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	February 20, 2015

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 05/29/2015 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

FIRST SEMI-ANNUAL SAMPLING EVENT OF 2015

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

May 28, 2015

BLE Project Number J15-1957-44

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

May 28, 2015

Haywood County Solid Waste Management
278 Recycle Road
Clyde, North Carolina 28721

Attention: Mr. David B. Francis
Solid Waste Administrator

Subject: **Report of Groundwater Quality Results & Statistical Analysis**
First Semi-Annual Sampling Event of 2015
Permit Number: 44-03
Haywood County, North Carolina
BLE Project Number J15-1957-44

Dear Mr. Francis:

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, L.G.
Project Geologist
Licensed, North Carolina No. 2025

Mark S. Preddy, L.G.
Senior Geologist
Licensed, North Carolina No. 1043

cc: Ms. Elizabeth Werner – NC DENR Solid Waste Section, 401 Oberlin Road, Suite 150, Raleigh, North Carolina 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 facility currently has a total of 30 groundwater monitoring wells. The landfill well network currently consists of one upgradient groundwater monitoring well (MW-12) and 29 downgradient wells installed at the facility as part of the assessment monitoring plan.

On August 15, 2013, the NCDWM approved replacement of the previously existing surface water monitoring points designated SW-1, SW-2, and Blanton Branch. These new surface water sampling locations consist of one upgradient (US-1) and three downgradient (DS-1, DS-2, and DS-3) sampling points.

BLE was retained by Haywood County to prepare the semi-annual sampling reports for 2015. Historical data from multiple sources and in multiple formats has been gathered and synthesized into this report.

This report presents data from the first semi-annual sampling event in 2015 for the site. The water samples were collected and analyzed as required by North Carolina's regulations for operation of municipal solid waste landfills. This report incorporates the thirty-one sampling events for wells MW-1A, MW-2A, MW-3A, MW-4 and MW-5 between February 1999 and February 2015. Additionally, this is the ninth (N9) sampling event for newly installed (2010) wells MW-6 through MW-15 and the seventh (N7) sampling event for newly installed (2011) wells MW-16 through MW-21, the fifth (N5) sampling event for newly installed (2012) wells MW-14D through MW-25, and the third (N3) for well MW-23D.

FIELD ACTIVITIES, SAMPLING, AND ANALYSIS

Groundwater and surface water samples were collected for the first semi-annual sampling event of 2015 by personnel from Pace Analytical Services, Inc. (Pace) of Asheville, North Carolina between February 20, 2015 and March 20, 2015. Groundwater samples were collected from each of the 30 groundwater monitoring well locations located on the site. Additionally, four on-site surface water locations were sampled during the event. The groundwater samples were analyzed in the laboratory for North Carolina's *Appendix II* list of volatile organic compounds (VOCs) and metals, pesticides, and cyanide and in the field for pH, specific conductance, turbidity, and temperature. The surface water samples were analyzed in the laboratory for North Carolina's *Appendix II* list of VOCs and metals, and in the field for pH, specific conductance, and temperature. Summary tables of analytical results are attached in **Appendix A** (groundwater) and **Appendix B** (surface water). A copy of the Pace laboratory and field data is included in **Appendix C**.

GROUNDWATER FLOW

The water level data collected during the groundwater sampling is presented in **Table 1**. A water table surface elevation contour map featuring the new survey elevation data is presented as **Figure 2** along with generalized groundwater flow directions.

SUMMARY OF LABORATORY RESULTS

Groundwater

Total metal detections in groundwater during the current sampling event included:

- total barium (30 wells);
- total chromium (8 wells);
- total cobalt (8 wells);
- total copper (4 wells);
- total lead (1 well);
- total nickel (11 wells);
- total vanadium (12 wells); and
- total zinc (18 wells).

VOC detections in groundwater included:

- benzene (4 wells);
- chlorobenzene (3 wells);
- chloroethane (3 wells);
- 1,2-dichlorobenzene (7 wells);
- 1,4-dichlorobenzene (8 wells);
- 1,1-dichloroethane (12 wells);
- 1,2-dichloroethane (4 wells);
- cis-1,2-dichloroethene (11 wells);
- dichloromethane (2 wells);
- tetrachloroethene (3 wells);
- trichloroethene (3 wells);
- total xylenes (1 well); and
- total naphthalene (1 well).

The concentrations of the following constituents were detected above North Carolina's maximum contaminant levels[1] (MCLs):

- total barium (MW-13);
- total chromium (MW-9, MW-20D, MW-23, and MW-25);
- benzene (MW-4, MW-5, and MW-13);
- 1,2-dichlorobenzene (MW-14);
- 1,4-dichlorobenzene (MW-2A, MW-4, and MW-14);
- 1,1-dichloroethane (MW-4 and MW-25);
- 1,2-dichloroethane (MW-4, MW-7, MW-19, and MW-19D);
- dichloromethane (MW-4);

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

- tetrachloroethene (MW-4, MW-5, and MW-25); and
- trichloroethene (MW-4);

Summary tables of the current and historical detected concentrations in groundwater are included in **Appendix A** (estimated "J-flag" values [i.e., estimated values between the method detection limit and the reporting limit] are also included with the laboratory data in **Appendix C**, but not on the summary tables).

Surface Water

Concentrations of total barium (4 locations) were detected in the surface water samples during the current sampling event. None of the concentrations were above established North Carolina surface water[2] MCL. Additionally, no VOCs were detected in the surface water samples. Summary tables of the current and historical detected concentrations in surface water are included in **Appendix B** (estimated "J-flag" values are also included with the laboratory data in **Appendix C**, but not on the summary tables).

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 a guidance document for evaluating groundwater quality data titled *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance* (March 2009). The procedures and methodology used for data analysis of this project are consistent with this US EPA guidance document, and meet or exceed the performance criteria specified in the North Carolina solid waste management rules Title 15A NCAC 13B .1632(g-i). Four 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 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;

2. 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);

3. 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; and

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

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

[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.

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 above the laboratory reporting limit, and have been detected during the current sampling event. Estimated "J-flag" values are not statistically analyzed. The statistical results summarized on **Table 2** and included in **Appendix D** indicate that:

1. The Poisson Prediction Limit test performed for total antimony, total arsenic, total beryllium, total cadmium, total mercury, total selenium, total silver, total thallium, acetone, carbon disulfide, chlorobenzene, chloroethane, chloroform, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,3-dichloropropene, ethylbenzene, naphthalene, toluene, trichlorofluoromethane, vinyl chloride, total xylenes, and naphthalene did not calculate SSIs. However, the Poisson Prediction Limit and Wilcoxon tests calculated SSIs for 1,2-dichlorobenzene (MW-14 and MW-15) and 1,4-dichorobenzene (MW-2A, MW-4, MW-13, and MW-14).

2. The Kruskal-Wallis tests used for total chromium, total copper, total lead, total nickel, total vanadium, and total zinc did not calculate SSIs. However, the Kruskal-Wallis and Wilcoxon tests calculated SSIs for total cobalt (MW-2A), benzene (MW-4, MW-5, MW-13, and MW-14), 1,1-dichloroethane (MW-3A, MW-4, MW-5, MW-7, MW-10, MW-11, MW-13, MW-19, MW-19D, and MW-25), cis-1,2-dichloroethene (MW-2A, MW-4, MW-5, MW-7, MW-11, MW-13, MW-14, MW-15, and MW-25), dichloromethane (MW-4 and MW-25), tetrachloroethene (MW-4 and MW-5), and trichloroethene (MW-4 and MW-5); and

3. The parametric ANOVA test used for total barium did not calculate an SSI.

CONCLUSION

The current sampling event represents the ninth (N9) sampling event for wells MW-6 through MW-15, the seventh (N7) sampling event for wells MW-16 through MW-21, and fifth (N5) sampling event for new wells MW-14D through MW-25, and the third (N3) for well MW-23D installed in association with the assessment monitoring phase of the landfill. The data from the new wells has been added to the statistical database, but a minimum of five to nine sampling events are necessary for the appropriate statistical processes to be run on the data from the new wells. As additional laboratory data becomes available for these wells during the following sampling events, statistical methods will be used to evaluate statistical significance. Additionally, the statistical database has

been realigned with MW-12 as the background monitoring well and the remaining monitoring wells as downgradient wells.

Concentrations of total metals (groundwater and surface water) and VOCs (groundwater) were detected at the site. Groundwater concentrations of total barium, total chromium, benzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, dichloromethane, tetrachloroethene, and trichloroethene were detected above North Carolina's MCL in several monitoring wells. No concentrations of total metals or VOCs were detected above North Carolina's surface water MCLs.

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.

A NCDWM-approved groundwater assessment is currently in progress at the facility. Four phases of well installation and sampling are complete and have been reported to the NCDWM. Phase I included installation of monitoring wells MW-6 through MW-15. Phase II included installation of monitoring wells MW-16 through MW-21. Phase III included installation of monitoring wells MW-14D through MW-25. The Phase IV well installation was conducted in December 2013 and included installation of monitoring well MW-23D. The laboratory analyses results contained herein includes the assessment wells from all three phases, plus the previously existing compliance wells.

The approved groundwater sampling matrix at the site includes the *Appendix II* list of VOCs and metals, pesticides, and cyanide. The next regularly scheduled groundwater sampling event will be conducted in August 2015.

TABLES

TABLE 1

GROUNDWATER MONITORING WELL CONSTRUCTION AND GROUNDWATER ELEVATION DATA
Closed Francis Farm Landfill
Haywood County, North Carolina
Permit Number 44-03
BLE Project Number J15-1957-44

February 20, 2015																
Well	**Well Location**	**Northing (feet)**	**Easting (feet)**	**Meas. Pt. Elevation**	**Gnd. Surface Elevation**	***Depth to Water (bgs)**	**Depth to Water (bmp)**	**Water Elevation**	**Total Borehole Depth (bgs)**	**Screen Depth (bgs)**	**Screen Elevation**	**Well Type**	**Well Monitors**	**Top of Rock Depth (bgs)**	**Top of Rock Elev.**
MW-1	On-Site	662,529.13	822,317.14	2,666.59	2,663.72	NM	NM	<2630.59	UK	UK - UK	UK - UK	UK	UK	UK	UK
MW-1A	On-Site	662,590.73	822,083.15	2,690.88	2,687.97	46.74	49.65	2,641.23	UK	UK - UK	UK - UK	UK	UK	UK	UK
MW-2A	On-Site	662,347.08	822,814.69	2,643.78	2,640.98	22.80	25.60	2,618.18	27.0	12.0 - 27.0	2,629.0 - 2,614.0	II	PWR/BR	18.0	2,623.0
MW-3A	On-Site	661,921.62	823,026.22	2,674.29	2,671.59	36.61	39.31	2,634.98	UK	UK - UK	UK - UK	UK	UK	UK	UK
MW-4	On-Site	661,420.29	822,245.39	2,789.47	2,786.88	66.53	69.12	2,720.35	UK	UK - UK	UK - UK	UK	UK	UK	UK
MW-5	On-Site	661,286.31	822,167.91	2,797.08	2,797.37	71.62	71.33	2,725.75	94.0	73.1 - 88.1	2,724.3 - 2,709.3	II	PWR	89.0	2,708.4
Groundwater Monitoring Wells MW-6 through MW-25 Installed by BLE															
MW-6	Off-Site	662,941.12	822,167.78	2,612.63	2,613.03	6.75	6.35	2,606.28	12.5	2.3 - 12.3	2,610.7 - 2,600.7	II	Res/Collv	12.5	2,600.5
MW-7	Off-Site	662,800.72	822,584.39	2,621.33	2,621.48	8.71	8.56	2,612.77	24.0	4.0 - 19.0	2,617.5 - 2,602.5	II	Collv/Allv	NE	NE
MW-8	Off-Site	662,619.60	822,989.68	2,620.05	2,620.25	5.33	5.13	2,614.92	19.0	3.0 - 13.0	2,617.3 - 2,607.3	II	Alluvial	NE	NE
MW-9	Off-Site	662,309.84	823,295.25	2,618.67	2,619.19	2.73	2.21	2,616.46	19.0	2.0 - 12.0	2,617.2 - 2,607.2	II	Alluvial	NE	NE
MW-10	Off-Site	661,947.33	823,365.59	2,623.60	2,623.96	2.58	2.22	2,621.38	15.0	2.0 - 12.0	2,622.0 - 2,612.0	II	Alluvial	NE	NE
MW-11	On-Site	661,509.39	822,572.73	2,756.22	2,756.46	77.40	77.16	2,679.06	100.0	70.8 - 85.8	2,685.7 - 2,670.7	II	BR	71.0	2,685.5
MW-12	Off-Site	661,078.94	822,142.39	2,803.11	2,800.28	64.73	67.56	2,735.55	90.0	64.8 - 79.8	2,735.5 - 2,720.5	II	BR	64.0	2,736.3
MW-13	On-Site	661,377.43	821,791.88	2,799.14	2,799.51	82.15	81.78	2,717.36	127.0	74.0 - 89.0	2,725.5 - 2,710.5	II	PWR/BR	81.0	2,718.5
MW-14	On-Site	661,894.81	821,755.37	2,770.34	2,770.64	87.87	87.57	2,682.77	120.0	93.8 - 108.8	2,676.8 - 2,661.8	II	BR	33.0	2,737.6
MW-14D	On-Site	661,878.59	821,754.85	2,771.63	2,772.05	148.70	148.28	2,623.35	250.5	202.0 - 212.0	2,570.0 - 2,560.0	II	BR	41.0	2,731.0
MW-15	On-Site	662,338.59	821,896.86	2,719.57	2,716.89	81.97	84.65	2,634.92	163.0	75.8 - 90.8	2,641.1 - 2,626.1	II	BR	19.0	2,697.9
MW-16	Off-Site	661,203.62	821,457.75	2,716.16	2,716.29	54.40	54.27	2,661.89	70.0	54.8 - 69.8	2,661.5 - 2,646.5	II	PWR/BR	63.0	2,653.3
MW-16D	Off-Site	661,192.49	821,467.73	2,716.28	2,716.57	73.64	73.35	2,642.93	150.0	116.0 - 126.0	2,600.6 - 2,590.6	II	BR	81.0	2,635.6
MW-17	Off-Site	661,739.15	821,178.09	2,664.77	2,665.07	51.35	51.05	2,613.72	73.0	49.8 - 64.8	2,615.3 - 2,600.3	II	PWR/BR	63.0	2,602.1
MW-18	Off-Site	662,150.91	821,256.31	2,620.91	2,620.93	25.94	25.92	2,594.99	41.0	25.8 - 40.8	2,595.1 - 2,580.1	II	BR	22.0	2,598.9
MW-19	Off-Site	662,965.29	822,624.55	2,615.08	2,615.29	6.81	6.60	2,608.48	21.0	5.5 - 20.5	2,609.8 - 2,594.8	II	Allv/Res	NE	NE
MW-19D	Off-Site	662,952.84	822,617.92	2,615.33	2,615.62	6.88	6.59	2,608.74	59.0	53.9 - 58.9	2,561.7 - 2,556.7	II	PWR	NE	NE
MW-20	Off-Site	661,973.29	823,503.41	2,621.94	2,622.13	2.32	2.13	2,619.81	15.5	5.3 - 15.3	2,616.8 - 2,606.8	II	Alluvial	NE	NE
MW-20D	Off-Site	661,973.43	823,494.68	2,621.94	2,622.12	1.42	1.24	2,620.70	69.0	60.0 - 65.0	2,562.1 - 2,557.1	II	PWR	NE	NE
MW-21	Off-Site	661,424.40	823,203.28	2,658.37	2,658.72	22.96	22.61	2,635.76	36.0	18.8 - 33.8	2,639.9 - 2,624.9	II	Residuum	NE	NE
MW-22	Off-Site	661,046.30	820,724.07	2,599.86	2,600.00	1.95	1.82	2,598.04	25.0	4.0 - 24.0	2,596.0 - 2,576.0	II	Alluvial	NE	NE
MW-23	Off-Site	663,169.77	822,719.36	2,611.43	2,611.63	1.68	1.49	2,609.94	24.0	3.8 - 23.8	2,607.8 - 2,587.8	II	Alluvial	NE	NE
MW-23D	Off-Site	663,182.53	822,725.71	2,611.52	2,611.75	2.04	1.81	2,609.71	62.0	53.0 - 58.0	2,558.8 - 2,553.8	III	BR	37.0	2,574.8
MW-24	Off-Site	662,019.81	823,641.42	2,625.80	2,626.04	4.74	4.50	2,621.30	35.0	7.5 - 27.5	2,618.5 - 2,598.5	II	Collv/PWR/BR	15.0	2,611.0
MW-25	Off-Site	661,488.76	822,382.32	2,756.31	2,756.67	177.31	176.95	2,579.36	259.5	249.3 - 259.3	2,507.4 - 2,497.4	II	BR	62.0	2,694.7

Notes:
All survey data provided by McGill Associates, all units in feet.
*DTW from bgs values have been calculated from survey data provided by McGill Associates.
All values shown to the nearest 0.1-ft have been rounded.
Water levels measured on February 20, 2015 by Pace
MW-1, -1A, -2A, -3A, -4, -5 installed by others. MW-6 through MW-25 installed by BLE.

Measuring Point Elevation is top of casing
II = Type II well
III = Type III well
NE = Not encountered
UK = Unknown, information is not available

BR & PWR = Bedrock & Partially Weathered Rock
Res = Residuum
Collv = Colluvium
Allv = Alluvium
NP = Well Not Present at Time of Measurement

Prepared by: IAI
Checked by: DRM

TABLE 2

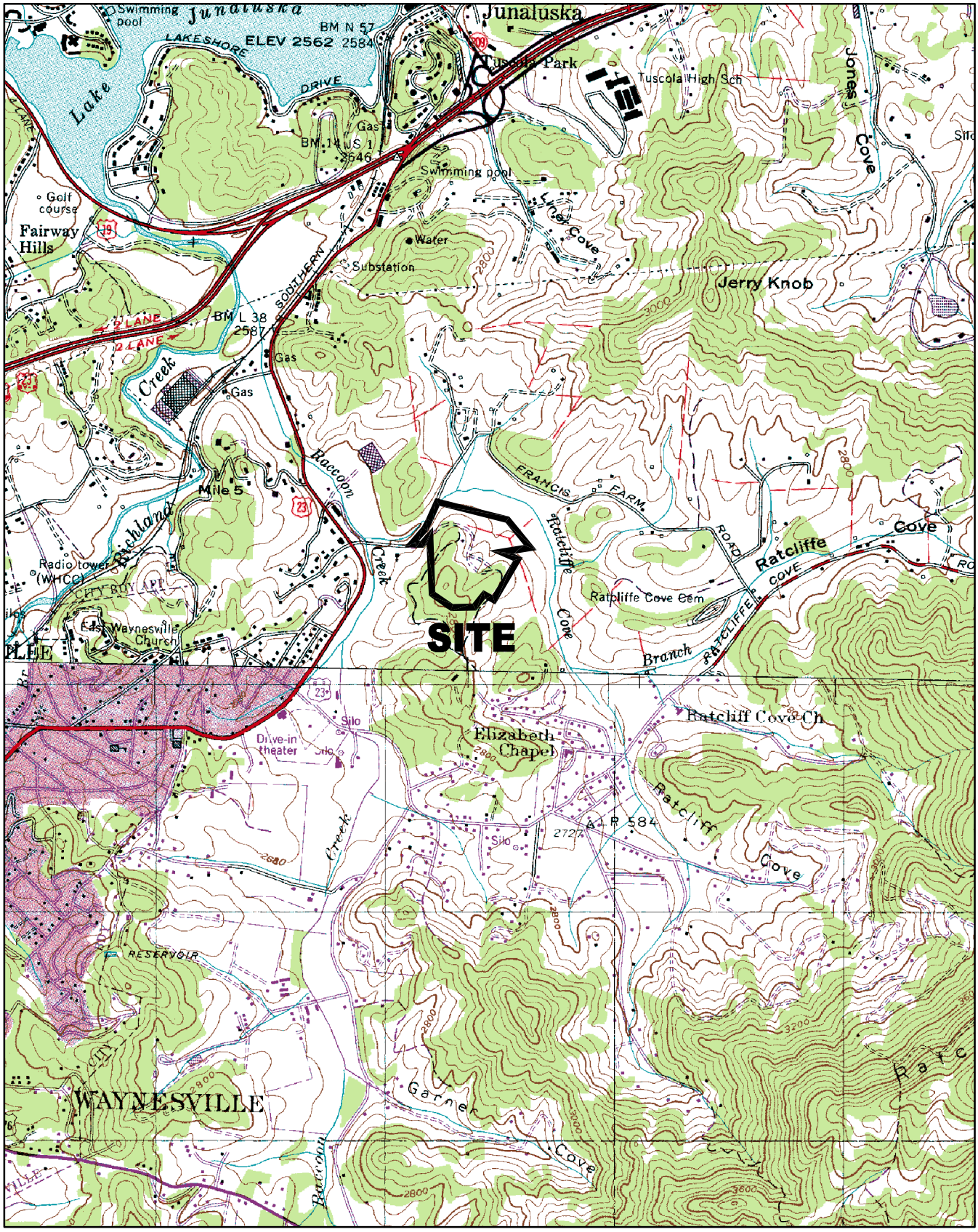
SUMMARY OF STATISTICAL ANALYSIS RESULTS
Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Chemical/ Compound	Percent ND	Primary Statistical Test	Primary Pass/Fail	Secondary Statistical Test	Secondary Pass/Fail	SSI [1] Calculated	SSI Concentration Above MCL [2] During Current Event
Total Antimony	99%	Poisson Prediction Limits	Pass	-	-	No	-
Total Arsenic	94%	Poisson Prediction Limits	Pass	-	-	No	-
Total Barium	2%	ANOVA	Fail	Shewhart-CUSUM/Trend Test	Pass	No	-
Total Beryllium	98%	Poisson Prediction Limits	Pass	-	-	No	-
Total Cadmium	92%	Poisson Prediction Limits	Pass	-	-	No	-
Total Chromium	70%	Kruskal-Wallis	Pass	-	-	No	-
Total Cobalt	65%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail	MW-2A	No
Total Copper	80%	Kruskal-Wallis	Pass	-	-	No	-
Total Lead	89%	Kruskal-Wallis	Pass	-	-	No	-
Total Mercury	97%	Poisson Prediction Limits	Pass	-	-	No	-
Total Nickel	68%	Kruskal-Wallis	Pass	-	-	No	-
Total Selenium	93%	Poisson Prediction Limits	Pass	-	-	No	-
Total Silver	96%	Poisson Prediction Limits	Pass	-	-	No	-
Total Thallium	100%	Poisson Prediction Limits	Pass	-	-	No	-
Total Vanadium	70%	Kruskal-Wallis	Pass	-	-	No	-
Total Zinc	50%	Kruskal-Wallis	Pass	-	-	No	-
Acetone	99%	Poisson Prediction Limits	Pass	-	-	No	-
Benzene	77%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-4, -5, -13, -14)	Yes (MW-4, -5, -13)
Carbon Disulfide	98%	Poisson Prediction Limits	Pass	-	-	No	-
Chlorobenzene	87%	Poisson Prediction Limits	Pass	-	-	No	-
Chloroethane	71%	Poisson Prediction Limits	Pass	-	-	No	-
Chloroform	99%	Poisson Prediction Limits	Pass	-	-	No	-
1,2-Dichlorobenzene	79%	Poisson Prediction Limits	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-14, -15)	Yes (MW-14)
1,4-Dichlorobenzene	66%	Poisson Prediction Limits	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-2A, -4, -13, -14)	Yes (MW-2A, -4, -14)
1,1-Dichloroethane	44%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-3A, -4, -5, -7, -10, -11, -13, -19, -19D, -25)	Yes (MW-4, -25)
1,2-Dichloroethane	82%	Poisson Prediction Limits	Pass	-	-	No	-
1,1-Dichloroethene	100%	Poisson Prediction Limits	Pass	-	-	No	-
cis-1,2-Dichloroethene	42%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-2A, -4, -5, -7, -11, -13, -14, -15, -25)	No
cis-1,3-Dichloropropene	100%	Poisson Prediction Limits	Pass	-	-	No	-
Ethylbenzene	98%	Poisson Prediction Limits	Pass	-	-	No	-
Dichloromethane	89%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-4, -25)	Yes (MW-4)
Tetrachloroethene	81%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-4, -5)	Yes (MW-4)
Toluene	96%	Poisson Prediction Limits	Pass	-	-	No	-
Trichloroethene	81%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-4, -5)	Yes (MW-4, -5)
Trichlorofluoromethane	99%	Poisson Prediction Limits	Pass	-	-	No	-
Vinyl Chloride	98%	Poisson Prediction Limits	Pass	-	-	No	-
Total Xylenes	91%	Poisson Prediction Limits	Pass	-	-	No	-
Naphthalene	94%	Poisson Prediction Limits	Pass	-	-	No	-

