NCAC 02B.0100, .0200, and .0300, May 1, 2007.

It is important to note that the nature of the statistical procedures applied to the data frequently leads to false positives, which result in statistically significant increases (SSI). These false positives are inherent to the statistical procedures themselves and are a result of the insufficiency of the mathematical equations to represent the multiple factors affecting the groundwater quality variability at a given site. Furthermore, a clear distinction should be made between the terms "calculated SSI" and "validated SSI." A calculated SSI is the result of the application of mathematical equations to evaluate variability of water quality data over time by mathematical means. A validated SSI is determined when, based on a review of the data set as a whole, it can be concluded that the calculated statistical significance might be a function of a release of leachate to groundwater, and not a function of natural variability and/or other conditions.

SUMMARY OF STATISTICAL RESULTS

The statistical analysis was performed on constituents that have been historically detected, and have been detected during the current sampling event. The statistical results summarized on Table 2 and included in Appendix D indicate that:

1. The Poisson Prediction Limit test performed for total arsenic, total mercury, acetone, carbon disulfide, chlorobenzene, chloroethane, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,3-dichloropropene, ethylbenzene, toluene, vinyl chloride, and xylenes did not calculate SSIs.

2. The Kruskal-Wallis test used for total barium, total cadmium, total chromium, total lead, total selenium, total silver, benzene, 1,1-dichloroethane, cis-1,2-dichloroethene, dichloromethane, tetrachloroethene, and trichloroethene did not calculate SSIs.

   Multiple VOC detections have been detected in the background wells during the current and historical sampling events for benzene, chloroethane, 1,4-dichloroethene 1,1-dichloroethane, cis-1,2-dichloroethene, ethylbenzene, dichloromethane, tetrachloroethene, toluene, and trichloroethene.

CONCLUSION

Concentrations of total metals (groundwater and surface water) and VOCs (groundwater) were detected at the site. The concentrations of benzene (MW-4 and MW-5), 1,4-dichlorobenzene (MW-2A and MW-4), 1,2-dichloroethane (MW-4), dichloromethane (MW-4), tetrachloroethene (MW-4 and MW-5), and trichloroethene (MW-4 and MW-5) were detected above North Carolina MCLs.

In summary, the detected concentrations of total metals are most likely naturally occurring and related to sample turbidity. Metal cations typically adsorb to the surface of platy particles (clay and silt). Therefore, turbidity of the groundwater and surface water samples will relate to detected concentrations of the metal cations. Consequently, the metal concentrations detected should be considered natural background concentrations.

We understand that a Groundwater Assessment and Corrective Measures Plan was submitted and subsequently approved by the NCDWM in 2004 to address the VOC detections in groundwater at the

site. However, this plan was not executed due to apparent difficulties in obtaining off-site access for new well installations. We understand that performance of the plan will need to be reevaluated.

We recommend that sampling continue on a semi-annual basis for the *Appendix I* list of VOCs and RCRA metals constituents.

TABLES

TABLE 1

POTENTIOMETRIC SURFACE DATA
Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Monitoring Well	TOC Elevation	Groundwater Elevation Data											
		8/11/03	2/9/04	8/16/04	2/14/05	9/1/05	2/16/06	2/16/06	8/30/06	2/26/07	8/13/07	2/11/08	8/25/08
MW-1A	2552.59	2508.89	2506.70	2507.02	2506.95	2507.34	2506.96	2506.96	2505.78	2506.14	2504.59	2504.25	2504.76
MW-2A	2505.64	2480.42	2483.85	2479.56	2480.40	2481.87	2481.44	2481.44	2477.90	2479.77	2476.86	2478.95	2476.22
MW-3A	2535.92	2499.12	2500.32	2497.07	2497.94	2499.47	2498.57	2498.57	2494.72	2495.75	Dry	2495.28	Dry
MW-4	2651.13	2581.57	2580.78	2580.95	2581.65	2582.06	2582.00	2582.00	2581.73	2580.88	2580.54	2579.54	2579.42
MW-5	2661.25	2584.42	2584.45	2584.95	2585.99	2587.11	2587.76	2587.76	2587.05	2585.81	2585.20	2583.70	2582.87

NOTES:

1. Elevations are in FEET above mean sea level (MSL)
2. *TOC* = top of casing
3. Current water level measurements are from Pace field sampling notes
4. *NP* = Not Present during sampling event
5. Water level data prior to 2003 was not available

Prepared By: IAI
Checked By: TZS

TABLE 2

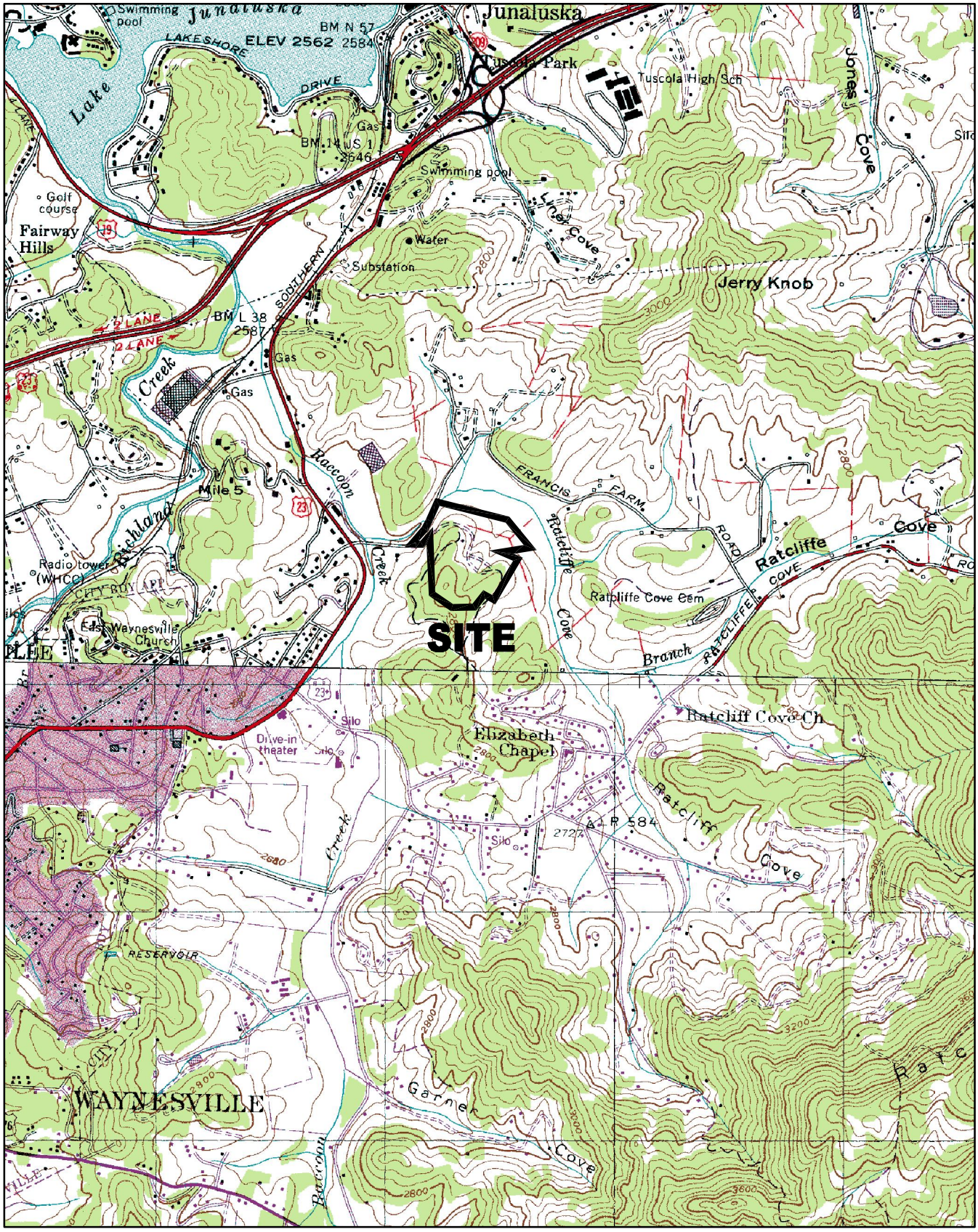
SUMMARY OF STATISTICAL ANALYSIS RESULTS
Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Chemical/ Compound	Percent ND	Primary Statistical Test	Primary Pass/Fail	Secondary Statistical Test	Secondary Pass/Fail	SSI Calculated
Total Arsenic	84%	Poisson Prediction Limits	Pass	-	-	No
Total Barium *	6%	Kruskal-Wallis	Pass	-	-	No
Total Cadmium	70%	Kruskal-Wallis	Pass	-	-	No
Total Chromium	48%	Kruskal-Wallis	Pass	-	-	No
Total Lead	70%	Kruskal-Wallis	Pass	-	-	No
Total Mercury	91%	Poisson Prediction Limits	Pass	-	-	No
Total Selenium	76%	Kruskal-Wallis	Fail	Shewart-CUSUM or Trend Test	Pass	No
Total Silver	84%	Kruskal-Wallis	Pass	-	-	No
Acetone	96%	Poisson Prediction Limits	Pass	-	-	No
Benzene	70%	Kruskal-Wallis	Pass	-	-	No (multiple historic detections in background wells)
Carbon Disulfide	98%	Poisson Prediction Limits	Pass	-	-	No
Chlorobenzene	94%	Poisson Prediction Limits	Pass	-	-	No
Chloroethane	66%	Poisson Prediction Limits	Pass	-	-	No
1,2-Dichlorobenzene	94%	Poisson Prediction Limits	Pass	-	-	No
1,4-Dichlorobenzene	77%	Poisson Prediction Limits	Pass	-	-	No
1,1-Dichloroethane	25%	Kruskal-Wallis	Pass	-	-	No (multiple historic detections in background wells)
1,2-Dichloroethane	87%	Poisson Prediction Limits	Pass	-	-	No
1,1-Dichloroethene	98%	Poisson Prediction Limits	Pass	-	-	No
cis-1,2-Dichloroethene	21%	Kruskal-Wallis	Pass	-	-	No (multiple historic detections in background wells)
cis-1,3-Dichloropropene	98%	Poisson Prediction Limits	Pass	-	-	No
Ethylbenzene	94%	Poisson Prediction Limits	Pass	-	-	No
Dichloromethane	75%	Kruskal-Wallis	Pass	-	-	No (multiple historic detections in background wells)
Tetrachloroethene	68%	Kruskal-Wallis	Pass	-	-	No (multiple historic detections in background wells)
Toluene	85%	Poisson Prediction Limits	Pass	-	-	No
Trichloroethene	68%	Kruskal-Wallis	Pass	-	-	No (multiple historic detections in background wells)
Vinyl Chloride	98%	Poisson Prediction Limits	Pass	-	-	No
Xylenes	94%	Poisson Prediction Limits	Pass	-	-	No

Notes:
1. MCL = *Maximum Contaminant Level*
2. SSI = *Statistically Significant Increase*
3. * = The dataset for total barium was not homogeneous and normally distributed. Therefore, a non-parametric ANOVA testing procedure was used (Kruskal-Wallis) rather than parametric ANOVA.

Prepared By: IAI
Checked By: MSP

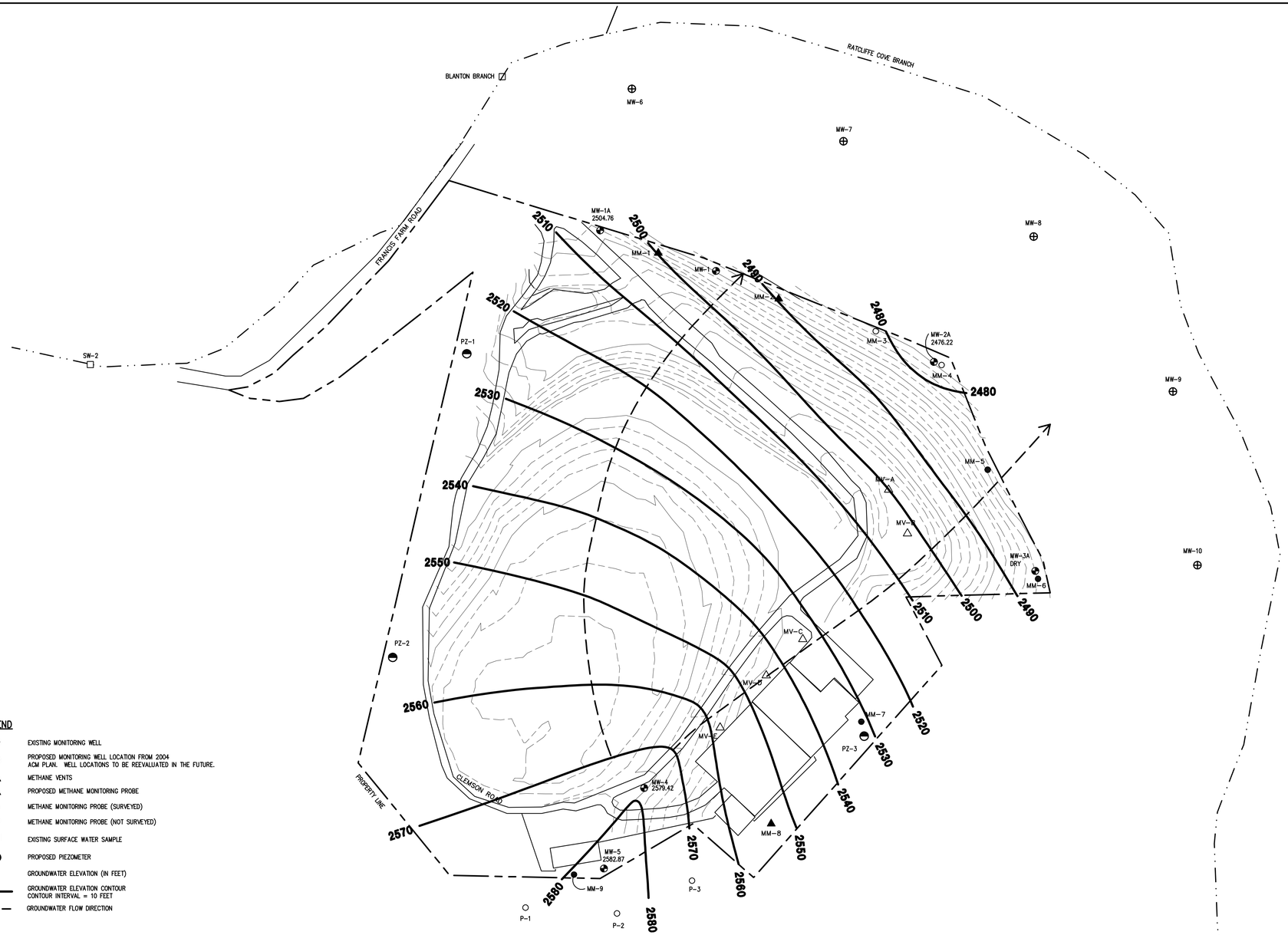
FIGURES



APPROXIMATE SCALE IN FEET

REFERENCE:
USGS TOPOGRAPHIC MAP, 7.5 MINUTE SERIES, CLYDE AND WAYNESVILLE, N.C. QUADRANGLES, 1978 AND PHOTOREVISED 1979.

DRAWN: AEH	DATE: 1-16-09	BLE INC. BUNNELL-LAMMONS ENGINEERING, INC. 6004 PONDERS COURT GREENVILLE, SOUTH CAROLINA 29615 PHONE: (864)288-1265 FAX: (864)288-4430	SITE LOCATION MAP HAYWOOD COUNTY LANDFILL CLOSED FRANCIS FARM LANDFILL HAYWOOD COUNTY, NORTH CAROLINA	FIGURE 1
CHECKED: AWA	CAD: HAYWOODFF05-SLM			
APPROVED:	JOB NO: J08-1957-05			



LEGEND

- EXISTING MONITORING WELL
- PROPOSED MONITORING WELL LOCATION FROM 2004 ACM PLAN. WELL LOCATIONS TO BE REEVALUATED IN THE FUTURE.
- METHANE VENTS
- PROPOSED METHANE MONITORING PROBE
- METHANE MONITORING PROBE (SURVEYED)
- METHANE MONITORING PROBE (NOT SURVEYED)
- EXISTING SURFACE WATER SAMPLE
- PROPOSED PIEZOMETER
- 2504.25 GROUNDWATER ELEVATION (IN FEET)
- 2540 GROUNDWATER ELEVATION CONTOUR CONTOUR INTERVAL = 10 FEET
- GROUNDWATER FLOW DIRECTION

NOTE:
WATER LEVELS MEASURED ON AUGUST 25, 2008
BY PACE ANALYTICAL SERVICES, INC.

CAUTION:

THIS MAP WAS CREATED BY DIGITIZING THE REFERENCED MAPS. THE MAP FEATURES HAVE NOT BEEN FIELD VERIFIED OR SURVEYED.

100 50 0 100 200
APPROXIMATE SCALE IN FEET

REFERENCS:
1. DRAWING TITLED "PROPOSED ASSESSMENT PLAN" BY MUNICIPAL ENGINEERING IN A REPORT DATED AUGUST 11, 2006.
2. DRAWING TITLED "POTENTIOMETRIC MAP" BY MUNICIPAL ENGINEERING DATED MARCH 19, 2001.

REVISIONS		
No.	DESCRIPTION	BY

DRAWN:	AEH
CHECKED:	IAI
APPROVED:	

DATE:	11-03-08
CAD FILE:	HAYWOODCFF-82508POT
JOB NO:	J08-1957-05

BLE INC.

BUNNELL-LAMMONS ENGINEERING, INC.
6004 PONDERS COURT
GREENVILLE, SOUTH CAROLINA 29615
PHONE: (864)288-1265 FAX: (864)288-4430

GROUNDWATER POTENTIOMETRIC MAP - AUGUST 25, 2008
CLOSED FRANCIS FARM LANDFILL
HAYWOOD COUNTY, NORTH CAROLINA

FIGURE NO.
2

APPENDICES

APPENDIX A

Summary Tables of Groundwater Analytical Results

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-18-1999)

TEST	UNITS	MDL	MCL	MW-4	MW-5A	MW-1A	MW-2	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.5**	NS	**5.4**	NS	**6**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**72**	NS	**310**	NS	**420**	NT
Temperature	°C (on-site)	-	NE	**12**	NS	**13**	NS	**12**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NS	NT	NS	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NS	NT	NS	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	NS	ND	NS	ND	ND
Total Barium (Ba)	µg/l	100	2000	**100**	NS	**300**	NS	**400**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NS	NT	NS	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	NS	ND	NS	ND	ND
Total Chromium (Cr)	µg/l	20	50	ND	NS	ND	NS	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NS	NT	NS	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	NS	ND	NS	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	NS	ND	NS	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NS	NT	NS	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	NS	ND	NS	ND	ND
Total Silver (Ag)	µg/l	50	17.5	ND	NS	ND	NS	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NS	NT	NS	NT	ND
Total Zinc (Zn)	µg/l	50	1050	NT	NS	NT	NS	NT	ND
Acetone	µg/l	100	700	NT	NS	NT	NS	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NS	NT	NS	NT	NT
Benzene	µg/l	5	1	NT	NS	NT	NS	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NS	NT	NS	NT	NT
Bromoform	µg/l	5	0.19	NT	NS	NT	NS	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NS	NT	NS	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NS	NT	NS	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NS	NT	NS	NT	NT
Chloroethane	µg/l	10	2800	NT	NS	NT	NS	NT	NT
Chloroform	µg/l	5	70	NT	NS	NT	NS	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NS	NT	NS	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NS	NT	NS	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NS	NT	NS	NT	NT
Dibromomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NS	NT	NS	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NS	NT	NS	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NS	NT	NS	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NS	NT	NS	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NS	NT	NS	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NS	NT	NS	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NS	NT	NS	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NS	NT	NS	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NS	NT	NS	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
Ethylbenzene	µg/l	5	550	NT	NS	NT	NS	NT	NT
2-Hexanone	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Iodomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NS	NT	NS	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NS	NT	NS	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NS	NT	NS	NT	NT
Styrene	µg/l	10	100	NT	NS	NT	NS	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NS	NT	NS	NT	NT
Toluene	µg/l	5	1000	NT	NS	NT	NS	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NS	NT	NS	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NS	NT	NS	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NS	NT	NS	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NS	NT	NS	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NS	NT	NS	NT	NT
Xylene	µg/l	5	530	NT	NS	NT	NS	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-16-1999)

TEST	UNITS	MDL	MCL	MW-4	MW-5A	MW-1A	MW-2	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.5**	NS	**5.3**	NS	**5.7**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**100**	NS	**430**	NS	**670**	NT
Temperature	°C (on-site)	-	NE	**15**	NS	**15**	NS	**14**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NS	NT	NS	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NS	NT	NS	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	NS	ND	NS	ND	ND
Total Barium (Ba)	µg/l	100	2000	**120**	NS	**230**	NS	**260**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NS	NT	NS	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	NS	**2.5**	NS	**7.4**	ND
Total Chromium (Cr)	µg/l	20	50	**35**	NS	**61**	NS	**14**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NS	NT	NS	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	NS	ND	NS	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	NS	ND	NS	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NS	NT	NS	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	NS	ND	NS	ND	NT
Total Silver (Ag)	µg/l	50	17.5	ND	NS	ND	NS	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NS	NT	NS	NT	ND
Total Zinc (Zn)	µg/l	50	1050	NT	NS	NT	NS	NT	ND
Acetone	µg/l	100	700	NT	NS	NT	NS	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NS	NT	NS	NT	NT
Benzene	µg/l	5	1	NT	NS	NT	NS	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NS	NT	NS	NT	NT
Bromoform	µg/l	5	0.19	NT	NS	NT	NS	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NS	NT	NS	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NS	NT	NS	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NS	NT	NS	NT	NT
Chloroethane	µg/l	10	2800	NT	NS	NT	NS	NT	NT
Chloroform	µg/l	5	70	NT	NS	NT	NS	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NS	NT	NS	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NS	NT	NS	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NS	NT	NS	NT	NT
Dibromomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NS	NT	NS	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NS	NT	NS	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NS	NT	NS	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NS	NT	NS	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NS	NT	NS	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NS	NT	NS	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NS	NT	NS	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NS	NT	NS	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NS	NT	NS	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
Ethylbenzene	µg/l	5	550	NT	NS	NT	NS	NT	NT
2-Hexanone	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Iodomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NS	NT	NS	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NS	NT	NS	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NS	NT	NS	NT	NT
Styrene	µg/l	10	100	NT	NS	NT	NS	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NS	NT	NS	NT	NT
Toluene	µg/l	5	1000	NT	NS	NT	NS	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NS	NT	NS	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NS	NT	NS	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NS	NT	NS	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NS	NT	NS	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NS	NT	NS	NT	NT
Xylene	µg/l	5	530	NT	NS	NT	NS	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-14-2000)

TEST	UNITS	MDL	MCL	MW-4	MW-5A	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5**	NS	**5.1**	NS	**6.7**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**180**	NS	**300**	NS	**500**	NT
Temperature	°C (on-site)	-	NE	**13**	NS	**13**	NS	**13**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NS	NT	NS	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NS	NT	NS	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	NS	ND	NS	ND	ND
Total Barium (Ba)	µg/l	100	2000	**150**	NS	**270**	NS	**240**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NS	NT	NS	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	**1.4**	NS	**2**	NS	**9.1**	ND
Total Chromium (Cr)	µg/l	20	50	**11**	NS	**7.2**	NS	**5.6**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NS	NT	NS	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	NS	ND	NS	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	NS	ND	NS	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NS	NT	NS	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	NS	ND	NS	ND	NT
Total Silver (Ag)	µg/l	50	17.5	ND	NS	**4.3**	NS	**4.9**	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NS	NT	NS	NT	ND
Total Zinc (Zn)	µg/l	50	1050	NT	NS	NT	NS	NT	ND
Acetone	µg/l	100	700	NT	NS	NT	NS	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NS	NT	NS	NT	NT
Benzene	µg/l	5	1	NT	NS	NT	NS	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NS	NT	NS	NT	NT
Bromoform	µg/l	5	0.19	NT	NS	NT	NS	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NS	NT	NS	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NS	NT	NS	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NS	NT	NS	NT	NT
Chloroethane	µg/l	10	2800	NT	NS	NT	NS	NT	NT
Chloroform	µg/l	5	70	NT	NS	NT	NS	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NS	NT	NS	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NS	NT	NS	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NS	NT	NS	NT	NT
Dibromomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NS	NT	NS	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NS	NT	NS	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NS	NT	NS	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NS	NT	NS	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NS	NT	NS	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NS	NT	NS	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NS	NT	NS	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NS	NT	NS	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NS	NT	NS	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NS	NT	NS	NT	NT
Ethylbenzene	µg/l	5	550	NT	NS	NT	NS	NT	NT
2-Hexanone	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Iodomethane	µg/l	10	NE	NT	NS	NT	NS	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NS	NT	NS	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NS	NT	NS	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NS	NT	NS	NT	NT
Styrene	µg/l	10	100	NT	NS	NT	NS	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NS	NT	NS	NT	NT
Toluene	µg/l	5	1000	NT	NS	NT	NS	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NS	NT	NS	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NS	NT	NS	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NS	NT	NS	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NS	NT	NS	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NS	NT	NS	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NS	NT	NS	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NS	NT	NS	NT	NT
Xylene	µg/l	5	530	NT	NS	NT	NS	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
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NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-14-2000)