Notes:
1. SSI = *Statistically Significant Increase*
2. MCL = *Maximum Contaminant Level*

Prepared by: IAI
Checked by: DRM/MSP

FIGURES

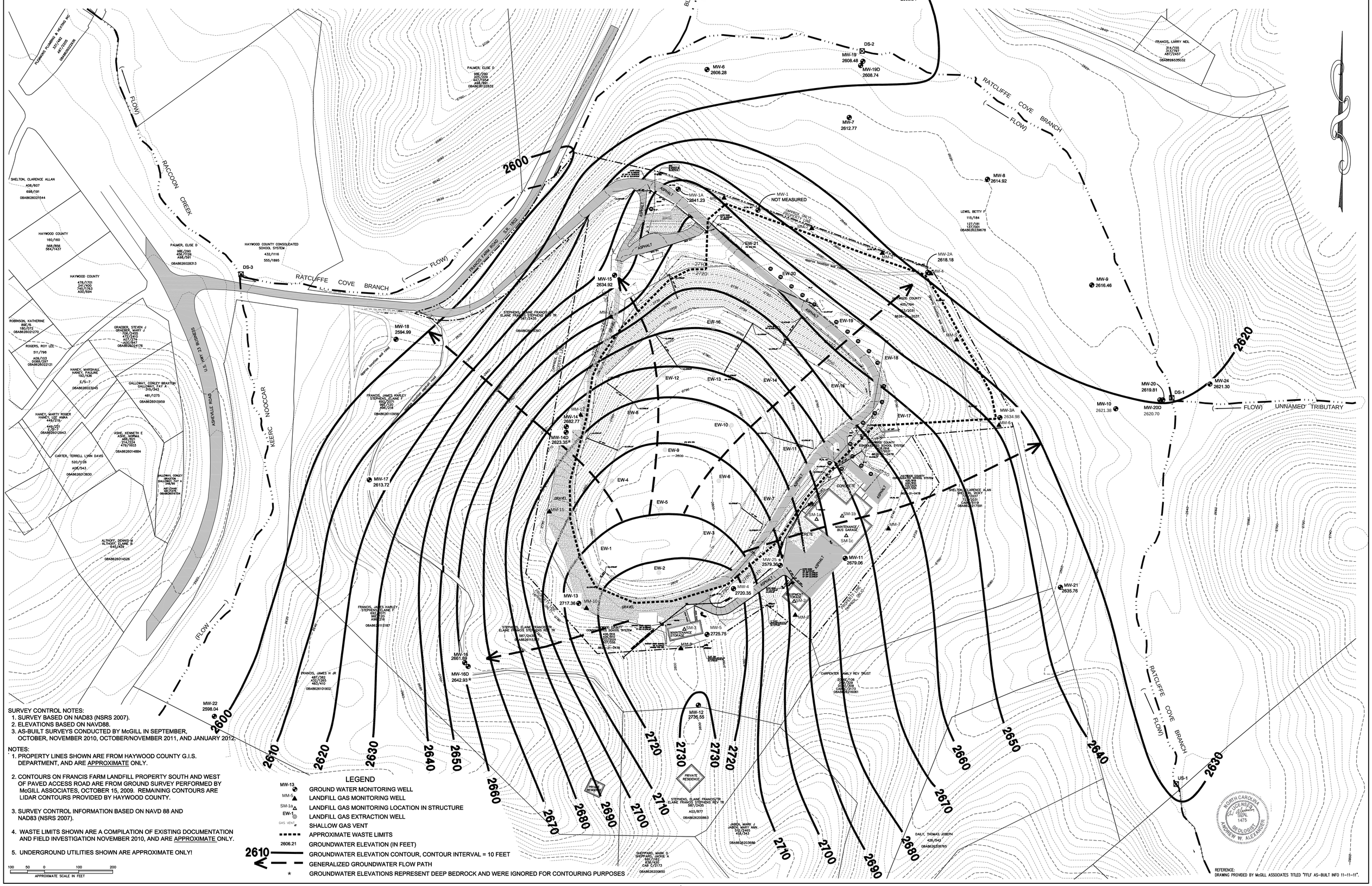


2000 1000 0 2000 4000

APPROXIMATE SCALE IN FEET

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

DRAWN: ACE	DATE: 05-28-15	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
CHECKED: AWA	CAD: FIG 1 FFLF-44 SLM			1
APPROVED:	JOB NO: J14-1957-44			



SURVEY CONTROL NOTES:
1. SURVEY BASED ON NAD83 (NSRS 2007).
2. ELEVATIONS BASED ON NAVD88.
3. AS-BUILT SURVEYS CONDUCTED BY McGILL IN SEPTEMBER, OCTOBER, NOVEMBER 2010, OCTOBER/NOVEMBER 2011, AND JANUARY 2012.

NOTES:
1. PROPERTY LINES SHOWN ARE FROM HAYWOOD COUNTY G.I.S. DEPARTMENT, AND ARE APPROXIMATE ONLY.
2. CONTOURS ON FRANCIS FARM LANDFILL PROPERTY SOUTH AND WEST OF PAVED ACCESS ROAD ARE FROM GROUND SURVEY PERFORMED BY McGILL ASSOCIATES, OCTOBER 15, 2009. REMAINING CONTOURS ARE LIDAR CONTOURS PROVIDED BY HAYWOOD COUNTY.
3. SURVEY CONTROL INFORMATION BASED ON NAVD 88 AND NAD83 (NSRS 2007).
4. WASTE LIMITS SHOWN ARE A COMPILATION OF EXISTING DOCUMENTATION AND FIELD INVESTIGATION NOVEMBER 2010, AND ARE APPROXIMATE ONLY.
5. UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY!

100 50 0 100 200
APPROXIMATE SCALE IN FEET

LEGEND

MW-13	GROUND WATER MONITORING WELL
MM-5	LANDFILL GAS MONITORING WELL
SM-1a	LANDFILL GAS MONITORING LOCATION IN STRUCTURE
EW-1	LANDFILL GAS EXTRACTION WELL
GAS VENT	SHALLOW GAS VENT
	APPROXIMATE WASTE LIMITS
2606.21	GROUNDWATER ELEVATION (IN FEET)
2610	GROUNDWATER ELEVATION CONTOUR, CONTOUR INTERVAL = 10 FEET
	GENERALIZED GROUNDWATER FLOW PATH
*	GROUNDWATER ELEVATIONS REPRESENT DEEP BEDROCK AND WERE IGNORED FOR CONTOURING PURPOSES

REFERENCE:
DRAWING PROVIDED BY McGILL ASSOCIATES TITLED "FFLF AS-BUILT INFO 11-11-11".

REVISIONS		
No.	DESCRIPTION	BY

DRAWN: ACE
CHECKED: IAI
APPROVED:

DATE: 04-23-15
CAD FILE: HCFFLF-44 POTMAP 022015
JOB NO: J15-1957-44

BLE INC.
BUNNELL-LAMMONS ENGINEERING, INC.
6004 POWERS COURT
GREENVILLE, SOUTH CAROLINA 29615
PHONE: (864)288-2290 / FAX: (864)288-4430

GROUNDWATER ELEVATION CONTOUR MAP – FEBRUARY 20, 2015
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	MRL	MCL	MW-12	MW-1A	MW-2	MW-3A	MW-4	MW-5A	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**5.4**	NS	**6**	**6.5**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**310**	NS	**420**	**72**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**13**	NS	**12**	**12**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	100	2000	NP	**300**	NS	**400**	**100**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	10	1.75	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	20	50	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	100	15	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	50	17.5	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acetone	µg/l	NT	700	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acrylonitrile	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Benzene	µg/l	NT	1	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromochloromethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromodichloromethane	µg/l	NT	0.56	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromoform	µg/l	NT	0.19	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon Disulfide	µg/l	NT	700	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon tetrachloride	µg/l	NT	0.269	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chlorobenzene (mono)	µg/l	NT	50	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroethane	µg/l	NT	2800	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroform	µg/l	NT	70	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	NT	2.6	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromochloromethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	NT	0.025	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	NT	0.00047	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromomethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichlorobenzene	µg/l	NT	24	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,4-Dichlorobenzene	µg/l	NT	1.4	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethane	µg/l	NT	70	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloroethane	µg/l	NT	0.38	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	NT	7	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	NT	70	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	NT	100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloropropane	µg/l	NT	0.51	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Ethylbenzene	µg/l	NT	550	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Hexanone	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Iodomethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	NT	4.6	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	NT	4200	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Styrene	µg/l	NT	100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	NT	0.7	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Toluene	µg/l	NT	1000	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1-Trichloroethane	µg/l	NT	200	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2-Trichloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	NT	2.8	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichlorofluoromethane	µg/l	NT	2100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2,3-Trichloropropane	µg/l	NT	0.005	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl acetate	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl chloride	µg/l	NT	0.015	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Xylenes	µg/l	NT	530	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
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3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2	MW-3A	MW-4	MW-5A	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**5.3**	NS	**5.7**	**5.5**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**430**	NS	**670**	**100**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**15**	NS	**14**	**15**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	100	2000	NP	**230**	NS	**260**	**120**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	10	1.75	NP	**2.5**	NS	**7.4**	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	20	50	NP	**61**	NS	**14**	**35**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	100	15	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Silver (Ag)	µg/l	50	17.5	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acetone	µg/l	NT	700	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acrylonitrile	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Benzene	µg/l	NT	1	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromochloromethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromodichloromethane	µg/l	NT	0.56	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromoform	µg/l	NT	0.19	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon Disulfide	µg/l	NT	700	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon tetrachloride	µg/l	NT	0.269	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chlorobenzene (mono)	µg/l	NT	50	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroethane	µg/l	NT	2800	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroform	µg/l	NT	70	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	NT	2.6	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromochloromethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	NT	0.025	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	NT	0.00047	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromomethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichlorobenzene	µg/l	NT	24	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,4-Dichlorobenzene	µg/l	NT	1.4	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethane	µg/l	NT	70	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloroethane	µg/l	NT	0.38	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	NT	7	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	NT	70	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	NT	100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloropropane	µg/l	NT	0.51	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Ethylbenzene	µg/l	NT	550	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Hexanone	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Iodomethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	NT	4.6	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	NT	4200	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Styrene	µg/l	NT	100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	NT	0.7	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Toluene	µg/l	NT	1000	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1-Trichloroethane	µg/l	NT	200	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2-Trichloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	NT	2.8	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichlorofluoromethane	µg/l	NT	2100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2,3-Trichloropropane	µg/l	NT	0.005	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl acetate	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl chloride	µg/l	NT	0.015	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Xylenes	µg/l	NT	530	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

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5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5A	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**5.1**	NS	**6.7**	**5**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**300**	NS	**500**	**180**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**13**	NS	**13**	**13**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	100	2000	NP	**270**	NS	**240**	**150**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	10	1.75	NP	**2**	NS	**9.1**	**1.4**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	20	50	NP	**7.2**	NS	**5.6**	**11**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	100	15	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Silver (Ag)	µg/l	50	17.5	NP	**4.3**	NS	**4.9**	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acetone	µg/l	NT	700	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acrylonitrile	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Benzene	µg/l	NT	1	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromochloromethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromodichloromethane	µg/l	NT	0.56	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromoform	µg/l	NT	0.19	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon Disulfide	µg/l	NT	700	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon tetrachloride	µg/l	NT	0.269	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chlorobenzene (mono)	µg/l	NT	50	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroethane	µg/l	NT	2800	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroform	µg/l	NT	70	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	NT	2.6	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromochloromethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	NT	0.025	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	NT	0.00047	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromomethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichlorobenzene	µg/l	NT	24	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,4-Dichlorobenzene	µg/l	NT	1.4	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethane	µg/l	NT	70	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloroethane	µg/l	NT	0.38	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	NT	7	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	NT	70	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	NT	100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloropropane	µg/l	NT	0.51	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Ethylbenzene	µg/l	NT	550	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Hexanone	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Iodomethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	NT	4.6	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	NT	4200	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Styrene	µg/l	NT	100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	NT	0.7	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Toluene	µg/l	NT	1000	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1-Trichloroethane	µg/l	NT	200	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2-Trichloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	NT	2.8	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichlorofluoromethane	µg/l	NT	2100	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2,3-Trichloropropane	µg/l	NT	0.005	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl acetate	µg/l	NT	NE	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl chloride	µg/l	NT	0.015	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Xylenes	µg/l	NT	530	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2	MW-3A	MW-4A	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**5.2**	NS	**5.8**	**4.9**	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**440**	NS	**600**	**100**	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**15**	NS	**14**	**16**	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	NS	**10**	ND	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	100	2000	NP	**410**	NS	**310**	**180**	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	10	1.75	NP	**4.9**	NS	**13**	**1.3**	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	20	50	NP	**7.4**	NS	ND	**5.4**	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	100	15	NP	ND	NS	ND	ND	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	**0.4**	NS	ND	ND	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	ND	NS	ND	ND	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	50	17.5	NP	**8.9**	NS	**7.8**	**4**	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**3**
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	NT	700	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acrylonitrile	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Benzene	µg/l	NT	1	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromochloromethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromodichloromethane	µg/l	NT	0.56	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromoform	µg/l	NT	0.19	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon Disulfide	µg/l	NT	700	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon tetrachloride	µg/l	NT	0.269	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chlorobenzene (mono)	µg/l	NT	50	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroethane	µg/l	NT	2800	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroform	µg/l	NT	70	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	NT	2.6	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromochloromethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	NT	0.025	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	NT	0.00047	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromomethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichlorobenzene	µg/l	NT	24	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,4-Dichlorobenzene	µg/l	NT	1.4	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethane	µg/l	NT	70	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloroethane	µg/l	NT	0.38	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	NT	7	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	NT	70	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	NT	100	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloropropane	µg/l	NT	0.51	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Ethylbenzene	µg/l	NT	550	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Hexanone	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Iodomethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	NT	4.6	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	NT	4200	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Styrene	µg/l	NT	100	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	NT	0.7	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Toluene	µg/l	NT	1000	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1-Trichloroethane	µg/l	NT	200	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2-Trichloroethane	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	NT	2.8	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichlorofluoromethane	µg/l	NT	2100	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2,3-Trichloropropane	µg/l	NT	0.005	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl acetate	µg/l	NT	NE	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl chloride	µg/l	NT	0.015	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Xylenes	µg/l	NT	530	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4A	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.0**	**6.2**	**6.1**	**5.4**	**5.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**350**	**550**	**470**	**98**	**130**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**13**	**13**	**13**	**14**	**12.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	ND	ND	**11**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	100	2000	NP	**340**	**830**	**310**	**120**	**2000**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	10	1.75	NP	**2.6**	**12**	**6.9**	ND	**18**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	20	50	NP	**12**	**32**	**7.7**	**5.2**	**140**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	100	15	NP	ND	**16**	ND	ND	**38**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	**0.2**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Silver (Ag)	µg/l	50	17.5	NP	ND	**6.6**	**4.7**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acetone	µg/l	NT	700	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acrylonitrile	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Benzene	µg/l	NT	1	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromochloromethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromodichloromethane	µg/l	NT	0.56	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromoform	µg/l	NT	0.19	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon Disulfide	µg/l	NT	700	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon tetrachloride	µg/l	NT	0.269	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chlorobenzene (mono)	µg/l	NT	50	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroethane	µg/l	NT	2800	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroform	µg/l	NT	70	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	NT	2.6	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromochloromethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	NT	0.025	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	NT	0.00047	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromomethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichlorobenzene	µg/l	NT	24	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,4-Dichlorobenzene	µg/l	NT	1.4	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethane	µg/l	NT	70	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloroethane	µg/l	NT	0.38	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	NT	7	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	NT	70	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloropropane	µg/l	NT	0.51	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Ethylbenzene	µg/l	NT	550	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Hexanone	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Iodomethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	NT	4.6	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	NT	4200	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Styrene	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	NT	0.7	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Toluene	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1-Trichloroethane	µg/l	NT	200	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2-Trichloroethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	NT	2.8	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichlorofluoromethane	µg/l	NT	2100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2,3-Trichloropropane	µg/l	NT	0.005	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl acetate	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl chloride	µg/l	NT	0.015	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Xylenes	µg/l	NT	530	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
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5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**5.9**	**5.92**	NT	**5.5**	**5.83**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**331**	**460**	NT	**110**	**170**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**16.5**	**17.8**	NT	**16.2**	**14.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	**23**	NT	**5.8**	**25**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	100	2000	NP	**250**	**2700**	NT	**150**	**2800**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	10	1.75	NP	ND	**25**	NT	ND	**21**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	20	50	NP	ND	**130**	NT	**5.4**	**210**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	100	15	NP	ND	**31**	NT	ND	**47**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	NT	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	ND	ND	NT	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Selenium (Se)	µg/l	5	50	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Silver (Ag)	µg/l	50	17.5	NP	ND	ND	NT	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	NT	700	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acrylonitrile	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Benzene	µg/l	NT	1	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromochloromethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromodichloromethane	µg/l	NT	0.56	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromoform	µg/l	NT	0.19	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon Disulfide	µg/l	NT	700	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon tetrachloride	µg/l	NT	0.269	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chlorobenzene (mono)	µg/l	NT	50	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroethane	µg/l	NT	2800	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroform	µg/l	NT	70	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	NT	2.6	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromochloromethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	NT	0.025	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	NT	0.00047	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromomethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichlorobenzene	µg/l	NT	24	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,4-Dichlorobenzene	µg/l	NT	1.4	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethane	µg/l	NT	70	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloroethane	µg/l	NT	0.38	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	NT	7	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	NT	70	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloropropane	µg/l	NT	0.51	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Ethylbenzene	µg/l	NT	550	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Hexanone	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Iodomethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	NT	4.6	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	NT	4200	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Styrene	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	NT	0.7	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Toluene	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1-Trichloroethane	µg/l	NT	200	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2-Trichloroethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	NT	2.8	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichlorofluoromethane	µg/l	NT	2100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2,3-Trichloropropane	µg/l	NT	0.005	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl acetate	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl chloride	µg/l	NT	0.015	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Xylenes	µg/l	NT	530	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

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5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**5.85**	**6.1**	**6.15**	**5.21**	**5.59**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**351**	**417**	**380**	**99**	**165**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**13.7**	**13**	**13.7**	**13.1**	**12.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	**16**	ND	ND	**23**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	100	2000	NP	**310**	**1800**	**330**	**150**	**2500**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	10	1.75	NP	**2.1**	**22**	**6.2**	ND	**19**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	20	50	NP	**5.1**	**79**	**14**	ND	**200**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	100	15	NP	ND	**27**	ND	ND	**41**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Nickel (Ni)	µg/l	50	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Silver (Ag)	µg/l	50	17.5	NP	**7.3**	**3.5**	**8.5**	**4.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**3.3**
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	NT	700	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acrylonitrile	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Benzene	µg/l	NT	1	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromochloromethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromodichloromethane	µg/l	NT	0.56	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromoform	µg/l	NT	0.19	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon Disulfide	µg/l	NT	700	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Bromomethane (Methylbromide)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Carbon tetrachloride	µg/l	NT	0.269	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chlorobenzene (mono)	µg/l	NT	50	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroethane	µg/l	NT	2800	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloroform	µg/l	NT	70	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Chloromethane (Methylchloride)	µg/l	NT	2.6	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromochloromethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromo-3-chloropropane; DBCP	µg/l	NT	0.025	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	NT	0.00047	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dibromomethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichlorobenzene	µg/l	NT	24	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,4-Dichlorobenzene	µg/l	NT	1.4	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,4-Dichloro-2-butene	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethane	µg/l	NT	70	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloroethane	µg/l	NT	0.38	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1-Dichloroethene (-ethylene)	µg/l	NT	7	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	NT	70	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2-Dichloropropane	µg/l	NT	0.51	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
cis-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
trans-1,3-Dichloropropene (-propylene)	µg/l	NT	0.19	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Ethylbenzene	µg/l	NT	550	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Hexanone	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Iodomethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Dichloromethane (Methylene chloride)	µg/l	NT	4.6	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
2-Butanone (Methyl ethyl ketone)	µg/l	NT	4200	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
4-Methyl-2-Pentanone	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Styrene	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2,2-Tetrachloroethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Tetrachloroethene (-ethylene)	µg/l	NT	0.7	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Toluene	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,1-Trichloroethane	µg/l	NT	200	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,1,2-Trichloroethane	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichloroethene (-ethylene)	µg/l	NT	2.8	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Trichlorofluoromethane	µg/l	NT	2100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,2,3-Trichloropropane	µg/l	NT	0.005	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl acetate	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Vinyl chloride	µg/l	NT	0.015	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Xylenes	µg/l	NT	530	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	6.27	6.34	6.28	5.69	5.89	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	5.25	580	510	100	189	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	16.9	14	14	16.4	15.2	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	6.5	ND	ND	9.9	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	NP	530	950	350	150	1200	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	2	3.1	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	NP	19	38	6.7	81	81	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	10	28	17	30	30	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	ND	7.3	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	2	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	10	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	25	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	5	1	NP	ND	ND	ND	7.2	9	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	10	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	10	2800	NP	20	11	ND	52	33	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	5	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	NP	ND	22	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	NP	8.8	5.2	10	22	23	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	NP	ND	ND	5	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NP	13	50	5.6	16	21	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	5	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	NP	ND	ND	ND	ND	21	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NP	ND	ND	ND	ND	8.9	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	5	1000	NP	ND	ND	4500	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	NP	ND	ND	ND	5.6	11	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	10	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	10	530	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**5.91**	**6.06**	**5.95**	**5.54**	**5.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**322**	**349**	**259**	**99**	**165**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**13.5**	**12.4**	**12**	**12.1**	**11.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	ND	ND	**8.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	NP	**260**	**370**	**310**	**120**	**890**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	NP	ND	**2.1**	**4.9**	ND	**57**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	ND	**9.4**	**7.4**	ND	**18**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Selenium (Se)	µg/l	5	50	NP	**6.9**	**13**	**16**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	2	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	10	700	NP	ND	**25**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	25	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	5	1	NP	ND	ND	ND	**14**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	10	700	NP	**12**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	10	2800	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	5	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	NP	ND	**5.9**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	NP	**6.2**	ND	**8.2**	**40**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NP	ND	ND	ND	ND	**11**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NP	**11**	**7.6**	ND	**24**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	**8.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	5	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	NP	ND	ND	ND	ND	**8.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NP	ND	ND	ND	**9.6**	**6.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	5	1000	NP	ND	ND	**34**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	NP	ND	ND	ND	**13**	**6.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	10	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	10	530	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
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4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.14**	**6.14**	**6.15**	**5.64**	**5.84**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**345**	**465**	**410**	**115**	**170**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**16.9**	**13.5**	**14.1**	**17.3**	**15.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	ND	ND	**6.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	NP	**280**	**300**	**310**	**140**	**1100**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	NP	**4**	**2.8**	**2**	**3.3**	**52**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	ND	**11**	**9.4**	ND	**23**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	**1.4**	**3.5**	**0.6**	**0.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**0.7**
Total Nickel (Ni)	µg/l	50	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	**5.5**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	2	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	100	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	200	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	5	1	NP	ND	ND	ND	**13**	**6.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	100	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	10	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	10	2800	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	5	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	10	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	NP	ND	**11**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	NP	ND	ND	**12**	**38**	**12**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NP	**9.7**	**12**	ND	**29**	**15**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	5	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	50	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NP	ND	ND	ND	**6.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	100	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	10	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NP	ND	ND	ND	**7.9**	**5.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	5	1000	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	NP	ND	ND	ND	**10**	**5.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	5	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	15	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	50	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	10	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	5	530	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

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5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.09**	**6.06**	**6.07**	**5.38**	**5.6**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**270**	**360**	**278**	**95**	**131**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**12.3**	**13.3**	**12.8**	**11.3**	**11.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	ND	ND	**6.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	NP	**310**	**300**	**300**	**160**	**520**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	**2.4**	**7**	**4**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	NP	**7.6**	**18**	**12**	**4.1**	**11**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	ND	ND	ND	ND	**7.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	**16**	**39**	**24**	**5.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5.8**
Total Silver (Ag)	µg/l	2	17.5	NP	ND	**5.8**	**3.6**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	100	700	NP	ND	ND	ND	**53**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	200	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	5	1	NP	ND	ND	ND	**20**	**7.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	100	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	10	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	10	2800	NP	ND	ND	ND	**16**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	5	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	10	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	25	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	NP	ND	**14**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	100	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	NP	**5.5**	ND	**11**	**70**	**15**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NP	**10**	**26**	**6**	**48**	**20**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	10	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	5	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	50	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	10	4.6	NP	ND	ND	ND	**12**	**12**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	100	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	10	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NP	ND	ND	ND	**15**	**6.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	5	1000	NP	ND	ND	**6.5**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	NP	ND	ND	ND	**17**	**7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	5	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	15	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	50	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	10	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	5	530	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.21**	**6.42**	**6.45**	**5.58**	**5.63**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**355**	**485**	**300**	**122**	**150**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**16**	**13.7**	**14**	**15.2**	**13.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	NP	**280**	**280**	**210**	**140**	**330**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	ND	**14**	**7.4**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	ND	**0.2**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	**10**	**8.9**	**9.5**	**6.9**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	2	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	10	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	25	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	5	1	NP	ND	ND	ND	**13**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	10	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	10	2800	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	5	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	NP	ND	**13**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	NP	**6.3**	ND	**8.6**	**42**	**10**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NP	**11**	**27**	**9.4**	**31**	**13**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	5	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	NP	ND	ND	ND	**7.3**	**7.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NP	ND	ND	ND	**9**	**5.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	5	1000	NP	ND	ND	**120**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	NP	ND	ND	ND	**11**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	10	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	10	530	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.03**	**6.16**	**6.35**	**5.71**	**5.65**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**460**	**590**	**380**	**181**	**168**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**13.8**	**13.3**	**13.3**	**15.1**	**12.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	NP	ND	ND	ND	ND	**16**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	50	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	2	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	10	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	25	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	5	1	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	10	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	10	2800	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	5	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	NP	ND	**10**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	NP	ND	ND	**13**	ND	**7.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NP	ND	**17**	ND	ND	**7.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	5	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	5	1000	NP	ND	ND	**6.5**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	10	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	10	530	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
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3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**5.9**	**6.44**	**6.29**	**5.62**	**5.95**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**409**	**642**	**545**	**177**	**213**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**18.3**	**14.7**	**15.4**	**16.5**	**15.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	NP	**290**	**220**	**240**	**160**	**250**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	2	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	**5.2**	**5.7**	ND	**7.6**	**6.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Nickel (Ni)	µg/l	50	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	2	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	25	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	25	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	5	1	NP	ND	ND	ND	**16**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	10	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	10	2800	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	5	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	NP	ND	**7.6**	**23**	**42**	**5.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	NP	ND	ND	**5**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NP	**6.8**	**16**	**5.8**	**34**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	5	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	NP	ND	ND	ND	**17**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NP	ND	ND	ND	**8.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	5	1000	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	NP	ND	ND	ND	**11**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	10	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	10	530	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

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4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.07**	**6.6**	**6.29**	**6.14**	**5.36**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	1	NE	NP	**388**	**756**	**548**	**175**	**180**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**14.1**	**12.1**	**13.1**	**13.8**	**12.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	**5.9**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Barium (Ba)	µg/l	5	2000	NP	**210**	**240**	**300**	**140**	**280**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Chromium (Cr)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Nickel (Ni)	µg/l	50	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	10	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Silver (Ag)	µg/l	5	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	25	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	25	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	5	1	NP	ND	ND	ND	**15**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	5	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	10	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	5	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	10	2800	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	5	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	5	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	5	24	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	5	1.4	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	5	70	NP	ND	ND	**17**	**36**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	5	0.38	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	70	NP	ND	**12**	ND	**30**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	5	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	5	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	5	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	5	4.6	NP	ND	ND	ND	**15**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	5	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	5	0.7	NP	ND	ND	ND	**8.5**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	5	1000	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	5	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	5	2.8	NP	ND	ND	ND	**11**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	10	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	5	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	5	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	10	530	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.14**	**6.2**	Dry	**5.46**	**5.76**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	10	NE	NP	**284**	**512**	Dry	**159**	**148**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**17.8**	**13.3**	Dry	**16.5**	**15**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	0.1	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Barium (Ba)	µg/l	5	2000	NP	**176**	**256**	Dry	**137**	**208**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	**1.5**	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Chromium (Cr)	µg/l	5	50	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Nickel (Ni)	µg/l	NT	100	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	10	50	NP	ND	**29.2**	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Silver (Ag)	µg/l	5	17.5	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	25	700	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1	1	NP	ND	ND	Dry	**17**	**1.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1	0.56	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1	0.19	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2	700	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1	0.269	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1	50	NP	**2.5**	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1	2800	NP	**2.3**	**4.8**	Dry	**5.5**	**2.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1	70	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1	24	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1	1.4	NP	ND	**12.1**	Dry	**3.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1	70	NP	**1.8**	**4.4**	Dry	**40.3**	**4.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1	0.38	NP	**1.1**	ND	Dry	**1.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	NP	**5.1**	**9.7**	Dry	**31.6**	**4.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1	0.51	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1	550	NP	ND	ND	Dry	**1.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	NP	ND	ND	Dry	**38.8**	**2.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1	100	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	NP	ND	ND	Dry	**8.1**	**3.6**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1	1000	NP	ND	ND	Dry	**7.4**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1	200	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	NP	ND	ND	Dry	**9.9**	**2.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1	2100	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1	0.005	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1	0.015	NP	ND	**1.5**	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2	530	NP	ND	ND	Dry	**6.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**5.64**	**5.81**	**5.4**	**5.27**	**5.47**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	10	NE	NP	**289**	**473**	**611**	**172**	**158**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**12.8**	**12.9**	**12.6**	**13**	**12.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	NP	**165**	**229**	**41.7**	**155**	**238**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	NP	ND	ND	**10.3**	ND	**6.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	10	50	NP	ND	**13.5**	**81.7**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	25	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1	1	NP	ND	ND	ND	**18.5**	**2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1	50	NP	**2.5**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1	2800	NP	**2.5**	**2.1**	**7.6**	**4.2**	**2.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1	24	NP	ND	**1.2**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1	1.4	NP	ND	**10.8**	**1.1**	**4.5**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1	70	NP	**1.5**	**1.5**	**15.4**	**39.0**	**4.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1	0.38	NP	ND	ND	**3.2**	**1.5**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	NP	**3.8**	ND	**1.6**	**33.4**	**4.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1	550	NP	ND	ND	ND	**2.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	NP	ND	ND	ND	**31.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	NP	ND	ND	ND	**8.2**	**3.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1	1000	NP	ND	ND	ND	**20.5**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	NP	ND	ND	ND	**9.9**	**2.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2	530	NP	ND	ND	ND	**11.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
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4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

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

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.02**	**6.38**	Dry	**5.30**	**5.71**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	10	NE	NP	**324**	**590**	Dry	**180**	**180**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**16.1**	**20.7**	Dry	**16.2**	**14.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5	50	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5	2000	NP	**150**	**265**	Dry	**142**	**195**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1	1.75	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5	50	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5	15	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.2	1.05	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	NT	100	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	10	50	NP	ND	**13.9**	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5	17.5	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	25	700	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1	1	NP	ND	ND	Dry	**18.9**	**2.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1	0.56	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1	0.19	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2	700	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1	0.269	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1	50	NP	**3.1**	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1	2800	NP	**2.6**	**4.2**	Dry	**6.2**	**2.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1	70	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1	2.6	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3	0.025	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	0.00047	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1	24	NP	ND	**1.9**	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1	1.4	NP	ND	**8.6**	Dry	**5.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1	70	NP	**1.4**	**2.6**	Dry	**39.3**	**5.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1	0.38	NP	ND	ND	Dry	**1.5**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	7	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	70	NP	**2.8**	**7.6**	Dry	**34.5**	**5.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	100	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1	0.51	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1	0.19	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1	550	NP	ND	ND	Dry	**2.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2	4.6	NP	ND	ND	Dry	**43.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	4200	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1	100	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1	0.7	NP	ND	ND	Dry	**7.9**	**3.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1	1000	NP	ND	ND	Dry	**11.9**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1	200	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1	2.8	NP	ND	ND	Dry	**10**	**3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1	2100	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1	0.005	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2	NE	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1	0.015	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	3	530	NP	ND	ND	Dry	**7.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

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5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-23-2009)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.00**	**5.89**	**5.94**	**5.48**	**5.56**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	-	NE	NP	**237**	**335**	**305**	**136**	**238**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**10.4**	**10.8**	**10.5**	NT	**8.6**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5.0	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5.0	2000	NP	**220**	**215**	**206**	**146**	**270**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1.0	1.75	NP	**2.2**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5.0	50	NP	ND	ND	ND	ND	**7.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5.0	15	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.20	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	10.0	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5.0	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	25.0	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1.0	1	NP	ND	ND	ND	**14.3**	**2.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1.0	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2.0	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1.0	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1.0	50	NP	**2.7**	ND	**1.0**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1.0	2800	NP	**1.8**	ND	**7.6**	**2.3**	**2.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1.0	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1.0	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3.0	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1.0	24	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1.0	1.4	NP	ND	**6.0**	**1.3**	**5.2**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1.0	70	NP	**1.1**	**1.0**	**14.4**	**29.9**	**5.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1.0	0.38	NP	ND	ND	**4.1**	**1.6**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	NP	**2.2**	**9.2**	ND	**27.7**	**5.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1.0	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1.0	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	4.6	NP	ND	ND	ND	**29.2**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1.0	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	NP	ND	ND	ND	**6.6**	**3.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1.0	1000	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1.0	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1.0	2.8	NP	ND	ND	ND	**8.1**	**3.0**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1.0	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1.0	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2.0	530	NP	ND	ND	ND	**3.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-24-2009)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.02**	**6.12**	**6.00**	**5.28**	**5.59**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	-	NE	NP	**413**	**534**	**515**	**185**	**217**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**15.7**	**16.7**	**14.8**	**15.7**	**13.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5.0	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5.0	2000	NP	**203**	**173**	**210**	**136**	**264**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1.0	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5.0	50	NP	ND	ND	ND	ND	**6.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5.0	15	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.20	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	10.0	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5.0	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	25.0	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1.0	1	NP	ND	ND	ND	**16.3**	**3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1.0	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2.0	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1.0	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1.0	50	NP	**3.4**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1.0	2800	NP	**2.3**	**4.7**	**6.1**	**2.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1.0	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1.0	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3.0	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1.0	24	NP	ND	**1.6**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1.0	1.4	NP	ND	**10.3**	**1.1**	**4.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1.0	70	NP	**1.5**	**2.4**	**19.3**	**30.5**	**7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1.0	0.38	NP	ND	ND	**5.1**	**1.6**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	NP	**2.1**	**11.2**	**2.2**	**31.8**	**7.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1.0	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1.0	550	NP	ND	ND	ND	**1.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	4.6	NP	ND	ND	ND	**40.8**	**2.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1.0	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	NP	ND	ND	ND	**6.6**	**4.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1.0	1000	NP	ND	ND	ND	**4.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1.0	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1.0	2.8	NP	ND	ND	ND	**7.8**	**3.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1.0	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1.0	0.015	NP	ND	**1.1**	**1.1**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2.0	530	NP	ND	ND	ND	**7.2**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-22-2010)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.16**	**6.01**	**6.13**	**5.47**	**5.84**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	-	NE	NP	**462**	**527**	**498**	**182**	**236**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**14.8**	**12**	**12.5**	**14.3**	**12.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5.0	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5.0	2000	NP	**269**	**250**	**224**	**139**	**260**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1.0	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5.0	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5.0	15	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.20	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	10.0	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5.0	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	25.0	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1.0	1	NP	ND	ND	**1.5**	**17.6**	**3.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1.0	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2.0	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1.0	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1.0	50	NP	**4.5**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1.0	2800	NP	**3.5**	**1.3**	**4.8**	**4.8**	**3.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1.0	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1.0	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3.0	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1.0	24	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1.0	1.4	NP	ND	**2.4**	ND	**5.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1.0	70	NP	**1.6**	ND	**15.5**	**34.5**	**10.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1.0	0.38	NP	**1.2**	ND	**2.5**	**1.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	NP	**1.2**	**5.8**	**2**	**36.5**	**7.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1.0	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1.0	550	NP	ND	ND	ND	**1.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	4.6	NP	ND	ND	ND	**42.8**	**2.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1.0	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	NP	ND	ND	ND	**7.8**	**5.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1.0	1000	NP	ND	ND	**48.4**	**11.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1.0	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1.0	2.8	NP	ND	ND	ND	**9.1**	**4.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1.0	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1.0	0.015	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2.0	530	NP	ND	ND	ND	**13.6**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

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7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-30-2010)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	NP	**6.12**	**6.01**	**6.21**	**5.41**	**5.64**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	-	NE	NP	**385**	**544**	**529**	**197**	**266**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	NP	**16.6**	**14.9**	**15.5**	**16.1**	**14.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Arsenic (As)	µg/l	5.0	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5.0	2000	NP	**192**	**203**	**206**	**125**	**246**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Cadmium (Cd)	µg/l	1.0	1.75	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5.0	50	NP	ND	ND	ND	ND	**8.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Copper (Cu)	µg/l	NT	1000	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Lead (Pb)	µg/l	5.0	15	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.20	1.05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	NT	100	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Selenium (Se)	µg/l	10.0	50	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5.0	17.5	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Vanadium (V)	µg/l	NT	NE	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Zinc (Zn)	µg/l	NT	1050	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Acetone	µg/l	25.0	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1.0	1	NP	ND	**1.3**	**1.3**	**19.9**	**4.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1.0	0.56	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2.0	700	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1.0	0.269	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1.0	50	NP	**2.5**	ND	**1.2**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1.0	2800	NP	**1.9**	**4.7**	**5.6**	**2.9**	**4.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1.0	70	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1.0	2.6	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	0.025	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.00047	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1.0	24	NP	ND	**2.1**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1.0	1.4	NP	ND	**12.3**	**1.3**	**4.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1.0	70	NP	**1.6**	**2.5**	**27.8**	**32.1**	**11.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1.0	0.38	NP	**1**	ND	**6.2**	**1.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	NP	**1.5**	**6.2**	**3.4**	**33.6**	**6.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1.0	0.51	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.19	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1.0	550	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	4.6	NP	ND	ND	ND	**41**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1.0	100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	NP	ND	ND	ND	**8**	**6.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1.0	1000	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1.0	200	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1.0	2.8	NP	ND	ND	ND	**9.1**	**5.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1.0	2100	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2.0	NE	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1.0	0.015	NP	ND	ND	**1.5**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2.0	530	NP	ND	ND	ND	**6.4**	**2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