TEST	UNITS	MDL	MCL	MW-4A	MW-5	MW-1A	MW-2	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**4.9**	NT	**5.2**	NS	**5.8**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**100**	NT	**440**	NS	**600**	NT
Temperature	°C (on-site)	-	NE	**16**	NT	**15**	NS	**14**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NS	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NS	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	NT	ND	NS	**10**	ND
Total Barium (Ba)	µg/l	100	2000	**180**	NT	**410**	NS	**310**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NS	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	**1.3**	NT	**4.9**	NS	**13**	ND
Total Chromium (Cr)	µg/l	20	50	**5.4**	NT	**7.4**	NS	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NS	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NS	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	NT	ND	NS	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	NT	**0.4**	NS	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NS	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	NT	ND	NS	ND	ND
Total Silver (Ag)	µg/l	50	17.5	**4**	NT	**8.9**	NS	**7.8**	**3**
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NS	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NS	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NS	NT	NT
Acetone	µg/l	100	700	NT	NT	NT	NS	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NS	NT	NT
Benzene	µg/l	5	1	NT	NT	NT	NS	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NT	NT	NS	NT	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NS	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NT	NT	NS	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NS	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NT	NT	NS	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NS	NT	NT
Chloroethane	µg/l	10	2800	NT	NT	NT	NS	NT	NT
Chloroform	µg/l	5	70	NT	NT	NT	NS	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NT	NT	NS	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NS	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NT	NT	NS	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NS	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NT	NT	NS	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NT	NT	NS	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NS	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NT	NT	NS	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NS	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NS	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NS	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NT	NT	NS	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NT	NT	NS	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NS	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NS	NT	NT
Ethylbenzene	µg/l	5	550	NT	NT	NT	NS	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NS	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NS	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NT	NT	NS	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NT	NT	NS	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NS	NT	NT
Styrene	µg/l	10	100	NT	NT	NT	NS	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NS	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT	NS	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NS	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NS	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NS	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NS	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NT	NT	NS	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NS	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NS	NT	NT
Xylene	µg/l	5	530	NT	NT	NT	NS	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (3-19-2001)

TEST	UNITS	MDL	MCL	MW-4A	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.4**	**5.8**	**6.0**	**6.2**	**6.1**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**98**	**130**	**350**	**550**	**470**	NT
Temperature	°C (on-site)	-	NE	**14**	**12.1**	**13**	**13**	**13**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	**11**	ND	ND	ND	ND
Total Barium (Ba)	µg/l	100	2000	**120**	**2000**	**340**	**830**	**310**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	**18**	**2.6**	**12**	**6.9**	ND
Total Chromium (Cr)	µg/l	20	50	**5.2**	**140**	**12**	**32**	**7.7**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	**38**	ND	**16**	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	**0.2**	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	NT
Total Silver (Ag)	µg/l	50	17.5	ND	ND	ND	**6.6**	**4.7**	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	ND
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	ND
Acetone	µg/l	100	700	NT	NT	NT	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NT	NT
Benzene	µg/l	5	1	NT	NT	NT	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NT	NT	NT	NT	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NT	NT	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NT	NT	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Chloroethane	µg/l	10	2800	NT	NT	NT	NT	NT	NT
Chloroform	µg/l	5	70	NT	NT	NT	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NT	NT	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NT	NT	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NT	NT	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NT	NT	NT	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NT	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NT	NT	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NT	NT	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
Ethylbenzene	µg/l	5	550	NT	NT	NT	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NT	NT	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NT	NT	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NT	NT	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-27-2002)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.5**	**5.83**	**5.9**	**5.92**	NT	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**110**	**170**	**331**	**460**	NT	NT
Temperature	°C (on-site)	-	NE	**16.2**	**14.4**	**16.5**	**17.8**	NT	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	**5.8**	**25**	ND	**23**	NT	ND
Total Barium (Ba)	µg/l	100	2000	**150**	**2800**	**250**	**2700**	NT	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	**21**	ND	**25**	NT	ND
Total Chromium (Cr)	µg/l	20	50	**5.4**	**210**	ND	**130**	NT	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	**47**	ND	**31**	NT	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	NT	ND
Total Nickel (Ni)	µg/l	50	100	ND	ND	ND	ND	NT	ND
Total Selenium (Se)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Total Silver (Ag)	µg/l	50	17.5	ND	ND	ND	ND	NT	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	700	NT	NT	NT	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NT	NT
Benzene	µg/l	5	1	NT	NT	NT	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NT	NT	NT	NT	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NT	NT	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NT	NT	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Chloroethane	µg/l	10	2800	NT	NT	NT	NT	NT	NT
Chloroform	µg/l	5	70	NT	NT	NT	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NT	NT	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NT	NT	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NT	NT	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NT	NT	NT	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NT	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NT	NT	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NT	NT	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
Ethylbenzene	µg/l	5	550	NT	NT	NT	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NT	NT	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NT	NT	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NT	NT	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-24-2003)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.21**	**5.59**	**5.85**	**6.1**	**6.15**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**99**	**165**	**351**	**417**	**380**	NT
Temperature	°C (on-site)	-	NE	**13.1**	**12.2**	**13.7**	**13**	**13.7**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	**23**	ND	**16**	ND	ND
Total Barium (Ba)	µg/l	100	2000	**150**	**2500**	**310**	**1800**	**330**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	10	1.75	ND	**19**	**2.1**	**22**	**6.2**	ND
Total Chromium (Cr)	µg/l	20	50	ND	**200**	**5.1**	**79**	**14**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	100	15	ND	**41**	ND	**27**	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NT	NT	NT	NT	NT	NT
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Total Silver (Ag)	µg/l	50	17.5	**4.1**	ND	**7.3**	**3.5**	**8.5**	**3.3**
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT.	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	700	NT	NT	NT	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT	NT	NT	NT
Benzene	µg/l	5	1	NT	NT	NT	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Bromodichloromethane	µg/l	5	0.56	NT	NT	NT	NT	NT	NT
Bromoform	µg/l	5	0.19	NT	NT	NT	NT	NT	NT
Carbon Disulfide	µg/l	100	700	NT	NT	NT	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.269	NT	NT	NT	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT	NT	NT	NT
Chloroethane	µg/l	10	2800	NT	NT	NT	NT	NT	NT
Chloroform	µg/l	5	70	NT	NT	NT	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	2.6	NT	NT	NT	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NT	NT	NT	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	24	NT	NT	NT	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	1.4	NT	NT	NT	NT	NT	NT
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NT	NT	NT	NT	NT	NT
1,1-Dichloroethane	µg/l	5	70	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NT	NT	NT	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.51	NT	NT	NT	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NT	NT	NT	NT	NT	NT
Ethylbenzene	µg/l	5	550	NT	NT	NT	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NT	NT	NT	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NT	NT	NT	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	0.005	NT	NT	NT	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT	NT	NT	NT

Notes:
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Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-11-2003)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.69**	**5.89**	**6.27**	**6.34**	**6.28**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**100**	**189**	**5.25**	**580**	**510**	NT
Temperature	°C (on-site)	-	NE	**16.4**	**15.2**	**16.9**	**14**	**14**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	**9.9**	ND	**6.5**	ND	ND
Total Barium (Ba)	µg/l	5	2000	**150**	**1200**	**530**	**950**	**350**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	**2**	**3.1**	ND	ND
Total Chromium (Cr)	µg/l	2	50	**81**	**81**	**19**	**38**	**6.7**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	**30**	**30**	**10**	**28**	**17**	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	**7.3**	ND	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	10	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**7.2**	**9**	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	**52**	**33**	**20**	**11**	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	**22**	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**22**	**23**	**8.8**	**5.2**	**10**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	**5**	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**16**	**21**	**13**	**50**	**5.6**	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	ND	**21**	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	**8.9**	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	**4500**	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**5.6**	**11**	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.

MDL = Laboratory Method Detection Limit

ND = Not Detected at the method detection limit

NS = Not Sampled

NT = Not Tested

NE = Not Established; North Carolina has not established a MCL

NP = Not Present during sampling event

Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-9-2004)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.54**	**5.4**	**5.91**	**6.06**	**5.95**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**99**	**165**	**322**	**349**	**259**	NT
Temperature	°C (on-site)	-	NE	**12.1**	**11.8**	**13.5**	**12.4**	**12**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	**8.3**	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	**120**	**890**	**260**	**370**	**310**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	ND	**57**	ND	**2.1**	**4.9**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	**18**	ND	**9.4**	**7.4**	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	ND	ND	ND	ND	ND	ND
Total Selenium (Se)	µg/l	5	50	ND	ND	**6.9**	**13**	**16**	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	10	700	ND	ND	ND	**25**	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**14**	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	**12**	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	**5.9**	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**40**	ND	**6.2**	ND	**8.2**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	**11**	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**24**	ND	**11**	**7.6**	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	**8.1**	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	ND	**8.7**	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	**9.6**	**6.2**	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	**34**	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**13**	**6.2**	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:

MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-16-2004)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.64**	**5.84**	**6.14**	**6.14**	**6.15**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**115**	**170**	**345**	**465**	**410**	NT
Temperature	°C (on-site)	-	NE	**17.3**	**15.3**	**16.9**	**13.5**	**14.1**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	**6.1**	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	**140**	**1100**	**280**	**300**	**310**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	**3.3**	**52**	**4**	**2.8**	**2**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	**23**	ND	**11**	**9.4**	ND
Total Mercury (Hg)	µg/l	0.2	1.05	**0.3**	ND	**1.4**	**3.5**	**0.6**	**0.7**
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	**5.5**	ND	ND	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**13**	**6.1**	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	**11**	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**38**	**12**	ND	ND	**12**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**29**	**15**	**9.7**	**12**	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	4.6	**6.1**	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	**7.9**	**5.8**	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**10**	**5.5**	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
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NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-14-2005)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.38**	**5.6**	**6.09**	**6.06**	**6.07**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**95**	**131**	**270**	**360**	**278**	NT
Temperature	°C (on-site)	-	NE	**11.3**	**11.3**	**12.3**	**13.3**	**12.8**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	**6.2**	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	**160**	**520**	**310**	**300**	**300**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	**2.4**	**7**	**4**	ND
Total Chromium (Cr)	µg/l	2	50	**4.1**	**11**	**7.6**	**18**	**12**	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	**7.9**	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	**5.3**	ND	**16**	**39**	**24**	**5.8**
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	**5.8**	**3.6**	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	100	700	**53**	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**20**	**7.1**	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	100	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	**16**	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	**14**	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	100	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**70**	**15**	**5.5**	ND	**11**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**48**	**20**	**10**	**26**	**6**	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	4.6	**12**	**12**	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	**15**	**6.4**	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	**6.5**	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**17**	**7**	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
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NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (9-1-2005)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.58**	**5.63**	**6.21**	**6.42**	**6.45**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**122**	**150**	**355**	**485**	**300**	NT
Temperature	°C (on-site)	-	NE	**15.2**	**13.7**	**16**	**13.7**	**14**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	**140**	**330**	**280**	**280**	**210**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	ND	ND	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	**14**	**7.4**	ND
Total Mercury (Hg)	µg/l	0.2	1.05	**0.2**	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	**6.9**	ND	**10**	**8.9**	**9.5**	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	10	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**13**	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	**13**	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**42**	**10**	**6.3**	ND	**8.6**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**31**	**13**	**11**	**27**	**9.4**	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	**7.3**	**7.4**	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	**9**	**5.4**	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	**120**	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**11**	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-16-2006)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.71**	**5.65**	**6.03**	**6.16**	**6.35**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**181**	**168**	**460**	**590**	**380**	NT
Temperature	°C (on-site)	-	NE	**15.1**	**12.4**	**13.8**	**13.3**	**13.3**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	ND	ND	ND	ND	ND	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	ND	**16**	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	10	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	**10**	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	ND	**7.1**	ND	ND	**13**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	**7.4**	ND	**17**	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	**6.5**	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-30-2006)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.62**	**5.95**	**5.9**	**6.44**	**6.29**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**177**	**213**	**409**	**642**	**545**	NT
Temperature	°C (on-site)	-	NE	**16.5**	**15.4**	**18.3**	**14.7**	**15.4**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	**160**	**250**	**290**	**220**	**240**	ND
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	2	50	ND	ND	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	**7.6**	**6.5**	**5.2**	**5.7**	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	NT
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	2	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**16**	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**42**	**5.7**	ND	**7.6**	**23**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	**5**	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**34**	ND	**6.8**	**16**	**5.8**	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	**17**	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	**8.3**	ND	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**11**	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
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NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-26-2007)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**6.14**	**5.36**	**6.07**	**6.6**	**6.29**	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	**175**	**180**	**388**	**756**	**548**	NT
Temperature	°C (on-site)	-	NE	**13.8**	**12.2**	**14.1**	**12.1**	**13.1**	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	**5.9**	ND	NT
Total Barium (Ba)	µg/l	5	2000	**140**	**280**	**210**	**240**	**300**	NT
Total Beryllium (Be)	µg/l	2	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	NT
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	ND	ND	NT
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	200	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	NT
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	NT
Total Nickel (Ni)	µg/l	50	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	ND	ND	NT
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	NT
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	40	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	50	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	5	1	**15**	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	5	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	10	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	10	2800	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	5	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	24	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	1.4	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	5	70	**36**	ND	ND	ND	**17**	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	**30**	ND	ND	**12**	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	5	550	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	**15**	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	**8.5**	ND	ND	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	**11**	ND	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-13-2007)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.46**	**5.76**	**6.14**	**6.2**	Dry	NT
Specific Conductance	µmhos/cm (on-site)	10	NE	**159**	**148**	**284**	**512**	Dry	NT
Temperature	°C (on-site)	-	NE	**16.5**	**15**	**17.8**	**13.3**	Dry	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	Dry	NT
Total Antimony (Sb)	µg/l	10	NE	NT	NT	NT	NT	Dry	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	Dry	NT
Total Barium (Ba)	µg/l	5	2000	**137**	**208**	**176**	**256**	Dry	NT
Total Beryllium (Be)	µg/l	NT	NE	NT	NT	NT	NT	Dry	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	**1.5**	ND	Dry	NT
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	ND	Dry	NT
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT	NT	Dry	NT
Total Copper (Cu)	µg/l	NT	1000	NT	NT	NT	NT	Dry	NT
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	Dry	NT
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	Dry	NT
Total Nickel (Ni)	µg/l	NT	100	NT	NT	NT	NT	Dry	NT
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	**29.2**	Dry	NT
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	Dry	NT
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT	NT	Dry	NT
Total Vanadium (V)	µg/l	NT	NE	NT	NT	NT	NT	Dry	NT
Total Zinc (Zn)	µg/l	NT	1050	NT	NT	NT	NT	Dry	NT
Acetone	µg/l	25	700	ND	ND	ND	ND	Dry	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	Dry	ND
Benzene	µg/l	1	1	**17**	**1.7**	ND	ND	Dry	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	Dry	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	Dry	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	Dry	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	Dry	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	Dry	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	**2.5**	ND	Dry	ND
Chloroethane	µg/l	1	2800	**5.5**	**2.7**	**2.3**	**4.8**	Dry	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	Dry	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	Dry	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND	ND	Dry	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	Dry	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	ND	Dry	ND
1,4-Dichlorobenzene	µg/l	1	1.4	**3.7**	ND	ND	**12.1**	Dry	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
1,1-Dichloroethane	µg/l	1	70	**40.3**	**4.3**	**1.8**	**4.4**	Dry	ND
1,2-Dichloroethane	µg/l	1	0.38	**1.3**	ND	**1.1**	ND	Dry	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	Dry	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	**31.6**	**4.3**	**5.1**	**9.7**	Dry	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	Dry	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	Dry	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	Dry	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	Dry	ND
Ethylbenzene	µg/l	1	550	**1.1**	ND	ND	ND	Dry	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	Dry	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	Dry	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	**38.8**	**2.9**	ND	ND	Dry	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	Dry	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	Dry	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	Dry	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	**8.1**	**3.6**	ND	ND	Dry	ND
Toluene	µg/l	1	1000	**7.4**	ND	ND	ND	Dry	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	Dry	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	**9.9**	**2.7**	ND	ND	Dry	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	Dry	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	Dry	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	Dry	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	**1.5**	Dry	ND
Xylene	µg/l	2	530	**6.1**	ND	ND	ND	Dry	ND

Notes:
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MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-11-2008)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	5.27	5.47	5.64	5.81	5.4	NT
Specific Conductance	µmhos/cm (on-site)	10	NE	172	158	289	473	611	NT
Temperature	°C (on-site)	-	NE	13	12.2	12.8	12.9	12.6	NT
Turbidity	NTU (on-site)	0.1	NE	NT	NT	NT	NT	NT	NT
Total Antimony (Sb)	µg/l	10	NE	NT	NT	NT	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5	2000	155	238	165	229	41.7	ND
Total Beryllium (Be)	µg/l	NT	NE	NT	NT	NT	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	6.3	ND	ND	10.3	ND
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT	NT	NT	NT
Total Copper (Cu)	µg/l	NT	1000	NT	NT	NT	NT	NT	NT
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	NT	100	NT	NT	NT	NT	NT	NT
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	13.5	81.7	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT	NT	NT	NT
Total Vanadium (V)	µg/l	NT	NE	NT	NT	NT	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	1050	NT	NT	NT	NT	NT	NT
Acetone	µg/l	25	700	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1	1	18.5	2	ND	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	2.5	ND	ND	ND
Chloroethane	µg/l	1	2800	4.2	2.5	2.5	2.1	7.6	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	1.2	ND	ND
1,4-Dichlorobenzene	µg/l	1	1.4	4.5	ND	ND	10.8	1.1	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1	70	39.0	4.7	1.5	1.5	15.4	ND
1,2-Dichloroethane	µg/l	1	0.38	1.5	ND	ND	ND	3.2	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	33.4	4.5	3.8	ND	1.6	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1	550	2.8	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	31.8	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	8.2	3.5	ND	ND	ND	ND
Toluene	µg/l	1	1000	20.5	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	9.9	2.7	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	ND	ND	ND
Xylene	µg/l	2	530	11.3	ND	ND	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-25-2008)

TEST	UNITS	MDL	MCL	MW-4	MW-5	MW-1A	MW-2A	MW-3A	EQUIP. BLANK
pH	pH units (on-site)	-	NE	**5.30**	**5.71**	**6.02**	**6.38**	Dry	NT
Specific Conductance	µmhos/cm (on-site)	10	NE	**180**	**180**	**324**	**590**	Dry	NT
Temperature	°C (on-site)	-	NE	**16.2**	**14.4**	**16.1**	**20.7**	Dry	NT
Turbidity	NTU (on-site)	NT	NE	NT	NT	NT	NT	Dry	NT
Total Antimony (Sb)	µg/l	NT	NE	NT	NT	NT	NT	Dry	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND	ND	Dry	ND
Total Barium (Ba)	µg/l	5	2000	**142**	**195**	**150**	**265**	Dry	ND
Total Beryllium (Be)	µg/l	NT	NE	NT	NT	NT	NT	Dry	NT
Total Cadmium (Cd)	µg/l	1	1.75	ND	ND	ND	ND	Dry	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND	ND	Dry	ND
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT	NT	Dry	NT
Total Copper (Cu)	µg/l	NT	1000	NT	NT	NT	NT	Dry	NT
Total Lead (Pb)	µg/l	5	15	ND	ND	ND	ND	Dry	ND
Total Mercury (Hg)	µg/l	0.2	1.05	ND	ND	ND	ND	Dry	ND
Total Nickel (Ni)	µg/l	NT	100	NT	NT	NT	NT	Dry	NT
Total Selenium (Se)	µg/l	10	50	ND	ND	ND	**13.9**	Dry	ND
Total Silver (Ag)	µg/l	5	17.5	ND	ND	ND	ND	Dry	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT	NT	Dry	NT
Total Vanadium (V)	µg/l	NT	NE	NT	NT	NT	NT	Dry	NT
Total Zinc (Zn)	µg/l	NT	1050	NT	NT	NT	NT	Dry	NT
Acetone	µg/l	25	700	ND	ND	ND	ND	Dry	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND	ND	Dry	ND
Benzene	µg/l	1	1	**18.9**	**2.3**	ND	ND	Dry	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
Bromodichloromethane	µg/l	1	0.56	ND	ND	ND	ND	Dry	ND
Bromoform	µg/l	1	0.19	ND	ND	ND	ND	Dry	ND
Carbon Disulfide	µg/l	2	700	ND	ND	ND	ND	Dry	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND	ND	Dry	ND
Carbon tetrachloride	µg/l	1	0.269	ND	ND	ND	ND	Dry	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	**3.1**	ND	Dry	ND
Chloroethane	µg/l	1	2800	**6.2**	**2.4**	**2.6**	**4.2**	Dry	ND
Chloroform	µg/l	1	70	ND	ND	ND	ND	Dry	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	ND	ND	ND	ND	Dry	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND	ND	Dry	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	ND	ND	ND	ND	Dry	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
1,2-Dichlorobenzene	µg/l	1	24	ND	ND	ND	**1.9**	Dry	ND
1,4-Dichlorobenzene	µg/l	1	1.4	**5.1**	ND	ND	**8.6**	Dry	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
1,1-Dichloroethane	µg/l	1	70	**39.3**	**5.4**	**1.4**	**2.6**	Dry	ND
1,2-Dichloroethane	µg/l	1	0.38	**1.5**	ND	ND	ND	Dry	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND	ND	Dry	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	**34.5**	**5.8**	**2.8**	**7.6**	Dry	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	ND	ND	ND	ND	Dry	ND
1,2-Dichloropropane	µg/l	1	0.51	ND	ND	ND	ND	Dry	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	Dry	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	ND	ND	ND	ND	Dry	ND
Ethylbenzene	µg/l	1	550	**2.1**	ND	ND	ND	Dry	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND	ND	Dry	ND
Iodomethane	µg/l	5	NE	ND	ND	ND	ND	Dry	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	**43.7**	ND	ND	ND	Dry	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	ND	ND	ND	ND	Dry	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND	ND	Dry	ND
Styrene	µg/l	1	100	ND	ND	ND	ND	Dry	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	**7.9**	**3.9**	ND	ND	Dry	ND
Toluene	µg/l	1	1000	**11.9**	ND	ND	ND	Dry	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND	ND	Dry	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND	ND	Dry	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	**10**	**3**	ND	ND	Dry	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND	ND	Dry	ND
1,2,3-Trichloropropane	µg/l	1	0.005	ND	ND	ND	ND	Dry	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND	ND	Dry	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND	ND	Dry	ND
Xylene	µg/l	3	530	**7.7**	ND	ND	ND	Dry	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, Classifications of Water Quality Standards Applicable to Groundwaters of North Carolina, Section 15A NCAC 2L.202.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
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Shaded cells indicated exceedances of MCLs.