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7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-22-2011)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	5.89	5.86	5.78	5.65	5.40	5.51	5.49	5.45	5.82	5.60	5.10	6.50	5.94	6.30	NP	7.12	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	-	NE	94	375	498	370	223	264	77	273	216	142	62	676	526	827	NP	732	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	13.1	13.6	12.6	12.2	13.5	12.3	12.8	10.9	10.9	9.3	8.1	14.4		14.8	NP	13.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	-	NE	23	0.31	4.8	7.56	8.42	3.68	4	7.19	6.53	275	97	4.16	4.88	3.69	NP	5.78	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.1	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.8	ND	5.3	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5.0	700	197	171	191	241	163	237	54	213	72.8	1190	193	138	977	309	NP	68.7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.6	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cadmium (Cd)	µg/l	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5.0	10	8.1	ND	ND	ND	ND	ND	ND	ND	6.3	161	17.6	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	5.0	NE	9.8	10.5	55.5	110	13.5	16.8	ND	5.4	ND	40.5	5.2	9.4	ND	6.1	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Copper (Cu)	µg/l	5.0	1000	ND	ND	ND	5.1	ND	155	ND	ND	ND	64.3	10.7	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Lead (Pb)	µg/l	5.0	15	ND	ND	ND	ND	ND	7.2	ND	ND	ND	16.2	6.3	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.20	1	ND	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Nickel (Ni)	µg/l	5.0	100	7.6	ND	ND	39	5	5.4	8	ND	ND	97.3	8.4	ND	15.9	7.5	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Selenium (Se)	µg/l	10.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Vanadium (V)	µg/l	5.0	NE	7.8	ND	ND	ND	6.1	ND	ND	ND	5.6	205	22.8	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1000	26.5	ND	ND	ND	30.7	90.4	ND	19.8	ND	162	36.7	10.3	ND	16	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acetone	µg/l	25.0	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1.0	1	ND	ND	ND	ND	15.5	5.1	ND	ND	ND	ND	ND	ND	5.3	1.3	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1.0	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2.0	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1.0	50	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1.0	3,000	ND	1.5	ND	7.3	3.1	4	ND	1.3	ND	ND	ND	ND	1.3	1.3	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.02000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1.0	20	ND	ND	ND	1.1	ND	ND	ND	1.4	ND	ND	ND	4.2	ND	104	NP	3.3	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1.0	6	ND	ND	7.0	1.2	4.7	1.3	ND	1.7	ND	ND	ND	1.4	5.9	21.4	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1.0	6	ND	1.2	1.4	17.5	31.9	12.9	ND	4.4	ND	ND	3.1	7.5	4.8	1.5	NP	1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1.0	0.4	ND	ND	ND	2.8	2	ND	ND	3	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	ND	1	5.6	1.6	34.6	14.4	ND	2.7	ND	ND	2.3	10.9	17.3	32.5	NP	8.9	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1.0	600	ND	ND	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	5	ND	ND	ND	ND	46.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	ND	ND	ND	ND	6.7	5.6	ND	ND	ND	ND	ND	ND	2.2	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1.0	600	ND	ND	ND	ND	11.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1.0	3	ND	ND	ND	ND	7	4.8	ND	ND	ND	ND	ND	ND	1.7	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1.0	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1.0	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2.0	500	ND	ND	ND	ND	12.6	2.5	ND	ND	ND	ND	ND	ND	8.8	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-22-2011)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	6.00	5.80	6.10	5.90	5.60	5.70	5.70	5.80	6.00	5.80	5.40	6.60	6.00	6.40	NP	7.30	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	-	NE	93	363	499	380	197	245	75	256	230	114	56	627	476	740	NP	660	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	13.5	13.8	14.4	13.2	15.7	13.4	17.8	15.6	15.3	16.8	17.4	15	14.8	15.2	NP	14.3	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Turbidity	NTU	-	NE	153	13	39	69	3.9	41	18	999	4.4	108	190	9.5	5.2	14	NP	12	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND	ND	ND	ND	ND	8.7	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5.0	700	191	189	189	214	133	280	66.8	1640	76.4	202	71.9	104	972	284	NP	57.7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	2.4	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cadmium (Cd)	µg/l	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5.0	10	8.3	ND	ND	ND	ND	ND	ND	105	ND	19.3	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	8.9	45.4	51.9	6.8	9.7	ND	43.1	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Copper (Cu)	µg/l	5.0	1000	ND	ND	ND	7.9	ND	7.3	ND	125	ND	7.9	ND	7.5	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Lead (Pb)	µg/l	5.0	15	ND	ND	ND	ND	ND	ND	ND	37.2	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	NT	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
Total Nickel (Ni)	µg/l	5.0	100	7.7	ND	5.7	11.6	8.2	7.4	5.5	62.1	ND	10.9	ND	5.2	20.1	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Selenium (Se)	µg/l	10.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Vanadium (V)	µg/l	5.0	NE	8.1	ND	ND	ND	ND	ND	ND	185	ND	23.1	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1000	ND	ND	ND	59.2	ND	16.9	ND	283	ND	15.9	ND	50.6	ND	21	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acetone	µg/l	25.0	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1.0	1	ND	ND	ND	ND	16.9	4.2	ND	ND	ND	ND	ND	ND	4.4	1.2	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1.0	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2.0	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1.0	50	ND	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1.0	3000	ND	2.2	2.5	ND	2.7	2.9	ND	1.2	ND	ND	ND	ND	1.2	1.6	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.02000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1.0	20	ND	ND	1.3	ND	ND	ND	ND	1.5	ND	ND	ND	4	ND	97.1	NP	2.8	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1.0	6	ND	ND	7.3	ND	5.1	1.1	ND	1.6	ND	ND	ND	1.5	5.6	21.7	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1.0	6	ND	1.4	1.7	14.7	33.2	9.6	ND	4.6	ND	1.5	2.8	9.6	4.3	1.3	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1.0	0.4	ND	ND	ND	2.1	2	ND	ND	3.2	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	ND	ND	4	2.4	36.7	11.5	ND	3.6	ND	2.3	2.1	10.1	15.8	31.1	NP	7.7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	5	ND	ND	ND	ND	48.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	ND	ND	ND	ND	7.5	4.6	ND	ND	ND	1.2	ND	1	1.7	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1.0	3	ND	ND	ND	ND	7.9	3.7	ND	ND	ND	ND	ND	ND	1.5	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1.0	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1.0	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2.0	500	ND	ND	ND	ND	7.7	2.1	ND	ND	ND	ND	ND	ND	7.7	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-22-2012)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	6.50	6.30	6.10	6.10	5.70	5.80	6.20	5.80	6.30	6.20	5.60	6.60	6.00	6.50	NP	7.50	6.20	NP	6.40	5.90	5.70	NP	6.50	NP	5.80	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	-	NE	81	522	568	356	228	246	63	299	207	138	61	678	514	774	NP	683	147	NP	82	71	201	NP	63	NP	25	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	11.4	12.7	12	11.3	13.2	12.2	12.3	11.4	10.5	10.5	12.2	13.4	13.1	13	NP	12.7	14.3	NP	13.8	13	11.8	NP	13.6	NP	13.4	NP	NP	NP	NP	NP	NT
Turbidity	NTU	-	NE	50.7	3.23	3.35	2.09	3.36	3.5	9.7	11.2	16.1	17.4	30.9	3.57	1.51	3.15	NP	4.77	10	NP	4.18	58.1	10.56	NP	44.2	NP	12.3	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5.0	700	196	222	266	175	134	214	48.7	207	62.7	126	102	90.2	970	237	NP	49.9	249	NP	93.5	135	141	NP	80.3	NP	56.3	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Cadmium (Cd)	µg/l	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5.0	10	11.1	ND	ND	ND	ND	ND	ND	5.2	6.9	10.6	6.2	ND	ND	ND	NP	ND	5.7	NP	ND	7.3	ND	NP	6.4	NP	ND	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	10.1	30.9	54	5.7	5.8	ND	ND	ND	ND	ND	ND	5.5	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Copper (Cu)	µg/l	5.0	1000	8.3	ND	ND	ND	ND	ND	ND	ND	5.7	6.9	ND	ND	ND	ND	NP	ND	6.8	NP	ND	5.4	ND	NP	7.4	NP	ND	NP	NP	NP	NP	NP	ND
Total Lead (Pb)	µg/l	5.0	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.20	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	5.0	100	9.6	ND	ND	11	9.2	ND	ND	ND	ND	5	ND	ND	24.6	5.2	NP	ND	ND	NP	ND	6.2	ND	NP	5.9	NP	ND	NP	NP	NP	NP	NP	ND
Total Selenium (Se)	µg/l	10.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Vanadium (V)	µg/l	5.0	NE	14.1	ND	ND	ND	ND	ND	ND	ND	8.8	12.5	8.6	ND	5	ND	NP	ND	11	NP	ND	9.8	6.1	NP	7.6	NP	ND	NP	NP	NP	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1000	10.9	16.7	ND	10.5	ND	ND	10.4	16.7	16.8	23.1	31.8	ND	11	143	NP	ND	21.4	NP	12.4	17.2	24.3	NP	26.9	NP	15.3	NP	NP	NP	NP	NP	ND
Acetone	µg/l	25.0	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1.0	1	ND	ND	ND	ND	16.9	3.9	ND	ND	ND	ND	ND	ND	5	1.3	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1.0	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2.0	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1.0	50	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1.0	3000	ND	1.7	ND	3.7	ND	2.3	ND	ND	ND	ND	ND	ND	1.2	1.2	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.02000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1.0	20	ND	ND	ND	ND	ND	ND	ND	1.6	ND	ND	ND	5	ND	75.9	NP	4	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1.0	6	ND	ND	3.1	ND	4.9	ND	ND	1.6	ND	ND	ND	1.6	6	18.7	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1.0	6	ND	1.2	ND	8.4	30.1	8.1	ND	3	ND	ND	2.1	8.5	4.7	ND	NP	ND	1.8	NP	ND	ND	3.4	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1.0	0.4	ND	ND	ND	ND	1.7	ND	ND	2.2	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	3.2	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	ND	ND	4.6	ND	33.1	10.2	ND	2.4	ND	ND	1.7	10.6	18.4	20.7	NP	9	1.5	NP	ND	ND	1.3	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	5	ND	ND	ND	ND	32.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	ND	ND	ND	ND	5.9	3.7	ND	ND	ND	ND	ND	ND	1.6	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1.0	3	ND	ND	ND	ND	7.3	3.6	ND	ND	ND	ND	ND	ND	1.6	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1.0	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	3.8	NP	3.8	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1.0	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2.0	500	ND	ND	ND	ND	6.6	ND	ND	ND	ND	ND	ND	ND	7.8	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	1.0	6	ND	ND	ND	ND	5.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,3-dichlorobenzene	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Dichlorodifluoromethane	µg/l	1.0	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-29-2012)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	6.20	6.00	6.10	6.10	5.70	5.90	5.90	5.90	6.20	5.90	5.50	6.20	6.10	6.40	NP	7.20	6.10	NP	6.30	6.10	5.70	NP	6.10	NP	5.80	NP	NP	NP	NP	NP	NT
Specific Conductance	µmhos/cm	-	NE	87	360	570	446	213	234	67	278	274	114	56	611	465	756	NP	681	138	NP	75	65	230	NP	59	NP	27	NP	NP	NP	NP	NP	NT
Temperature	°C	-	NE	14.1	15.4	16.8	15.4	16.7	15.1	16.6	16.2	20	18.6	19.4	15.8	17	14.6	NP	14.2	15.2	NP	15.4	14.8	18.6	NP	16.6	NP	18.4	NP	NP	NP	NP	NP	NT
Turbidity	NTU	-	NE	630	2.15	12.9	13	5.84	33.9	7.29	15	15.4	28.7	20.7	8.69	4.05	5.89	NP	4.67	14.7	NP	14.8	8.53	3.84	NP	622	NP	22.8	NP	NP	NP	NP	NP	NT
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND	5.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	11.2	NP	ND	NP	NP	NP	NP	NP	ND
Total Barium (Ba)	µg/l	5.0	700	335	174	283	232	151	289	42.8	224	67.4	106	110	106	931	237	NP	64	184	NP	96.2	83.7	137	NP	615	NP	51	NP	NP	NP	NP	NP	ND
Total Beryllium (Be)	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	1.1	NP	ND	NP	NP	NP	NP	NP	ND
Total Cadmium (Cd)	µg/l	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Chromium (Cr)	µg/l	5.0	10	40.2	ND	6.2	5.5	ND	7.1	6.1	9.7	ND	7.9	6.5	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	56.3	NP	ND	NP	NP	NP	NP	NP	ND
Total Cobalt (Co)	µg/l	5.0	NE	11.7	8.5	40	104	9.6	17.3	ND	5.1	ND	ND	ND	ND	15.8	ND	NP	ND	ND	NP	ND	ND	ND	NP	21.4	NP	ND	NP	NP	NP	NP	NP	ND
Total Copper (Cu)	µg/l	5.0	1000	17.3	ND	5.6	9.2	ND	16.2	ND	5.6	ND	ND	5	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	78.5	NP	ND	NP	NP	NP	NP	NP	ND
Total Lead (Pb)	µg/l	5.0	15	9.2	ND	ND	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	13.3	NP	ND	NP	NP	NP	NP	NP	ND
Total Mercury (Hg)	µg/l	0.20	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Nickel (Ni)	µg/l	5.0	100	22.3	ND	13.3	23	10.3	9.2	ND	5.5	ND	ND	ND	ND	34.9	ND	NP	ND	ND	NP	ND	ND	ND	NP	60.8	NP	ND	NP	NP	NP	NP	NP	ND
Total Selenium (Se)	µg/l	10.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Silver (Ag)	µg/l	5.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Vanadium (V)	µg/l	5.0	NE	49	ND	8.1	5.9	ND	14.7	ND	9.9	ND	10.6	10	ND	ND	ND	NP	ND	5.5	NP	ND	ND	ND	NP	86.2	NP	ND	NP	NP	NP	NP	NP	ND
Total Zinc (Zn)	µg/l	10	1000	21	ND	28	194	ND	12.7	37.8	20.3	14.5	10.4	19.5	ND	10.8	12.4	NP	ND	ND	NP	ND	ND	13.6	NP	198	NP	11.7	NP	NP	NP	NP	NP	ND
Acetone	µg/l	25.0	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Acrylonitrile	µg/l	50.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Benzene	µg/l	1.0	1	ND	ND	ND	ND	15.6	3.3	ND	ND	ND	ND	ND	ND	4.4	1.1	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Bromodichloromethane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Bromoform	µg/l	1.0	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Carbon Disulfide	µg/l	2.0	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Carbon tetrachloride	µg/l	1.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Chlorobenzene (mono)	µg/l	1.0	50	ND	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Chloroethane	µg/l	1.0	3000	ND	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Chloroform	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Chloromethane (Methylchloride)	µg/l	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.02000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dichlorobenzene	µg/l	1.0	20	ND	ND	1.8	ND	ND	ND	ND	1.6	ND	ND	ND	5.9	ND	70.7	NP	4.4	ND	NP	ND	ND	1.2	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,4-Dichlorobenzene	µg/l	1.0	6	ND	ND	8.6	ND	5	ND	ND	1.4	ND	ND	ND	1.8	5.6	17.5	NP	ND	ND	NP	ND	ND	1.3	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1-Dichloroethane	µg/l	1.0	6	ND	1.3	1.50	15.2	26.5	7.4	ND	2.6	ND	ND	1.8	6.8	3.3	ND	NP	ND	1.6	NP	ND	ND	4.5	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dichloroethane	µg/l	1.0	0.4	ND	ND	ND	2.1	1.4	ND	ND	1.7	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	3.9	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	ND	ND	2.8	2.6	30.5	8	ND	2.2	ND	1.6	1.3	15.1	13.9	22.8	NP	5.3	1.2	NP	ND	ND	1.3	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2-Dichloropropane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Ethylbenzene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Dichloromethane (Methylene chloride)	µg/l	1.0	5	ND	ND	ND	ND	16.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Styrene	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	ND	ND	ND	ND	5.8	3.7	ND	ND	ND	ND	ND	ND	1.5	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Toluene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1,1-Trichloroethane	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Trichloroethene (-ethylene)	µg/l	1.0	3	ND	ND	ND	ND	7	3.4	ND	ND	ND	ND	ND	1.1	1.3	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Trichlorofluoromethane	µg/l	1.0	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Vinyl chloride	µg/l	1.0	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Total Xylenes	µg/l	2.0	500	ND	ND	ND	ND	5.3	ND	ND	ND	ND	ND	ND	ND	6.7	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Naphthalene	µg/l	1.0	6	ND	ND	ND	ND	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
1,3-dichlorobenzene	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND
Dichlorodifluoromethane	µg/l	1.0	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	ND

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
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5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-18-2013)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	6.50	6.30	6.00	6.10	5.70	5.90	6.00	6.00	6.30	6.10	5.70	6.60	6.20	6.50	9.75	7.50	6.20	8.59	6.30	6.10	5.80	6.20	6.50	6.70	5.70	5.80	6.10	NP	6.20	11.34	NT
Specific Conductance	µmhos/cm	-	NE	80	445	33.2	347	193	242	57	333	198	66	57	667	5	716	284	678	107	184.7	75	65	201	611	59	85	24	75.8	87.5	NP	56.4	891	NT
Temperature	°C	-	NE	11	13.8	13.4	12.9	12.8	12.2	12.6	13.4	10.4	9.9	10.9	15.2	12.2	14.2	14.5	14	12	14	11.5	11.7	11.1	11.8	10.9	11.4	12	9.8	9.5	NP	11.2	14.9	NT
Turbidity	NTU	-	NE	40	5.06	4.28	6.73	1.89	10.08	1.3	5.4	12.9	6.24	31.7	2.53	2.56	9.66	7.65	3.39	2.14	9.97	1.32	7.73	9.7	9.23	80	27.8	6.09	9.26	900	NP	4.53	15.3	NT
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Arsenic (As)	µg/l	10.0	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	700	216	267	221	172	128	229	16.2	200	41.3	75.7	86	95.5	815	238	34.6	42.6	118	56.1	65.6	91.5	131	265	100	54.5	45.6	103	1470	NP	31.6	64.6	ND
Total Beryllium (Be)	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	NP	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4	NP	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	10	16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6	1.7	2.6	ND	ND	7	ND	ND	ND	292	NP	ND	51.4	ND
Total Cobalt (Co)	µg/l	5.0	NE	7	26.1	49.7	84.3	6	14.8	ND	ND	ND	ND	ND	ND	20.7	6.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	72.7	NP	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	1000	9	ND	ND	12.8	ND	7.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.8	ND	ND	207	NP	ND	12.3	ND
Total Lead (Pb)	µg/l	5.0	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.4	NP	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Nickel (Ni)	µg/l	5.0	100	11.3	ND	ND	11.9	ND	6	ND	ND	ND	ND	ND	ND	36.5	ND	ND	ND	ND	ND	ND	ND	ND	6.6	8.4	ND	ND	ND	104	NP	ND	18.5	ND
Total Selenium (Se)	µg/l	10.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	20.8	ND	ND	ND	ND	ND	ND	ND	5.3	ND	ND	ND	ND	ND	6.2	ND	ND	ND	ND	ND	ND	ND	10.6	5.1	ND	ND	393	NP	ND	24.5	ND
Total Zinc (Zn)	µg/l	10	1000	13.6	123	25.7	14.2	24	11.5	19.5	ND	20.2	ND	ND	ND	ND	13.7	ND	ND	ND	ND	ND	12.4	ND	ND	24.8	21.4	ND	ND	195	NP	ND	39.2	ND
Acetone	µg/l	25.0	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Benzene	µg/l	1.0	1	ND	ND	ND	ND	17.1	4.1	ND	ND	ND	ND	ND	ND	3.5	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Bromodichloromethane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Bromoform	µg/l	1.0	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Carbon Disulfide	µg/l	2.0	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	3.9	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	50	ND	3.1	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	2.3	ND	ND	ND	ND	ND	NP	ND	ND	ND
Chloroethane	µg/l	1.0	3000	ND	2.1	ND	2.7	1.3	2.4	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND	NP	ND	ND	ND
Chloroform	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.02000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	20	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND	5.9	ND	76.7	5.9	9.2	ND	ND	ND	ND	1.1	3.2	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	6	ND	ND	2.2	ND	5.6	1.1	ND	1.9	ND	ND	ND	1.6	5.2	18.1	1.1	1.6	ND	ND	ND	ND	1.1	2.7	ND	ND	ND	ND	ND	NP	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	6	ND	1.4	ND	7.0	27.5	7.9	ND	2.9	ND	ND	1.8	5.7	2.7	ND	ND	ND	ND	1.1	ND	ND	3.6	3.4	ND	ND	ND	ND	ND	NP	ND	3.1	ND
1,2-Dichloroethane	µg/l	1.0	0.4	ND	ND	ND	ND	1.6	ND	ND	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	3.7	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	ND	ND	1.6	ND	31.4	10.4	ND	2.6	ND	ND	1.6	17.3	14.2	20.6	1.5	10.6	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	NP	ND	2	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Ethylbenzene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	1.0	5	ND	ND	ND	ND	21.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	2.4	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Styrene	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	ND	ND	ND	ND	5.8	4.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Toluene	µg/l	1.0	600	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	3	ND	ND	ND	ND	6.1	3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Vinyl chloride	µg/l	1.0	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Xylenes	µg/l	2.0	500	ND	ND	ND	ND	7.5	ND	ND	ND	ND	ND	ND	ND	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Naphthalene	µg/l	1.0	6	ND	ND	ND	ND	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,3-dichlorobenzene	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Dichlorodifluoromethane	µg/l	1.0	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND

Notes:

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6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-26-2013)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	6.30	6.20	6.40	6.20	5.60	5.80	5.60	4.60	6.80	5.80	5.70	6.40	6.20	6.50	9.40	7.40	6.50	7.30	7.40	6.20	5.90	5.70	6.70	7.00	5.60	5.90	5.40	NP	6.30	11.55	NT
Specific Conductance	µmhos/cm	-	NE	87.3	573	609	379	206	264	72.6	354.3	233.1	121.9	61	650	499	749	2621	718	95.2	174	67.1	63.8	209.6	627	60.5	91.5	18.4	73.8	96.6	NP	50.3	5440	NT
Temperature	°C	-	NE	13.7	15.9	14.7	13.8	16.3	15.5	17	16.4	20.9	18	19.5	16.4	15.8	16.2	15.4	15.1	14.4	14.2	14.6	14.1	17.5	16.3	16.1	15.7	14.7	18.4	18.9	NP	17.2	15.4	NT
Turbidity	NTU	-	NE	13	5.21	1.64	1.68	4.25	8.96	1.76	6.47	3.25	10.18	6.51	3.01	1.27	9.16	8.31	1.75	2.11	5.36	2.07	22	2.75	6.33	27	7200	9.1	6.98	24.7	NP	6.99	9.45	NT
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Arsenic (As)	µg/l	10.0	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	700	207	264	259	149	163	255	23.7	204	50.7	79.8	77.5	111	854	281	30.9	45.1	97.1	36.4	48.8	135	112	264	58.9	253	49.6	96.6	283	NP	42	106	ND
Total Beryllium (Be)	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	NP	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	10	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.9	ND	ND	ND	ND	ND	6.6	ND	ND	ND	23.8	ND	ND	40.6	NP	ND	151	ND
Total Cobalt (Co)	µg/l	5.0	NE	5.8	52.6	155	90.7	11.9	26.6	ND	ND	ND	ND	ND	5.3	16.9	19.5	ND	ND	ND	ND	ND	7.4	ND	13.3	ND	23.7	ND	5.4	22	NP	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	1000	6.3	ND	ND	ND	ND	8.4	ND	ND	ND	ND	ND	ND	ND	8.1	ND	ND	ND	ND	ND	5.6	ND	ND	ND	28	ND	ND	25.9	NP	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.7	ND	ND	ND	NP	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Nickel (Ni)	µg/l	5.0	100	5.1	ND	ND	ND	10.1	8.1	ND	ND	ND	ND	ND	ND	32.2	7.9	ND	ND	ND	ND	ND	6.3	ND	6.2	ND	11.7	ND	ND	14.3	NP	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	67.9	NP	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	102	NP	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	6.8	ND	ND	ND	ND	ND	ND	ND	ND	6	ND	ND	6.6	14.8	ND	ND	ND	ND	ND	8.8	ND	ND	5.8	37.2	ND	ND	ND	NP	ND	ND	ND
Total Zinc (Zn)	µg/l	10	1000	11	14.8	ND	ND	ND	29	34.3	10.8	14.1	11.6	17.1	ND	12.8	37.6	ND	ND	ND	ND	ND	21.8	22.1	102	45	129	11.4	25.5	ND	NP	34.7	12.1	ND
Acetone	µg/l	25.0	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Benzene	µg/l	1.0	1	ND	ND	ND	ND	15.7	3.7	ND	ND	ND	ND	ND	ND	3.8	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	8.6	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Bromodichloromethane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Bromoform	µg/l	1.0	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Carbon Disulfide	µg/l	2.0	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	5.8	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	50	ND	3.8	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	2.3	ND	ND	ND	ND	ND	NP	ND	ND	ND
Chloroethane	µg/l	1.0	3000	ND	2.3	ND	5.7	ND	2.1	ND	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.8	ND	ND	ND	ND	ND	NP	ND	2.4	ND
Chloroform	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.02000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	20	ND	ND	ND	ND	ND	ND	ND	2.6	ND	ND	ND	4.2	ND	78.6	2.3	8.2	ND	ND	ND	ND	1.2	3.4	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	6	ND	ND	5.7	ND	6.2	1.1	ND	2.2	ND	ND	ND	1.5	6.4	20.7	ND	1.1	ND	ND	ND	ND	1.2	3	ND	ND	ND	ND	ND	NP	ND	3.9	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	6	ND	1.3	ND	7.9	20.8	7.8	ND	2.6	ND	ND	1.5	6.6	2.1	ND	ND	ND	ND	1.1	ND	ND	2.8	2.7	ND	ND	ND	ND	ND	NP	ND	16.3	ND
1,2-Dichloroethane	µg/l	1.0	0.4	ND	1.2	ND	ND	1.5	ND	ND	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	3	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	ND	ND	5.1	2	25.8	8.6	ND	1.8	ND	1.1	1.4	17.2	11.3	18.1	ND	4.5	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	NP	ND	23.2	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Ethylbenzene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	1.0	5	ND	ND	ND	ND	40.6	2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	28.3	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Styrene	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	ND	ND	ND	ND	5.9	4.4	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	3.3	ND
Toluene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	3	ND	ND	ND	ND	6	3.8	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	3.7	ND
Trichlorofluoromethane	µg/l	1.0	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Vinyl chloride	µg/l	1.0	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Total Xylenes	µg/l	2.0	500	ND	ND	ND	ND	7.7	ND	ND	ND	ND	ND	ND	ND	4.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Naphthalene	µg/l	1.0	6	ND	ND	ND	ND	5.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	7.7	ND
1,3-dichlorobenzene	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND
Dichlorodifluoromethane	µg/l	1.0	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	ND

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (2-20-2014)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	6.60	6.20	6.20	6.20	5.50	5.80	5.80	5.90	6.30	5.90	5.50	6.40	6.10	6.30	9.60	7.40	6.10	7.20	6.00	5.90	5.80	6.10	6.30	6.60	5.40	5.80	5.80	6.80	6.10	10.15	NT
Specific Conductance	µmhos/cm	-	NE	107	485	514	299	222	258	>4	383	208.0	115	62	617	478	742	214	701	89	186	77	60	440.0	639	61	91	18	72	87	124	55	663	NT
Temperature	°C	-	NE	12	14.1	12.5	12.3	13.6	12.5	11.3	12.5	10.5	11.4	11.6	15	15.8	13	13.1	13.2	11.3	11.8	11.6	14	13.6	12.8	13.4	12	14.1	7.8	11	10.3	12.5	14.8	NT
Turbidity	NTU	-	NE	9.2	3.36	1.75	1.25	3.69	1.42	3.3	4.6	2.87	3.7	67	2.87	1.99	4.88	4.27	3.29	15.8	6.71	2.96	6.54	2.22	3.12	3.38	55	100	5.59	2.28	206	4.2	4.56	NT
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10.0	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	700	185	215	253	159	149	210	16.8	214	13	92.5	97.3	85.3	823	240	42.4	40.1	176	38.6	48.8	80.1	183	278	32.5	109	122	74.7	86.9	70.8	42.8	19.2	ND
Total Beryllium (Be)	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	10	6.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.6	ND	ND	ND	ND	ND	ND	10.8	11	ND	ND	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	18.3	36.6	48.8	8.5	6.9	ND	ND	ND	ND	ND	ND	11.9	ND	ND	ND	ND	ND	ND	ND	10.2	13.9	ND	ND	6	ND	ND	ND	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.8	8.3	ND	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5.0	100	8	ND	ND	6.2	8.1	ND	ND	ND	ND	ND	ND	ND	28.6	ND	ND	ND	ND	ND	ND	ND	ND	6.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	7.4	ND	ND	ND	ND	ND	ND	ND	ND	6.5	7.6	ND	6.2	ND	ND	ND	12.8	ND	ND	ND	ND	ND	ND	15.8	16.5	ND	5.3	ND	ND	9.2	ND
Total Zinc (Zn)	µg/l	10	1000	ND	ND	ND	19.2	ND	ND	ND	54	ND	ND	ND	ND	ND	ND	ND	ND	14	ND	ND	ND	12.5	ND	ND	42.2	22.2	35.2	ND	ND	13.8	ND	ND
Acetone	µg/l	25.0	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1.0	1	ND	ND	ND	ND	16.5	4.4	ND	ND	ND	ND	ND	ND	3.6	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.7	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1.0	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2.0	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	50	ND	2.5	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	1.8	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1.0	3000	ND	1.2	ND	1.1	ND	1.4	ND	1.2	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	1.7	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	20	ND	ND	ND	ND	ND	ND	ND	2.8	ND	ND	ND	3.3	ND	70.5	1.6	7.2	ND	ND	ND	ND	3.1	3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	6	ND	ND	4.0	ND	6.1	1.4	ND	2.3	ND	ND	ND	1	7.3	18	ND	ND	ND	ND	ND	ND	2.8	2.5	ND	ND	ND	ND	ND	ND	ND	2.8	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	6	ND	1.2	ND	3.2	21.2	6.8	ND	2.3	ND	ND	1.1	5.2	1.7	ND	ND	ND	ND	1.2	ND	ND	3.4	2.3	ND	1.1	ND	ND	ND	ND	ND	8.7	ND
1,2-Dichloroethane	µg/l	1.0	0.4	ND	ND	ND	ND	1.7	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	ND	ND	2.8	ND	27.6	10.2	ND	1.6	ND	1	1.2	14.8	10.9	15.1	ND	3.7	ND	ND	ND	ND	1.9	ND	ND	ND	ND	ND	ND	ND	ND	14.1	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	1.0	5	ND	ND	ND	ND	34.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	ND	ND	ND	ND	6	5.1	ND	ND	ND	ND	ND	1.1	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND
Toluene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	3	ND	ND	ND	ND	6	4.1	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9	ND
Trichlorofluoromethane	µg/l	1.0	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1.0	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	µg/l	2.0	500	ND	ND	ND	ND	6.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	µg/l	1.0	6	ND	ND	ND	ND	6.5	ND	1.6	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.9	ND
1,3-dichlorobenzene	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	µg/l	1.0	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (8-28-14)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	6.60	6.40	6.50	6.50	5.60	5.90	5.90	6.20	6.50	6.00	6.00	6.60	6.40	6.40	9.30	7.50	6.50	7.40	6.60	6.50	5.80	6.30	6.40	7.00	5.80	5.90	6.10	7.20	6.30	8.30	NT
Specific Conductance	µmhos/cm	-	NE	113	456	642	363	228	217	65	340	249.0	107	59	600	448	732	204	672	93	182	81	58	238	632	64	94	17	68	99	120	40	540	NT
Temperature	°C	-	NE	13.6	17.5	14.2	14.1	16.5	13.9	16.9	15.8	18.3	17.9	18.9	15.7	16.7	16.1	17.2	15.4	15.6	14.5	14.9	16.2	19.4	17.5	17.1	17.5	14.5	16	21.1	15.9	17.7	15.7	NT
Turbidity	NTU	-	NE	10	1.23	9.35	5.71	9.17	10.05	5.79	4.36	4.88	1.61	5.97	315	4.16	2.87	4.37	4.73	14.2	3.31	7.15	8.18	1.95	2.09	24.8.	50	2.01	10	6.39	2.43	2.04	65	NT
Total Antimony (Sb)	µg/l	5.0	NE	ND	8.6	ND	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10.0	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	700	339	224	145	185	160	199	39.2	183	34.2	54.4	67.6	82.3	906	223	53.6	38	134	32.5	60	92.8	136	272	46.3	119	28.5	80	107	69.2	22.7	30.8	ND
Total Beryllium (Be)	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	10	20.4	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.6	ND	ND	ND	ND	ND	8.8	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	18.6	47.4	48	ND	8.1	ND	ND	ND	ND	ND	ND	9	ND	ND	ND	ND	ND	ND	ND	ND	11.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	1000	7.6	ND	12.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.1	ND	ND	ND	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	15	ND	ND	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	NT	1	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Total Nickel (Ni)	µg/l	5.0	100	17.3	ND	7.4	5.6	ND	5.5	ND	ND	ND	ND	ND	ND	30.2	ND	ND	ND	ND	ND	ND	ND	ND	11.2	ND	6.9	ND	ND	ND	ND	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	ND	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12	ND
Total Silver (Ag)	µg/l	5.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	24.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13.3	ND	ND	ND	7.3	ND	ND	ND	ND	ND	ND	17.3	ND	ND	15.4	ND	ND	5.3	ND
Total Zinc (Zn)	µg/l	10	1000	20.7	ND	ND	27.2	ND	ND	83	ND	ND	ND	ND	ND	12	ND	ND	ND	11.8	ND	ND	10.4	ND	ND	ND	27.7	ND	ND	ND	ND	ND	ND	ND
Acetone	µg/l	25.0	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1.0	1	ND	ND	1.2	ND	15.9	3.2	ND	ND	ND	ND	ND	ND	1.9	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1.0	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2.0	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	50	ND	1.8	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1.0	3000	ND	1.5	3.9	3	ND	1.8	ND	1.8	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	2.0	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	20	ND	ND	2	ND	ND	ND	ND	2.6	ND	ND	ND	2.5	ND	60.5	1.4	6.3	ND	ND	ND	ND	1.5	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	6	ND	ND	11.5	ND	6	ND	ND	2.3	ND	ND	ND	ND	6.6	16	ND	ND	ND	ND	ND	ND	1.8	3	ND	ND	ND	ND	ND	ND	ND	1.4	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	6	ND	ND	1.40	9.7	21.8	8.1	ND	3	ND	1.1	1.6	6	1.8	ND	ND	ND	ND	1.4	ND	ND	3.9	2.9	ND	1.2	ND	ND	ND	ND	ND	14.7	ND
1,2-Dichloroethane	µg/l	1.0	0.4	ND	ND	ND	1	2	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	ND	ND	4.4	1.4	32.7	7.9	ND	2.4	ND	1.5	1.6	17.4	12.1	16.5	ND	3	ND	1	ND	ND	1.7	ND	ND	1.1	ND	ND	ND	ND	ND	14.8	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	5	ND	ND	ND	ND	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.5	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	ND	ND	ND	ND	5.8	4.2	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	ND
Toluene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	3	ND	ND	ND	ND	6	3.6	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND
Trichlorofluoromethane	µg/l	1.0	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1.0	0.03	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	µg/l	2.0	500	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	µg/l	NT	6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,3-dichlorobenzene	µg/l	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Dichlorodifluoromethane	µg/l	NT	1000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Groundwater Sampling Event (3-20-15)

TEST	UNITS	MRL	MCL	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	EQUIP. BLANK
pH	pH units	-	NE	6.30	6.00	6.10	5.90	5.60	5.80	6.00	5.80	6.60	6.40	5.90	6.30	6.60	6.90	9.60	7.00	6.30	6.70	6.80	6.60	5.80	6.10	6.90	6.70	6.20	6.00	6.60	6.70	6.90	8.10	NT
Specific Conductance	µmhos/cm	-	NE	99	309	538	202	221.5	198.3	52	297	168.0	121	58	517.8	81.78	687	239.7	651.1	109.5	181.8	68.1	60.1	229.0	574	64.3	83.5	18.7	64.6	100	109.5	63.1	429.4	NT
Temperature	°C	-	NE	10.1	11.6	13.3	13	11.7	10.4	10.7	12	10.1	9.1	10.7	12.9	11.8	11.8	11.8	11.3	10.9	10.4	10.7	10.5	11.4	12.1	13	12.3	12.8	6.7	7.3	8.5	10.5	11.2	NT
Turbidity	NTU	-	NE	4.34	0.92	4.55	4.2	4.22	1.8	11.2	11.7	8.89	19.4	28.2	3.87	1.87	4.91	5.64	7.4	15.2	4.87	2.7	5.68	2.87	4.27	16.7	80.8	3.98	6.07	33.9	6.92	1.63	9.42	NT
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10.0	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	700	138	161	182	162	134	171	60.5	181	25.8	137	87.2	55.4	831	262	44.8	46.9	171	32.7	45.1	68	136	271	68.3	187	32.3	67.1	198	73.5	27.2	32.9	ND
Total Beryllium (Be)	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	10	5.1	ND	ND	ND	ND	ND	6.9	ND	6.2	12.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6	17.3	ND	ND	24.7	ND	ND	12	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	7.2	55	84.3	9.6	5.3	ND	ND	ND	ND	ND	ND	9.4	ND	ND	ND	ND	ND	ND	ND	ND	12.6	ND	ND	ND	ND	5.6	ND	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	1000	ND	ND	5.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.8	21.2	ND	ND	16.9	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.3	ND	ND	ND	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5.0	100	13.2	ND	ND	15.4	13.9	5.2	ND	ND	ND	6.5	ND	ND	13.1	9.7	ND	ND	ND	ND	ND	ND	ND	13	ND	10.7	ND	ND	10.2	ND	ND	8.8	ND
Total Selenium (Se)	µg/l	10.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	5.8	10.1	13.4	15	ND	ND	8.9	ND	ND	14.3	5.2	ND	ND	7.7	ND	ND	10.9	ND	ND	ND	ND	ND	8.1	27.2	ND	ND	42.9	ND	ND	ND	ND
Total Zinc (Zn)	µg/l	10	1000	21.2	ND	21.4	44.7	20.4	ND	39.4	ND	ND	14.5	ND	19.6	39.6	122	105	ND	61.5	ND	ND	ND	57.3	18.8	26.7	48.1	ND	16.7	112	ND	ND	15	ND
Acetone	µg/l	25.0	6000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	µg/l	50.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	µg/l	1.0	1	ND	ND	ND	ND	13.1	1.4	ND	ND	ND	ND	ND	ND	1.3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	µg/l	1.0	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	µg/l	2.0	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	50	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	µg/l	1.0	3000	ND	ND	2.1	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	2.0	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	20	ND	ND	ND	ND	ND	ND	ND	1.9	ND	ND	ND	1.9	ND	58.6	1.8	5.7	ND	ND	ND	ND	1.1	3.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	6	ND	ND	6.4	ND	6.1	ND	ND	2	ND	ND	ND	ND	5.8	15.4	ND	ND	ND	ND	ND	ND	1.3	2.8	ND	ND	ND	ND	ND	ND	ND	1.2	ND
trans-1,4-Dichloro-2-butene	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	6	ND	ND	ND	3.2	14.1	4.3	ND	2.4	ND	ND	1.6	5	1.4	ND	ND	ND	ND	1.2	ND	ND	3	2.4	ND	1	ND	ND	ND	ND	ND	10.9	ND
1,2-Dichloroethane	µg/l	1.0	0.4	ND	ND	ND	ND	1.2	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	70	ND	ND	2.7	ND	18.9	2.9	ND	1.8	ND	ND	1.4	12.2	8	12	ND	1.8	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	9.2	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	1.0	5	ND	ND	ND	ND	12.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.9	ND
2-Butanone (Methyl ethyl ketone)	µg/l	2.0	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	µg/l	1.0	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	0.7	ND	ND	ND	ND	4.2	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	ND
Toluene	µg/l	1.0	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	3	ND	ND	ND	ND	4	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND
Trichlorofluoromethane	µg/l	1.0	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/l	1.0	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	µg/l	2.0	500	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	µg/l	1.0	6	ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	µg/l	1.0	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	µg/l	1.0	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

1. 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. Shaded cells indicated exceedances of MCLs.
2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
4. ND = Not Detected at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.
5. NS = Not Sampled
6. NT = Not Tested
7. NP = Not Present during sampling event
8. The monitoring wells were sampled between February 20 and March 20, 2015.

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	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	NE	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	NE	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	NE	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT
Toluene	µg/l	5	0.36	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT
Trichlorofluoromethane	µg/l	5	NE	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	2.4	NT	NT	NT
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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

MRL = Laboratory *Method Reporting Limit*

ND = *Not Detected* at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.

NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	NE	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	NE	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	NE	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT
Toluene	µg/l	5	0.36	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT
Trichlorofluoromethane	µg/l	5	NE	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	2.4	NT	NT	NT
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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

MRL = Laboratory *Method Reporting Limit*

ND = *Not Detected* at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.

NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	NE	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	NE	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	NE	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT
Toluene	µg/l	5	0.36	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT
Trichlorofluoromethane	µg/l	5	NE	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	2.4	NT	NT	NT
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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

MRL = Laboratory *Method Reporting Limit*

ND = *Not Detected* at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.

NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	**18**	**12**	**9.6**
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	NE	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	NE	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	NE	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT
Toluene	µg/l	5	0.36	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT
Trichlorofluoromethane	µg/l	5	NE	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	2.4	NT	NT	NT
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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

MRL = Laboratory *Method Reporting Limit*

ND = *Not Detected* at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.

NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	NE	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	NE	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	NE	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT
Toluene	µg/l	5	0.36	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT
Trichlorofluoromethane	µg/l	5	NE	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	2.4	NT	NT	NT
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	NE	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	NE	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	NE	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT
Toluene	µg/l	5	0.36	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT
Trichlorofluoromethane	µg/l	5	NE	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	2.4	NT	NT	NT
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	**2.9**	**4.4**	**4.1**
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	NT	NT	NT
Chlorobenzene (mono)	µg/l	5	NE	NT	NT	NT
Chloroethane	µg/l	10	NE	NT	NT	NT
Chloroform	µg/l	5	NE	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	NE	NT	NT	NT
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	NT	NT	NT
Dibromomethane	µg/l	10	NE	NT	NT	NT
1,2-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
1,4-Dichlorobenzene	µg/l	5	NE	NT	NT	NT
trans-1,4-Dichloro-2butene	µg/l	100	NE	NT	NT	NT
1,1-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,2-Dichloroethane	µg/l	5	NE	NT	NT	NT
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	NT	NT	NT
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	NT	NT	NT
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	NT	NT	NT
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	NT	NT	NT
4-Methyl-2-Pentanone	µg/l	100	NE	NT	NT	NT
Styrene	µg/l	10	NE	NT	NT	NT
1,1,1,2-Tetrachloroethane	µg/l	5	NE	NT	NT	NT
1,1,2,2-Tetrachloroethane	µg/l	5	4	NT	NT	NT
Tetrachloroethene (-ethylene)	µg/l	5	3.3	NT	NT	NT
Toluene	µg/l	5	0.36	NT	NT	NT
1,1,1-Trichloroethane	µg/l	5	NE	NT	NT	NT
1,1,2-Trichloroethane	µg/l	5	NE	NT	NT	NT
Trichloroethene (-ethylene)	µg/l	5	30	NT	NT	NT
Trichlorofluoromethane	µg/l	5	NE	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	2.4	NT	NT	NT
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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

MRL = Laboratory *Method Reporting Limit*

ND = *Not Detected* at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.

NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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

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NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	**0.25**	**0.67**	**0.29**
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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	5	NE	ND	ND	ND

Notes:

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NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	5	NE	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. Shaded cells indicated exceedances of MCLs.

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

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NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	10	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND
Dibromomethane	µg/l	10	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	100	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	100	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	100	NE	ND	ND	ND
Styrene	µg/l	10	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND
Trichlorofluoromethane	µg/l	5	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	5	NE	ND	ND	ND

Notes:

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NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	5	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	10	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	50	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	5	NE	ND	ND	ND
Chloroethane	µg/l	10	NE	ND	ND	ND
Chloroform	µg/l	5	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	5	NE	ND	ND	ND
Dibromomethane	µg/l	5	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	5	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	5	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	5	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	5	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	5	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	10	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	10	NE	ND	ND	ND
Styrene	µg/l	5	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	5	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	5	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	5	3.3	ND	ND	ND
Toluene	µg/l	5	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	5	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	5	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	5	30	ND	ND	ND
Trichlorofluoromethane	µg/l	10	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	10	NE	ND	ND	ND

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NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	5	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND
Chloroform	µg/l	1	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	2	NE	ND	ND	ND

Notes:

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NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	5	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND
Chloroform	µg/l	1	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	2	NE	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. Shaded cells indicated exceedances of MCLs.

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

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ND = *Not Detected* at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.

NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

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

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**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	10	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	0.4	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	7	NT	NT	NT
Total Lead (Pb)	µg/l	5	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.2	0.012	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	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	50	NT	NT	NT
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	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1	NE	ND	ND	ND
Chloroethane	µg/l	1	NE	ND	ND	ND
Chloroform	µg/l	1	NE	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	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1	NE	ND	ND	ND
Dibromomethane	µg/l	1	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1	NE	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	NE	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	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5	NE	ND	ND	ND
Styrene	µg/l	1	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1	3.3	ND	ND	ND
Toluene	µg/l	1	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1	NE	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	2.4	ND	ND	ND
Total Xylenes	µg/l	3	NE	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. Shaded cells indicated exceedances of MCLs.

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NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-23-2009)

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**6.56**	**6.62**	**6.54**
Specific Conductance	µmhos/cm (on-site)	-	NE	**66**	**96**	**87**
Temperature	°C (on-site)	-	29	**6.0**	**9.1**	**7.1**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT
Total Antimony (Sb)	µg/l	NT	NE	NT	NT	NT
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**35.5**	**47.6**	**40.3**
Total Beryllium (Be)	µg/l	NT	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT
Total Copper (Cu)	µg/l	NT	7	NT	NT	NT
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	0.012	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	5.0	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	50	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5.0	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3.0	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	ND	ND	ND

Notes:

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NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-24-2009)

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**6.6**	**6.35**	**6.52**
Specific Conductance	µmhos/cm (on-site)	-	NE	**72**	**108**	**96**
Temperature	°C (on-site)	-	29	**19.2**	**22.1**	**6.52**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT
Total Antimony (Sb)	µg/l	NT	NE	NT	NT	NT
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**41.7**	**41.5**	**36.8**
Total Beryllium (Be)	µg/l	NT	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT
Total Copper (Cu)	µg/l	NT	7	NT	NT	NT
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	0.012	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	5.0	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	50	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5.0	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3.0	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	ND	ND	ND

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NT = *Not Tested*

NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-22-2010)

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**6.54**	**6.54**	**6.65**
Specific Conductance	µmhos/cm (on-site)	-	NE	**66**	**108**	**72**
Temperature	°C (on-site)	-	29	**10.2**	**13.5**	**10.5**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT
Total Antimony (Sb)	µg/l	NT	NE	NT	NT	NT
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**35.4**	**51.7**	**43.9**
Total Beryllium (Be)	µg/l	NT	6.5	NT	NT	NT
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT
Total Copper (Cu)	µg/l	NT	7	NT	NT	NT
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	0.012	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	5.0	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	50	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	5.0	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	3.0	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	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. Shaded cells indicated exceedances of MCLs.

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

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ND = *Not Detected* at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.

NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-30-2010)

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**6.53**	**6.38**	**6.5**
Specific Conductance	µmhos/cm (on-site)	-	NE	**72**	**104**	**96**
Temperature	°C (on-site)	-	29	**20.9**	**24.5**	**23.2**
Turbidity	NTU (on-site)	NT	50	NT	NT	NT
Total Antimony (Sb)	µg/l	NT	NE	NT	NT	NT
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**65**	**44.4**	**37.7**
Total Beryllium (Be)	µg/l	NT	6.5	NT	ND	NT
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	**7.1**	ND	ND
Total Cobalt (Co)	µg/l	NT	NE	NT	NT	NT
Total Copper (Cu)	µg/l	NT	7	NT	NT	NT
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	0.012	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	5.0	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	NT	NE	NT	NT	NT
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	NT	50	NT	NT	NT
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	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. Shaded cells indicated exceedances of MCLs.

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Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-22-2011)

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**6.45**	**6.33**	**6.28**
Specific Conductance	µmhos/cm (on-site)	-	NE	**86**	**99**	**112**
Temperature	°C (on-site)	-	29	**10.8**	**8.4**	**13.9**
Turbidity	NTU (on-site)	-	50	**0.94**	**1.3**	**1.45**
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**37.5**	**39.8**	**46.9**
Total Beryllium (Be)	µg/l	1.0	6.5	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	**7.2**	**5.4**	ND
Total Copper (Cu)	µg/l	5.0	7	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND
Total Mercury (Hg)	µg/l	NT	0.012	NT	NT	NT
Total Nickel (Ni)	µg/l	5.0	88	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	5	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	10.0	50	ND	**12.7**	ND
Acetone	µg/l	25.0	NE	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	ND	ND	ND

Notes:

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Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-22-2011)

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**6.6**	**6.5**	**6.6**
Specific Conductance	µmhos/cm (on-site)	-	NE	**93**	**99**	**114**
Temperature	°C (on-site)	-	29	**23.5**	**24**	**22**
Turbidity	NTU (on-site)	-	50	**37**	**5.9**	**5.7**
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**45.5**	**41.8**	**41.6**
Total Beryllium (Be)	µg/l	1.0	6.5	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	7	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND
Total Mercury (Hg)	µg/l	NT	0.012	NT	NT	NT
Total Nickel (Ni)	µg/l	5.0	88	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	5	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	10.0	50	ND	ND	ND
Acetone	µg/l	25.0	NE	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	ND	ND	ND

Notes:

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NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-22-2012)

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**7.4**	**7**	**7.1**
Specific Conductance	µmhos/cm (on-site)	-	NE	**75**	**85**	**101**
Temperature	°C (on-site)	-	29	**12.4**	**11**	**12.1**
Turbidity	NTU (on-site)	-	50	**2.95**	**4.53**	**3.9**
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**35.1**	**36.0**	**38.6**
Total Beryllium (Be)	µg/l	1.0	6.5	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	7	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	0.012	ND	ND	ND
Total Nickel (Ni)	µg/l	5.0	88	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	5	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	10.0	50	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	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. Shaded cells indicated exceedances of MCLs.

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

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NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-29-2012)

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**6.4**	**7.3**	**6.9**
Specific Conductance	µmhos/cm (on-site)	-	NE	**89**	**106**	**113**
Temperature	°C (on-site)	-	29	**22.8**	**21.4**	**21**
Turbidity	NTU (on-site)	-	50	**5.99**	**7.39**	**7**
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**40.2**	**41.9**	**47.2**
Total Beryllium (Be)	µg/l	1.0	6.5	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	7	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	0.012	ND	ND	ND
Total Nickel (Ni)	µg/l	5.0	88	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	5	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	10.0	50	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	1.0	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	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. Shaded cells indicated exceedances of MCLs.

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NT = *Not Tested*

NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-18-2013)

TEST	UNITS	MDL	MRL	SW-1	SW-2	Blanton Branch
pH	pH units (on-site)	-	<6.0; >9.0	**6.9**	**7.1**	**7.1**
Specific Conductance	µmhos/cm (on-site)	-	NE	**68**	**75**	**97**
Temperature	°C (on-site)	-	29	**9.0**	**9.4**	**11.3**
Turbidity	NTU (on-site)	-	50	**2.40**	**2.48**	**294**
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**35**	**38.0**	**41.4**
Total Beryllium (Be)	µg/l	1.0	6.5	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	7	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	0.012	ND	ND	ND
Total Nickel (Ni)	µg/l	5.0	88	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	5	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	0.06	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	NT	NT	NT
Total Zinc (Zn)	µg/l	10.0	50	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	NE	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	1.0	NE	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	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. Shaded cells indicated exceedances of MCLs.

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NT = *Not Tested*

NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-26-13)

TEST	UNITS	MDL	MRL	US-1	DS-1	DS-2	DS-3
pH	pH units (on-site)	-	<6.0; >9.0	**7.2**	**7**	**7.1**	**7.3**
Specific Conductance	µmhos/cm (on-site)	-	NE	**81.2**	**80.9**	**86.4**	**88.4**
Temperature	°C (on-site)	-	29	**19.0**	**19.2**	**19.1**	**19.6**
Turbidity	NTU (on-site)	-	50	**11.6**	**8.32**	**7.09**	**4.82**
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**60.1**	**48.5**	**46.3**	**44.5**
Total Beryllium (Be)	µg/l	1.0	6.5	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	**6.1**	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	**5.7**	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	7	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	0.012	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5.0	88	ND	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	5	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	0.06	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	**9**	**5.9**	ND	ND
Total Zinc (Zn)	µg/l	10.0	50	**14.3**	ND	**11.9**	ND
Acetone	µg/l	25	NE	ND	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	NE	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	1.0	NE	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	ND	ND	ND	ND

Notes:

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NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-20-14)

TEST	UNITS	MDL	MRL	US-1	DS-1	DS-2	DS-3
pH	pH units (on-site)	-	<6.0; >9.0	**6.6**	**7.1**	**7.3**	**7.1**
Specific Conductance	µmhos/cm (on-site)	-	NE	**68**	**54**	**74**	**80**
Temperature	°C (on-site)	-	29	**12.2**	**13.2**	**11.9**	**12.3**
Turbidity	NTU (on-site)	-	50	**4.61**	**3.41**	**4.38**	**4.92**
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND
Total Arsenic (As)	µg/l	5.0	10	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**39.6**	**40.6**	**43.8**	**46.6**
Total Beryllium (Be)	µg/l	1.0	6.5	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	7	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	0.20	0.012	ND	ND	ND	ND
Total Nickel (Ni)	µg/l	5.0	88	ND	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	5	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	0.06	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	ND	ND	ND	ND
Total Zinc (Zn)	µg/l	10.0	50	ND	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	5.0	NE	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	1.0	NE	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	ND	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. Shaded cells indicated exceedances of MCLs.

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

MRL = Laboratory *Method Reporting Limit*

ND = *Not Detected* at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.

NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (8-28-14)

TEST	UNITS	MDL	MRL	US-1	DS-1	DS-2	DS-3
pH	pH units (on-site)	-	<6.0; >9.0	**7.6**	**7.5**	**7.2**	**7.5**
Specific Conductance	µmhos/cm (on-site)	-	NE	**91**	**88**	**94**	**105**
Temperature	°C (on-site)	-	29	**21.1**	**22.3**	**22.3**	**22.6**
Turbidity	NTU (on-site)	-	50	**6.79**	**10.04**	**4.11**	**5.44**
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10.0	10	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**47.4**	**46.2**	**45.4**	**54.7**
Total Beryllium (Be)	µg/l	1.0	6.5	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	7	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	NT	0.012	NT	NT	NT	NT
Total Nickel (Ni)	µg/l	5.0	88	ND	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	5	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	0.06	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	ND	ND	ND	ND
Total Zinc (Zn)	µg/l	10.0	50	ND	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	2.0	NE	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	NE	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	ND	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. Shaded cells indicated exceedances of MCLs.

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

MRL = Laboratory *Method Reporting Limit*

ND = *Not Detected* at the MRL; "J"-flagged data (i.e., values estimated between the laboratory method detection limit [MDL] and the MRL) are not presented on this spreadsheet.

NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

Closed Francis Farm Landfill - Haywood Co., NC
Surface Water Sampling Event (2-20-15)

TEST	UNITS	MDL	MRL	US-1	DS-1	DS-2	DS-3
pH	pH units (on-site)	-	<6.0; >9.0	**6.9**	**7**	**7.1**	**7.1**
Specific Conductance	µmhos/cm (on-site)	-	NE	**78**	**78**	**81**	**87**
Temperature	°C (on-site)	-	29	**2.1**	**1.5**	**2.9**	**2.7**
Turbidity	NTU (on-site)	-	50	**0.5**	**0.47**	**2.26**	**2.26**
Total Antimony (Sb)	µg/l	5.0	NE	ND	ND	ND	ND
Total Arsenic (As)	µg/l	10.0	10	ND	ND	ND	ND
Total Barium (Ba)	µg/l	5.0	NE	**36.1**	**39.9**	**41.6**	**43.4**
Total Beryllium (Be)	µg/l	1.0	6.5	ND	ND	ND	ND
Total Cadmium (Cd)	µg/l	1.0	0.4	ND	ND	ND	ND
Total Chromium (Cr)	µg/l	5.0	50	ND	ND	ND	ND
Total Cobalt (Co)	µg/l	5.0	NE	ND	ND	ND	ND
Total Copper (Cu)	µg/l	5.0	7	ND	ND	ND	ND
Total Lead (Pb)	µg/l	5.0	25	ND	ND	ND	ND
Total Mercury (Hg)	µg/l	NT	0.012	NT	NT	NT	NT
Total Nickel (Ni)	µg/l	5.0	88	ND	ND	ND	ND
Total Selenium (Se)	µg/l	10.0	5	ND	ND	ND	ND
Total Silver (Ag)	µg/l	5.0	0.06	ND	ND	ND	ND
Total Thallium (Tl)	µg/l	5.4	NE	ND	ND	ND	ND
Total Vanadium (V)	µg/l	5.0	NE	ND	ND	ND	ND
Total Zinc (Zn)	µg/l	10.0	50	ND	ND	ND	ND
Acetone	µg/l	25	NE	ND	ND	ND	ND
Acrylonitrile	µg/l	10.0	NE	ND	ND	ND	ND
Benzene	µg/l	1.0	51	ND	ND	ND	ND
Bromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND
Bromodichloromethane	µg/l	1.0	NE	ND	ND	ND	ND
Bromoform	µg/l	1.0	NE	ND	ND	ND	ND
Carbon Disulfide	µg/l	2.0	NE	ND	ND	ND	ND
Bromomethane (Methylbromide)	µg/l	2.0	NE	ND	ND	ND	ND
Carbon tetrachloride	µg/l	1.0	1.6	ND	ND	ND	ND
Chlorobenzene (mono)	µg/l	1.0	NE	ND	ND	ND	ND
Chloroethane	µg/l	1.0	NE	ND	ND	ND	ND
Chloroform	µg/l	1.0	NE	ND	ND	ND	ND
Chloromethane (Methylchloride)	µg/l	1.0	NE	ND	ND	ND	ND
Dibromochloromethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane; DBCP	µg/l	2.0	NE	ND	ND	ND	ND
1,2-Dibromoethane; Ethylene dibromide	µg/l	1.0	NE	ND	ND	ND	ND
Dibromomethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND	ND
1,4-Dichlorobenzene	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,4-Dichloro-2butene	µg/l	1.0	NE	ND	ND	ND	ND
1,1-Dichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND	ND
cis-1,2-Dichloroethene (-ethylene)	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,2-Dichloroethene (-ylene)	µg/l	1.0	NE	ND	ND	ND	ND
1,2-Dichloropropane	µg/l	1.0	NE	ND	ND	ND	ND
cis-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND	ND
trans-1,3-Dichloropropene (-propylene)	µg/l	1.0	NE	ND	ND	ND	ND
Ethylbenzene	µg/l	1.0	NE	ND	ND	ND	ND
2-Hexanone	µg/l	5.0	NE	ND	ND	ND	ND
Iodomethane	µg/l	5.0	NE	ND	ND	ND	ND
Dichloromethane (Methylene chloride)	µg/l	2.0	NE	ND	ND	ND	ND
2-Butanone (Methyl ethyl ketone)	µg/l	5.0	NE	ND	ND	ND	ND
4-Methyl-2-Pentanone	µg/l	5.0	NE	ND	ND	ND	ND
Styrene	µg/l	1.0	NE	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	1.0	4	ND	ND	ND	ND
Tetrachloroethene (-ethylene)	µg/l	1.0	3.3	ND	ND	ND	ND
Toluene	µg/l	1.0	0.36	ND	ND	ND	ND
1,1,1-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
1,1,2-Trichloroethane	µg/l	1.0	NE	ND	ND	ND	ND
Trichloroethene (-ethylene)	µg/l	1.0	30	ND	ND	ND	ND
Trichlorofluoromethane	µg/l	1.0	NE	ND	ND	ND	ND
1,2,3-Trichloropropane	µg/l	1.0	NE	ND	ND	ND	ND
Vinyl acetate	µg/l	2.0	NE	ND	ND	ND	ND
Vinyl chloride	µg/l	1.0	2.4	ND	ND	ND	ND
Total Xylenes	µg/l	2.0	NE	ND	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. Shaded cells indicated exceedances of MCLs.

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NP = *Not Present* during sampling event

APPENDIX C

LABORATORY ANALYTICAL RESULTS

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

March 31, 2015

Randy Siske
Haywood Co. Solid Waste
278 Recycle Rd
Clyde, NC 28721

RE: Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Dear Randy Siske:
Enclosed are the analytical results for sample(s) received by the laboratory between February 25, 2015 and March 20, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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

Sincerely,

Chris Derouen
christopher.derouen@pacelabs.com
Project Manager

Enclosures

cc: Andy Alexander, BLE
David Francis, Haywood Co. Soild Waste
Mr. Stephen King, Haywood Co. Solid Waste
Randy Siske, Haywood Co. Solid Waste

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

CERTIFICATIONS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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Asheville, NC 28804
(828)254-7176

SAMPLE SUMMARY

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92238730001	MW-1A	Water	02/24/15 15:00	02/25/15 08:10
92238730002	MW-4	Water	02/24/15 15:45	02/25/15 08:10
92238730003	MW-5	Water	02/24/15 16:15	02/25/15 08:10
92238730004	MW-11	Water	02/24/15 15:20	02/25/15 08:10
92238730005	MW-12	Water	02/24/15 16:30	02/25/15 08:10
92238730006	MW-16	Water	02/24/15 13:15	02/25/15 08:10
92238730007	MW-16D	Water	02/24/15 13:30	02/25/15 08:10
92238730008	MW-17	Water	02/24/15 13:30	02/25/15 08:10
92238730009	MW-18	Water	02/24/15 14:20	02/25/15 08:10
92238730010	MW-22	Water	02/24/15 14:50	02/25/15 08:10
92238730011	MW-13	Water	02/25/15 14:05	02/25/15 16:00
92238730012	MW-14	Water	02/25/15 13:40	02/25/15 16:00
92238730013	MW-14D	Water	02/25/15 13:20	02/25/15 16:00
92238730014	MW-15	Water	02/25/15 14:30	02/25/15 16:00
92238730015	MW-25	Water	02/25/15 15:15	02/25/15 16:00
92238730016	MW-8	Water	03/02/15 15:40	03/02/15 16:45
92238730017	MW-9	Water	03/02/15 15:20	03/02/15 16:45
92238730018	MW-24	Water	03/02/15 15:00	03/02/15 16:45
92238730019	MW-2A	Water	03/03/15 16:45	03/03/15 18:05
92238730020	MW-3A	Water	03/03/15 16:30	03/03/15 18:05
92238730021	MW-6	Water	03/03/15 13:50	03/03/15 18:05
92238730022	MW-7	Water	03/03/15 14:10	03/03/15 18:05
92238730023	MW-10	Water	03/03/15 13:15	03/03/15 18:05
92238730024	MW-19	Water	03/03/15 14:30	03/03/15 18:05
92238730025	MW-19D	Water	03/03/15 14:45	03/03/15 18:05
92238730026	MW-20	Water	03/03/15 12:50	03/03/15 18:05
92238730027	MW-20D	Water	03/03/15 13:00	03/03/15 18:05
92238730028	MW-21	Water	03/03/15 13:40	03/03/15 18:05
92238730029	MW-23	Water	03/03/15 11:40	03/03/15 18:05
92238730030	MW-23D	Water	03/03/15 11:50	03/03/15 18:05
92238730031	EQUIP BLK	Water	03/03/15 00:00	03/03/15 18:05
92238730032	TVL BLK	Water	03/03/15 00:00	03/03/15 18:05
92238730033	MW-19	Water	03/20/15 13:00	03/20/15 15:35
92238730034	MW-19D	Water	03/20/15 12:45	03/20/15 15:35

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

SAMPLE ANALYTE COUNT

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92238730001	MW-1A	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	AES2	1	PASI-A
92238730002	MW-4	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730003	MW-5	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	AES2	1	PASI-A
92238730004	MW-11	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	AES2	1	PASI-A
92238730005	MW-12	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730006	MW-16	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730007	MW-16D	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730008	MW-17	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730009	MW-18	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730010	MW-22	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730011	MW-13	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	AES2	1	PASI-A
92238730012	MW-14	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	AES2	1	PASI-A
92238730013	MW-14D	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730014	MW-15	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C

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

SAMPLE ANALYTE COUNT

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-CN-E	AES2	1	PASI-A
92238730015	MW-25	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730016	MW-8	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92238730017	MW-9	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730018	MW-24	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730019	MW-2A	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92238730020	MW-3A	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92238730021	MW-6	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92238730022	MW-7	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92238730023	MW-10	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730024	MW-19	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730025	MW-19D	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730026	MW-20	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730027	MW-20D	EPA 6010	JMW	15	PASI-A

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SAMPLE ANALYTE COUNT

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8260	GAW	66	PASI-C
92238730028	**MW-21**	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730029	**MW-23**	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730030	**MW-23D**	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730031	**EQUIP BLK**	EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
92238730032	**TVL BLK**	EPA 8260	GAW	66	PASI-C
92238730033	**MW-19**	EPA 8081	RES	24	PASI-C
92238730034	**MW-19D**	EPA 8081	RES	24	PASI-C