APPENDIX B

Summary Tables of Surface Water Analytical Results

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-18-1999)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7	7	6.7
Specific Conductance	µmhos/cm (on-site)	1	NE	32	41	75
Temperature	°C (on-site)	-	29	9.4	10	12
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	ND	ND	ND
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	ND	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-16-1999)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	**6.2**	**6.3**	**6.3**
Specific Conductance	µmhos/cm (on-site)	1	NE	**60**	**80**	**100**
Temperature	°C (on-site)	-	29	**19**	**21**	**22**
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	**29**	**29**	**29**
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Bromofrom	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
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NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-14-2000)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	6.2	6.2	6.4
Specific Conductance	µmhos/cm (on-site)	1	NE	55	70	110
Temperature	°C (on-site)	-	29	10	10	9
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	43	69	56
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	7.5	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	ND	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
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MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-14-2000)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	**6.4**	**6.8**	**6.6**
Specific Conductance	µmhos/cm (on-site)	1	NE	**52**	**78**	**110**
Temperature	°C (on-site)	-	29	**17**	**19**	**20**
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	**28**	**35**	**36**
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	**18**	**12**	**9.6**
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
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NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (3-19-2001)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	**6.3**	**6.9**	**7**
Specific Conductance	µmhos/cm (on-site)	1	NE	**40**	**52**	**110**
Temperature	°C (on-site)	-	29	**10.8**	**9.7**	**9.6**
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	**32**	**32**	**30**
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	ND
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	ND
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	ND	ND
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-27-2002)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	6.37	6.84	6.8
Specific Conductance	µmhos/cm (on-site)	1	NE	55	80	149
Temperature	°C (on-site)	-	29	18.5	20	22.6
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	ND	49	71
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
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NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-24-2003)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7.05	6.84	6.8
Specific Conductance	µmhos/cm (on-site)	1	NE	41	50	110
Temperature	°C (on-site)	-	29	11.6	12.2	13
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	35	42	45
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	2.9	4.4	4.1
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	NT	NT	NT
Acrylonitrile	µg/l	200	NE	NT	NT	NT
Benzene	µg/l	5	51	NT	NT	NT
Bromochloromethane	µg/l	5	NE	NT	NT	NT
Bromodichloromethane	µg/l	5	NE	NT	NT	NT
Bromoform	µg/l	5	NE	NT	NT	NT
Carbon Disulfide	µg/l	100	NE	NT	NT	NT
Bromomethane (Methylbromide)	µg/l	10	NE	NT	NT	NT
Carbon tetrachloride	µg/l	10	0.3	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	50	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	0.19	NT	NT	NT
Chloromethane (Methylchloride)	µg/l	10	NE	NT	NT	NT
Dibromochloromethane	µg/l	5	NE	NT	NT	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	620	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	75	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	700	NT	NT	NT
1,2-Dichloroethane	µg/l	5	0.38	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	NT	NT	NT
1,2-Dichloropropane	µg/l	5	0.56	NT	NT	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	NT	NT	NT
Ethylbenzene	µg/l	5	29	NT	NT	NT
2-Hexanone	µg/l	50	NE	NT	NT	NT
Iodomethane	µg/l	10	NE	NT	NT	NT
Dichloromethane (Methylene chloride)	µg/l	10	5	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	100	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NT	NT	NT
Toluene	µg/l	5	1000	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	200	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	2.8	NT	NT	NT
Trichlorofluoromethane	µg/l	5	2100	NT	NT	NT
1,2,3-Trichloropropane	µg/l	15	NE	NT	NT	NT
Vinyl acetate	µg/l	50	NE	NT	NT	NT
Vinyl chloride	µg/l	10	0.015	NT	NT	NT
Xylene	µg/l	5	530	NT	NT	NT

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-11-2003)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7.24	7.15	7.1
Specific Conductance	µmhos/cm (on-site)	1	NE	51	75	111
Temperature	°C (on-site)	-	29	19	21.6	23
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	29	45	28
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	2.6	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
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MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-9-2004)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	**6.22**	**6.71**	**6.38**
Specific Conductance	µmhos/cm (on-site)	1	NE	**39**	**42**	**80**
Temperature	°C (on-site)	-	29	**7.8**	**7.8**	**8.1**
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	**30**	**37**	**34**
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	**14**
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
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NS = Not Sampled
NT = Not Tested
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NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-16-2004)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	6.98	7.11	6.8
Specific Conductance	µmhos/cm (on-site)	1	NE	59	80	125
Temperature	°C (on-site)	-	29	19.4	22.3	24.8
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	34	40	43
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	0.25	0.67	0.29
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-14-2005)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	8.06	7.32	7.97
Specific Conductance	µmhos/cm (on-site)	1	NE	38	120	45
Temperature	°C (on-site)	-	29	8.2	10.7	9.3
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	35	52	52
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	5.6	3.7
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	8.6	ND	5.5
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
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NS = Not Sampled
NT = Not Tested
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NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (9-1-2005)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	**7.21**	**7.13**	**7.5**
Specific Conductance	µmhos/cm (on-site)	1	NE	**61**	**78**	**120**
Temperature	°C (on-site)	-	29	**19.8**	**22.6**	**24.1**
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	**41**	**48**	**41**
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-16-2006)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	NT	NT	NT
Specific Conductance	µmhos/cm (on-site)	1	NE	NT	NT	NT
Temperature	°C (on-site)	-	29	NT	NT	NT
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	ND	ND	ND
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
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NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-30-2006)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7.12	7.33	7.05
Specific Conductance	µmhos/cm (on-site)	1	NE	75	96	134
Temperature	°C (on-site)	-	29	21.3	26.2	27.6
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	10	50	ND	ND	ND
Total Barium (Ba)	µg/l	500	NE	33	37	48
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	10	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	20	5	ND	ND	ND
Total Silver (Ag)	µg/l	10	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	100	NE	ND	ND	ND
Acrylonitrile	µg/l	200	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	100	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	10	NE	ND	ND	ND
Carbon tetrachloride	µg/l	10	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	10	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	50	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	10	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	5	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	15	NE	ND	ND	ND
Vinyl acetate	µg/l	50	NE	ND	ND	ND
Vinyl chloride	µg/l	10	0.015	ND	ND	ND
Xylene	µg/l	5	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-26-2007)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	7.18	7.36	7.36
Specific Conductance	µmhos/cm (on-site)	1	NE	62	206	91
Temperature	°C (on-site)	-	29	12.3	12.3	12.6
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	30	NE	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND
Total Barium (Ba)	µg/l	5	NE	34	36	36
Total Beryllium (Be)	µg/l	2	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND
Total Cobalt (Co)	µg/l	10	NE	NT	NT	NT
Total Copper (Cu)	µg/l	200	NE	NT	NT	NT
Total Lead (Pb)	µg/l	5	25	ND	ND	ND
Total Nickel (Ni)	µg/l	50	88	NT	NT	NT
Total Selenium (Se)	µg/l	10	5	ND	ND	ND
Total Silver (Ag)	µg/l	5	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	25	NE	ND	ND	ND
Benzene	µg/l	5	51	ND	ND	ND
Bromochloromethane	µg/l	5	NE	ND	ND	ND
Bromodichloromethane	µg/l	5	NE	ND	ND	ND
Bromoform	µg/l	5	NE	ND	ND	ND
Carbon Disulfide	µg/l	10	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND
Carbon tetrachloride	µg/l	5	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	50	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	5	NE	ND	ND	ND
Dibromochloromethane	µg/l	5	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.0004	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	700	ND	ND	ND
1,2-Dichloroethane	µg/l	5	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	70	ND	ND	ND
1,2-Dichloropropane	µg/l	5	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	NE	ND	ND	ND
Ethylbenzene	µg/l	5	29	ND	ND	ND
2-Hexanone	µg/l	10	NE	ND	ND	ND
Iodomethane	µg/l	10	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	5	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND
Styrene	µg/l	5	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	ND	ND	ND
Toluene	µg/l	5	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	10	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	5	NE	ND	ND	ND
Vinyl acetate	µg/l	10	NE	ND	ND	ND
Vinyl chloride	µg/l	5	0.015	ND	ND	ND
Xylene	µg/l	10	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-13-2007)

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	**7.38**	**7.2**	**7.2**
Specific Conductance	µmhos/cm (on-site)	10	NE	**63.6**	**84.2**	**83**
Temperature	°C (on-site)	-	29	**21**	**25.4**	**26.1**
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	NT	NE	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND
Total Barium (Ba)	µg/l	5	NE	**31.6**	**34.7**	**34.3**
Total Beryllium (Be)	µg/l	NT	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT
Total Copper (Cu)	µg/l	NT	NE	NT	NT	NT
Total Lead (Pb)	µg/l	5	25	ND	ND	ND
Total Nickel (Ni)	µg/l	NT	88	NT	NT	NT
Total Selenium (Se)	µg/l	10	5	ND	ND	ND
Total Silver (Ag)	µg/l	5	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND
Benzene	µg/l	1	51	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND
Chloroform	µg/l	1	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.0004	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1	700	ND	ND	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	70	ND	ND	ND
1,2-Dichloropropane	µg/l	1	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND
Ethylbenzene	µg/l	1	29	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND
Styrene	µg/l	1	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND
Toluene	µg/l	1	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND
Xylene	µg/l	2	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event 2-11-2008

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	**7.08**	**6.95**	**6.86**
Specific Conductance	µmhos/cm (on-site)	10	NE	**66**	**92**	**81**
Temperature	°C (on-site)	-	29	**9.1**	**11.1**	**10.2**
Turbidity	NTU (on-site)	0.1	50	NT	NT	NT
Total Antimony (Sb)	µg/l	NT	NE	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND
Total Barium (Ba)	µg/l	5	NE	**33.9**	**45.4**	**40.5**
Total Beryllium (Be)	µg/l	NT	6.5	ND	ND	ND
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT
Total Copper (Cu)	µg/l	NT	NE	NT	NT	NT
Total Lead (Pb)	µg/l	5	25	ND	ND	ND
Total Nickel (Ni)	µg/l	NT	88	NT	NT	NT
Total Selenium (Se)	µg/l	10	5	ND	ND	ND
Total Silver (Ag)	µg/l	5	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND
Benzene	µg/l	1	51	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND
Chloroform	µg/l	1	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.0004	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1	700	ND	ND	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	70	ND	ND	ND
1,2-Dichloropropane	µg/l	1	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND
Ethylbenzene	µg/l	1	29	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND
Styrene	µg/l	1	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND
Toluene	µg/l	1	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND
Xylene	µg/l	2	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event 8-25-2008

TEST	UNITS	MDL	MCL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >8.5	**7.24**	**6.88**	**6.7**
Specific Conductance	µmhos/cm (on-site)	10	NE	**74**	**135**	**97**
Temperature	°C (on-site)	-	29	**20.3**	**22.7**	**20.7**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT
Total Antimony (Sb)	µg/l	NT	NE	NT	NT	NT
Total Arsenic (As)	µg/l	5	50	ND	ND	ND
Total Barium (Ba)	µg/l	5	NE	**38.8**	**59.0**	**36.0**
Total Beryllium (Be)	µg/l	NT	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1	2	ND	ND	ND
Total Chromium (Cr)	µg/l	5	50	ND	ND	ND
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT
Total Copper (Cu)	µg/l	NT	NE	NT	NT	NT
Total Lead (Pb)	µg/l	5	25	ND	ND	ND
Total Nickel (Ni)	µg/l	NT	88	NT	NT	NT
Total Selenium (Se)	µg/l	10	5	ND	ND	ND
Total Silver (Ag)	µg/l	5	NE	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	NE	NT	NT	NT
Mercury	µg/l	0.2	0.012	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10	NE	ND	ND	ND
Benzene	µg/l	1	51	ND	ND	ND
Bromochloromethane	µg/l	1	NE	ND	ND	ND
Bromodichloromethane	µg/l	1	NE	ND	ND	ND
Bromoform	µg/l	1	NE	ND	ND	ND
Carbon Disulfide	µg/l	2	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1	0.3	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	50	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND
Chloroform	µg/l	1	0.19	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1	NE	ND	ND	ND
Dibromochloromethane	µg/l	1	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.0004	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	620	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	75	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1	700	ND	ND	ND
1,2-Dichloroethane	µg/l	1	0.38	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	70	ND	ND	ND
1,2-Dichloropropane	µg/l	1	0.56	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	NE	ND	ND	ND
Ethylbenzene	µg/l	1	29	ND	ND	ND
2-Hexanone	µg/l	5	NE	ND	ND	ND
Iodomethane	µg/l	5	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2	5	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	170	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND
Styrene	µg/l	1	100	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	ND	ND	ND
Toluene	µg/l	1	1000	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	200	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	ND	ND	ND
Trichlorofluoromethane	µg/l	1	2100	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1	NE	ND	ND	ND
Vinyl acetate	µg/l	2	NE	ND	ND	ND
Vinyl chloride	µg/l	1	0.015	ND	ND	ND
Xylene	µg/l	3	530	ND	ND	ND

Notes:
MCL = Maximum Contaminant Level, as established in the NCDENR, "Redbook" Surface Waters and Wetlands Standards Section 15A NCAC 02B.0100, .0200, and .0300.
MDL = Laboratory Method Detection Limit
ND = Not Detected at the method detection limit
NS = Not Sampled
NT = Not Tested
NE = Not Established; North Carolina has not established a MCL
NP = Not Present during sampling event
Shaded cells indicated exceedances of MCLs.

APPENDIX C

Laboratory Analytical Results

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

September 04, 2008

Mr. Stephen King
Haywood Co. Solid Waste
278 Recycle Rd.
Clyde, NC 28721

RE: Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Dear Mr. King:
Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tom R. Williams

Tom Williams

tom.williams@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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Pace Analytical Services, Inc.
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Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Charlotte Certification IDs

Connecticut Certification Number: PH-0104
Pennsylvania Certification Number: 68-00784
West Virginia Certification Number: 357
Virginia Certification Number: 00213
Tennessee Certification Number: 04010
South Carolina Bioassay Certification Number: 990060003
South Carolina Certification Number: 990060001
North Carolina Field Services Certification Number: 5342
North Carolina Wastewater Certification Number: 12
North Carolina Drinking Water Certification Number: 37706
Louisiana/LELAP Certification Number: 04034
Kentucky UST Certification Number: 84
New Jersey Certification Number: NC012
Florida/NELAP Certification Number: E87627

Asheville Certification IDs

Connecticut Certification Number: PH-0106
Massachusetts Certification Number: M-NC030
West Virginia Certification Number: 356
Virginia Certification Number: 00072
Tennessee Certification Number: 2980
South Carolina Bioassay Certification Number: 99030002
South Carolina Certification Number: 99030001
Pennsylvania Certification Number: 68-03578
North Carolina Bioassay Certification Number: 9
North Carolina Wastewater Certification Number: 40
North Carolina Drinking Water Certification Number: 37712
New Jersey Certification Number: NC011
Louisiana/LELAP Certification Number: 03095
Florida/NELAP Certification Number: E87648

Eden Certification IDs

Virginia Drinking Water Certification Number: 00424
North Carolina Wastewater Certification Number: 633
North Carolina Drinking Water Certification Number: 37738

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: MW-1A **Lab ID: 9226386001** Collected: 08/25/08 15:00 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		09/02/08 10:41		
Collected Date	**8/25/08**			1		09/02/08 10:41		
Collected Time	**15:00**			1		09/02/08 10:41		
Field pH	**6.02**	Std. Units		1		09/02/08 10:41		
Field Temperature	**16.1**	deg C		1		09/02/08 10:41		
Static Water Level	**47.83**	feet		1		09/02/08 10:41		
Field Specific Conductance	**324**	umhos/cm		1		09/02/08 10:41		
6010 ICP Groundwater	Analytical Method: EPA 6010 GW North Carolina Preparation Method: EPA 3010							
Arsenic	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:00	7440-38-2	
Barium	**150**	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:00	7440-39-3	
Cadmium	ND	ug/L	1.0	1	08/28/08 10:20	09/03/08 06:00	7440-43-9	
Chromium	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:00	7440-47-3	
Lead	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:00	7439-92-1	
Selenium	ND	ug/L	10.0	1	08/28/08 10:20	09/03/08 06:00	7782-49-2	
Silver	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:00	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/29/08 13:20	08/30/08 11:53	7439-97-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		08/27/08 22:18	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		08/27/08 22:18	107-13-1	
Benzene	ND	ug/L	1.0	1		08/27/08 22:18	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		08/27/08 22:18	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/27/08 22:18	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/27/08 22:18	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/27/08 22:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		08/27/08 22:18	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		08/27/08 22:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		08/27/08 22:18	56-23-5	
Chlorobenzene	**3.1**	ug/L	1.0	1		08/27/08 22:18	108-90-7	
Chloroethane	**2.6**	ug/L	1.0	1		08/27/08 22:18	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/27/08 22:18	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/27/08 22:18	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	1		08/27/08 22:18	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/27/08 22:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/27/08 22:18	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/27/08 22:18	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/27/08 22:18	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/27/08 22:18	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		08/27/08 22:18	110-57-6	
1,1-Dichloroethane	**1.4**	ug/L	1.0	1		08/27/08 22:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/27/08 22:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/27/08 22:18	75-35-4	
cis-1,2-Dichloroethene	**2.8**	ug/L	1.0	1		08/27/08 22:18	156-59-2	

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: MW-1A **Lab ID: 9226386001** Collected: 08/25/08 15:00 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/27/08 22:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/27/08 22:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 22:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 22:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		08/27/08 22:18	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		08/27/08 22:18	591-78-6	
Iodomethane	ND	ug/L	5.0	1		08/27/08 22:18	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		08/27/08 22:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		08/27/08 22:18	108-10-1	
Styrene	ND	ug/L	1.0	1		08/27/08 22:18	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 22:18	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 22:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/27/08 22:18	127-18-4	
Toluene	ND	ug/L	1.0	1		08/27/08 22:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/27/08 22:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/27/08 22:18	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/27/08 22:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/27/08 22:18	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/27/08 22:18	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		08/27/08 22:18	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		08/27/08 22:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/27/08 22:18	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/27/08 22:18	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/27/08 22:18	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109	1		08/27/08 22:18	460-00-4	
Dibromofluoromethane (S)	97	%	85-115	1		08/27/08 22:18	1868-53-7	
1,2-Dichloroethane-d4 (S)	99	%	79-120	1		08/27/08 22:18	17060-07-0	
Toluene-d8 (S)	99	%	70-120	1		08/27/08 22:18	2037-26-5	

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: MW-2A **Lab ID: 9226386002** Collected: 08/25/08 14:20 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		09/02/08 10:42		
Collected Date	**8/25/08**			1		09/02/08 10:42		
Collected Time	**14:20**			1		09/02/08 10:42		
Field pH	**6.38**	Std. Units		1		09/02/08 10:42		
Field Temperature	**20.7**	deg C		1		09/02/08 10:42		
Static Water Level	**29.42**	feet		1		09/02/08 10:42		
Field Specific Conductance	**590**	umhos/cm		1		09/02/08 10:42		
6010 ICP Groundwater	Analytical Method: EPA 6010 GW North Carolina Preparation Method: EPA 3010							
Arsenic	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:17	7440-38-2	
Barium	**265**	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:17	7440-39-3	
Cadmium	ND	ug/L	1.0	1	08/28/08 10:20	09/03/08 06:17	7440-43-9	
Chromium	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:17	7440-47-3	
Lead	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:17	7439-92-1	
Selenium	**13.9**	ug/L	10.0	1	08/28/08 10:20	09/03/08 06:17	7782-49-2	
Silver	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:17	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/29/08 13:20	08/30/08 11:55	7439-97-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		08/27/08 22:42	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		08/27/08 22:42	107-13-1	
Benzene	ND	ug/L	1.0	1		08/27/08 22:42	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		08/27/08 22:42	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/27/08 22:42	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/27/08 22:42	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/27/08 22:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		08/27/08 22:42	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		08/27/08 22:42	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		08/27/08 22:42	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/27/08 22:42	108-90-7	
Chloroethane	**4.2**	ug/L	1.0	1		08/27/08 22:42	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/27/08 22:42	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/27/08 22:42	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	1		08/27/08 22:42	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/27/08 22:42	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/27/08 22:42	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/27/08 22:42	74-95-3	
1,2-Dichlorobenzene	**1.9**	ug/L	1.0	1		08/27/08 22:42	95-50-1	
1,4-Dichlorobenzene	**8.6**	ug/L	1.0	1		08/27/08 22:42	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		08/27/08 22:42	110-57-6	
1,1-Dichloroethane	**2.6**	ug/L	1.0	1		08/27/08 22:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/27/08 22:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/27/08 22:42	75-35-4	
cis-1,2-Dichloroethene	**7.6**	ug/L	1.0	1		08/27/08 22:42	156-59-2	

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: MW-2A **Lab ID: 9226386002** Collected: 08/25/08 14:20 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/27/08 22:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/27/08 22:42	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 22:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 22:42	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		08/27/08 22:42	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		08/27/08 22:42	591-78-6	
Iodomethane	ND	ug/L	5.0	1		08/27/08 22:42	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		08/27/08 22:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		08/27/08 22:42	108-10-1	
Styrene	ND	ug/L	1.0	1		08/27/08 22:42	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 22:42	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 22:42	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/27/08 22:42	127-18-4	
Toluene	ND	ug/L	1.0	1		08/27/08 22:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/27/08 22:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/27/08 22:42	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/27/08 22:42	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/27/08 22:42	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/27/08 22:42	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		08/27/08 22:42	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		08/27/08 22:42	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/27/08 22:42	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/27/08 22:42	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/27/08 22:42	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109	1		08/27/08 22:42	460-00-4	
Dibromofluoromethane (S)	98	%	85-115	1		08/27/08 22:42	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120	1		08/27/08 22:42	17060-07-0	
Toluene-d8 (S)	101	%	70-120	1		08/27/08 22:42	2037-26-5	

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: MW-3A **Lab ID: 9226386003** Collected: 08/25/08 14:45 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		09/02/08 10:43		
Collected Date	**8/25/08**			1		09/02/08 10:43		
Collected Time	**14:45**			1		09/02/08 10:43		
Field pH	**DRY**	Std. Units		1		09/02/08 10:43		
Field Temperature	**DRY**	deg C		1		09/02/08 10:43		
Field Specific Conductance	**DRY**	umhos/cm		1		09/02/08 10:43		
Total Well Depth	**43.19**	feet		1		09/02/08 10:43		

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: MW-4 **Lab ID: 9226386004** Collected: 08/25/08 15:15 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		09/02/08 10:47		
Collected Date	**8/25/08**			1		09/02/08 10:47		
Collected Time	**15:15**			1		09/02/08 10:47		
Field pH	**5.30**	Std. Units		1		09/02/08 10:47		
Field Temperature	**16.2**	deg C		1		09/02/08 10:47		
Static Water Level	**71.71**	feet		1		09/02/08 10:47		
Field Specific Conductance	**180**	umhos/cm		1		09/02/08 10:47		
6010 ICP Groundwater	Analytical Method: EPA 6010 GW North Carolina Preparation Method: EPA 3010							
Arsenic	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:28	7440-38-2	
Barium	**142**	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:28	7440-39-3	
Cadmium	ND	ug/L	1.0	1	08/28/08 10:20	09/03/08 06:28	7440-43-9	
Chromium	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:28	7440-47-3	
Lead	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:28	7439-92-1	
Selenium	ND	ug/L	10.0	1	08/28/08 10:20	09/03/08 06:28	7782-49-2	
Silver	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:28	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/29/08 13:20	08/30/08 11:58	7439-97-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		08/27/08 23:06	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		08/27/08 23:06	107-13-1	
Benzene	**18.9**	ug/L	1.0	1		08/27/08 23:06	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		08/27/08 23:06	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/27/08 23:06	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/27/08 23:06	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/27/08 23:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		08/27/08 23:06	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		08/27/08 23:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		08/27/08 23:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/27/08 23:06	108-90-7	
Chloroethane	**6.2**	ug/L	1.0	1		08/27/08 23:06	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/27/08 23:06	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/27/08 23:06	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	1		08/27/08 23:06	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/27/08 23:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/27/08 23:06	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/27/08 23:06	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/27/08 23:06	95-50-1	
1,4-Dichlorobenzene	**5.1**	ug/L	1.0	1		08/27/08 23:06	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		08/27/08 23:06	110-57-6	
1,1-Dichloroethane	**39.3**	ug/L	1.0	1		08/27/08 23:06	75-34-3	
1,2-Dichloroethane	**1.5**	ug/L	1.0	1		08/27/08 23:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/27/08 23:06	75-35-4	
cis-1,2-Dichloroethene	**34.5**	ug/L	1.0	1		08/27/08 23:06	156-59-2	

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(704)875-9092

ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: MW-4 **Lab ID: 9226386004** Collected: 08/25/08 15:15 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/27/08 23:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/27/08 23:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 23:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 23:06	10061-02-6	
Ethylbenzene	**2.1**	ug/L	1.0	1		08/27/08 23:06	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		08/27/08 23:06	591-78-6	
Iodomethane	ND	ug/L	5.0	1		08/27/08 23:06	74-88-4	
Methylene Chloride	**43.7**	ug/L	2.0	1		08/27/08 23:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		08/27/08 23:06	108-10-1	
Styrene	ND	ug/L	1.0	1		08/27/08 23:06	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 23:06	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 23:06	79-34-5	
Tetrachloroethene	**7.9**	ug/L	1.0	1		08/27/08 23:06	127-18-4	
Toluene	**11.9**	ug/L	1.0	1		08/27/08 23:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/27/08 23:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/27/08 23:06	79-00-5	
Trichloroethene	**10.0**	ug/L	1.0	1		08/27/08 23:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/27/08 23:06	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/27/08 23:06	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		08/27/08 23:06	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		08/27/08 23:06	75-01-4	
Xylene (Total)	**7.7**	ug/L	3.0	1		08/27/08 23:06	1330-20-7	
m&p-Xylene	**5.1**	ug/L	2.0	1		08/27/08 23:06	1330-20-7	
o-Xylene	**2.6**	ug/L	1.0	1		08/27/08 23:06	95-47-6	
4-Bromofluorobenzene (S)	99	%	87-109	1		08/27/08 23:06	460-00-4	
Dibromofluoromethane (S)	98	%	85-115	1		08/27/08 23:06	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120	1		08/27/08 23:06	17060-07-0	
Toluene-d8 (S)	101	%	70-120	1		08/27/08 23:06	2037-26-5	

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(704)875-9092

ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: MW-5 **Lab ID: 9226386005** Collected: 08/25/08 15:30 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		09/02/08 10:50		
Collected Date	**8/25/08**			1		09/02/08 10:50		
Collected Time	**15:30**			1		09/02/08 10:50		
Field pH	**5.71**	Std. Units		1		09/02/08 10:50		
Field Temperature	**14.4**	deg C		1		09/02/08 10:50		
Static Water Level	**78.38**	feet		1		09/02/08 10:50		
Field Specific Conductance	**180**	umhos/cm		1		09/02/08 10:50		
6010 ICP Groundwater	Analytical Method: EPA 6010 GW North Carolina Preparation Method: EPA 3010							
Arsenic	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:32	7440-38-2	
Barium	**195**	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:32	7440-39-3	
Cadmium	ND	ug/L	1.0	1	08/28/08 10:20	09/03/08 06:32	7440-43-9	
Chromium	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:32	7440-47-3	
Lead	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:32	7439-92-1	
Selenium	ND	ug/L	10.0	1	08/28/08 10:20	09/03/08 06:32	7782-49-2	
Silver	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:32	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/29/08 13:20	08/30/08 12:00	7439-97-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		08/27/08 23:30	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		08/27/08 23:30	107-13-1	
Benzene	**2.3**	ug/L	1.0	1		08/27/08 23:30	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		08/27/08 23:30	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/27/08 23:30	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/27/08 23:30	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/27/08 23:30	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		08/27/08 23:30	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		08/27/08 23:30	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		08/27/08 23:30	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/27/08 23:30	108-90-7	
Chloroethane	**2.4**	ug/L	1.0	1		08/27/08 23:30	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/27/08 23:30	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/27/08 23:30	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	1		08/27/08 23:30	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/27/08 23:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/27/08 23:30	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/27/08 23:30	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/27/08 23:30	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/27/08 23:30	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		08/27/08 23:30	110-57-6	
1,1-Dichloroethane	**5.4**	ug/L	1.0	1		08/27/08 23:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/27/08 23:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/27/08 23:30	75-35-4	
cis-1,2-Dichloroethene	**5.8**	ug/L	1.0	1		08/27/08 23:30	156-59-2	