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-1A **Lab ID: 92238730001** Collected: 02/24/15 15:00 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/27/15 09:16		
Collected By	**Mark Swann**				1		03/04/15 12:13		
Collected Date	**2/20/15**				1		03/27/15 09:16		
Collected Date	**2/24/15**				1		03/04/15 12:13		
Collected Time	**13:40**				1		03/27/15 09:16		
Collected Time	**15:00**				1		03/04/15 12:13		
Field pH	**6.0**	Std. Units	0.10	0.10	1		03/04/15 12:13		
Field Temperature	**11.6**	deg C	0.50	0.50	1		03/04/15 12:13		
Static Water Level	**49.62**	feet			1		03/04/15 12:13		
Static Water Level	**49.65**	feet			1		03/27/15 09:16		
Field Specific Conductance	**309.0**	umhos/cm	1.0	1.0	1		03/04/15 12:13		
Turbidity	**0.92**	NTU	1.0	1.0	1		03/04/15 12:13		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:30	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:30	7440-38-2	
Barium	**161**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:30	7440-39-3	
Beryllium	**0.16J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:30	7440-41-7	
Cadmium	**0.63J**	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:30	7440-43-9	
Chromium	**2.5J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:30	7440-47-3	
Cobalt	**7.2**	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:30	7440-48-4	
Copper	**0.97J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:30	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:30	7439-92-1	
Nickel	**2.5J**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:30	7440-02-0	
Selenium	**1.6J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:30	7782-49-2	B
Silver	**0.44J**	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:30	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:30	7440-28-0	
Vanadium	**10.1**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:30	7440-62-2	
Zinc	**7.4J**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:30	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/27/15 23:20	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/27/15 23:20	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/27/15 23:20	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/27/15 23:20	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/27/15 23:20	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/27/15 23:20	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/27/15 23:20	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/27/15 23:20	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/27/15 23:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/27/15 23:20	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/27/15 23:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/27/15 23:20	56-23-5	
Chlorobenzene	**0.84J**	ug/L	1.0	0.23	1		02/27/15 23:20	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-1A **Lab ID: 92238730001** Collected: 02/24/15 15:00 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/27/15 23:20	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/27/15 23:20	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/27/15 23:20	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/27/15 23:20	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/27/15 23:20	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/27/15 23:20	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/27/15 23:20	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/27/15 23:20	74-95-3	
1,2-Dichlorobenzene	**0.42J**	ug/L	1.0	0.30	1		02/27/15 23:20	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/27/15 23:20	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/27/15 23:20	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/27/15 23:20	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/27/15 23:20	75-71-8	
1,1-Dichloroethane	**0.45J**	ug/L	1.0	0.32	1		02/27/15 23:20	75-34-3	
1,2-Dichloroethane	**0.33J**	ug/L	1.0	0.12	1		02/27/15 23:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/27/15 23:20	75-35-4	
cis-1,2-Dichloroethene	**0.36J**	ug/L	1.0	0.19	1		02/27/15 23:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/27/15 23:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/27/15 23:20	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/27/15 23:20	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/27/15 23:20	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/27/15 23:20	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/27/15 23:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/27/15 23:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/27/15 23:20	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/27/15 23:20	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/27/15 23:20	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/27/15 23:20	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/27/15 23:20	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/27/15 23:20	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/27/15 23:20	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/27/15 23:20	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/27/15 23:20	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/27/15 23:20	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/27/15 23:20	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/27/15 23:20	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/27/15 23:20	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/27/15 23:20	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/27/15 23:20	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/27/15 23:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/27/15 23:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/27/15 23:20	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/27/15 23:20	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/27/15 23:20	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/27/15 23:20	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/27/15 23:20	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-1A **Lab ID: 92238730001** Collected: 02/24/15 15:00 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/27/15 23:20	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/27/15 23:20	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/27/15 23:20	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/27/15 23:20	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	94	%	70-130		1		02/27/15 23:20	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		02/27/15 23:20	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		02/27/15 23:20	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/05/15 11:45	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-4 **Lab ID: 92238730002** Collected: 02/24/15 15:45 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/04/15 12:18		
Collected By	**Mark Swann**				1		03/27/15 09:23		
Collected Date	**2/20/15**				1		03/27/15 09:23		
Collected Date	**2/24/15**				1		03/04/15 12:18		
Collected Time	**13:42**				1		03/27/15 09:23		
Collected Time	**15:45**				1		03/04/15 12:18		
Field pH	**5.6**	Std. Units	0.10	0.10	1		03/04/15 12:18		
Field Temperature	**11.7**	deg C	0.50	0.50	1		03/04/15 12:18		
Static Water Level	**69.12**	feet			1		03/27/15 09:23		
Static Water Level	**69.14**	feet			1		03/04/15 12:18		
Field Specific Conductance	**221.5**	umhos/cm	1.0	1.0	1		03/04/15 12:18		
Turbidity	**4.22**	NTU	1.0	1.0	1		03/04/15 12:18		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 18:41	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:41	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 18:41	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 18:41	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 18:41	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	73	%	20-130		1	03/03/15 14:20	03/09/15 18:41	877-09-8	
Decachlorobiphenyl (S)	50	%	20-130		1	03/03/15 14:20	03/09/15 18:41	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:33	7440-36-0	
Arsenic	**3.4J**	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:33	7440-38-2	
Barium	**134**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:33	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-4 **Lab ID: 92238730002** Collected: 02/24/15 15:45 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	**0.16J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:33	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:33	7440-43-9	
Chromium	**1.0J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:33	7440-47-3	
Cobalt	**9.6**	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:33	7440-48-4	
Copper	**1.1J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:33	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:33	7439-92-1	
Nickel	**13.9**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:33	7440-02-0	
Selenium	**0.30J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:33	7782-49-2	B
Silver	**0.46J**	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:33	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:33	7440-28-0	
Vanadium	**2.0J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:33	7440-62-2	
Zinc	**20.4**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:33	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/27/15 23:37	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/27/15 23:37	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/27/15 23:37	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/27/15 23:37	107-05-1	
Benzene	**13.1**	ug/L	1.0	0.25	1		02/27/15 23:37	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/27/15 23:37	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/27/15 23:37	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/27/15 23:37	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/27/15 23:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/27/15 23:37	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/27/15 23:37	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/27/15 23:37	56-23-5	
Chlorobenzene	**0.89J**	ug/L	1.0	0.23	1		02/27/15 23:37	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		02/27/15 23:37	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/27/15 23:37	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/27/15 23:37	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/27/15 23:37	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/27/15 23:37	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/27/15 23:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/27/15 23:37	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/27/15 23:37	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/27/15 23:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/27/15 23:37	541-73-1	
1,4-Dichlorobenzene	**6.1**	ug/L	1.0	0.33	1		02/27/15 23:37	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/27/15 23:37	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/27/15 23:37	75-71-8	
1,1-Dichloroethane	**14.1**	ug/L	1.0	0.32	1		02/27/15 23:37	75-34-3	
1,2-Dichloroethane	**1.2**	ug/L	1.0	0.12	1		02/27/15 23:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/27/15 23:37	75-35-4	
cis-1,2-Dichloroethene	**18.9**	ug/L	1.0	0.19	1		02/27/15 23:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/27/15 23:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/27/15 23:37	78-87-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-4 **Lab ID: 92238730002** Collected: 02/24/15 15:45 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/27/15 23:37	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/27/15 23:37	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/27/15 23:37	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/27/15 23:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/27/15 23:37	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/27/15 23:37	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/27/15 23:37	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/27/15 23:37	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/27/15 23:37	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/27/15 23:37	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/27/15 23:37	126-98-7	
Methylene Chloride	**12.2**	ug/L	1.0	0.97	1		02/27/15 23:37	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/27/15 23:37	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/27/15 23:37	108-10-1	
Naphthalene	**2.1**	ug/L	1.0	0.24	1		02/27/15 23:37	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/27/15 23:37	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/27/15 23:37	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/27/15 23:37	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/27/15 23:37	79-34-5	
Tetrachloroethene	**4.2**	ug/L	1.0	0.46	1		02/27/15 23:37	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/27/15 23:37	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/27/15 23:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/27/15 23:37	79-00-5	
Trichloroethene	**4.0**	ug/L	1.0	0.47	1		02/27/15 23:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/27/15 23:37	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/27/15 23:37	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/27/15 23:37	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/27/15 23:37	75-01-4	
Xylene (Total)	**1.1J**	ug/L	2.0	0.66	1		02/27/15 23:37	1330-20-7	
m&p-Xylene	**1.8J**	ug/L	2.0	0.66	1		02/27/15 23:37	179601-23-1	
o-Xylene	**1.1**	ug/L	1.0	0.23	1		02/27/15 23:37	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	92	%	70-130		1		02/27/15 23:37	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		02/27/15 23:37	17060-07-0	
Toluene-d8 (S)	93	%	70-130		1		02/27/15 23:37	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-5 **Lab ID: 92238730003** Collected: 02/24/15 16:15 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/04/15 12:20		
Collected By	**Mark Swann**				1		03/27/15 09:54		
Collected Date	**2/20/15**				1		03/27/15 09:54		
Collected Date	**2/24/15**				1		03/04/15 12:20		
Collected Time	**16:15**				1		03/04/15 12:20		
Collected Time	**13:50**				1		03/27/15 09:54		
Field pH	**5.8**	Std. Units	0.10	0.10	1		03/04/15 12:20		
Field Temperature	**10.4**	deg C	0.50	0.50	1		03/04/15 12:20		
Static Water Level	**71.33**	feet			1		03/27/15 09:54		
Static Water Level	**71.41**	feet			1		03/04/15 12:20		
Field Specific Conductance	**198.3**	umhos/cm	1.0	1.0	1		03/04/15 12:20		
Turbidity	**1.80**	NTU	1.0	1.0	1		03/04/15 12:20		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:36	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:36	7440-38-2	
Barium	**171**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:36	7440-39-3	
Beryllium	**0.12J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:36	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:36	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:36	7440-47-3	
Cobalt	**5.3**	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:36	7440-48-4	
Copper	**0.32J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:36	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:36	7439-92-1	
Nickel	**5.2**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:36	7440-02-0	
Selenium	**0.12J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:36	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:36	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:36	7440-28-0	
Vanadium	**0.90J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:36	7440-62-2	
Zinc	**7.7J**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:36	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/27/15 23:54	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/27/15 23:54	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/27/15 23:54	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/27/15 23:54	107-05-1	
Benzene	**1.4**	ug/L	1.0	0.25	1		02/27/15 23:54	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/27/15 23:54	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/27/15 23:54	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/27/15 23:54	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/27/15 23:54	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/27/15 23:54	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/27/15 23:54	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/27/15 23:54	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/27/15 23:54	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-5 **Lab ID: 92238730003** Collected: 02/24/15 16:15 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/27/15 23:54	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/27/15 23:54	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/27/15 23:54	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/27/15 23:54	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/27/15 23:54	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/27/15 23:54	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/27/15 23:54	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/27/15 23:54	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/27/15 23:54	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/27/15 23:54	541-73-1	
1,4-Dichlorobenzene	**0.51J**	ug/L	1.0	0.33	1		02/27/15 23:54	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/27/15 23:54	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/27/15 23:54	75-71-8	
1,1-Dichloroethane	**4.3**	ug/L	1.0	0.32	1		02/27/15 23:54	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/27/15 23:54	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/27/15 23:54	75-35-4	
cis-1,2-Dichloroethene	**2.9**	ug/L	1.0	0.19	1		02/27/15 23:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/27/15 23:54	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/27/15 23:54	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/27/15 23:54	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/27/15 23:54	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/27/15 23:54	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/27/15 23:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/27/15 23:54	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/27/15 23:54	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/27/15 23:54	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/27/15 23:54	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/27/15 23:54	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/27/15 23:54	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/27/15 23:54	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/27/15 23:54	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/27/15 23:54	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/27/15 23:54	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/27/15 23:54	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/27/15 23:54	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/27/15 23:54	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/27/15 23:54	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/27/15 23:54	79-34-5	
Tetrachloroethene	**3.0**	ug/L	1.0	0.46	1		02/27/15 23:54	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/27/15 23:54	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/27/15 23:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/27/15 23:54	79-00-5	
Trichloroethene	**2.0**	ug/L	1.0	0.47	1		02/27/15 23:54	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/27/15 23:54	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/27/15 23:54	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/27/15 23:54	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-5 **Lab ID: 92238730003** Collected: 02/24/15 16:15 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/27/15 23:54	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/27/15 23:54	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/27/15 23:54	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/27/15 23:54	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		02/27/15 23:54	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		02/27/15 23:54	17060-07-0	
Toluene-d8 (S)	92	%	70-130		1		02/27/15 23:54	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/05/15 11:46	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-11 **Lab ID: 92238730004** Collected: 02/24/15 15:20 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/04/15 12:31		
Collected By	**Mark Swann**				1		03/27/15 09:56		
Collected Date	**2/20/15**				1		03/27/15 09:56		
Collected Date	**2/24/15**				1		03/04/15 12:31		
Collected Time	**14:10**				1		03/27/15 09:56		
Collected Time	**15:20**				1		03/04/15 12:31		
Field pH	**6.3**	Std. Units	0.10	0.10	1		03/04/15 12:31		
Field Temperature	**12.9**	deg C	0.50	0.50	1		03/04/15 12:31		
Static Water Level	**77.03**	feet			1		03/04/15 12:31		
Static Water Level	**77.16**	feet			1		03/27/15 09:56		
Field Specific Conductance	**517.8**	umhos/cm	1.0	1.0	1		03/04/15 12:31		
Turbidity	**3.87**	NTU	1.0	1.0	1		03/04/15 12:31		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 18:59	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 18:59	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 18:59	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 18:59	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 18:59	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	82	%	20-130		1	03/03/15 14:20	03/09/15 18:59	877-09-8	
Decachlorobiphenyl (S)	68	%	20-130		1	03/03/15 14:20	03/09/15 18:59	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:39	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:39	7440-38-2	
Barium	**55.4**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:39	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-11 **Lab ID: 92238730004** Collected: 02/24/15 15:20 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	ND	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:39	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:39	7440-43-9	
Chromium	**3.0J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:39	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:39	7440-48-4	
Copper	**1.1J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:39	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:39	7439-92-1	
Nickel	**4.9J**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:39	7440-02-0	
Selenium	**2.1J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:39	7782-49-2	B
Silver	**0.25J**	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:39	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:39	7440-28-0	
Vanadium	**0.57J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:39	7440-62-2	
Zinc	**19.6**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:39	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 00:11	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 00:11	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 00:11	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 00:11	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/28/15 00:11	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 00:11	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 00:11	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 00:11	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 00:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 00:11	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 00:11	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 00:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 00:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 00:11	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 00:11	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 00:11	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 00:11	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 00:11	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 00:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 00:11	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 00:11	74-95-3	
1,2-Dichlorobenzene	**1.9**	ug/L	1.0	0.30	1		02/28/15 00:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 00:11	541-73-1	
1,4-Dichlorobenzene	**0.69J**	ug/L	1.0	0.33	1		02/28/15 00:11	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 00:11	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 00:11	75-71-8	
1,1-Dichloroethane	**5.0**	ug/L	1.0	0.32	1		02/28/15 00:11	75-34-3	
1,2-Dichloroethane	**0.31J**	ug/L	1.0	0.12	1		02/28/15 00:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 00:11	75-35-4	
cis-1,2-Dichloroethene	**12.2**	ug/L	1.0	0.19	1		02/28/15 00:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 00:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 00:11	78-87-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-11 **Lab ID: 92238730004** Collected: 02/24/15 15:20 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 00:11	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 00:11	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 00:11	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 00:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 00:11	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 00:11	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 00:11	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 00:11	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 00:11	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 00:11	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 00:11	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 00:11	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 00:11	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 00:11	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 00:11	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 00:11	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 00:11	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 00:11	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 00:11	79-34-5	
Tetrachloroethene	**0.79J**	ug/L	1.0	0.46	1		02/28/15 00:11	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 00:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 00:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 00:11	79-00-5	
Trichloroethene	**0.90J**	ug/L	1.0	0.47	1		02/28/15 00:11	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 00:11	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 00:11	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 00:11	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 00:11	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 00:11	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 00:11	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 00:11	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		02/28/15 00:11	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		02/28/15 00:11	17060-07-0	
Toluene-d8 (S)	93	%	70-130		1		02/28/15 00:11	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/05/15 11:46	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-12 **Lab ID: 92238730005** Collected: 02/24/15 16:30 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/27/15 10:09		
Collected By	**Mark Swann**				1		03/04/15 12:40		
Collected Date	**2/20/15**				1		03/27/15 10:09		
Collected Date	**2/24/15**				1		03/04/15 12:40		
Collected Time	**13:55**				1		03/27/15 10:09		
Collected Time	**16:30**				1		03/04/15 12:40		
Field pH	**6.3**	Std. Units	0.10	0.10	1		03/04/15 12:40		
Field Temperature	**10.1**	deg C	0.50	0.50	1		03/04/15 12:40		
Static Water Level	**67.53**	feet			1		03/04/15 12:40		
Static Water Level	**67.50**	feet			1		03/27/15 10:09		
Field Specific Conductance	**99.0**	umhos/cm	1.0	1.0	1		03/04/15 12:40		
Turbidity	**4.34**	NTU	1.0	1.0	1		03/04/15 12:40		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:42	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:42	7440-38-2	
Barium	**138**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:42	7440-39-3	
Beryllium	**0.14J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:42	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:42	7440-43-9	
Chromium	**5.1**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:42	7440-47-3	
Cobalt	**1.1J**	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:42	7440-48-4	
Copper	**2.9J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:42	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:42	7439-92-1	
Nickel	**13.2**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:42	7440-02-0	
Selenium	**2.0J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:42	7782-49-2	B
Silver	**0.64J**	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:42	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:42	7440-28-0	
Vanadium	**5.8**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:42	7440-62-2	
Zinc	**21.2**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:42	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 00:28	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 00:28	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 00:28	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 00:28	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/28/15 00:28	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 00:28	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 00:28	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 00:28	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 00:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 00:28	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 00:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 00:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 00:28	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-12 **Lab ID: 92238730005** Collected: 02/24/15 16:30 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 00:28	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 00:28	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 00:28	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 00:28	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 00:28	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 00:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 00:28	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 00:28	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/28/15 00:28	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 00:28	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/28/15 00:28	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 00:28	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 00:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		02/28/15 00:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 00:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 00:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		02/28/15 00:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 00:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 00:28	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 00:28	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 00:28	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 00:28	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 00:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 00:28	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 00:28	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 00:28	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 00:28	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 00:28	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 00:28	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 00:28	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 00:28	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 00:28	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 00:28	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 00:28	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 00:28	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 00:28	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 00:28	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 00:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/28/15 00:28	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 00:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 00:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 00:28	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 00:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 00:28	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 00:28	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 00:28	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-12 **Lab ID: 92238730005** Collected: 02/24/15 16:30 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 00:28	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 00:28	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 00:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 00:28	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	95	%	70-130		1		02/28/15 00:28	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		02/28/15 00:28	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		02/28/15 00:28	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-16 **Lab ID: 92238730006** Collected: 02/24/15 13:15 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/04/15 12:42		
Collected By	**Mark Swann**				1		03/27/15 10:14		
Collected Date	**2/20/15**				1		03/27/15 10:14		
Collected Date	**2/24/15**				1		03/04/15 12:42		
Collected Time	**10:30**				1		03/27/15 10:14		
Collected Time	**13:15**				1		03/04/15 12:42		
Field pH	**6.3**	Std. Units	0.10	0.10	1		03/04/15 12:42		
Field Temperature	**10.9**	deg C	0.50	0.50	1		03/04/15 12:42		
Static Water Level	**54.27**	feet			1		03/27/15 10:14		
Static Water Level	**54.39**	feet			1		03/04/15 12:42		
Field Specific Conductance	**109.5**	umhos/cm	1.0	1.0	1		03/04/15 12:42		
Turbidity	**15.2**	NTU	1.0	1.0	1		03/04/15 12:42		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:45	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:45	7440-38-2	
Barium	**171**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:45	7440-39-3	
Beryllium	**0.22J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:45	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:45	7440-43-9	
Chromium	**4.7J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:45	7440-47-3	
Cobalt	**2.6J**	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:45	7440-48-4	
Copper	**4.3J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:45	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:45	7439-92-1	
Nickel	**4.1J**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:45	7440-02-0	
Selenium	**1.5J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:45	7782-49-2	B
Silver	**0.15J**	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:45	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:45	7440-28-0	
Vanadium	**10.9**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:45	7440-62-2	
Zinc	**61.5**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:45	7440-66-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 00:44	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 00:44	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 00:44	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 00:44	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/28/15 00:44	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 00:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 00:44	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 00:44	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 00:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 00:44	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 00:44	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 00:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 00:44	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-16 **Lab ID: 92238730006** Collected: 02/24/15 13:15 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 00:44	75-00-3	
Chloroform	**0.25J**	ug/L	1.0	0.14	1		02/28/15 00:44	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 00:44	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 00:44	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 00:44	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 00:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 00:44	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 00:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/28/15 00:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 00:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/28/15 00:44	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 00:44	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 00:44	75-71-8	
1,1-Dichloroethane	**0.40J**	ug/L	1.0	0.32	1		02/28/15 00:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 00:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 00:44	75-35-4	
cis-1,2-Dichloroethene	**0.29J**	ug/L	1.0	0.19	1		02/28/15 00:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 00:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 00:44	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 00:44	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 00:44	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 00:44	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 00:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 00:44	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 00:44	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 00:44	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 00:44	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 00:44	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 00:44	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 00:44	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 00:44	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 00:44	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 00:44	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 00:44	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 00:44	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 00:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 00:44	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 00:44	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/28/15 00:44	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 00:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 00:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 00:44	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 00:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 00:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 00:44	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 00:44	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-16 **Lab ID: 92238730006** Collected: 02/24/15 13:15 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 00:44	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 00:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 00:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 00:44	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	94	%	70-130		1		02/28/15 00:44	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		02/28/15 00:44	17060-07-0	
Toluene-d8 (S)	93	%	70-130		1		02/28/15 00:44	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-16D **Lab ID: 92238730007** Collected: 02/24/15 13:30 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/04/15 12:44		
Collected By	**Mark Swann**				1		03/31/15 11:49		
Collected Date	**2/20/15**				1		03/31/15 11:49		
Collected Date	**2/24/15**				1		03/04/15 12:44		
Collected Time	**13:30**				1		03/04/15 12:44		
Collected Time	**10:25**				1		03/31/15 11:49		
Field pH	**6.7**	Std. Units	0.10	0.10	1		03/04/15 12:44		
Field Temperature	**10.4**	deg C	0.50	0.50	1		03/04/15 12:44		
Static Water Level	**73.35**	feet			1		03/31/15 11:49		
Static Water Level	**73.23**	feet			1		03/04/15 12:44		
Field Specific Conductance	**181.8**	umhos/cm	1.0	1.0	1		03/04/15 12:44		
Turbidity	**4.87**	NTU	1.0	1.0	1		03/04/15 12:44		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:48	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:48	7440-38-2	
Barium	**32.7**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:48	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:48	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:48	7440-43-9	
Chromium	**3.1J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:48	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:48	7440-48-4	
Copper	**0.91J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:48	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:48	7439-92-1	
Nickel	**1.8J**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:48	7440-02-0	
Selenium	**1.2J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:48	7782-49-2	B
Silver	**0.16J**	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:48	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:48	7440-28-0	
Vanadium	**1.0J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:48	7440-62-2	