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(704)875-9092

ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: MW-5 **Lab ID: 9226386005** Collected: 08/25/08 15:30 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/27/08 23:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/27/08 23:30	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 23:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 23:30	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		08/27/08 23:30	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		08/27/08 23:30	591-78-6	
Iodomethane	ND	ug/L	5.0	1		08/27/08 23:30	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		08/27/08 23:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		08/27/08 23:30	108-10-1	
Styrene	ND	ug/L	1.0	1		08/27/08 23:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 23:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 23:30	79-34-5	
Tetrachloroethene	**3.9**	ug/L	1.0	1		08/27/08 23:30	127-18-4	
Toluene	ND	ug/L	1.0	1		08/27/08 23:30	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/27/08 23:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/27/08 23:30	79-00-5	
Trichloroethene	**3.0**	ug/L	1.0	1		08/27/08 23:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/27/08 23:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/27/08 23:30	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		08/27/08 23:30	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		08/27/08 23:30	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/27/08 23:30	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/27/08 23:30	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/27/08 23:30	95-47-6	
4-Bromofluorobenzene (S)	99	%	87-109	1		08/27/08 23:30	460-00-4	
Dibromofluoromethane (S)	97	%	85-115	1		08/27/08 23:30	1868-53-7	
1,2-Dichloroethane-d4 (S)	97	%	79-120	1		08/27/08 23:30	17060-07-0	
Toluene-d8 (S)	101	%	70-120	1		08/27/08 23:30	2037-26-5	

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: SW-1 **Lab ID: 9226386006** Collected: 08/25/08 16:20 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		09/02/08 10:50		
Collected Date	**8/25/08**			1		09/02/08 10:50		
Collected Time	**16:20**			1		09/02/08 10:50		
Field pH	**7.24**	Std. Units		1		09/02/08 10:50		
Field Temperature	**20.3**	deg C		1		09/02/08 10:50		
Field Specific Conductance	**74**	umhos/cm		1		09/02/08 10:50		
6010 ICP Groundwater	Analytical Method: EPA 6010 GW North Carolina Preparation Method: EPA 3010							
Arsenic	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:37	7440-38-2	
Barium	**38.8**	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:37	7440-39-3	
Cadmium	ND	ug/L	1.0	1	08/28/08 10:20	09/03/08 06:37	7440-43-9	
Chromium	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:37	7440-47-3	
Lead	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:37	7439-92-1	
Selenium	ND	ug/L	10.0	1	08/28/08 10:20	09/03/08 06:37	7782-49-2	
Silver	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:37	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/29/08 13:20	08/30/08 12:03	7439-97-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		08/27/08 23:53	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		08/27/08 23:53	107-13-1	
Benzene	ND	ug/L	1.0	1		08/27/08 23:53	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		08/27/08 23:53	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/27/08 23:53	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/27/08 23:53	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/27/08 23:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		08/27/08 23:53	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		08/27/08 23:53	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		08/27/08 23:53	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/27/08 23:53	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/27/08 23:53	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/27/08 23:53	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/27/08 23:53	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	1		08/27/08 23:53	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/27/08 23:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/27/08 23:53	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/27/08 23:53	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/27/08 23:53	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/27/08 23:53	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		08/27/08 23:53	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/27/08 23:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/27/08 23:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/27/08 23:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/27/08 23:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/27/08 23:53	156-60-5	

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: SW-1 **Lab ID: 9226386006** Collected: 08/25/08 16:20 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,2-Dichloropropane	ND	ug/L	1.0	1		08/27/08 23:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 23:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/27/08 23:53	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		08/27/08 23:53	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		08/27/08 23:53	591-78-6	
Iodomethane	ND	ug/L	5.0	1		08/27/08 23:53	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		08/27/08 23:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		08/27/08 23:53	108-10-1	
Styrene	ND	ug/L	1.0	1		08/27/08 23:53	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 23:53	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/27/08 23:53	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/27/08 23:53	127-18-4	
Toluene	ND	ug/L	1.0	1		08/27/08 23:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/27/08 23:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/27/08 23:53	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/27/08 23:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/27/08 23:53	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/27/08 23:53	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		08/27/08 23:53	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		08/27/08 23:53	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/27/08 23:53	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/27/08 23:53	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/27/08 23:53	95-47-6	
4-Bromofluorobenzene (S)	99	%	87-109	1		08/27/08 23:53	460-00-4	
Dibromofluoromethane (S)	99	%	85-115	1		08/27/08 23:53	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120	1		08/27/08 23:53	17060-07-0	
Toluene-d8 (S)	101	%	70-120	1		08/27/08 23:53	2037-26-5	

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: SW-2 **Lab ID: 9226386007** Collected: 08/25/08 16:00 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		09/02/08 10:52		
Collected Date	**8/25/08**			1		09/02/08 10:52		
Collected Time	**16:00**			1		09/02/08 10:52		
Field pH	**6.88**	Std. Units		1		09/02/08 10:52		
Field Temperature	**22.7**	deg C		1		09/02/08 10:52		
Field Specific Conductance	**135**	umhos/cm		1		09/02/08 10:52		
6010 ICP Groundwater	Analytical Method: EPA 6010 GW North Carolina Preparation Method: EPA 3010							
Arsenic	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:41	7440-38-2	
Barium	**59.0**	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:41	7440-39-3	
Cadmium	ND	ug/L	1.0	1	08/28/08 10:20	09/03/08 06:41	7440-43-9	
Chromium	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:41	7440-47-3	
Lead	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:41	7439-92-1	
Selenium	ND	ug/L	10.0	1	08/28/08 10:20	09/03/08 06:41	7782-49-2	
Silver	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:41	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/29/08 13:20	08/30/08 12:10	7439-97-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		08/28/08 00:17	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		08/28/08 00:17	107-13-1	
Benzene	ND	ug/L	1.0	1		08/28/08 00:17	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		08/28/08 00:17	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/28/08 00:17	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/28/08 00:17	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/28/08 00:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		08/28/08 00:17	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		08/28/08 00:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		08/28/08 00:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/28/08 00:17	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/28/08 00:17	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/28/08 00:17	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/28/08 00:17	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	1		08/28/08 00:17	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/28/08 00:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/28/08 00:17	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/28/08 00:17	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/28/08 00:17	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/28/08 00:17	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		08/28/08 00:17	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/28/08 00:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/28/08 00:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/28/08 00:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/28/08 00:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/28/08 00:17	156-60-5	

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(704)875-9092

ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: SW-2 **Lab ID: 9226386007** Collected: 08/25/08 16:00 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,2-Dichloropropane	ND	ug/L	1.0	1		08/28/08 00:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/28/08 00:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/28/08 00:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		08/28/08 00:17	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		08/28/08 00:17	591-78-6	
Iodomethane	ND	ug/L	5.0	1		08/28/08 00:17	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		08/28/08 00:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		08/28/08 00:17	108-10-1	
Styrene	ND	ug/L	1.0	1		08/28/08 00:17	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/28/08 00:17	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/28/08 00:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/28/08 00:17	127-18-4	
Toluene	ND	ug/L	1.0	1		08/28/08 00:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/28/08 00:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/28/08 00:17	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/28/08 00:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/28/08 00:17	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/28/08 00:17	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		08/28/08 00:17	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		08/28/08 00:17	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/28/08 00:17	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/28/08 00:17	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/28/08 00:17	95-47-6	
4-Bromofluorobenzene (S)	100	%	87-109	1		08/28/08 00:17	460-00-4	
Dibromofluoromethane (S)	97	%	85-115	1		08/28/08 00:17	1868-53-7	
1,2-Dichloroethane-d4 (S)	99	%	79-120	1		08/28/08 00:17	17060-07-0	
Toluene-d8 (S)	100	%	70-120	1		08/28/08 00:17	2037-26-5	

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: Blanton Branch **Lab ID: 9226386008** Collected: 08/25/08 15:45 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:							
Collected By	**MPS**			1		09/02/08 10:52		
Collected Date	**8/25/08**			1		09/02/08 10:52		
Collected Time	**15:45**			1		09/02/08 10:52		
Field pH	**6.70**	Std. Units		1		09/02/08 10:52		
Field Temperature	**20.7**	deg C		1		09/02/08 10:52		
Field Specific Conductance	**97**	umhos/cm		1		09/02/08 10:52		
6010 ICP Groundwater	Analytical Method: EPA 6010 GW North Carolina Preparation Method: EPA 3010							
Arsenic	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:45	7440-38-2	
Barium	**36.0**	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:45	7440-39-3	
Cadmium	ND	ug/L	1.0	1	08/28/08 10:20	09/03/08 06:45	7440-43-9	
Chromium	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:45	7440-47-3	
Lead	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:45	7439-92-1	
Selenium	ND	ug/L	10.0	1	08/28/08 10:20	09/03/08 06:45	7782-49-2	
Silver	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:45	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/29/08 13:20	08/30/08 12:13	7439-97-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		08/28/08 00:41	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		08/28/08 00:41	107-13-1	
Benzene	ND	ug/L	1.0	1		08/28/08 00:41	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		08/28/08 00:41	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/28/08 00:41	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/28/08 00:41	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/28/08 00:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		08/28/08 00:41	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		08/28/08 00:41	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		08/28/08 00:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/28/08 00:41	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/28/08 00:41	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/28/08 00:41	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/28/08 00:41	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	1		08/28/08 00:41	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/28/08 00:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/28/08 00:41	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/28/08 00:41	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/28/08 00:41	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/28/08 00:41	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		08/28/08 00:41	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/28/08 00:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/28/08 00:41	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/28/08 00:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/28/08 00:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/28/08 00:41	156-60-5	

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: Blanton Branch **Lab ID: 9226386008** Collected: 08/25/08 15:45 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,2-Dichloropropane	ND	ug/L	1.0	1		08/28/08 00:41	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/28/08 00:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/28/08 00:41	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		08/28/08 00:41	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		08/28/08 00:41	591-78-6	
Iodomethane	ND	ug/L	5.0	1		08/28/08 00:41	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		08/28/08 00:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		08/28/08 00:41	108-10-1	
Styrene	ND	ug/L	1.0	1		08/28/08 00:41	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/28/08 00:41	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/28/08 00:41	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/28/08 00:41	127-18-4	
Toluene	ND	ug/L	1.0	1		08/28/08 00:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/28/08 00:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/28/08 00:41	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/28/08 00:41	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/28/08 00:41	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/28/08 00:41	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		08/28/08 00:41	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		08/28/08 00:41	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/28/08 00:41	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/28/08 00:41	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/28/08 00:41	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109	1		08/28/08 00:41	460-00-4	
Dibromofluoromethane (S)	98	%	85-115	1		08/28/08 00:41	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120	1		08/28/08 00:41	17060-07-0	
Toluene-d8 (S)	97	%	70-120	1		08/28/08 00:41	2037-26-5	

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ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: Travel Blank **Lab ID: 9226386009** Collected: 08/25/08 00:00 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		08/28/08 01:05	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		08/28/08 01:05	107-13-1	
Benzene	ND	ug/L	1.0	1		08/28/08 01:05	71-43-2	
Bromochloromethane	ND	ug/L	1.0	1		08/28/08 01:05	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/28/08 01:05	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/28/08 01:05	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/28/08 01:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		08/28/08 01:05	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		08/28/08 01:05	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		08/28/08 01:05	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/28/08 01:05	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/28/08 01:05	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/28/08 01:05	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/28/08 01:05	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	1		08/28/08 01:05	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/28/08 01:05	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/28/08 01:05	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/28/08 01:05	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/28/08 01:05	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/28/08 01:05	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		08/28/08 01:05	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/28/08 01:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/28/08 01:05	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/28/08 01:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/28/08 01:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/28/08 01:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/28/08 01:05	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/28/08 01:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/28/08 01:05	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		08/28/08 01:05	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		08/28/08 01:05	591-78-6	
Iodomethane	ND	ug/L	5.0	1		08/28/08 01:05	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		08/28/08 01:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		08/28/08 01:05	108-10-1	
Styrene	ND	ug/L	1.0	1		08/28/08 01:05	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/28/08 01:05	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/28/08 01:05	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/28/08 01:05	127-18-4	
Toluene	ND	ug/L	1.0	1		08/28/08 01:05	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/28/08 01:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/28/08 01:05	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/28/08 01:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/28/08 01:05	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/28/08 01:05	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		08/28/08 01:05	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		08/28/08 01:05	75-01-4	
Xylene (Total)	ND	ug/L	3.0	1		08/28/08 01:05	1330-20-7	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: Travel Blank **Lab ID: 9226386009** Collected: 08/25/08 00:00 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
m&p-Xylene	ND	ug/L	2.0	1		08/28/08 01:05	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/28/08 01:05	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109	1		08/28/08 01:05	460-00-4	
Dibromofluoromethane (S)	98	%	85-115	1		08/28/08 01:05	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120	1		08/28/08 01:05	17060-07-0	
Toluene-d8 (S)	97	%	70-120	1		08/28/08 01:05	2037-26-5	

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: Equip Blank **Lab ID: 9226386010** Collected: 08/25/08 00:00 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 GW North Carolina Preparation Method: EPA 3010							
Arsenic	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:50	7440-38-2	
Barium	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:50	7440-39-3	
Cadmium	ND	ug/L	1.0	1	08/28/08 10:20	09/03/08 06:50	7440-43-9	
Chromium	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:50	7440-47-3	
Lead	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:50	7439-92-1	
Selenium	ND	ug/L	10.0	1	08/28/08 10:20	09/03/08 06:50	7782-49-2	
Silver	ND	ug/L	5.0	1	08/28/08 10:20	09/03/08 06:50	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/29/08 13:20	08/30/08 12:15	7439-97-6	
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		08/31/08 18:26	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1		08/31/08 18:26	107-13-1	
Benzene	ND	ug/L	1.0	1		08/31/08 18:26	71-43-2	HS,T3
Bromochloromethane	ND	ug/L	1.0	1		08/31/08 18:26	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		08/31/08 18:26	75-27-4	
Bromoform	ND	ug/L	1.0	1		08/31/08 18:26	75-25-2	
Bromomethane	ND	ug/L	5.0	1		08/31/08 18:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		08/31/08 18:26	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1		08/31/08 18:26	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	1		08/31/08 18:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		08/31/08 18:26	108-90-7	
Chloroethane	ND	ug/L	1.0	1		08/31/08 18:26	75-00-3	
Chloroform	ND	ug/L	1.0	1		08/31/08 18:26	67-66-3	
Chloromethane	ND	ug/L	1.0	1		08/31/08 18:26	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	3.0	1		08/31/08 18:26	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		08/31/08 18:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		08/31/08 18:26	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		08/31/08 18:26	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		08/31/08 18:26	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		08/31/08 18:26	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1		08/31/08 18:26	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	1		08/31/08 18:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		08/31/08 18:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		08/31/08 18:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		08/31/08 18:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		08/31/08 18:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		08/31/08 18:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		08/31/08 18:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		08/31/08 18:26	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	1		08/31/08 18:26	100-41-4	
2-Hexanone	ND	ug/L	5.0	1		08/31/08 18:26	591-78-6	
Iodomethane	ND	ug/L	5.0	1		08/31/08 18:26	74-88-4	
Methylene Chloride	ND	ug/L	2.0	1		08/31/08 18:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		08/31/08 18:26	108-10-1	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

Sample: Equip Blank **Lab ID: 9226386010** Collected: 08/25/08 00:00 Received: 08/26/08 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Styrene	ND	ug/L	1.0	1		08/31/08 18:26	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		08/31/08 18:26	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		08/31/08 18:26	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		08/31/08 18:26	127-18-4	
Toluene	ND	ug/L	1.0	1		08/31/08 18:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		08/31/08 18:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		08/31/08 18:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		08/31/08 18:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		08/31/08 18:26	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		08/31/08 18:26	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		08/31/08 18:26	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		08/31/08 18:26	75-01-4	
Xylene (Total)	ND	ug/L	2.0	1		08/31/08 18:26	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		08/31/08 18:26	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		08/31/08 18:26	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109	1		08/31/08 18:26	460-00-4	
Dibromofluoromethane (S)	96	%	85-115	1		08/31/08 18:26	1868-53-7	
1,2-Dichloroethane-d4 (S)	95	%	79-120	1		08/31/08 18:26	17060-07-0	
Toluene-d8 (S)	99	%	70-120	1		08/31/08 18:26	2037-26-5	

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

QC Batch: MSV/4410 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 9226386001, 9226386002, 9226386004, 9226386005, 9226386006, 9226386007, 9226386008, 9226386009

METHOD BLANK: 159519 Matrix: Water
Associated Lab Samples: 9226386001, 9226386002, 9226386004, 9226386005, 9226386006, 9226386007, 9226386008, 9226386009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	08/27/08 19:56	
1,1,1-Trichloroethane	ug/L	ND	1.0	08/27/08 19:56	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/27/08 19:56	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/27/08 19:56	
1,1-Dichloroethane	ug/L	ND	1.0	08/27/08 19:56	
1,1-Dichloroethene	ug/L	ND	1.0	08/27/08 19:56	
1,2,3-Trichloropropane	ug/L	ND	1.0	08/27/08 19:56	
1,2-Dibromo-3-chloropropane	ug/L	ND	3.0	08/27/08 19:56	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	08/27/08 19:56	
1,2-Dichlorobenzene	ug/L	ND	1.0	08/27/08 19:56	
1,2-Dichloroethane	ug/L	ND	1.0	08/27/08 19:56	
1,2-Dichloropropane	ug/L	ND	1.0	08/27/08 19:56	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/27/08 19:56	
2-Butanone (MEK)	ug/L	ND	5.0	08/27/08 19:56	
2-Hexanone	ug/L	ND	5.0	08/27/08 19:56	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	08/27/08 19:56	
Acetone	ug/L	ND	25.0	08/27/08 19:56	
Acrylonitrile	ug/L	ND	10.0	08/27/08 19:56	
Benzene	ug/L	ND	1.0	08/27/08 19:56	
Bromochloromethane	ug/L	ND	1.0	08/27/08 19:56	
Bromodichloromethane	ug/L	ND	1.0	08/27/08 19:56	
Bromoform	ug/L	ND	1.0	08/27/08 19:56	
Bromomethane	ug/L	ND	5.0	08/27/08 19:56	
Carbon disulfide	ug/L	ND	2.0	08/27/08 19:56	
Carbon tetrachloride	ug/L	ND	1.0	08/27/08 19:56	
Chlorobenzene	ug/L	ND	1.0	08/27/08 19:56	
Chloroethane	ug/L	ND	1.0	08/27/08 19:56	
Chloroform	ug/L	ND	1.0	08/27/08 19:56	
Chloromethane	ug/L	ND	1.0	08/27/08 19:56	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/27/08 19:56	
cis-1,3-Dichloropropene	ug/L	ND	1.0	08/27/08 19:56	
Dibromochloromethane	ug/L	ND	1.0	08/27/08 19:56	
Dibromomethane	ug/L	ND	1.0	08/27/08 19:56	
Ethylbenzene	ug/L	ND	1.0	08/27/08 19:56	
Iodomethane	ug/L	ND	5.0	08/27/08 19:56	
m&p-Xylene	ug/L	ND	2.0	08/27/08 19:56	
Methylene Chloride	ug/L	ND	2.0	08/27/08 19:56	
o-Xylene	ug/L	ND	1.0	08/27/08 19:56	
Styrene	ug/L	ND	1.0	08/27/08 19:56	
Tetrachloroethene	ug/L	ND	1.0	08/27/08 19:56	
Toluene	ug/L	ND	1.0	08/27/08 19:56	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/27/08 19:56	
trans-1,3-Dichloropropene	ug/L	ND	1.0	08/27/08 19:56	

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QUALITY CONTROL DATA

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

METHOD BLANK: 159519 Matrix: Water

Associated Lab Samples: 9226386001, 9226386002, 9226386004, 9226386005, 9226386006, 9226386007, 9226386008, 9226386009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	08/27/08 19:56	
Trichloroethene	ug/L	ND	1.0	08/27/08 19:56	
Trichlorofluoromethane	ug/L	ND	1.0	08/27/08 19:56	
Vinyl acetate	ug/L	ND	2.0	08/27/08 19:56	
Vinyl chloride	ug/L	ND	1.0	08/27/08 19:56	
Xylene (Total)	ug/L	ND	3.0	08/27/08 19:56	
1,2-Dichloroethane-d4 (S)	%	98	79-120	08/27/08 19:56	
4-Bromofluorobenzene (S)	%	99	87-109	08/27/08 19:56	
Dibromofluoromethane (S)	%	97	85-115	08/27/08 19:56	
Toluene-d8 (S)	%	101	70-120	08/27/08 19:56	

LABORATORY CONTROL SAMPLE: 159520

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	55.5	111	83-125	
1,1,1-Trichloroethane	ug/L	50	56.8	114	80-129	
1,1,2,2-Tetrachloroethane	ug/L	50	53.3	107	73-127	
1,1,2-Trichloroethane	ug/L	50	57.8	116	77-123	
1,1-Dichloroethane	ug/L	50	59.3	119	76-129	
1,1-Dichloroethene	ug/L	50	65.2	130	78-146	
1,2,3-Trichloropropane	ug/L	50	57.0	114	72-125	
1,2-Dibromo-3-chloropropane	ug/L	50	61.0	122	65-128	
1,2-Dibromoethane (EDB)	ug/L	50	57.6	115	81-125	
1,2-Dichlorobenzene	ug/L	50	58.2	116	82-126	
1,2-Dichloroethane	ug/L	50	57.8	116	72-126	
1,2-Dichloropropane	ug/L	50	58.7	117	80-127	
1,4-Dichlorobenzene	ug/L	50	56.8	114	79-125	
2-Butanone (MEK)	ug/L	100	117	117	50-134	
2-Hexanone	ug/L	100	122	122	58-138	
4-Methyl-2-pentanone (MIBK)	ug/L	100	121	121	70-131	
Acetone	ug/L	100	125	125	50-146	
Acrylonitrile	ug/L	250	289	116	66-124	
Benzene	ug/L	50	56.3	113	78-128	
Bromochloromethane	ug/L	50	53.3	107	73-124	
Bromodichloromethane	ug/L	50	57.0	114	81-125	
Bromoform	ug/L	50	58.6	117	71-125	
Bromomethane	ug/L	50	64.4	129	50-150	
Carbon disulfide	ug/L	50	59.4	119	54-150	
Carbon tetrachloride	ug/L	50	56.1	112	81-137	
Chlorobenzene	ug/L	50	56.0	112	82-126	
Chloroethane	ug/L	50	53.5	107	69-140	
Chloroform	ug/L	50	58.5	117	77-129	
Chloromethane	ug/L	50	53.2	106	54-139	
cis-1,2-Dichloroethene	ug/L	50	59.6	119	76-133	
cis-1,3-Dichloropropene	ug/L	50	58.0	116	76-127	

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QUALITY CONTROL DATA

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

LABORATORY CONTROL SAMPLE: 159520

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	50	55.5	111	77-125	
Dibromomethane	ug/L	50	59.2	118	77-125	
Ethylbenzene	ug/L	50	55.2	110	80-127	
Iodomethane	ug/L	100	132	132	65-172	
m&p-Xylene	ug/L	100	110	110	82-127	
Methylene Chloride	ug/L	50	55.6	111	67-133	
o-Xylene	ug/L	50	53.7	107	83-124	
Styrene	ug/L	50	56.8	114	80-130	
Tetrachloroethene	ug/L	50	56.7	113	78-128	
Toluene	ug/L	50	54.7	109	76-126	
trans-1,2-Dichloroethene	ug/L	50	57.7	115	78-134	
trans-1,3-Dichloropropene	ug/L	50	57.5	115	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	53.0	106	51-140	
Trichloroethene	ug/L	50	57.5	115	79-127	
Trichlorofluoromethane	ug/L	50	54.3	109	76-148	
Vinyl acetate	ug/L	100	126	126	50-150	
Vinyl chloride	ug/L	50	56.5	113	67-143	
Xylene (Total)	ug/L	150	164	109	83-125	
1,2-Dichloroethane-d4 (S)	%			103	79-120	
4-Bromofluorobenzene (S)	%			98	87-109	
Dibromofluoromethane (S)	%			103	85-115	
Toluene-d8 (S)	%			101	70-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 159521 159522

Parameter	Units	9226386009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1-Dichloroethene	ug/L	ND	50	50	55.6	60.3	111	121	60-150	8	
Benzene	ug/L	ND	50	50	54.3	58.0	109	116	74-136	7	
Chlorobenzene	ug/L	ND	50	50	55.5	58.6	111	117	79-135	6	
Toluene	ug/L	ND	50	50	50.4	54.7	101	109	73-131	8	
Trichloroethene	ug/L	ND	50	50	54.8	58.9	110	118	73-131	7	
1,2-Dichloroethane-d4 (S)	%						98	100	79-120		
4-Bromofluorobenzene (S)	%						101	101	87-109		
Dibromofluoromethane (S)	%						98	99	85-115		
Toluene-d8 (S)	%						97	97	70-120		

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QUALITY CONTROL DATA

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

QC Batch: MPRP/2931 — Analysis Method: EPA 6010 GW North Carolina
QC Batch Method: EPA 3010 — Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 9226386001, 9226386002, 9226386004, 9226386005, 9226386006, 9226386007, 9226386008, 9226386010

METHOD BLANK: 159889 — Matrix: Water
Associated Lab Samples: 9226386001, 9226386002, 9226386004, 9226386005, 9226386006, 9226386007, 9226386008, 9226386010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	5.0	09/03/08 05:52	
Barium	ug/L	ND	5.0	09/03/08 05:52	
Cadmium	ug/L	ND	1.0	09/03/08 05:52	
Chromium	ug/L	ND	5.0	09/03/08 05:52	
Lead	ug/L	ND	5.0	09/03/08 05:52	
Selenium	ug/L	ND	10.0	09/03/08 05:52	
Silver	ug/L	ND	5.0	09/03/08 05:52	

LABORATORY CONTROL SAMPLE: 159890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	500	444	89	80-120	
Barium	ug/L	500	436	87	80-120	
Cadmium	ug/L	500	442	88	80-120	
Chromium	ug/L	500	443	89	80-120	
Lead	ug/L	500	448	90	80-120	
Selenium	ug/L	500	441	88	80-120	
Silver	ug/L	250	242	97	80-120	

MATRIX SPIKE SAMPLE: 159891

Parameter	Units	9226386001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	ND	500	465	93	75-125	
Barium	ug/L	150	500	593	89	75-125	
Cadmium	ug/L	ND	500	449	90	75-125	
Chromium	ug/L	ND	500	455	91	75-125	
Lead	ug/L	ND	500	450	90	75-125	
Selenium	ug/L	ND	500	455	91	75-125	
Silver	ug/L	ND	250	244	97	75-125	

SAMPLE DUPLICATE: 159892

Parameter	Units	9226386002 Result	Dup Result	RPD	Qualifiers
Arsenic	ug/L	ND	ND	30	R3
Barium	ug/L	265	278	5	
Cadmium	ug/L	ND	ND	3	
Chromium	ug/L	ND	.85J	7	
Lead	ug/L	ND	ND	93	R3

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

SAMPLE DUPLICATE: 159892

Parameter	Units	9226386002 Result	Dup Result	RPD	Qualifiers
Selenium	ug/L	13.9	15.5	11	
Silver	ug/L	ND	2.6J	2	

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QUALITY CONTROL DATA

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

QC Batch: MSV/4422
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 9226386010

METHOD BLANK: 160136
Matrix: Water
Associated Lab Samples: 9226386010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	08/31/08 18:02	
1,1,1-Trichloroethane	ug/L	ND	1.0	08/31/08 18:02	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/31/08 18:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/31/08 18:02	
1,1-Dichloroethane	ug/L	ND	1.0	08/31/08 18:02	
1,1-Dichloroethene	ug/L	ND	1.0	08/31/08 18:02	
1,2,3-Trichloropropane	ug/L	ND	1.0	08/31/08 18:02	
1,2-Dibromo-3-chloropropane	ug/L	ND	3.0	08/31/08 18:02	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	08/31/08 18:02	
1,2-Dichlorobenzene	ug/L	ND	1.0	08/31/08 18:02	
1,2-Dichloroethane	ug/L	ND	1.0	08/31/08 18:02	
1,2-Dichloropropane	ug/L	ND	1.0	08/31/08 18:02	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/31/08 18:02	
2-Butanone (MEK)	ug/L	ND	5.0	08/31/08 18:02	
2-Hexanone	ug/L	ND	5.0	08/31/08 18:02	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	08/31/08 18:02	
Acetone	ug/L	ND	25.0	08/31/08 18:02	
Acrylonitrile	ug/L	ND	10.0	08/31/08 18:02	
Benzene	ug/L	ND	1.0	08/31/08 18:02	
Bromochloromethane	ug/L	ND	1.0	08/31/08 18:02	
Bromodichloromethane	ug/L	ND	1.0	08/31/08 18:02	
Bromoform	ug/L	ND	1.0	08/31/08 18:02	
Bromomethane	ug/L	ND	5.0	08/31/08 18:02	
Carbon disulfide	ug/L	ND	2.0	08/31/08 18:02	
Carbon tetrachloride	ug/L	ND	1.0	08/31/08 18:02	
Chlorobenzene	ug/L	ND	1.0	08/31/08 18:02	
Chloroethane	ug/L	ND	1.0	08/31/08 18:02	
Chloroform	ug/L	ND	1.0	08/31/08 18:02	
Chloromethane	ug/L	ND	1.0	08/31/08 18:02	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/31/08 18:02	
cis-1,3-Dichloropropene	ug/L	ND	1.0	08/31/08 18:02	
Dibromochloromethane	ug/L	ND	1.0	08/31/08 18:02	
Dibromomethane	ug/L	ND	1.0	08/31/08 18:02	
Ethylbenzene	ug/L	ND	1.0	08/31/08 18:02	
Iodomethane	ug/L	ND	5.0	08/31/08 18:02	
m&p-Xylene	ug/L	ND	2.0	08/31/08 18:02	
Methylene Chloride	ug/L	ND	2.0	08/31/08 18:02	
o-Xylene	ug/L	ND	1.0	08/31/08 18:02	
Styrene	ug/L	ND	1.0	08/31/08 18:02	
Tetrachloroethene	ug/L	ND	1.0	08/31/08 18:02	
Toluene	ug/L	ND	1.0	08/31/08 18:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/31/08 18:02	
trans-1,3-Dichloropropene	ug/L	ND	1.0	08/31/08 18:02	

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

METHOD BLANK: 160136 Matrix: Water

Associated Lab Samples: 9226386010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	08/31/08 18:02	
Trichloroethene	ug/L	ND	1.0	08/31/08 18:02	
Trichlorofluoromethane	ug/L	ND	1.0	08/31/08 18:02	
Vinyl acetate	ug/L	ND	2.0	08/31/08 18:02	
Vinyl chloride	ug/L	ND	1.0	08/31/08 18:02	
Xylene (Total)	ug/L	ND	2.0	08/31/08 18:02	
1,2-Dichloroethane-d4 (S)	%	93	79-120	08/31/08 18:02	
4-Bromofluorobenzene (S)	%	100	87-109	08/31/08 18:02	
Dibromofluoromethane (S)	%	94	85-115	08/31/08 18:02	
Toluene-d8 (S)	%	100	70-120	08/31/08 18:02	

LABORATORY CONTROL SAMPLE: 160137

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	49.6	99	83-125	
1,1,1-Trichloroethane	ug/L	50	48.7	97	80-129	
1,1,2,2-Tetrachloroethane	ug/L	50	47.4	95	73-127	
1,1,2-Trichloroethane	ug/L	50	48.9	98	77-123	
1,1-Dichloroethane	ug/L	50	49.2	98	76-129	
1,1-Dichloroethene	ug/L	50	52.4	105	78-146	
1,2,3-Trichloropropane	ug/L	50	49.0	98	72-125	
1,2-Dibromo-3-chloropropane	ug/L	50	52.2	104	65-128	
1,2-Dibromoethane (EDB)	ug/L	50	51.4	103	81-125	
1,2-Dichlorobenzene	ug/L	50	51.6	103	82-126	
1,2-Dichloroethane	ug/L	50	49.0	98	72-126	
1,2-Dichloropropane	ug/L	50	50.6	101	80-127	
1,4-Dichlorobenzene	ug/L	50	50.7	101	79-125	
2-Butanone (MEK)	ug/L	100	106	106	50-134	
2-Hexanone	ug/L	100	104	104	58-138	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	70-131	
Acetone	ug/L	100	113	113	50-146	
Acrylonitrile	ug/L	250	244	97	66-124	
Benzene	ug/L	50	49.5	99	78-128	
Bromochloromethane	ug/L	50	48.5	97	73-124	
Bromodichloromethane	ug/L	50	49.8	100	81-125	
Bromoform	ug/L	50	53.2	106	71-125	
Bromomethane	ug/L	50	37.7	75	50-150	
Carbon disulfide	ug/L	50	49.9	100	54-150	
Carbon tetrachloride	ug/L	50	49.4	99	81-137	
Chlorobenzene	ug/L	50	50.4	101	82-126	
Chloroethane	ug/L	50	49.9	100	69-140	
Chloroform	ug/L	50	49.0	98	77-129	
Chloromethane	ug/L	50	48.3	97	54-139	
cis-1,2-Dichloroethene	ug/L	50	50.2	100	76-133	
cis-1,3-Dichloropropene	ug/L	50	50.2	100	76-127	

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QUALITY CONTROL DATA

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

LABORATORY CONTROL SAMPLE: 160137

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	50	48.8	98	77-125	
Dibromomethane	ug/L	50	52.2	104	77-125	
Ethylbenzene	ug/L	50	49.2	98	80-127	
Iodomethane	ug/L	100	119	119	65-172	
m&p-Xylene	ug/L	100	99.5	99	82-127	
Methylene Chloride	ug/L	50	50.5	101	67-133	
o-Xylene	ug/L	50	48.9	98	83-124	
Styrene	ug/L	50	52.2	104	80-130	
Tetrachloroethene	ug/L	50	49.3	99	78-128	
Toluene	ug/L	50	47.8	96	76-126	
trans-1,2-Dichloroethene	ug/L	50	48.6	97	78-134	
trans-1,3-Dichloropropene	ug/L	50	49.5	99	75-125	
trans-1,4-Dichloro-2-butene	ug/L	50	50.6	101	51-140	
Trichloroethene	ug/L	50	50.5	101	79-127	
Trichlorofluoromethane	ug/L	50	51.9	104	76-148	
Vinyl acetate	ug/L	100	93.5	93	50-150	
Vinyl chloride	ug/L	50	52.1	104	67-143	
Xylene (Total)	ug/L	150	148	99	83-125	
1,2-Dichloroethane-d4 (S)	%			99	79-120	
4-Bromofluorobenzene (S)	%			101	87-109	
Dibromofluoromethane (S)	%			100	85-115	
Toluene-d8 (S)	%			101	70-120	

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QUALITY CONTROL DATA

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

QC Batch: MERP/1680 — Analysis Method: EPA 7470
QC Batch Method: EPA 7470 — Analysis Description: 7470 Mercury
Associated Lab Samples: 9226386001, 9226386002, 9226386004, 9226386005, 9226386006, 9226386007, 9226386008, 9226386010

METHOD BLANK: 160553 — Matrix: Water
Associated Lab Samples: 9226386001, 9226386002, 9226386004, 9226386005, 9226386006, 9226386007, 9226386008, 9226386010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	08/30/08 11:00	

LABORATORY CONTROL SAMPLE: 160554

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	3.0	118	80-120	

MATRIX SPIKE SAMPLE: 160555

Parameter	Units	9226337001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1.6	2.5	3.0	54	75-125	M1

SAMPLE DUPLICATE: 160556

Parameter	Units	9226337002 Result	Dup Result	RPD	Qualifiers
Mercury	ug/L	2.4	2.6	9	

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QUALIFIERS

Project: Frances Farm LF 8/26/08
Pace Project No.: 9226386

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

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ANALYTE QUALIFIERS

HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R3	RPD value was outside control limits due to uncertainty of values at or near the PRL.
T3	Insufficient sample received from client to perform the analysis per EPA method requirements.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1175233

Section A Required Client Information:

Company: Haywood Co Solid Waste
Address:
Clyde NC
Email To:
Phone: 627-8042 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Stephen King
Copy To:
Purchase Order No.:
Project Name: Frances Farm LF
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ ~~RCRA~~ ☐ OTHER

Site Location STATE: NC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	VOA Transparent	Static H_2O	Acetone Volatiles	RCRA 8 metals	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1A					8-25	1500		4			1	3						X	X	X	X		9226386
2	MW-2A						1420		4			1	3						X	X	X	X		
3	MW-3A						1445		0										~~X~~					
4	MW-4						1515		4			1	3						X	X	X	X		
5	MW-5						1530		4			1	3						X	X	X	X		
6	SW-1						1620		4			1	3						X		X	X		
7	SW-2						1600		4			1	3						X		X	X		
8	~~SW~~ BLANTON BR						1545		4			1	3						X		X	X		
9																								
10	TVC BLK												2								X			
11	EQUIP BLK											1	2								X	X		
12																								

Requested Analysis Filtered (Y/N)

Dup

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Kittie Smart	8-25-08	1630	[signature]	8-25-08	1630	3X			
	[signature] 8-26	8-26	0800	[signature]	8/26	0800	3X	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK P. SWANN

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 8-25-08

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

APPENDIX D

Statistical Calculations

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

COMPOUND	TOTAL	ND	DETECTED	%ND	STATISTICAL TEST
Total Arsenic	79	66	13	83.5%	Poisson Prediction Limits
Total Barium *	79	5	74	6.3%	Kruskal-Wallis
Total Cadmium	79	55	24	69.6%	Kruskal-Wallis
Total Chromium	79	38	41	48.1%	Kruskal-Wallis
Total Lead	79	55	24	69.6%	Kruskal-Wallis
Total Mercury	74	67	7	90.5%	Poisson Prediction Limits
Total Selenium	70	53	17	75.7%	Kruskal-Wallis
Total Silver	79	66	13	83.5%	Kruskal-Wallis
Acetone	53	51	2	96.2%	Poisson Prediction Limits
Benzene	53	37	16	69.8%	Kruskal-Wallis
Carbon Disulfide	53	52	1	98.1%	Poisson Prediction Limits
Chlorobenzene	53	50	3	94.3%	Poisson Prediction Limits
Chloroethane	53	35	18	66.0%	Poisson Prediction Limits
1,2-Dichlorobenzene	53	50	3	94.3%	Poisson Prediction Limits
1,4-Dichlorobenzene	53	41	12	77.4%	Poisson Prediction Limits
1,1-Dichloroethane	53	13	40	24.5%	Kruskal-Wallis
1,2-Dichloroethane	53	46	7	86.8%	Poisson Prediction Limits
1,1-Dichloroethene	53	52	1	98.1%	Poisson Prediction Limits
cis-1,2-Dichloroethene	53	11	42	20.8%	Kruskal-Wallis
cis-1,3-Dichloropropene	53	52	1	98.1%	Poisson Prediction Limits
Ethylbenzene	53	50	3	94.3%	Poisson Prediction Limits
Dichloromethane	53	40	13	75.5%	Kruskal-Wallis
Tetrachloroethene	53	36	17	67.9%	Kruskal-Wallis
Toluene	53	45	8	84.9%	Poisson Prediction Limits
Trichloroethene	53	36	17	67.9%	Kruskal-Wallis
Vinyl Chloride	53	52	1	98.1%	Poisson Prediction Limits
Xylenes	53	50	3	94.3%	Poisson Prediction Limits

Sampling Event	# Detected
N 1	3
N 2	8
N 3	11
N 4	13
N 5	20
N 6	14
N 7	21
N 8	43
N 9	33
N 10	34
N 11	42
N 12	29
N 13	7
N 14	22
N 15	14
N 16	35
N 17	40
N 18	32

LEGEND FOR THE FOLLOWING PAGES:

ND = *Not Detected* at the method detection limit
MCL = *Maximum Contaminant Level*; NCAC 2L Standard
NE = *Not Established*; NC has not established a MCL
NP = *Not Present* during sampling event
NS = *Not Sampled*
NT = *Not Tested*
NA = information *Not Available*
MDL = *Method Detection Limit*

Total Detected Concentrations (per compound) =	421
Total Detected Concentrations (per event) =	421
Are all accounted for ?	Yes
Statistical Package Prepared By:	IAI
Statistical Package Checked By:	MSP

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Total Arsenic (As)**
MCL (µg/l): 50
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	5
08/16/99	ND	NS	ND	NS	ND	5
02/14/00	ND	NS	ND	NS	ND	5
08/14/00	ND	NT	ND	NS	**10**	5
03/19/01	ND	**11**	ND	ND	ND	5
08/27/02	**5.8**	**25**	ND	**23**	NT	5
02/24/03	ND	**23**	ND	**16**	ND	5
08/11/03	ND	**9.9**	ND	**6.5**	ND	5
02/09/04	ND	**8.3**	ND	ND	ND	5
08/16/04	ND	**6.1**	ND	ND	ND	5
02/14/05	ND	**6.2**	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	**5.9**	ND	5
08/13/07	ND	ND	ND	ND	Dry	5
02/11/08	ND	ND	ND	ND	ND	5
08/25/08	ND	ND	ND	ND	Dry	5

1) If not detected (ND), use half of the detection limit.

02/18/99	2.5	-	2.5	-	2.5
08/16/99	2.5	-	2.5	-	2.5
02/14/00	2.5	-	2.5	-	2.5
08/14/00	2.5	-	2.5	-	10
03/19/01	2.5	11	2.5	2.5	2.5
08/27/02	5.8	25	2.5	23	-
02/24/03	2.5	23	2.5	16	2.5
08/11/03	2.5	9.9	2.5	6.5	2.5
02/09/04	2.5	8.3	2.5	2.5	2.5
08/16/04	2.5	6.1	2.5	2.5	2.5
02/14/05	2.5	6.2	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07	2.5	2.5	2.5	5.9	2.5
08/13/07	2.5	2.5	2.5	2.5	-
02/11/08	2.5	2.5	2.5	2.5	2.5
08/25/08			2.5	2.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 17.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 30$
$T_{n1} = 150.3$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 30$
$T_{n1} = 150.3$
$t[29,.01] = 2.462$
$c = 0.0667$
$T_{n2} = 5$
$T^*_k = 18.3$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Total Barium (Ba)**
NC MCL (µg/l):	2000
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	100	NS	300	NS	400	100
08/16/99	120	NS	230	NS	260	100
02/14/00	150	NS	270	NS	240	100
08/14/00	180	NT	410	NS	310	100
03/19/01	120	2000	340	830	310	100
08/27/02	150	2800	250	2700	NT	100
02/24/03	150	2500	310	1800	330	100
08/11/03	150	1200	530	950	350	5
02/09/04	120	890	260	370	310	5
08/16/04	140	1100	280	300	310	5
02/14/05	160	520	310	300	300	5
09/01/05	140	330	280	280	210	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	160	250	290	220	240	5
02/26/07	140	280	210	240	300	5
08/13/07	137	208	176	256	Dry	5
02/11/08	155	238	165	229	41.7	5
08/25/08	142	195	150	265	Dry	5
N_i	18	14	18	14	15	
sum of rank values (R_i)	266.0	756.5	764.5	695.5	677.5	
avg rank value (Rbar)	14.8	54.0	42.5	49.7	45.2	

	Number of each rank value					Rank Value
rank value of NDs =	1	1	1	1	1	3
rank value of 41.7s =	0	0	0	0	1	6
rank value of 100s =	1	0	0	0	0	7
rank value of 120s =	3	0	0	0	0	9
rank value of 137s =	1	0	0	0	0	11
rank value of 140s =	3	0	0	0	0	13
rank value of 142s =	1	0	0	0	0	15
rank value of 150s =	4	0	1	0	0	18
rank value of 155s =	1	0	0	0	0	21
rank value of 160s =	2	0	0	0	0	22.5
rank value of 165s =	0	0	1	0	0	24
rank value of 176s =	0	0	1	0	0	25
rank value of 180s =	1	0	0	0	0	26
rank value of 195s =	0	1	0	0	0	27
rank value of 208s =	0	1	0	0	0	28
rank value of 210s =	0	0	1	0	1	29.5
rank value of 220s =	0	0	0	1	0	31
rank value of 229s =	0	0	0	1	0	32
rank value of 230s =	0	0	1	0	0	33
rank value of 238s =	0	1	0	0	0	34
rank value of 240s =	0	0	0	1	2	36
rank value of 250s =	0	1	1	0	0	38.5
rank value of 256s =	0	0	0	1	0	40
rank value of 260s =	0	0	1	0	1	41.5
rank value of 265s =	0	0	0	1	0	43
rank value of 270s =	0	0	1	0	0	44
rank value of 280s =	0	1	2	1	0	46.5
rank value of 290s =	0	0	1	0	0	49
rank value of 300s =	0	0	1	2	2	52
rank value of 310s =	0	0	2	0	4	57.5
rank value of 330s =	0	1	0	0	1	61.5
rank value of 340s =	0	0	1	0	0	63
rank value of 350s =	0	0	0	0	1	64
rank value of 370s =	0	0	0	1	0	65
rank value of 400s =	0	0	0	0	1	66
rank value of 410s =	0	0	1	0	0	67
rank value of 520s =	0	1	0	0	0	68
rank value of 530s =	0	0	1	0	0	69
rank value of 830s =	0	0	0	1	0	70
rank value of 890s =	0	1	0	0	0	71
rank value of 950s =	0	0	0	1	0	72
rank value of 1100s =	0	1	0	0	0	73
rank value of 1200s =	0	1	0	0	0	74
rank value of 1800s =	0	0	0	1	0	75
rank value of 2000s =	0	1	0	0	0	76
rank value of 2500s =	0	1	0	0	0	77

rank value of 2700s =	0	0	0	1	0	78
rank value of 2800s =	0	1	0	0	0	79
n =	**18**	**14**	**18**	**14**	**15**	

Sum of rank value calculations

3	3	3	3	3
0	0	0	0	6
7	0	0	0	0
27	0	0	0	0
11	0	0	0	0
39	0	0	0	0
15	0	0	0	0
72	0	18	0	0
21	0	0	0	0
45	0	0	0	0
0	0	24	0	0
0	0	25	0	0
26	0	0	0	0
0	27	0	0	0
0	28	0	0	0
0	0	29.5	0	29.5
0	0	0	31	0
0	0	0	32	0
0	0	33	0	0
0	34	0	0	0
0	0	0	36	72
0	38.5	38.5	0	0
0	0	0	40	0
0	0	41.5	0	41.5
0	0	0	43	0
0	0	44	0	0
0	46.5	93	46.5	0
0	0	49	0	0
0	0	52	104	104
0	0	115	0	230
0	61.5	0	0	61.5
0	0	63	0	0
0	0	0	0	64
0	0	0	65	0
0	0	0	0	66
0	0	67	0	0
0	68	0	0	0
0	0	69	0	0
0	0	0	70	0
0	71	0	0	0
0	0	0	72	0
0	73	0	0	0
0	74	0	0	0
0	0	0	75	0
0	76	0	0	0
0	77	0	0	0
0	0	0	78	0
0	79	0	0	0
sum of rank values (R_i)	**266**	**756.5**	**764.5**	**695.5**	**677.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} - 3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	32672.1	32470.01	34551.45	30600.42

$N_{i\,bg}$ = 32
N = 79
H = 7.39

Adjust H for ties:

T_i = 732 sum of T1..T5

$H' = H/(1-(T_i/(N^3-N)))$
H' = 7.40
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =7.40.
Therefore, the null hypothesis of no contamination at the 5% level holds true
and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Total Barium (Ba)**
AL MCL (µg/l): 2000
Method: Levene's Test for Homogeneity
Background: MW-4 & MW-5

	MW-11S	MW-11D	MW-1A	MW-2	MW-2D	MDL
2/18/1999	100	NS	300	NS	400	100
8/16/1999	120	NS	230	NS	260	100
2/14/2000	150	NS	270	NS	240	100
8/14/2000	180	NT	410	NS	310	100
3/19/2001	120	2000	340	830	310	100
8/27/2002	150	2800	250	2700	NT	100
2/24/2003	150	2500	310	1800	330	100
8/11/2003	150	1200	530	950	350	5
2/9/2004	120	890	260	370	310	5
8/16/2004	140	1100	280	300	310	5
2/14/2005	160	520	310	300	300	5
9/1/2005	140	330	280	280	210	5
2/16/2006	ND	ND	ND	ND	ND	5
8/30/2006	160	250	290	220	240	5
2/26/2007	140	280	210	240	300	5
8/13/2007	137	208	176	256	Dry	5
2/11/2008	155	238	165	229	41.7	5
8/25/2008	142	195	150	265	Dry	5

If not detected (ND), use half of the detection limit.

	100		300		400
	120		230		260
	150		270		240
	180		410		310
	120	2000	340	830	310
	150	2800	250	2700	
	150	2500	310	1800	330
	150	1200	530	950	350
	120	890	260	370	310
	140	1100	280	300	310
	160	520	310	300	300
	140	330	280	280	210
	2.5	2.5	2.5	2.5	2.5
	160	250	290	220	240
	140	280	210	240	300
	137	208	176	256	
	155	238	165	229	41.7
	142	195	150	265	
n =	18	14	18	14	15
bar x_i =	134.25	893.8214286	264.6388889	624.4642857	260.9466667
z_{ij} =	34.25		35.36111111		139.0533333
	14.25		34.63888889		0.946666667
	15.75		5.361111111		20.94666667
	45.75		145.3611111		49.05333333
	14.25	1106.178571	75.36111111	205.5357143	49.05333333
	15.75	1906.178571	14.63888889	2075.535714	
	15.75	1606.178571	45.36111111	1175.535714	69.05333333
	15.75	306.1785714	265.3611111	325.5357143	89.05333333
	14.25	3.821428571	4.638888889	254.4642857	49.05333333
	5.75	206.1785714	15.36111111	324.4642857	49.05333333
	25.75	373.8214286	45.36111111	324.4642857	39.05333333
	5.75	563.8214286	15.36111111	344.4642857	50.94666667
	131.75	891.3214286	262.1388889	621.9642857	258.4466667
	25.75	643.8214286	25.36111111	404.4642857	20.94666667
	5.75	613.8214286	54.63888889	384.4642857	39.05333333
	2.75	685.8214286	88.63888889	368.4642857	
	20.75	655.8214286	99.63888889	395.4642857	219.2466667
	7.75	698.8214286	114.6388889	359.4642857	
bar z_i =	23.19444444	732.9846939	74.84567901	540.3061224	76.19733333

n_i * bar z_i^2 =	9683.680556	7521731.86	100833.762	4087029.883	87090.50411

bar z = 289.5056546
N = 79

	SS	df	MS	F_{Ratio}	$F_{critical}$
Between Wells	5185101.29	4	1296275.32	9.59	2.51
Error	10002296.48	74	135166.17		
Total	15187397.77	78			

Since the F-ratio = 9.59 exceeds the tabulated value of F-critical = 2.51 (see Table 2 of IFG) with 4 and 74 df, the assumption of equal variances should be rejected.
Re-test the data set using the natural log of the above values.

	MW-11S	MW-11D	MW-1A	MW-2	MW-2D
ln=	4.605170186		5.703782475		5.991464547
	4.787491743		5.438079309		5.560681631
	5.010635294		5.598421959		5.480638923
	5.192956851		6.01615716		5.736572297
	4.787491743	7.60090246	5.828945618	6.721425701	5.736572297
	5.010635294	7.937374696	5.521460918	7.901007052	
	5.010635294	7.824046011	5.736572297	7.495541944	5.799092654
	5.010635294	7.090076836	6.272877007	6.856461985	5.857933154
	4.787491743	6.791221463	5.560681631	5.913503006	5.736572297
	4.941642423	7.003065459	5.634789603	5.703782475	5.736572297
	5.075173815	6.253828812	5.736572297	5.703782475	5.703782475
	4.941642423	5.799092654	5.634789603	5.634789603	5.347107531
	0.916290732	0.916290732	0.916290732	0.916290732	0.916290732
	5.075173815	5.521460918	5.669880923	5.393627546	5.480638923
	4.941642423	5.634789603	5.347107531	5.480638923	5.703782475
	4.919980926	5.33753808	5.170483995	5.545177444	
	5.043425117	5.472270674	5.105945474	5.433722004	3.730501129
	4.955827058	5.272999559	5.010635294	5.579729826	
n =	18	14	18	14	15
bar x_i =	4.722996787	6.032496997	5.327970768	5.734248622	5.234546891
z_{ij} =	0.117826601		0.375811707		0.756917656
	0.064494955		0.110108541		0.32613474
	0.287638507		0.270451191		0.246092032
	0.469960064		0.688186392		0.502025407
	0.064494955	1.568405463	0.50097485	0.987177078	0.502025407
	0.287638507	1.904877699	0.19349015	2.166758429	
	0.287638507	1.791549014	0.408601529	1.761293321	0.564545764
	0.287638507	1.057579839	0.944906238	1.122213362	0.623386264
	0.064494955	0.758724466	0.232710863	0.179254383	0.502025407
	0.218645635	0.970568462	0.306818835	0.030466148	0.502025407
	0.352177028	0.221331815	0.408601529	0.030466148	0.469235584
	0.218645635	0.233404342	0.306818835	0.099459019	0.11256064
	3.806706055	5.116206265	4.411680036	4.817957891	4.318256159
	0.352177028	0.511036079	0.341910155	0.340621076	0.246092032
	0.218645635	0.397707394	0.019136763	0.253609699	0.469235584
	0.196984138	0.694958917	0.157486773	0.189071178	
	0.32042833	0.560226323	0.222025294	0.300526619	1.504045762
	0.23283027	0.759497438	0.317335474	0.154518797	
bar z_i =	0.436059184	1.181862394	0.567614175	0.888099511	0.776306923
n_i * bar z_i^2 =	3.422657017	19.55518206	5.799345335	11.04209037	9.039786577

bar z = 0.769988437
N = 79

	SS	df	MS	F_{Ratio}	$F_{critical}$
Between Wells	2.02	4	0.51	0.36	2.51
Error	102.69	74	1.39		
Total	104.71	78			

Since the F-ratio = 0.36 does not exceed the tabulated value of F-critical = 2.51 (see Table 2 of IFG) with 4 and 74 df, the assumption of equal means should be accepted.
Proceed with further statistical tests using the log-transformed values shown above.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Total Barium**
NC MCL (µg/l): 2000
Method: Skewness Test for Normality
Background: MW-4 & MW-5

	MW-11S	MW-11D	MW-1A	MW-2	MW-2D	MDL
2/18/99	100	NS	300	NS	400	100
8/16/99	120	NS	230	NS	260	100
2/14/00	150	NS	270	NS	240	100
8/14/00	180	NT	410	NS	310	100
3/19/01	120	2000	340	830	310	100
8/27/02	150	2800	250	2700	NT	100
2/24/03	150	2500	310	1800	330	100
8/11/03	150	1200	530	950	350	5
2/9/04	120	890	260	370	310	5
8/16/04	140	1100	280	300	310	5
2/14/05	160	520	310	300	300	5
9/1/05	140	330	280	280	210	5
2/16/06	ND	ND	ND	ND	ND	5
8/30/06	160	250	290	220	240	5
2/26/07	140	280	210	240	300	5
8/13/07	137	208	176	256	Dry	5
2/11/08	155	238	165	229	41.7	5
8/25/08	142	195	150	265	Dry	5

If not detected (ND), use half of the detection limit.

	100		300		400
	120		230		260
	150		270		240
	180		410		310
	120	2000	340	830	310
	150	2800	250	2700	
	150	2500	310	1800	330
	150	1200	530	950	350
	120	890	260	370	310
	140	1100	280	300	310
	160	520	310	300	300
	140	330	280	280	210
	2.5	2.5	2.5	2.5	2.5
	160	250	290	220	240
	140	280	210	240	300
	137	208	176	256	
	155	238	165	229	41.7
	142	195	150	265	

X_i values =	-29645991.1		-1312795.78		-856.347246
	-24262112.6		-5783167.82		-3341107.76
	-17474027.7		-2714483.18		-4869450.08
	-12087222.3		0.127869787		-984962.092
	-24262112.6	4023501162	-335647.35	74354929.55	-984962.092
	-17474027.7	13660554045	-4057430.06	12016916637	
	-17474027.7	9135932505	-984962.092	2688540220	-502387.876
	-17474027.7	493982861.7	1749855.551	157905133.3	-210604.546
	-24262112.6	110940590.4	-3341107.76	-61612.1017	-984962.092
	-19573025	329229099.4	-2171556.33	-1312795.78	-984962.092
	-15530728.2	1349371.734	-984962.092	-1312795.78	-1312795.78
	-19573025	-502387.876	-2171556.33	-2171556.33	-7939696.46
	-67417255.9	-67417255.9	-67417255.9	-67417255.9	-67417255.9
	-15530728.2	-4057430.06	-1706327.19	-6804583.28	-4869450.08
	-19573025	-2171556.33	-7939696.46	-4869450.08	-1312795.78
	-20233982.2	-8180890.83	-12730324.2	-3616536.95	
	-16483290.7	-5043865.81	-14615590.1	-5880363.97	-49753280.6

	-19140481.7	-9868674.47	-17474027.7	-3016958.25

X_{bar} = 409.4962025
SD = 563.3607954
N = 79
$1/N\Sigma_i(X_i-X_{bar})^3$ = 529273023
γ_1 = 3.017300946

Since the Coefficient of Skewness of 3.02 is greater than 1.0, the data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

	MW-11S	MW-11D	MW-1A	MW-2	MW-2D
ln =	4.605170186		5.703782475		5.991464547
	4.787491743		5.438079309		5.560681631
	5.010635294		5.598421959		5.480638923
	5.192956851		6.01615716		5.736572297
	4.787491743	7.60090246	5.828945618	6.721425701	5.736572297
	5.010635294	7.937374696	5.521460918	7.901007052	
	5.010635294	7.824046011	5.736572297	7.495541944	5.799092654
	5.010635294	7.090076836	6.272877007	6.856461985	5.857933154
	4.787491743	6.791221463	5.560681631	5.913503006	5.736572297
	4.941642423	7.003065459	5.634789603	5.703782475	5.736572297
	5.075173815	6.253828812	5.736572297	5.703782475	5.703782475
	4.941642423	5.799092654	5.634789603	5.634789603	5.347107531
	0.916290732	0.916290732	0.916290732	0.916290732	0.916290732
	5.075173815	5.521460918	5.669880923	5.393627546	5.480638923
	4.941642423	5.634789603	5.347107531	5.480638923	5.703782475
	4.919980926	5.33753808	5.170483995	5.545177444	
	5.043425117	5.472270674	5.105945474	5.433722004	3.730501129
	4.955827058	5.272999559	5.010635294	5.579729826	

X_i values =	-0.44606818		0.037441131		0.240901122
	-0.19688292		0.000326202		0.00701618
	-0.04611609		0.012037443		0.001382383
	-0.00547825		0.270734445		0.049564753
	-0.19688292	11.11436869	0.097148459	2.472337871	0.049564753
	-0.04611609	16.93763483	0.003527056	16.22820901	
	-0.04611609	14.79281669	0.049564753	9.613334373	0.079424608
	-0.04611609	5.095867675	0.737870649	3.289472825	0.116709298
	-0.19688292	2.87528347	0.00701618	0.161221693	0.049564753
	-0.07818249	4.361300264	0.01872539	0.037441131	0.049564753
	-0.02542967	0.692185502	0.049564753	0.037441131	0.037441131
	-0.07818249	0.079424608	0.01872539	0.01872539	-1.0843E-05
	-88.2965236	-88.2965236	-88.2965236	-88.2965236	-88.2965236
	-0.02542967	0.003527056	0.027173083	1.45023E-05	0.001382383
	-0.07818249	0.01872539	-1.0843E-05	0.001382383	0.037441131
	-0.09067638	-3.1865E-05	-0.00785179	0.00544585	
	-0.03458738	0.001093664	-0.01825289	0.000268096	-4.40078602
	-0.07065715	-0.00089143	-0.04611609	0.00932579	

X_{bar} = 5.369241241
SD = 1.392357993
N = 79
$1/N\Sigma_i(X_i-X_{bar})^3$ = -4.52870756
γ_1 = 1.71009514

Since the Coefficient of Skewness of 1.71 is greater than 1.0, the data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
A non-parametric testing procedure should be used on the data set.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Total Cadmium (Cd)**
NC MCL (µg/l):	1.75
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	**10**
08/16/99	ND	NS	**2.5**	NS	**7.4**	**10**
02/14/00	**1.4**	NS	**2**	NS	**9.1**	**10**
08/14/00	**1.3**	NT	**4.9**	NS	**13**	**10**
03/19/01	ND	**18**	**2.6**	**12**	**6.9**	**10**
08/27/02	ND	**21**	ND	**25**	NT	**10**
02/24/03	ND	**19**	**2.1**	**22**	**6.2**	**10**
08/11/03	ND	ND	**2**	**3.1**	ND	**1**
02/09/04	ND	ND	ND	ND	ND	**1**
08/16/04	ND	ND	ND	ND	ND	**1**
02/14/05	ND	ND	**2.4**	**7**	**4**	**1**
09/01/05	ND	ND	ND	ND	ND	**1**
02/16/06	ND	ND	ND	ND	ND	**1**
08/30/06	ND	ND	ND	ND	ND	**1**
02/26/07	ND	ND	ND	ND	ND	**1**
08/13/07	ND	ND	**1.5**	ND	Dry	**1**
02/11/08	ND	ND	ND	ND	ND	**1**
08/25/08	ND	ND	ND	ND	Dry	**1**
N_i	18	14	18	14	15	
sum of rank values (R_i)	561.0	536.0	774.0	617.0	672.0	
avg rank value (Rbar)	31.2	38.3	43.0	44.1	44.8	

	Number of each rank value					Rank Value
rank value of NDs =	16	11	10	9	9	28
rank value of 1.3s =	1	0	0	0	0	56
rank value of 1.4s =	1	0	0	0	0	57
rank value of 1.5s =	0	0	1	0	0	58
rank value of 2s =	0	0	2	0	0	59.5
rank value of 2.1s =	0	0	1	0	0	61
rank value of 2.4s =	0	0	1	0	0	62
rank value of 2.5s =	0	0	1	0	0	63
rank value of 2.6s =	0	0	1	0	0	64
rank value of 3.1s =	0	0	0	1	0	65
rank value of 4s =	0	0	0	0	1	66
rank value of 4.9s =	0	0	1	0	0	67
rank value of 6.2s =	0	0	0	0	1	68
rank value of 6.9s =	0	0	0	0	1	69
rank value of 7s =	0	0	0	1	0	70
rank value of 7.4s =	0	0	0	0	1	71
rank value of 9.1s =	0	0	0	0	1	72
rank value of 12s =	0	0	0	1	0	73
rank value of 13s =	0	0	0	0	1	74
rank value of 18s =	0	1	0	0	0	75
rank value of 19s =	0	1	0	0	0	76
rank value of 21s =	0	1	0	0	0	77

rank value of 22s =	0	0	0	1	0	78
rank value of 25s =	0	0	0	1	0	79
n =	**18**	**14**	**18**	**14**	**15**	

Sum of rank value calculations

448	308	280	252	252
56	0	0	0	0
57	0	0	0	0
0	0	58	0	0
0	0	119	0	0
0	0	61	0	0
0	0	62	0	0
0	0	63	0	0
0	0	64	0	0
0	0	0	65	0
0	0	0	0	66
0	0	67	0	0
0	0	0	0	68
0	0	0	0	69
0	0	0	70	0
0	0	0	0	71
0	0	0	0	72
0	0	0	73	0
0	0	0	0	74
0	75	0	0	0
0	76	0	0	0
0	77	0	0	0
0	0	0	78	0
0	0	0	79	0
sum of rank values (R_i) **561**	**536**	**774**	**617**	**672**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	37606.5	33282	27192.07	30105.6

$N_{i\,bg}$ = 32
N = 79
H = 3.39

Adjust H for ties:

T_i = 166326 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 5.12
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =5.12. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Total Chromium (Cr)**
NC MCL (µg/l):	50
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	20
08/16/99	35	NS	61	NS	14	20
02/14/00	11	NS	7.2	NS	5.6	20
08/14/00	5.4	NT	7.4	NS	ND	20
03/19/01	5.2	140	12	32	7.7	20
08/27/02	5.4	210	ND	130	NT	20
02/24/03	ND	200	5.1	79	14	20
08/11/03	81	81	19	38	6.7	2
02/09/04	ND	57	ND	2.1	4.9	2
08/16/04	3.3	52	4	2.8	2	2
02/14/05	4.1	11	7.6	18	12	2
09/01/05	ND	ND	ND	ND	ND	2
02/16/06	ND	16	ND	ND	ND	2
08/30/06	ND	ND	ND	ND	ND	2
02/26/07	ND	ND	ND	ND	ND	5
08/13/07	ND	ND	ND	ND	Dry	5
02/11/08	ND	6.3	ND	ND	10.3	5
08/25/08	ND	ND	ND	ND	Dry	5
N_i	18	14	18	14	15	
sum of rank values (R_i)	626.0	720.5	644.5	567.5	601.5	
avg rank value (Rbar)	34.8	51.5	35.8	40.5	40.1	

	Number of each rank value					Rank Value
rank value of NDs =	10	5	10	7	6	19.5
rank value of 2s =	0	0	0	0	1	39
rank value of 2.1s =	0	0	0	1	0	40
rank value of 2.8s =	0	0	0	1	0	41
rank value of 3.3s =	1	0	0	0	0	42
rank value of 4s =	0	0	1	0	0	43
rank value of 4.1s =	1	0	0	0	0	44
rank value of 4.9s =	0	0	0	0	1	45
rank value of 5.1s =	0	0	1	0	0	46
rank value of 5.2s =	1	0	0	0	0	47
rank value of 5.4s =	2	0	0	0	0	48.5
rank value of 5.6s =	0	0	0	0	1	50
rank value of 6.3s =	0	1	0	0	0	51
rank value of 6.7s =	0	0	0	0	1	52
rank value of 7.2s =	0	0	1	0	0	53
rank value of 7.4s =	0	0	1	0	0	54
rank value of 7.6s =	0	0	1	0	0	55
rank value of 7.7s =	0	0	0	0	1	56
rank value of 10.3s =	0	0	0	0	1	57
rank value of 11s =	1	1	0	0	0	58.5
rank value of 12s =	0	0	1	0	1	60.5
rank value of 14s =	0	0	0	0	2	62.5
rank value of 16s =	0	1	0	0	0	64
rank value of 18s =	0	0	0	1	0	65
rank value of 19s =	0	0	1	0	0	66
rank value of 32s =	0	0	0	1	0	67
rank value of 35s =	1	0	0	0	0	68
rank value of 38s =	0	0	0	1	0	69
rank value of 52s =	0	1	0	0	0	70
rank value of 57s =	0	1	0	0	0	71
rank value of 61s =	0	0	1	0	0	72
rank value of 79s =	0	0	0	1	0	73
rank value of 81s =	1	1	0	0	0	74.5
rank value of 130s =	0	0	0	1	0	76
rank value of 140s =	0	1	0	0	0	77

rank value of 200s =	0	1	0	0	0	78
rank value of 210s =	0	1	0	0	0	79
n =	**18**	**14**	**18**	**14**	**15**	

Sum of rank value calculations

195	97.5	195	136.5	117
0	0	0	0	39
0	0	0	40	0
0	0	0	41	0
42	0	0	0	0
0	0	43	0	0
44	0	0	0	0
0	0	0	0	45
0	0	46	0	0
47	0	0	0	0
97	0	0	0	0
0	0	0	0	50
0	51	0	0	0
0	0	0	0	52
0	0	53	0	0
0	0	54	0	0
0	0	55	0	0
0	0	0	0	56
0	0	0	0	57
58.5	58.5	0	0	0
0	0	60.5	0	60.5
0	0	0	0	125
0	64	0	0	0
0	0	0	65	0
0	0	66	0	0
0	0	0	67	0
68	0	0	0	0
0	0	0	69	0
0	70	0	0	0
0	71	0	0	0
0	0	72	0	0
0	0	0	73	0
74.5	74.5	0	0	0
0	0	0	76	0
0	77	0	0	0
0	78	0	0	0
0	79	0	0	0
626	**720.5**	**644.5**	**567.5**	**601.5**

sum of rank values (R_i)

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	56658.2	23076.7	23004	24120.2

$N_{i\,bg}$ = 32
N = 79
H = 0.87

Adjust H for ties:

T_i = 54864 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 0.98
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =0.98. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Total Lead (Pb)**
NC MCL (µg/l):	15
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	**100**
08/16/99	ND	NS	ND	NS	ND	**100**
02/14/00	ND	NS	ND	NS	ND	**100**
08/14/00	ND	NT	ND	NS	ND	**100**
03/19/01	ND	**38**	ND	**16**	ND	**100**
08/27/02	ND	**47**	ND	**31**	NT	**100**
02/24/03	ND	**41**	ND	**27**	ND	**100**
08/11/03	**30**	**30**	**10**	**28**	**17**	**5**
02/09/04	ND	**18**	ND	**9.4**	**7.4**	**5**
08/16/04	ND	**23**	ND	**11**	**9.4**	**5**
02/14/05	ND	**7.9**	ND	ND	ND	**5**
09/01/05	ND	ND	ND	**14**	**7.4**	**5**
02/16/06	ND	ND	ND	ND	ND	**5**
08/30/06	**7.6**	**6.5**	**5.2**	**5.7**	ND	**5**
02/26/07	ND	ND	ND	ND	ND	**5**
08/13/07	ND	ND	ND	ND	Dry	**5**
02/11/08	ND	ND	ND	ND	ND	**5**
08/25/08	ND	ND	ND	ND	Dry	**5**
N_i	18	14	18	14	15	
sum of rank values (R_i)	583.5	737.5	569.0	710.5	559.5	
avg rank value (Rbar)	32.4	52.7	31.6	50.8	37.3	

	Number of each rank value					Rank Value
rank value of NDs =	16	6	16	6	11	28
rank value of 5.2s =	0	0	1	0	0	56
rank value of 5.7s =	0	0	0	1	0	57
rank value of 6.5s =	0	1	0	0	0	58
rank value of 7.4s =	0	0	0	0	2	59.5
rank value of 7.6s =	1	0	0	0	0	61
rank value of 7.9s =	0	1	0	0	0	62
rank value of 9.4s =	0	0	0	1	1	63.5
rank value of 10s =	0	0	1	0	0	65
rank value of 11s =	0	0	0	1	0	66
rank value of 14s =	0	0	0	1	0	67
rank value of 16s =	0	0	0	1	0	68
rank value of 17s =	0	0	0	0	1	69
rank value of 18s =	0	1	0	0	0	70
rank value of 23s =	0	1	0	0	0	71
rank value of 27s =	0	0	0	1	0	72
rank value of 28s =	0	0	0	1	0	73
rank value of 30s =	1	1	0	0	0	74.5
rank value of 31s =	0	0	0	1	0	76
rank value of 38s =	0	1	0	0	0	77
rank value of 41s =	0	1	0	0	0	78
rank value of 47s =	0	1	0	0	0	79
n =	**18**	**14**	**18**	**14**	**15**	

Sum of rank value calculations

448	168	448	168	308
0	0	56	0	0
0	0	0	57	0
0	58	0	0	0
0	0	0	0	119
61	0	0	0	0

0	62	0	0	0
0	0	0	63.5	63.5
0	0	65	0	0
0	0	0	66	0
0	0	0	67	0
0	0	0	68	0
0	0	0	0	69
0	70	0	0	0
0	71	0	0	0
0	0	0	72	0
0	0	0	73	0
74.5	74.5	0	0	0
0	0	0	76	0
0	77	0	0	0
0	78	0	0	0
0	79	0	0	0
sum of rank values (R_i) **583.5**	**737.5**	**569**	**710.5**	**559.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	54532.5	17986.7	36057.9	20869.4

$N_{i\,bg}$ = 32
N = 79
H = 5.78

Adjust H for ties:

T_i = 166338 sum of T1..T3

$H' = H/(1-(T_i/(N^3-N)))$
H' = 8.73
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =8.73.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	31.6	50.8	37.3
avg Rbar (background) =	41.3	41.3	41.3
Dx =	-9.7	9.5	-4.0
Cx =	14.3	15.6	15.2
Statistical Significance ?	-	-	-
If SSI, is current event above MCL?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Total Mercury (Hg)**
MCL (µg/l): 1.05
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	**0.2**
08/16/99	ND	NS	ND	NS	ND	**0.2**
02/14/00	ND	NS	ND	NS	ND	**0.2**
08/14/00	ND	NT	**0.4**	NS	ND	**0.2**
03/19/01	ND	ND	ND	**0.2**	ND	**0.2**
08/27/02	ND	ND	ND	ND	NT	**0.2**
02/24/03	NT	NT	NT	NT	NT	**0.2**
08/11/03	ND	ND	ND	ND	ND	**0.2**
02/09/04	ND	ND	ND	ND	ND	**0.2**
08/16/04	**0.3**	ND	**1.4**	**3.5**	**0.6**	**0.2**
02/14/05	ND	ND	ND	ND	ND	**0.2**
09/01/05	**0.2**	ND	ND	ND	ND	**0.2**
02/16/06	ND	ND	ND	ND	ND	**0.2**
08/30/06	ND	ND	ND	ND	ND	**0.2**
02/26/07	ND	ND	ND	ND	ND	**0.2**
08/13/07	ND	ND	ND	ND	Dry	**0.2**
02/11/08	ND	ND	ND	ND	ND	**0.2**
08/25/08	ND	ND	ND	ND	Dry	**0.2**

1) If not detected (ND), use half of the detection limit.

02/18/99	0.1	-	0.1	-	0.1
08/16/99	0.1	-	0.1	-	0.1
02/14/00	0.1	-	0.1	-	0.1
08/14/00	0.1	-	0.4	-	0.1
03/19/01	0.1	0.1	0.1	0.2	0.1
08/27/02	0.1	0.1	0.1	0.1	-
02/24/03	-	-	-	-	-
08/11/03	0.1	0.1	0.1	0.1	0.1
02/09/04	0.1	0.1	0.1	0.1	0.1
08/16/04	0.3	0.1	1.4	3.5	0.6
02/14/05	0.1	0.1	0.1	0.1	0.1
09/01/05	0.2	0.1	0.1	0.1	0.1
02/16/06	0.1	0.1	0.1	0.1	0.1
08/30/06	0.1	0.1	0.1	0.1	0.1
02/26/07	0.1	0.1	0.1	0.1	0.1
08/13/07	0.1	0.1	0.1	0.1	-
02/11/08	0.1	0.1	0.1	0.1	0.1
08/25/08			0.1	0.1	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 16.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 28$
$T_{n1} = 3.1$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 28$
$T_{n1} = 3.1$
$t[27,.01] = 2.473$
$c = 0.0714$
$T_{n2} = 0.2$
$T^*_k = 1.7$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Total Selenium (Se)**
NC MCL (µg/l):	50
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	5
08/16/99	ND	NS	ND	NS	ND	5
02/14/00	ND	NS	ND	NS	ND	5
08/14/00	ND	NT	ND	NS	ND	5
03/19/01	ND	ND	ND	ND	ND	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	**7.3**	ND	5
02/09/04	ND	ND	**6.9**	**13**	**16**	5
08/16/04	ND	ND	**5.5**	ND	ND	5
02/14/05	**5.3**	ND	**16**	**39**	**24**	5
09/01/05	**6.9**	ND	**10**	**8.9**	**9.5**	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	10
08/13/07	ND	ND	ND	**29.2**	Dry	10
02/11/08	ND	ND	ND	**13.5**	**81.7**	10
08/25/08	ND	ND	ND	**13.9**	Dry	10
N_i	16	12	16	12	14	
sum of rank values (R_i)	488.5	324.0	562.0	578.0	532.5	
avg rank value (Rbar)	30.5	27.0	35.1	48.2	38.0	

	Number of each rank value					Rank Value
rank value of NDs =	14	12	12	5	10	27
rank value of 5.3s =	1	0	0	0	0	54
rank value of 5.5s =	0	0	1	0	0	55
rank value of 6.9s =	1	0	1	0	0	56.5
rank value of 7.3s =	0	0	0	1	0	58
rank value of 8.9s =	0	0	0	1	0	59
rank value of 9.5s =	0	0	0	0	1	60
rank value of 10s =	0	0	1	0	0	61
rank value of 13s =	0	0	0	1	0	62
rank value of 13.5s =	0	0	0	1	0	63
rank value of 13.9s =	0	0	0	1	0	64
rank value of 16s =	0	0	1	0	1	65.5
rank value of 24s =	0	0	0	0	1	67
rank value of 29.2s =	0	0	0	1	0	68
rank value of 39s =	0	0	0	1	0	69
rank value of 81.7s =	0	0	0	0	1	70
n =	**16**	**12**	**16**	**12**	**14**	

Sum of rank value calculations

378	324	324	135	270
54	0	0	0	0
0	0	55	0	0
56.5	0	56.5	0	0
0	0	0	58	0
0	0	0	59	0

	0	0	0	0	60
	0	0	61	0	0
	0	0	0	62	0
	0	0	0	63	0
	0	0	0	64	0
	0	0	65.5	0	65.5
	0	0	0	0	67
	0	0	0	68	0
	0	0	0	69	0
	0	0	0	0	70
sum of rank values (R_i)	**488.5**	**324**	**562**	**578**	**532.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	23577.0	19740.3	27840.3	20254

$N_{i\,bg}$ = 28
N = 70
H = 7.71

Adjust H for ties:

T_i = 148836 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 13.63
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =13.63.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	**MW-2A**	MW-3A
Rbar (well x) =	35.1	48.2	38.0
avg Rbar (background) =	29.0	29.0	29.0
Dx =	6.1	19.1	9.0
Cx =	13.5	14.9	14.1
Statistical Significance ?	-	**Yes**	-
If SSI, is current event above MCL?	-	No	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of Total Selenium (Se) averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts should be performed for each failing well to check for statistical significance.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Total Selenium (Se)**
GA MCL (μg/l):	50
Method:	Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-2A	MDL
8/11/2003	**7.3**	**5**
2/9/2004	**13**	**5**
8/16/2004	ND	**5**
2/14/2005	**39**	**5**
9/1/2005	**8.9**	**5**
2/16/2006	ND	**5**
8/30/2006	ND	**5**
2/26/2007	ND	**10**
8/13/2007	**29.2**	**10**
2/11/2008	**13.5**	**10**
8/25/2008	**13.9**	**10**

If not detected (ND), use half of the detection limit.

	X_i values =
7.3	-139.1382419
13	0.139138242
2.5	-994.5553659
39	18647.95583
8.9	-45.95265515
2.5	-994.5553659
2.5	-994.5553659
5	-418.8142502
29.2	4672.69175
13.5	1.055543201
13.9	2.852303531

X_{bar} = 12.48181818
SD = 11.74987814
N = 11
$1/N\Sigma_i(X_i-X_{bar})^3$ = 1794.283938
γ_1 = 1.276086486

Since the Coefficient of Skewness of 1.28 is greater than 1.0, the real data appear to be significantly skewed.
Do not assume that the data follow a Normal distribution.
Perform the Skewness Test on the natural log of the values.

	X_i values =
ln = 1.987874348	-0.002550301
2.564949357	0.085445572
0.916290732	-1.763704803
3.663561646	3.645595762
2.186051277	0.000233197
0.916290732	-1.763704803
0.916290732	-1.763704803
1.609437912	-0.136639846
3.374168709	1.951575054
2.602689685	0.1093458
2.63188884	0.130624349

X_{bar} = 2.124499452
SD = 0.963199879
N = 11

$1/N\Sigma_i(X_i-X_{bar})^3 =$ 0.044774107

$\gamma_1 =$ 0.057805173

Since the Coefficient of Skewness of 0.06 is less than 1.0, the data appear not to be significantly skewed. Proceed with further statistical tests using the log-transformed values shown above.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-2A	MDL	Data for Testing
8/11/2003	**7.3**	5	1.987874348
2/9/2004	**13**	5	2.564949357
8/16/2004	ND	5	0.916290732
2/14/2005	**39**	5	3.663561646
9/1/2005	**8.9**	5	2.186051277
2/16/2006	ND	5	0.916290732
8/30/2006	ND	5	0.916290732
2/26/2007	ND	10	1.609437912
8/13/2007	**29.2**	10	3.374168709
2/11/2008	**13.5**	10	2.602689685
8/25/2008	**13.9**	10	2.63188884

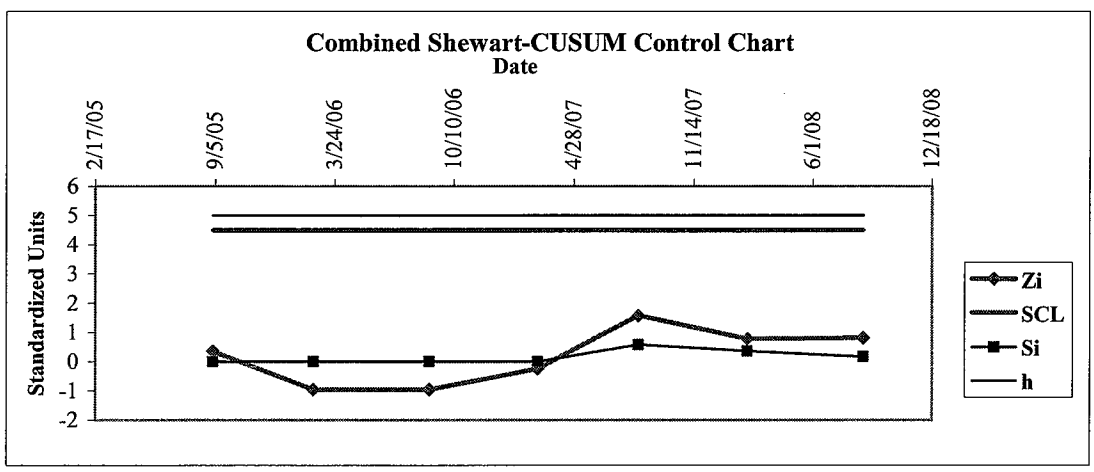
Compute the mean and standard deviation of the historical data:

1.845093342 = x_{mean} (Mean of N1-N8 historical data)
0.971391839 = s (Standard Deviation of N1-N8 historical data)
1 = k (constant, reference value)
5 = h (constant, upper control limit for the CUSUM scheme)
4.5 = SCL (Constant, upper Shewhart Control Limit)

Compute the standardized mean (Z_i) and the cumulative sum (S_i) for each concentration.

Date	x_i	Z_i	S_i	h	SCL
			0		
9/1/2005	2.186051277	0.35099938	0	5	4.5
2/16/2006	0.916290732	-0.9561565	0	5	4.5
8/30/2006	0.916290732	-0.9561565	0	5	4.5
2/26/2007	1.609437912	-0.2425956	0	5	4.5
8/13/2007	3.374168709	1.57410769	0.5741077	5	4.5
2/11/2008	2.602689685	0.77990808	0.3540158	5	4.5
8/25/2008	2.63188884	0.80996717	0.1639829	5	4.5

Plot Z_i and S_i versus time:



Compare the Z_i and S_i values to their respective control limits of SCL and h. The limits were not exceeded and do not indicate statistically significant evidence of contamination at the site.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Total Silver (Ag)**
NC MCL (µg/l):	17.5
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	ND	NS	ND	NS	ND	**0.2**
08/16/99	ND	NS	ND	NS	ND	**0.2**
02/14/00	ND	NS	**4.3**	NS	**4.9**	**0.2**
08/14/00	**4**	NT	**8.9**	NS	**7.8**	**0.2**
03/19/01	ND	ND	ND	**6.6**	**4.7**	**0.2**
08/27/02	ND	ND	ND	ND	NT	**0.2**
02/24/03	**4.1**	ND	**7.3**	**3.5**	**8.5**	**0.2**
08/11/03	ND	ND	ND	ND	ND	**0.2**
02/09/04	ND	ND	ND	ND	ND	**0.2**
08/16/04	ND	ND	ND	ND	ND	**0.2**
02/14/05	ND	ND	ND	**5.8**	**3.6**	**0.2**
09/01/05	ND	ND	ND	ND	ND	**0.2**
02/16/06	ND	ND	ND	ND	ND	**0.2**
08/30/06	ND	ND	ND	ND	ND	**0.2**
02/26/07	ND	ND	ND	ND	ND	**0.2**
08/13/07	ND	ND	ND	ND	Dry	**0.2**
02/11/08	ND	ND	ND	ND	ND	**0.2**
08/25/08	ND	ND	ND	ND	Dry	**0.2**
N_i	18	14	18	14	15	
sum of rank values (R_i)	675.0	469.0	728.5	584.5	703.0	
avg rank value (Rbar)	37.5	33.5	40.5	41.8	46.9	

	Number of each rank value					Rank Value
rank value of NDs =	16	14	15	11	10	33.5
rank value of 3.5s =	0	0	0	1	0	67
rank value of 3.6s =	0	0	0	0	1	68
rank value of 4s =	1	0	0	0	0	69
rank value of 4.1s =	1	0	0	0	0	70
rank value of 4.3s =	0	0	1	0	0	71
rank value of 4.7s =	0	0	0	0	1	72
rank value of 4.9s =	0	0	0	0	1	73
rank value of 5.8s =	0	0	0	1	0	74
rank value of 6.6s =	0	0	0	1	0	75
rank value of 7.3s =	0	0	1	0	0	76
rank value of 7.8s =	0	0	0	0	1	77
rank value of 8.5s =	0	0	0	0	1	78
rank value of 8.9s =	0	0	1	0	0	79

n =	**18**	**14**	**18**	**14**	**15**

Sum of rank value calculations

536	469	502.5	368.5	335
0	0	0	67	0
0	0	0	0	68
69	0	0	0	0
70	0	0	0	0
0	0	71	0	0
0	0	0	0	72
0	0	0	0	73
0	0	0	74	0
0	0	0	75	0
0	0	76	0	0
0	0	0	0	77
0	0	0	0	78
0	0	79	0	0

sum of rank values (R_i)	**675**	**469**	**728.5**	**584.5**	**703**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	40898.0	29484	24402.9	32947.3

$N_{i\,bg}$ = 32
N = 79
H = 2.53

Adjust H for ties:

T_i = 287430 sum of T1..T1

$H' = H/(1-(T_i/(N^3-N)))$
H' = 6.07
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is greater than H' =6.07. Therefore, the null hypothesis of no contamination at the 5% level holds true and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Acetone**
MCL (µg/l): 700
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**100**
08/16/99	NT	NS	NT	NS	NT	**100**
02/14/00	NT	NS	NT	NS	NT	**100**
08/14/00	NT	NT	NT	NS	NT	**100**
03/19/01	NT	NT	NT	NT	NT	**100**
08/27/02	NT	NT	NT	NT	NT	**100**
02/24/03	NT	NT	NT	NT	NT	**100**
08/11/03	ND	ND	ND	ND	ND	**10**
02/09/04	ND	ND	ND	**25**	ND	**10**
08/16/04	ND	ND	ND	ND	ND	**100**
02/14/05	**53**	ND	ND	ND	ND	**100**
09/01/05	ND	ND	ND	ND	ND	**10**
02/16/06	ND	ND	ND	ND	ND	**10**
08/30/06	ND	ND	ND	ND	ND	**25**
02/26/07	ND	ND	ND	ND	ND	**25**
08/13/07	ND	ND	ND	ND	Dry	**25**
02/11/08	ND	ND	ND	ND	ND	**25**
08/25/08	ND	ND	ND	ND	Dry	**25**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	5	5	5	5	5
02/09/04	5	5	5	25	5
08/16/04	50	50	50	50	50
02/14/05	53	50	50	50	50
09/01/05	5	5	5	5	5
02/16/06	5	5	5	5	5
08/30/06	12.5	12.5	12.5	12.5	12.5
02/26/07	12.5	12.5	12.5	12.5	12.5
08/13/07	12.5	12.5	12.5	12.5	-
02/11/08	12.5	12.5	12.5	12.5	12.5
08/25/08			12.5	12.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 343$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 343$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 25$
$T^*_k = 50.2$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Benzene**
NC MCL (µg/l):	1
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	**7.2**	**9**	ND	ND	ND	5
02/09/04	**14**	ND	ND	ND	ND	5
08/16/04	**13**	**6.1**	ND	ND	ND	5
02/14/05	**20**	**7.1**	ND	ND	ND	5
09/01/05	**13**	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	**16**	ND	ND	ND	ND	5
02/26/07	**15**	ND	ND	ND	ND	5
08/13/07	**17**	**1.7**	ND	ND	Dry	1
02/11/08	**18.5**	**2**	ND	ND	ND	1
08/25/08	**18.9**	**2.3**	ND	ND	Dry	1

N_i	11	11	11	11	9
sum of rank values (R_i)	503.0	339.0	209.0	209.0	171.0
avg rank value (Rbar)	45.7	30.8	19.0	19.0	19.0

	Number of each rank value					Rank Value
rank value of NDs =	1	5	11	11	9	19
rank value of 1.7s =	0	1	0	0	0	38
rank value of 2s =	0	1	0	0	0	39
rank value of 2.3s =	0	1	0	0	0	40
rank value of 6.1s =	0	1	0	0	0	41
rank value of 7.1s =	0	1	0	0	0	42
rank value of 7.2s =	1	0	0	0	0	43
rank value of 9s =	0	1	0	0	0	44
rank value of 13s =	2	0	0	0	0	45.5
rank value of 14s =	1	0	0	0	0	47
rank value of 15s =	1	0	0	0	0	48
rank value of 16s =	1	0	0	0	0	49
rank value of 17s =	1	0	0	0	0	50
rank value of 18.5s =	1	0	0	0	0	51
rank value of 18.9s =	1	0	0	0	0	52
rank value of 20s =	1	0	0	0	0	53
n =	**11**	**11**	**11**	**11**	**9**	

Sum of rank value calculations

19	95	209	209	171
0	38	0	0	0
0	39	0	0	0
0	40	0	0	0
0	41	0	0	0
0	42	0	0	0

43	0	0	0	0
0	44	0	0	0
91	0	0	0	0
47	0	0	0	0
48	0	0	0	0
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
sum of rank values (R_i)	**503**	**339**	**209**	**209**	**171**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	32225.6	3971	3971	3249

$N_{i\,bg}$ = 22
N = 53
H = 20.04

Adjust H for ties:

T_i = 50622 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 30.37
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =30.37.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	19.0	19.0	19.0
avg Rbar (background) =	38.3	38.3	38.3
Dx =	-19.3	-19.3	-19.3
Cx =	12.1	12.1	13.0
Statistical Significance ?	-	-	-
If SSI, is current event above MCL?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Carbon Disulfide**
MCL (µg/l): 700
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**100**
08/16/99	NT	NS	NT	NS	NT	**100**
02/14/00	NT	NS	NT	NS	NT	**100**
08/14/00	NT	NT	NT	NS	NT	**100**
03/19/01	NT	NT	NT	NT	NT	**100**
08/27/02	NT	NT	NT	NT	NT	**100**
02/24/03	NT	NT	NT	NT	NT	**100**
08/11/03	ND	ND	ND	ND	ND	**10**
02/09/04	ND	ND	**12**	ND	ND	**10**
08/16/04	ND	ND	ND	ND	ND	**100**
02/14/05	ND	ND	ND	ND	ND	**100**
09/01/05	ND	ND	ND	ND	ND	**10**
02/16/06	ND	ND	ND	ND	ND	**10**
08/30/06	ND	ND	ND	ND	ND	**10**
02/26/07	ND	ND	ND	ND	ND	**10**
08/13/07	ND	ND	ND	ND	Dry	**2**
02/11/08	ND	ND	ND	ND	ND	**2**
08/25/08	ND	ND	ND	ND	Dry	**2**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	5	5	5	5	5
02/09/04	5	5	12	5	5
08/16/04	50	50	50	50	50
02/14/05	50	50	50	50	50
09/01/05	5	5	5	5	5
02/16/06	5	5	5	5	5
08/30/06	5	5	5	5	5
02/26/07	5	5	5	5	5
08/13/07	1	1	1	1	-
02/11/08	1	1	1	1	1
08/25/08			1	1	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 264$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 264$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 2$
$T^*_k = 40.4$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Chlorobenzene**
MCL (µg/l): 50
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	ND	5
02/09/04	ND	ND	ND	ND	ND	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5
08/13/07	ND	ND	**2.5**	ND	Dry	1
02/11/08	ND	ND	**2.5**	ND	ND	1
08/25/08	ND	ND	**3.1**	ND	Dry	1

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	2.5
02/09/04	2.5	2.5	2.5	2.5	2.5
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07	2.5	2.5	2.5	2.5	2.5
08/13/07	0.5	0.5	2.5	0.5	-
02/11/08	0.5	0.5	2.5	0.5	0.5
08/25/08			3.1	0.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 42$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 42$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 3.6$
$T^*_k = 10.0$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Chloroethane**
MCL (µg/l): 2800
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**10**
08/16/99	NT	NS	NT	NS	NT	**10**
02/14/00	NT	NS	NT	NS	NT	**10**
08/14/00	NT	NT	NT	NS	NT	**10**
03/19/01	NT	NT	NT	NT	NT	**10**
08/27/02	NT	NT	NT	NT	NT	**10**
02/24/03	NT	NT	NT	NT	NT	**10**
08/11/03	**52**	**33**	**20**	**11**	ND	**10**
02/09/04	ND	ND	ND	ND	ND	**10**
08/16/04	ND	ND	ND	ND	ND	**10**
02/14/05	**16**	ND	ND	ND	ND	**10**
09/01/05	ND	ND	ND	ND	ND	**10**
02/16/06	ND	ND	ND	ND	ND	**10**
08/30/06	ND	ND	ND	ND	ND	**10**
02/26/07	ND	ND	ND	ND	ND	**10**
08/13/07	**5.5**	**2.7**	**2.3**	**4.8**	Dry	**1**
02/11/08	**4.2**	**2.5**	**2.5**	**2.1**	**7.6**	**1**
08/25/08	**6.2**	**2.4**	**2.6**	**4.2**	Dry	**1**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	52	33	20	11	5
02/09/04	5	5	5	5	5
08/16/04	5	5	5	5	5
02/14/05	16	5	5	5	5
09/01/05	5	5	5	5	5
02/16/06	5	5	5	5	5
08/30/06	5	5	5	5	5
02/26/07	5	5	5	5	5
08/13/07	5.5	2.7	2.3	4.8	-
02/11/08	4.2	2.5	2.5	2.1	7.6
08/25/08			2.6	4.2	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 180.9$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 180.9$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 6.8$
$T^*_k = 29.7$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **1,2-Dichlorobenzene**
MCL (µg/l): 24
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	**22**	ND	5
02/09/04	ND	ND	ND	ND	ND	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5
08/13/07	ND	ND	ND	ND	Dry	1
02/11/08	ND	ND	ND	**1.2**	ND	1
08/25/08	ND	ND	ND	**1.9**	Dry	1

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	22	2.5
02/09/04	2.5	2.5	2.5	2.5	2.5
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07	2.5	2.5	2.5	2.5	2.5
08/13/07	0.5	0.5	0.5	0.5	-
02/11/08	0.5	0.5	0.5	1.2	0.5
08/25/08			0.5	1.9	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 42$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 42$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 2.4$
$T^*_k = 10.0$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **1,4-Dichlorobenzene**
MCL (µg/l): 1.4
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	ND	5
02/09/04	ND	ND	ND	**5.9**	ND	5
08/16/04	ND	ND	ND	**11**	ND	5
02/14/05	ND	ND	ND	**14**	ND	5
09/01/05	ND	ND	ND	**13**	ND	5
02/16/06	ND	ND	ND	**10**	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5
08/13/07	**3.7**	ND	ND	**12.1**	Dry	1
02/11/08	**4.5**	ND	ND	**10.8**	**1.1**	1
08/25/08	**5.1**	ND	ND	**8.6**	Dry	1

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	2.5
02/09/04	2.5	2.5	2.5	5.9	2.5
08/16/04	2.5	2.5	2.5	11	2.5
02/14/05	2.5	2.5	2.5	14	2.5
09/01/05	2.5	2.5	2.5	13	2.5
02/16/06	2.5	2.5	2.5	10	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07	2.5	2.5	2.5	2.5	2.5
08/13/07	3.7	0.5	0.5	12.1	-
02/11/08	4.5	0.5	0.5	10.8	1.1
08/25/08			0.5	8.6	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 49.2$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 49.2$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 9.1$
$T^*_k = 11.2$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **1,1-Dichloroethane**
NC MCL (µg/l): 70
Method: Kruskal-Wallis
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	**22**	**23**	**8.8**	**5.2**	**10**	5
02/09/04	**40**	ND	**6.2**	ND	**8.2**	5
08/16/04	**38**	**12**	ND	ND	**12**	5
02/14/05	**70**	**15**	**5.5**	ND	**11**	5
09/01/05	**42**	**10**	**6.3**	ND	**8.6**	5
02/16/06	ND	**7.1**	ND	ND	**13**	5
08/30/06	**42**	**5.7**	ND	**7.6**	**23**	5
02/26/07	**36**	ND	ND	ND	**17**	5
08/13/07	**40.3**	**4.3**	**1.8**	**4.4**	Dry	1
02/11/08	**39**	**4.7**	**1.5**	**1.5**	**15.4**	1
08/25/08	**39.3**	**5.4**	**1.4**	**2.6**	Dry	1
N_i	11	11	11	11	9	
sum of rank values (R_i)	490.0	282.5	183.5	146.5	328.5	
avg rank value (Rbar)	44.5	25.7	16.7	13.3	36.5	

	Number of each rank value					Rank Value
rank value of NDs =	1	2	4	6	0	7
rank value of 1.4s =	0	0	1	0	0	14
rank value of 1.5s =	0	0	1	1	0	15.5
rank value of 1.8s =	0	0	1	0	0	17
rank value of 2.6s =	0	0	0	1	0	18
rank value of 4.3s =	0	1	0	0	0	19
rank value of 4.4s =	0	0	0	1	0	20
rank value of 4.7s =	0	1	0	0	0	21
rank value of 5.2s =	0	0	0	1	0	22
rank value of 5.4s =	0	1	0	0	0	23
rank value of 5.5s =	0	0	1	0	0	24
rank value of 5.7s =	0	1	0	0	0	25
rank value of 6.2s =	0	0	1	0	0	26
rank value of 6.3s =	0	0	1	0	0	27
rank value of 7.1s =	0	1	0	0	0	28
rank value of 7.6s =	0	0	0	1	0	29
rank value of 8.2s =	0	0	0	0	1	30
rank value of 8.6s =	0	0	0	0	1	31
rank value of 8.8s =	0	0	1	0	0	32
rank value of 10s =	0	1	0	0	1	33.5
rank value of 11s =	0	0	0	0	1	35
rank value of 12s =	0	1	0	0	1	36.5
rank value of 13s =	0	0	0	0	1	38
rank value of 15s =	0	1	0	0	0	39
rank value of 15.4s =	0	0	0	0	1	40
rank value of 17s =	0	0	0	0	1	41
rank value of 22s =	1	0	0	0	0	42
rank value of 23s =	0	1	0	0	1	43.5
rank value of 36s =	1	0	0	0	0	45
rank value of 38s =	1	0	0	0	0	46
rank value of 39s =	1	0	0	0	0	47
rank value of 39.3s =	1	0	0	0	0	48
rank value of 40s =	1	0	0	0	0	49
rank value of 40.3s =	1	0	0	0	0	50
rank value of 42s =	2	0	0	0	0	51.5
rank value of 70s =	1	0	0	0	0	53
n =	**11**	**11**	**11**	**11**	**9**	

Sum of rank value calculations

7	14	28	42	0
0	0	14	0	0
0	0	15.5	15.5	0
0	0	17	0	0
0	0	0	18	0
0	19	0	0	0
0	0	0	20	0

	0	21	0	0	0
	0	0	0	22	0
	0	23	0	0	0
	0	0	24	0	0
	0	25	0	0	0
	0	0	26	0	0
	0	0	27	0	0
	0	28	0	0	0
	0	0	0	29	0
	0	0	0	0	30
	0	0	0	0	31
	0	0	32	0	0
	0	33.5	0	0	33.5
	0	0	0	0	35
	0	36.5	0	0	36.5
	0	0	0	0	38
	0	39	0	0	0
	0	0	0	0	40
	0	0	0	0	41
	42	0	0	0	0
	0	43.5	0	0	43.5
	45	0	0	0	0
	46	0	0	0	0
	47	0	0	0	0
	48	0	0	0	0
	49	0	0	0	0
	50	0	0	0	0
	103	0	0	0	0
	53	0	0	0	0
sum of rank values (R_i)	**490**	**282.5**	**183.5**	**146.5**	**328.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

		MW-1A	MW-2A	MW-3A
Well =	**Background**			
Ri^2/N_i =	27125.3	3061.11	1951.11	11990.3

$N_{i\,bg}$ = 22
N = 53
H = 23.02

Adjust H for ties:

T_i = 2214 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 23.37
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =23.37.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

	MW-1A	MW-2A	MW-3A
Well =			
Rbar (well x) =	16.7	13.3	36.5
avg Rbar (background) =	35.1	35.1	35.1
Dx =	-18.4	-21.8	1.4
Cx =	12.1	12.1	13.0
Statistical Significance ?	-	-	-
If SSI, is current event above MCL?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **1,2-Dichloroethane**
MCL (µg/l): 0.38
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	5	5
02/09/04	ND	ND	ND	ND	ND	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	5	5
02/26/07	ND	ND	ND	ND	ND	5
08/13/07	1.3	ND	1.1	ND	Dry	1
02/11/08	1.5	ND	ND	ND	3.2	1
08/25/08	1.5	ND	ND	ND	Dry	1

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	5
02/09/04	2.5	2.5	2.5	2.5	2.5
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	5
02/26/07	2.5	2.5	2.5	2.5	2.5
08/13/07	1.3	0.5	1.1	0.5	-
02/11/08	1.5	0.5	0.5	0.5	3.2
08/25/08			0.5	0.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 43.8$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 43.8$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 1$
$T^*_k = 10.3$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **1,1-Dichloroethene**
MCL (µg/l): 7
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	ND	5
02/09/04	ND	11	ND	ND	ND	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5
08/13/07	ND	ND	ND	ND	Dry	1
02/11/08	ND	ND	ND	ND	ND	1
08/25/08	ND	ND	ND	ND	Dry	1

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	2.5
02/09/04	2.5	11	2.5	2.5	2.5
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07	2.5	2.5	2.5	2.5	2.5
08/13/07	0.5	0.5	0.5	0.5	-
02/11/08	0.5	0.5	0.5	0.5	0.5
08/25/08			0.5	0.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 50.5$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 50.5$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 1$
$T^*_k = 11.4$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	**16**	**21**	**13**	**50**	**5.6**	5
02/09/04	**24**	ND	**11**	**7.6**	ND	5
08/16/04	**29**	**15**	**9.7**	**12**	ND	5
02/14/05	**48**	**20**	**10**	**26**	**6**	5
09/01/05	**31**	**13**	**11**	**27**	**9.4**	5
02/16/06	ND	**7.4**	ND	**17**	ND	5
08/30/06	**34**	ND	**6.8**	**16**	**5.8**	5
02/26/07	**30**	ND	ND	**12**	ND	5
08/13/07	**31.6**	**4.3**	**5.1**	**9.7**	Dry	1
02/11/08	**33.4**	**4.5**	**3.8**	ND	**1.6**	1
08/25/08	**34.5**	**5.8**	**2.8**	**7.6**	Dry	1
N_i	11	11	11	11	9	
sum of rank values (R_i)	473.5	243.0	230.0	364.0	120.5	
avg rank value (Rbar)	43.0	22.1	20.9	33.1	13.4	

	Number of each rank value					Rank Value
rank value of NDs =	1	3	2	1	4	6
rank value of 1.6s =	0	0	0	0	1	12
rank value of 2.8s =	0	0	1	0	0	13
rank value of 3.8s =	0	0	1	0	0	14
rank value of 4.3s =	0	1	0	0	0	15
rank value of 4.5s =	0	1	0	0	0	16
rank value of 5.1s =	0	0	1	0	0	17
rank value of 5.6s =	0	0	0	0	1	18
rank value of 5.8s =	0	1	0	0	1	19.5
rank value of 6s =	0	0	0	0	1	21
rank value of 6.8s =	0	0	1	0	0	22
rank value of 7.4s =	0	1	0	0	0	23
rank value of 7.6s =	0	0	0	2	0	24.5
rank value of 9.4s =	0	0	0	0	1	26
rank value of 9.7s =	0	0	1	1	0	27.5
rank value of 10s =	0	0	1	0	0	29
rank value of 11s =	0	0	2	0	0	30.5
rank value of 12s =	0	0	0	2	0	32.5
rank value of 13s =	0	1	1	0	0	34.5
rank value of 15s =	0	1	0	0	0	36
rank value of 16s =	1	0	0	1	0	37.5
rank value of 17s =	0	0	0	1	0	39
rank value of 20s =	0	1	0	0	0	40
rank value of 21s =	0	1	0	0	0	41
rank value of 24s =	1	0	0	0	0	42
rank value of 26s =	0	0	0	1	0	43
rank value of 27s =	0	0	0	1	0	44
rank value of 29s =	1	0	0	0	0	45
rank value of 30s =	1	0	0	0	0	46
rank value of 31s =	1	0	0	0	0	47
rank value of 31.6s =	1	0	0	0	0	48
rank value of 33.4s =	1	0	0	0	0	49
rank value of 34s =	1	0	0	0	0	50
rank value of 34.5s =	1	0	0	0	0	51
rank value of 48s =	1	0	0	0	0	52
rank value of 50s =	0	0	0	1	0	53
n =	**11**	**11**	**11**	**11**	**9**	

Sum of rank value calculations

6	18	12	6	24
0	0	0	0	12
0	0	13	0	0
0	0	14	0	0
0	15	0	0	0
0	16	0	0	0
0	0	17	0	0

0	0	0	0	18
0	19.5	0	0	19.5
0	0	0	0	21
0	0	22	0	0
0	23	0	0	0
0	0	0	49	0
0	0	0	0	26
0	0	27.5	27.5	0
0	0	29	0	0
0	0	61	0	0
0	0	0	65	0
0	34.5	34.5	0	0
0	36	0	0	0
37.5	0	0	37.5	0
0	0	0	39	0
0	40	0	0	0
0	41	0	0	0
42	0	0	0	0
0	0	0	43	0
0	0	0	44	0
45	0	0	0	0
46	0	0	0	0
47	0	0	0	0
48	0	0	0	0
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0
0	0	0	53	0
sum of rank values (R_i) **473.5**	**243**	**230**	**364**	**120.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} - 3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	23335.1	4809.09	12045.1	1613.36

$N_{i\,bg}$ = 22
N = 53
H = 13.27

Adjust H for ties:

T_i = 1362 sum of T1..T4

$H' = H/(1-(T_i/(N^3-N)))$
H' = 13.40
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =13.40.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	20.9	33.1	13.4
avg Rbar (background) =	32.6	32.6	32.6
Dx =	-11.7	0.5	-19.2
Cx =	12.1	12.1	13.0
Statistical Significance ?	-	-	-
If SSI, is current event above MCL?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **cis-1,3-Dichloropropene**
MCL (µg/l): 0.19
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**10**
08/16/99	NT	NS	NT	NS	NT	**10**
02/14/00	NT	NS	NT	NS	NT	**10**
08/14/00	NT	NT	NT	NS	NT	**10**
03/19/01	NT	NT	NT	NT	NT	**10**
08/27/02	NT	NT	NT	NT	NT	**10**
02/24/03	NT	NT	NT	NT	NT	**10**
08/11/03	ND	ND	ND	ND	ND	**5**
02/09/04	ND	**8.1**	ND	ND	ND	**5**
08/16/04	ND	ND	ND	ND	ND	**10**
02/14/05	ND	ND	ND	ND	ND	**10**
09/01/05	ND	ND	ND	ND	ND	**5**
02/16/06	ND	ND	ND	ND	ND	**5**
08/30/06	ND	ND	ND	ND	ND	**5**
02/26/07	ND	ND	ND	ND	ND	**5**
08/13/07	ND	ND	ND	ND	Dry	**1**
02/11/08	ND	ND	ND	ND	ND	**1**
08/25/08	ND	ND	ND	ND	Dry	**1**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	2.5
02/09/04	2.5	8.1	2.5	2.5	2.5
08/16/04	5	5	5	5	5
02/14/05	5	5	5	5	5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07	2.5	2.5	2.5	2.5	2.5
08/13/07	0.5	0.5	0.5	0.5	-
02/11/08	0.5	0.5	0.5	0.5	0.5
08/25/08			0.5	0.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 57.6$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 57.6$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 1$
$T^*_k = 12.5$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Ethylbenzene**
MCL (µg/l): 550
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	ND	5
02/09/04	ND	ND	ND	ND	ND	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	ND	5
09/01/05	ND	ND	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5
08/13/07	**1.1**	ND	ND	ND	Dry	1
02/11/08	**2.8**	ND	ND	ND	ND	1
08/25/08	**2.1**	ND	ND	ND	Dry	1

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	2.5
02/09/04	2.5	2.5	2.5	2.5	2.5
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	2.5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07	2.5	2.5	2.5	2.5	2.5
08/13/07	1.1	0.5	0.5	0.5	-
02/11/08	2.8	0.5	0.5	0.5	0.5
08/25/08			0.5	0.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 44.9$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where $c = k/n$
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 44.9$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 1$
$T^*_k = 10.5$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Dichloromethane**
NC MCL (µg/l):	4.6
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**10**
08/16/99	NT	NS	NT	NS	NT	**10**
02/14/00	NT	NS	NT	NS	NT	**10**
08/14/00	NT	NT	NT	NS	NT	**10**
03/19/01	NT	NT	NT	NT	NT	**10**
08/27/02	NT	NT	NT	NT	NT	**10**
02/24/03	NT	NT	NT	NT	NT	**10**
08/11/03	ND	**21**	ND	ND	ND	**5**
02/09/04	ND	**8.7**	ND	ND	ND	**5**
08/16/04	**6.1**	ND	ND	ND	ND	**10**
02/14/05	**12**	**12**	ND	ND	ND	**10**
09/01/05	**7.3**	**7.4**	ND	ND	ND	**5**
02/16/06	ND	ND	ND	ND	ND	**5**
08/30/06	**17**	ND	ND	ND	ND	**5**
02/26/07	**15**	ND	ND	ND	ND	**5**
08/13/07	**38.8**	**2.9**	ND	ND	Dry	**2**
02/11/08	**31.8**	ND	ND	ND	ND	**2**
08/25/08	**43.7**	ND	ND	ND	Dry	**2**
N_i	11	11	11	11	9	
sum of rank values (R_i)	446.0	349.5	225.5	225.5	184.5	
avg rank value (Rbar)	40.5	31.8	20.5	20.5	20.5	

	Number of each rank value					Rank Value
rank value of NDs =	3	6	11	11	9	20.5
rank value of 2.9s =	0	1	0	0	0	41
rank value of 6.1s =	1	0	0	0	0	42
rank value of 7.3s =	1	0	0	0	0	43
rank value of 7.4s =	0	1	0	0	0	44
rank value of 8.7s =	0	1	0	0	0	45
rank value of 12s =	1	1	0	0	0	46.5
rank value of 15s =	1	0	0	0	0	48
rank value of 17s =	1	0	0	0	0	49
rank value of 21s =	0	1	0	0	0	50
rank value of 31.8s =	1	0	0	0	0	51
rank value of 38.8s =	1	0	0	0	0	52
rank value of 43.7s =	1	0	0	0	0	53
n =	**11**	**11**	**11**	**11**	**9**	

Sum of rank value calculations

61.5	123	225.5	225.5	184.5
0	41	0	0	0
42	0	0	0	0
43	0	0	0	0
0	44	0	0	0
0	45	0	0	0

46.5	46.5	0	0	0
48	0	0	0	0
49	0	0	0	0
0	50	0	0	0
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
sum of rank values (R_i)	**446**	**349.5**	**225.5**	**225.5**	**184.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	28764.6	4622.75	4622.75	3782.25

$N_{i\,bg}$ = 22
N = 53
H = 13.23

Adjust H for ties:

T_i = 63966 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 23.20
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =23.20.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	20.5	20.5	20.5
avg Rbar (background) =	36.2	36.2	36.2
Dx =	-15.7	-15.7	-15.7
Cx =	12.1	12.1	13.0
Statistical Significance ?	-	-	-
If SSI, is current event above MCL?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Tetrachloroethene**
NC MCL (µg/l):	0.7
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	**8.9**	ND	ND	ND	5
02/09/04	**9.6**	**6.2**	ND	ND	ND	5
08/16/04	**7.9**	**5.8**	ND	ND	ND	5
02/14/05	**15**	**6.4**	ND	ND	ND	5
09/01/05	**9**	**5.4**	ND	ND	ND	5
02/16/06	ND	ND	ND	ND	ND	5
08/30/06	**8.3**	ND	ND	ND	ND	5
02/26/07	**8.5**	ND	ND	ND	ND	5
08/13/07	**8.1**	**3.6**	ND	ND	Dry	1
02/11/08	**8.2**	**3.5**	ND	ND	ND	1
08/25/08	**7.9**	**3.9**	ND	ND	Dry	1
N_i	11	11	11	11	9	
sum of rank values (R_i)	472.0	385.5	203.5	203.5	166.5	
avg rank value (Rbar)	42.9	35.0	18.5	18.5	18.5	

	Number of each rank value					Rank Value
rank value of NDs =	2	3	11	11	9	18.5
rank value of 3.5s =	0	1	0	0	0	37
rank value of 3.6s =	0	1	0	0	0	38
rank value of 3.9s =	0	1	0	0	0	39
rank value of 5.4s =	0	1	0	0	0	40
rank value of 5.8s =	0	1	0	0	0	41
rank value of 6.2s =	0	1	0	0	0	42
rank value of 6.4s =	0	1	0	0	0	43
rank value of 7.9s =	2	0	0	0	0	44.5
rank value of 8.1s =	1	0	0	0	0	46
rank value of 8.2s =	1	0	0	0	0	47
rank value of 8.3s =	1	0	0	0	0	48
rank value of 8.5s =	1	0	0	0	0	49
rank value of 8.9s =	0	1	0	0	0	50
rank value of 9s =	1	0	0	0	0	51
rank value of 9.6s =	1	0	0	0	0	52
rank value of 15s =	1	0	0	0	0	53
n =	**11**	**11**	**11**	**11**	**9**	

Sum of rank value calculations

37	55.5	203.5	203.5	166.5
0	37	0	0	0
0	38	0	0	0
0	39	0	0	0
0	40	0	0	0
0	41	0	0	0

	0	42	0	0	0
	0	43	0	0	0
	89	0	0	0	0
	46	0	0	0	0
	47	0	0	0	0
	48	0	0	0	0
	49	0	0	0	0
	0	50	0	0	0
	51	0	0	0	0
	52	0	0	0	0
	53	0	0	0	0
sum of rank values (R_i)	**472**	**385.5**	**203.5**	**203.5**	**166.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	33423.0	3764.75	3764.75	3080.25

$N_{i\,bg}$ = 22
N = 53
H = 22.62

Adjust H for ties:

T_i = 46626 sum of T1..T2

$H' = H/(1-(T_i/(N^3-N)))$
H' = 32.95
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =32.95.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	18.5	18.5	18.5
avg Rbar (background) =	39.0	39.0	39.0
Dx =	-20.5	-20.5	-20.5
Cx =	12.1	12.1	13.0
Statistical Significance ?	-	-	-
If SSI, is current event above MCL?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Toluene**
MCL (µg/l): 1000
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	5
08/16/99	NT	NS	NT	NS	NT	5
02/14/00	NT	NS	NT	NS	NT	5
08/14/00	NT	NT	NT	NS	NT	5
03/19/01	NT	NT	NT	NT	NT	5
08/27/02	NT	NT	NT	NT	NT	5
02/24/03	NT	NT	NT	NT	NT	5
08/11/03	ND	ND	ND	ND	**4500**	5
02/09/04	ND	ND	ND	ND	**34**	5
08/16/04	ND	ND	ND	ND	ND	5
02/14/05	ND	ND	ND	ND	**6.5**	5
09/01/05	ND	ND	ND	ND	**120**	5
02/16/06	ND	ND	ND	ND	**6.5**	5
08/30/06	ND	ND	ND	ND	ND	5
02/26/07	ND	ND	ND	ND	ND	5
08/13/07	**7.4**	ND	ND	ND	Dry	1
02/11/08	**20.5**	ND	ND	ND	ND	1
08/25/08	**11.9**	ND	ND	ND	Dry	1

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	4500
02/09/04	2.5	2.5	2.5	2.5	34
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	6.5
09/01/05	2.5	2.5	2.5	2.5	120
02/16/06	2.5	2.5	2.5	2.5	6.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07	2.5	2.5	2.5	2.5	2.5
08/13/07	7.4	0.5	0.5	0.5	-
02/11/08	20.5	0.5	0.5	0.5	0.5
08/25/08			0.5	0.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 68.9$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 68.9$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 1$
$T^*_k = 14.2$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound:	**Trichloroethene**
NC MCL (µg/l):	2.8
Method:	Kruskal-Wallis
Background:	MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**5**
08/16/99	NT	NS	NT	NS	NT	**5**
02/14/00	NT	NS	NT	NS	NT	**5**
08/14/00	NT	NT	NT	NS	NT	**5**
03/19/01	NT	NT	NT	NT	NT	**5**
08/27/02	NT	NT	NT	NT	NT	**5**
02/24/03	NT	NT	NT	NT	NT	**5**
08/11/03	**5.6**	**11**	ND	ND	ND	**5**
02/09/04	**13**	**6.2**	ND	ND	ND	**5**
08/16/04	**10**	**5.5**	ND	ND	ND	**5**
02/14/05	**17**	**7**	ND	ND	ND	**5**
09/01/05	**11**	ND	ND	ND	ND	**5**
02/16/06	ND	ND	ND	ND	ND	**5**
08/30/06	**11**	ND	ND	ND	ND	**5**
02/26/07	**11**	ND	ND	ND	ND	**5**
08/13/07	**9.9**	**2.7**	ND	ND	Dry	**1**
02/11/08	**9.9**	**2.7**	ND	ND	ND	**1**
08/25/08	**10**	**3**	ND	ND	Dry	**1**

N_i	11	11	11	11	9
sum of rank values (R_i)	495.0	362.5	203.5	203.5	166.5
avg rank value (Rbar)	45.0	33.0	18.5	18.5	18.5

	Number of each rank value					Rank Value
rank value of NDs =	1	4	11	11	9	18.5
rank value of 2.7s =	0	2	0	0	0	37.5
rank value of 3s =	0	1	0	0	0	39
rank value of 5.5s =	0	1	0	0	0	40
rank value of 5.6s =	1	0	0	0	0	41
rank value of 6.2s =	0	1	0	0	0	42
rank value of 7s =	0	1	0	0	0	43
rank value of 9.9s =	2	0	0	0	0	44.5
rank value of 10s =	2	0	0	0	0	46.5
rank value of 11s =	3	1	0	0	0	49.5
rank value of 13s =	1	0	0	0	0	52
rank value of 17s =	1	0	0	0	0	53
n =	**11**	**11**	**11**	**11**	**9**	

Sum of rank value calculations

18.5	74	203.5	203.5	166.5
0	75	0	0	0
0	39	0	0	0
0	40	0	0	0
41	0	0	0	0
0	42	0	0	0

	0	43	0	0	0
	89	0	0	0	0
	93	0	0	0	0
	148.5	49.5	0	0	0
	52	0	0	0	0
	53	0	0	0	0
sum of rank values (R_i)	**495**	**362.5**	**203.5**	**203.5**	**166.5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{i=1} (R_i^2)/N_i]\} -3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**
Ri^2/N_i =	33423.0	3764.75	3764.75	3080.25

$N_{i\,bg}$ = 22
N = 53
H = 22.62

Adjust H for ties:

T_i = 46698 sum of T1..T5

$H' = H/(1-(T_i/(N^3-N)))$
H' = 32.97
Chi-square = 7.82

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 17df at the 5% significance level from Table 1 of the IFG. The value is 7.82 which is less than H' =32.97.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Calculate the critical values to compare each compliance well to the background wells:

Critical Value (C_x) = $P(N(N+1)/12)^{0.5} * (1/N_{i\,bg}+1/N_x)^{0.5}$
P = 2.12 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
$N_{i\,bg}$ = total samples (N_i) of background data
N_x = total samples (N_i) of well x

Difference between average ranks (Dx) = Rbar (well x) - avg Rbar (background)

Well =	MW-1A	MW-2A	MW-3A
Rbar (well x) =	18.5	18.5	18.5
avg Rbar (background) =	39.0	39.0	39.0
Dx =	-20.5	-20.5	-20.5
Cx =	12.1	12.1	13.0
Statistical Significance ?	-	-	-
If SSI, is current event above MCL?	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
No compliance well's difference between average ranks exceeded its corresponding critical value at a 5% significance level. Therefore, we conclude that significant evidence of contamination does not exist at the 5% significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Vinyl Chloride**
MCL (µg/l): 0.015
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**10**
08/16/99	NT	NS	NT	NS	NT	**10**
02/14/00	NT	NS	NT	NS	NT	**10**
08/14/00	NT	NT	NT	NS	NT	**10**
03/19/01	NT	NT	NT	NT	NT	**10**
08/27/02	NT	NT	NT	NT	NT	**10**
02/24/03	NT	NT	NT	NT	NT	**10**
08/11/03	ND	ND	ND	ND	ND	**5**
02/09/04	ND	ND	ND	ND	ND	**5**
08/16/04	ND	ND	ND	ND	ND	**10**
02/14/05	ND	ND	ND	ND	ND	**10**
09/01/05	ND	ND	ND	ND	ND	**5**
02/16/06	ND	ND	ND	ND	ND	**5**
08/30/06	ND	ND	ND	ND	ND	**5**
02/26/07	ND	ND	ND	ND	ND	**5**
08/13/07	ND	ND	ND	**1.5**	Dry	**1**
02/11/08	ND	ND	ND	ND	ND	**1**
08/25/08	ND	ND	ND	ND	Dry	**1**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	2.5	2.5	2.5	2.5	2.5
02/09/04	2.5	2.5	2.5	2.5	2.5
08/16/04	5	5	5	5	5
02/14/05	5	5	5	5	5
09/01/05	2.5	2.5	2.5	2.5	2.5
02/16/06	2.5	2.5	2.5	2.5	2.5
08/30/06	2.5	2.5	2.5	2.5	2.5
02/26/07	2.5	2.5	2.5	2.5	2.5
08/13/07	0.5	0.5	0.5	1.5	-
02/11/08	0.5	0.5	0.5	0.5	0.5
08/25/08			0.5	0.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 52$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 52$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 1$
$T^*_k = 11.6$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J08-1957-05

Compound: **Total Xylenes**
MCL (µg/l): 530
Method: Poisson Prediction Limits
Background: MW-4 & MW-5

	MW-4	MW-5	MW-1A	MW-2A	MW-3A	MDL
02/18/99	NT	NS	NT	NS	NT	**5**
08/16/99	NT	NS	NT	NS	NT	**5**
02/14/00	NT	NS	NT	NS	NT	**5**
08/14/00	NT	NT	NT	NS	NT	**5**
03/19/01	NT	NT	NT	NT	NT	**5**
08/27/02	NT	NT	NT	NT	NT	**5**
02/24/03	NT	NT	NT	NT	NT	**5**
08/11/03	ND	ND	ND	ND	ND	**10**
02/09/04	ND	ND	ND	ND	ND	**10**
08/16/04	ND	ND	ND	ND	ND	**5**
02/14/05	ND	ND	ND	ND	ND	**5**
09/01/05	ND	ND	ND	ND	ND	**10**
02/16/06	ND	ND	ND	ND	ND	**10**
08/30/06	ND	ND	ND	ND	ND	**10**
02/26/07	ND	ND	ND	ND	ND	**10**
08/13/07	**6.1**	ND	ND	ND	Dry	**2**
02/11/08	**11.3**	ND	ND	ND	ND	**2**
08/25/08	**7.7**	ND	ND	ND	Dry	**3**

1) If not detected (ND), use half of the detection limit.

02/18/99	-	-	-	-	-
08/16/99	-	-	-	-	-
02/14/00	-	-	-	-	-
08/14/00	-	-	-	-	-
03/19/01	-	-	-	-	-
08/27/02	-	-	-	-	-
02/24/03	-	-	-	-	-
08/11/03	5	5	5	5	5
02/09/04	5	5	5	5	5
08/16/04	2.5	2.5	2.5	2.5	2.5
02/14/05	2.5	2.5	2.5	2.5	2.5
09/01/05	5	5	5	5	5
02/16/06	5	5	5	5	5
08/30/06	5	5	5	5	5
02/26/07	5	5	5	5	5
08/13/07	6.1	1	1	1	-
02/11/08	11.3	1	1	1	1
08/25/08			1.5	1.5	-

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 10.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 20$
$T_{n1} = 89.4$

3) Using Gibbons' formula, calculate the upper Poisson Prediction limit T^*_k:

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{-0.5}$$

where c = k/n
and where k = the number of future predicted measurements (one per well during the current sampling event)
and where t = the upper 99th percentile of the t-distribution with (n-1) degrees of freedom (Table 6 of the IFG).

$k = 2$
$n = 20$
$T_{n1} = 89.4$
$t[19,.01] = 2.539$
$c = 0.1000$
$T_{n2} = 3$
$T^*_k = 17.2$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was not exceeded, there is no evidence of contamination.