Zinc	**5.8J**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:48	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 01:01	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 01:01	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 01:01	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 01:01	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/28/15 01:01	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 01:01	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 01:01	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 01:01	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 01:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 01:01	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 01:01	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 01:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 01:01	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-16D **Lab ID: 92238730007** Collected: 02/24/15 13:30 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 01:01	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 01:01	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 01:01	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 01:01	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 01:01	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 01:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 01:01	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 01:01	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/28/15 01:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 01:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/28/15 01:01	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 01:01	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 01:01	75-71-8	
1,1-Dichloroethane	**1.2**	ug/L	1.0	0.32	1		02/28/15 01:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 01:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 01:01	75-35-4	
cis-1,2-Dichloroethene	**0.78J**	ug/L	1.0	0.19	1		02/28/15 01:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 01:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 01:01	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 01:01	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 01:01	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 01:01	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 01:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 01:01	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 01:01	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 01:01	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 01:01	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 01:01	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 01:01	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 01:01	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 01:01	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 01:01	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 01:01	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 01:01	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 01:01	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 01:01	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 01:01	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 01:01	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/28/15 01:01	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 01:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 01:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 01:01	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 01:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 01:01	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 01:01	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 01:01	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-16D **Lab ID: 92238730007** Collected: 02/24/15 13:30 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 01:01	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 01:01	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 01:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 01:01	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	91	%	70-130		1		02/28/15 01:01	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		02/28/15 01:01	17060-07-0	
Toluene-d8 (S)	93	%	70-130		1		02/28/15 01:01	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-17 **Lab ID: 92238730008** Collected: 02/24/15 13:30 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/04/15 12:51		
Collected By	**Mark Swann**				1		03/31/15 11:53		
Collected Date	**2/24/15**				1		03/04/15 12:51		
Collected Date	**2/20/15**				1		03/31/15 11:53		
Collected Time	**14:00**				1		03/04/15 12:51		
Collected Time	**10:20**				1		03/31/15 11:53		
Field pH	**6.8**	Std. Units	0.10	0.10	1		03/04/15 12:51		
Field Temperature	**10.7**	deg C	0.50	0.50	1		03/04/15 12:51		
Static Water Level	**51.05**	feet			1		03/31/15 11:53		
Static Water Level	**51.07**	feet			1		03/04/15 12:51		
Field Specific Conductance	**68.1**	umhos/cm	1.0	1.0	1		03/04/15 12:51		
Turbidity	**2.70**	NTU	1.0	1.0	1		03/04/15 12:51		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 01:01	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 01:01	7440-38-2	
Barium	**45.1**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 01:01	7440-39-3	
Beryllium	**0.12J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 01:01	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 01:01	7440-43-9	
Chromium	**1.9J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 01:01	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 01:01	7440-48-4	
Copper	**1.5J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 01:01	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 01:01	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 01:01	7440-02-0	
Selenium	**1.6J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 01:01	7782-49-2	B
Silver	**0.12J**	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 01:01	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 01:01	7440-28-0	
Vanadium	**0.97J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 01:01	7440-62-2	
Zinc	**5.6J**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 01:01	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 01:18	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 01:18	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 01:18	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 01:18	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/28/15 01:18	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 01:18	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 01:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 01:18	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 01:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 01:18	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 01:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 01:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 01:18	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-17 **Lab ID: 92238730008** Collected: 02/24/15 13:30 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 01:18	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 01:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 01:18	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 01:18	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 01:18	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 01:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 01:18	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 01:18	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/28/15 01:18	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 01:18	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/28/15 01:18	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 01:18	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 01:18	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		02/28/15 01:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 01:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 01:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		02/28/15 01:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 01:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 01:18	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 01:18	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 01:18	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 01:18	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 01:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 01:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 01:18	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 01:18	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 01:18	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 01:18	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 01:18	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 01:18	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 01:18	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 01:18	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 01:18	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 01:18	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 01:18	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 01:18	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 01:18	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 01:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/28/15 01:18	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 01:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 01:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 01:18	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 01:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 01:18	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 01:18	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 01:18	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-17 **Lab ID: 92238730008** Collected: 02/24/15 13:30 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 01:18	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 01:18	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 01:18	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 01:18	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		02/28/15 01:18	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		02/28/15 01:18	17060-07-0	
Toluene-d8 (S)	92	%	70-130		1		02/28/15 01:18	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-18 **Lab ID: 92238730009** Collected: 02/24/15 14:20 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 12:00		
Collected By	**Mark Swann**				1		03/04/15 12:52		
Collected Date	**2/20/15**				1		03/31/15 12:00		
Collected Date	**2/24/15**				1		03/04/15 12:52		
Collected Time	**14:20**				1		03/04/15 12:52		
Collected Time	**10:42**				1		03/31/15 12:00		
Field pH	**6.6**	Std. Units	0.10	0.10	1		03/04/15 12:52		
Field Temperature	**10.5**	deg C	0.50	0.50	1		03/04/15 12:52		
Static Water Level	**25.87**	feet			1		03/04/15 12:52		
Static Water Level	**25.92**	feet			1		03/31/15 12:00		
Field Specific Conductance	**60.1**	umhos/cm	1.0	1.0	1		03/04/15 12:52		
Turbidity	**5.68**	NTU	1.0	1.0	1		03/04/15 12:52		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 01:04	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 01:04	7440-38-2	
Barium	**68.0**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 01:04	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 01:04	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 01:04	7440-43-9	
Chromium	**1.9J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 01:04	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 01:04	7440-48-4	
Copper	**1.6J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 01:04	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 01:04	7439-92-1	
Nickel	**2.2J**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 01:04	7440-02-0	
Selenium	**3.1J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 01:04	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 01:04	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 01:04	7440-28-0	
Vanadium	**1.4J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 01:04	7440-62-2	
Zinc	**9.0J**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 01:04	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 01:35	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 01:35	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 01:35	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 01:35	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/28/15 01:35	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 01:35	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 01:35	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 01:35	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 01:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 01:35	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 01:35	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 01:35	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 01:35	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-18 **Lab ID: 92238730009** Collected: 02/24/15 14:20 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 01:35	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 01:35	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 01:35	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 01:35	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 01:35	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 01:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 01:35	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 01:35	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/28/15 01:35	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 01:35	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/28/15 01:35	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 01:35	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 01:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		02/28/15 01:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 01:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 01:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		02/28/15 01:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 01:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 01:35	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 01:35	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 01:35	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 01:35	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 01:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 01:35	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 01:35	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 01:35	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 01:35	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 01:35	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 01:35	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 01:35	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 01:35	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 01:35	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 01:35	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 01:35	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 01:35	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 01:35	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 01:35	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 01:35	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/28/15 01:35	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 01:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 01:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 01:35	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 01:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 01:35	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 01:35	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 01:35	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-18 **Lab ID: 92238730009** Collected: 02/24/15 14:20 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 01:35	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 01:35	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 01:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 01:35	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		02/28/15 01:35	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		02/28/15 01:35	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		02/28/15 01:35	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-22 **Lab ID: 92238730010** Collected: 02/24/15 14:50 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 12:52		
Collected By	**Mark Swann**				1		03/04/15 13:07		
Collected Date	**2/24/15**				1		03/04/15 13:07		
Collected Date	**2/20/15**				1		03/31/15 12:52		
Collected Time	**14:50**				1		03/04/15 13:07		
Collected Time	**10:10**				1		03/31/15 12:52		
Field pH	**6.0**	Std. Units	0.10	0.10	1		03/04/15 13:07		
Field Temperature	**6.7**	deg C	0.50	0.50	1		03/04/15 13:07		
Static Water Level	**1.47**	feet			1		03/04/15 13:07		
Static Water Level	**1.82**	feet			1		03/31/15 12:52		
Field Specific Conductance	**64.6**	umhos/cm	1.0	1.0	1		03/04/15 13:07		
Turbidity	**6.07**	NTU	1.0	1.0	1		03/04/15 13:07		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 01:07	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 01:07	7440-38-2	
Barium	**67.1**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 01:07	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 01:07	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 01:07	7440-43-9	
Chromium	**2.9J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 01:07	7440-47-3	
Cobalt	**1.2J**	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 01:07	7440-48-4	
Copper	**1.1J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 01:07	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 01:07	7439-92-1	
Nickel	**2.0J**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 01:07	7440-02-0	
Selenium	**1.6J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 01:07	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 01:07	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 01:07	7440-28-0	
Vanadium	**2.3J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 01:07	7440-62-2	
Zinc	**16.7**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 01:07	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 01:52	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 01:52	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 01:52	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 01:52	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/28/15 01:52	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 01:52	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 01:52	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 01:52	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 01:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 01:52	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 01:52	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 01:52	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 01:52	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-22 **Lab ID: 92238730010** Collected: 02/24/15 14:50 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 01:52	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 01:52	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 01:52	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 01:52	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 01:52	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 01:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 01:52	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 01:52	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/28/15 01:52	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 01:52	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/28/15 01:52	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 01:52	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 01:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		02/28/15 01:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 01:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 01:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		02/28/15 01:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 01:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 01:52	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 01:52	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 01:52	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 01:52	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 01:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 01:52	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 01:52	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 01:52	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 01:52	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 01:52	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 01:52	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 01:52	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 01:52	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 01:52	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 01:52	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 01:52	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 01:52	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 01:52	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 01:52	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 01:52	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/28/15 01:52	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 01:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 01:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 01:52	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 01:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 01:52	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 01:52	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 01:52	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-22 **Lab ID: 92238730010** Collected: 02/24/15 14:50 Received: 02/25/15 08:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 01:52	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 01:52	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 01:52	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 01:52	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	95	%	70-130		1		02/28/15 01:52	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		02/28/15 01:52	17060-07-0	
Toluene-d8 (S)	92	%	70-130		1		02/28/15 01:52	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-13 **Lab ID: 92238730011** Collected: 02/25/15 14:05 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 12:55		
Collected By	**Mark Swann**				1		03/04/15 13:11		
Collected Date	**2/20/15**				1		03/31/15 12:55		
Collected Date	**2/25/15**				1		03/04/15 13:11		
Collected Time	**14:15**				1		03/31/15 12:55		
Collected Time	**14:05**				1		03/04/15 13:11		
Field pH	**6.6**	Std. Units	0.10	0.10	1		03/04/15 13:11		
Field Temperature	**11.8**	deg C	0.50	0.50	1		03/04/15 13:11		
Static Water Level	**81.75**	feet			1		03/04/15 13:11		
Field Specific Conductance	**439.8**	umhos/cm	1.0	1.0	1		03/04/15 13:11		
Field Specific Conductance	**81.78**	umhos/cm	1.0	1.0	1		03/31/15 12:55		
Turbidity	**1.87**	NTU	1.0	1.0	1		03/04/15 13:11		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 19:17	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:17	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 19:17	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 19:17	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 19:17	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	53	%	20-130		1	03/03/15 14:20	03/09/15 19:17	877-09-8	
Decachlorobiphenyl (S)	84	%	20-130		1	03/03/15 14:20	03/09/15 19:17	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 01:23	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 01:23	7440-38-2	
Barium	**831**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 01:23	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-13 **Lab ID: 92238730011** Collected: 02/25/15 14:05 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	**0.11J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 01:23	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 01:23	7440-43-9	
Chromium	**0.80J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 01:23	7440-47-3	
Cobalt	**9.4**	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 01:23	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 01:23	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 01:23	7439-92-1	
Nickel	**30.1**	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 01:23	7440-02-0	
Selenium	**2.4J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 01:23	7782-49-2	B
Silver	**0.38J**	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 01:23	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 01:23	7440-28-0	
Vanadium	**4.1J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 01:23	7440-62-2	
Zinc	**39.6**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 01:23	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 02:09	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 02:09	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 02:09	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 02:09	107-05-1	
Benzene	**1.3**	ug/L	1.0	0.25	1		02/28/15 02:09	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 02:09	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 02:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 02:09	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 02:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 02:09	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 02:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 02:09	56-23-5	
Chlorobenzene	**0.24J**	ug/L	1.0	0.23	1		02/28/15 02:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 02:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 02:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 02:09	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 02:09	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 02:09	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 02:09	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 02:09	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 02:09	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/28/15 02:09	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 02:09	541-73-1	
1,4-Dichlorobenzene	**5.8**	ug/L	1.0	0.33	1		02/28/15 02:09	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 02:09	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 02:09	75-71-8	
1,1-Dichloroethane	**1.4**	ug/L	1.0	0.32	1		02/28/15 02:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 02:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 02:09	75-35-4	
cis-1,2-Dichloroethene	**8.0**	ug/L	1.0	0.19	1		02/28/15 02:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 02:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 02:09	78-87-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-13 **Lab ID: 92238730011** Collected: 02/25/15 14:05 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 02:09	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 02:09	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 02:09	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 02:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 02:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 02:09	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 02:09	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 02:09	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 02:09	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 02:09	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 02:09	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 02:09	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 02:09	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 02:09	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 02:09	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 02:09	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 02:09	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 02:09	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 02:09	79-34-5	
Tetrachloroethene	**0.58J**	ug/L	1.0	0.46	1		02/28/15 02:09	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 02:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 02:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 02:09	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 02:09	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 02:09	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 02:09	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 02:09	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 02:09	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 02:09	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 02:09	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 02:09	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	94	%	70-130		1		02/28/15 02:09	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		02/28/15 02:09	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		02/28/15 02:09	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/05/15 11:51	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-14 **Lab ID: 92238730012** Collected: 02/25/15 13:40 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 12:59		
Collected By	**Mark Swann**				1		03/04/15 13:16		
Collected Date	**2/20/15**				1		03/31/15 12:59		
Collected Date	**2/25/15**				1		03/04/15 13:16		
Collected Time	**13:40**				1		03/04/15 13:16		
Collected Time	**14:20**				1		03/31/15 12:59		
Field pH	**6.9**	Std. Units	0.10	0.10	1		03/04/15 13:16		
Field Temperature	**11.8**	deg C	0.50	0.50	1		03/04/15 13:16		
Elevation Water Level	**87.57**	feet			1		03/31/15 12:59		
Static Water Level	**87.32**	feet			1		03/04/15 13:16		
Field Specific Conductance	**687**	umhos/cm	1.0	1.0	1		03/04/15 13:16		
Turbidity	**4.91**	NTU	1.0	1.0	1		03/04/15 13:16		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 19:35	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:35	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 19:35	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 19:35	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 19:35	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	58	%	20-130		1	03/03/15 14:20	03/09/15 19:35	877-09-8	
Decachlorobiphenyl (S)	80	%	20-130		1	03/03/15 14:20	03/09/15 19:35	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/03/15 14:55	03/04/15 01:06	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/03/15 14:55	03/04/15 01:06	7440-38-2	
Barium	**262**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 01:06	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-14 **Lab ID: 92238730012** Collected: 02/25/15 13:40 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	ND	ug/L	1.0	0.10	1	03/03/15 14:55	03/04/15 01:06	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/03/15 14:55	03/04/15 01:06	7440-43-9	
Chromium	**4.5J**	ug/L	5.0	0.40	1	03/03/15 14:55	03/04/15 01:06	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	03/03/15 14:55	03/04/15 01:06	7440-48-4	
Copper	**2.8J**	ug/L	5.0	0.30	1	03/03/15 14:55	03/04/15 01:06	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/03/15 14:55	03/04/15 01:06	7439-92-1	
Nickel	**9.7**	ug/L	5.0	1.7	1	03/03/15 14:55	03/04/15 01:06	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	03/03/15 14:55	03/04/15 01:06	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	03/03/15 14:55	03/04/15 01:06	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/03/15 14:55	03/04/15 01:06	7440-28-0	
Vanadium	**7.7**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 01:06	7440-62-2	
Zinc	**122**	ug/L	10.0	0.40	1	03/03/15 14:55	03/04/15 01:06	7440-66-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 02:26	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 02:26	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 02:26	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 02:26	107-05-1	
Benzene	**1.0**	ug/L	1.0	0.25	1		02/28/15 02:26	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 02:26	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 02:26	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 02:26	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 02:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 02:26	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 02:26	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 02:26	56-23-5	
Chlorobenzene	**1.3**	ug/L	1.0	0.23	1		02/28/15 02:26	108-90-7	
Chloroethane	**0.94J**	ug/L	1.0	0.54	1		02/28/15 02:26	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 02:26	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 02:26	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 02:26	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 02:26	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 02:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 02:26	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 02:26	74-95-3	
1,2-Dichlorobenzene	**58.6**	ug/L	1.0	0.30	1		02/28/15 02:26	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 02:26	541-73-1	
1,4-Dichlorobenzene	**15.4**	ug/L	1.0	0.33	1		02/28/15 02:26	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 02:26	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 02:26	75-71-8	
1,1-Dichloroethane	**0.56J**	ug/L	1.0	0.32	1		02/28/15 02:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 02:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 02:26	75-35-4	
cis-1,2-Dichloroethene	**12.0**	ug/L	1.0	0.19	1		02/28/15 02:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 02:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 02:26	78-87-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-14 **Lab ID: 92238730012** Collected: 02/25/15 13:40 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 02:26	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 02:26	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 02:26	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 02:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 02:26	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 02:26	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 02:26	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 02:26	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 02:26	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 02:26	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 02:26	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 02:26	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 02:26	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 02:26	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 02:26	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 02:26	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 02:26	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 02:26	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 02:26	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/28/15 02:26	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 02:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 02:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 02:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 02:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 02:26	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 02:26	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 02:26	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 02:26	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 02:26	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 02:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 02:26	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	94	%	70-130		1		02/28/15 02:26	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		02/28/15 02:26	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		02/28/15 02:26	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/05/15 11:52	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-14D **Lab ID: 92238730013** Collected: 02/25/15 13:20 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/04/15 13:19		
Collected By	**Mark Swann**				1		03/31/15 13:02		
Collected Date	**2/25/15**				1		03/04/15 13:19		
Collected Date	**2/20/15**				1		03/31/15 13:02		
Collected Time	**14:18**				1		03/31/15 13:02		
Collected Time	**13:20**				1		03/04/15 13:19		
Field pH	**9.6**	Std. Units	0.10	0.10	1		03/04/15 13:19		
Field Temperature	**11.8**	deg C	0.50	0.50	1		03/04/15 13:19		
Static Water Level	**148.28**	feet			1		03/31/15 13:02		
Static Water Level	**148.14**	feet			1		03/04/15 13:19		
Field Specific Conductance	**239.7**	umhos/cm	1.0	1.0	1		03/04/15 13:19		
Turbidity	**5.64**	NTU	1.0	1.0	1		03/04/15 13:19		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/03/15 14:55	03/04/15 01:16	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/03/15 14:55	03/04/15 01:16	7440-38-2	
Barium	**44.8**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 01:16	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/03/15 14:55	03/04/15 01:16	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/03/15 14:55	03/04/15 01:16	7440-43-9	
Chromium	**0.77J**	ug/L	5.0	0.40	1	03/03/15 14:55	03/04/15 01:16	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	03/03/15 14:55	03/04/15 01:16	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	03/03/15 14:55	03/04/15 01:16	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/03/15 14:55	03/04/15 01:16	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	03/03/15 14:55	03/04/15 01:16	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	03/03/15 14:55	03/04/15 01:16	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	03/03/15 14:55	03/04/15 01:16	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/03/15 14:55	03/04/15 01:16	7440-28-0	
Vanadium	**1.2J**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 01:16	7440-62-2	
Zinc	**105**	ug/L	10.0	0.40	1	03/03/15 14:55	03/04/15 01:16	7440-66-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 02:43	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 02:43	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 02:43	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 02:43	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/28/15 02:43	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 02:43	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 02:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 02:43	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 02:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 02:43	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 02:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 02:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 02:43	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-14D **Lab ID: 92238730013** Collected: 02/25/15 13:20 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 02:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 02:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 02:43	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 02:43	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 02:43	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 02:43	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 02:43	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 02:43	74-95-3	
1,2-Dichlorobenzene	**1.8**	ug/L	1.0	0.30	1		02/28/15 02:43	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 02:43	541-73-1	
1,4-Dichlorobenzene	**0.45J**	ug/L	1.0	0.33	1		02/28/15 02:43	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 02:43	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 02:43	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		02/28/15 02:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 02:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 02:43	75-35-4	
cis-1,2-Dichloroethene	**0.66J**	ug/L	1.0	0.19	1		02/28/15 02:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 02:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 02:43	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 02:43	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 02:43	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 02:43	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 02:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 02:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 02:43	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 02:43	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 02:43	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 02:43	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 02:43	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 02:43	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 02:43	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 02:43	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 02:43	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 02:43	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 02:43	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 02:43	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 02:43	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 02:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/28/15 02:43	127-18-4	
Toluene	**0.27J**	ug/L	1.0	0.26	1		02/28/15 02:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 02:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 02:43	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 02:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 02:43	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 02:43	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 02:43	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-14D **Lab ID: 92238730013** Collected: 02/25/15 13:20 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 02:43	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 02:43	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 02:43	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 02:43	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	95	%	70-130		1		02/28/15 02:43	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		02/28/15 02:43	17060-07-0	
Toluene-d8 (S)	93	%	70-130		1		02/28/15 02:43	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-15 **Lab ID: 92238730014** Collected: 02/25/15 14:30 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/04/15 13:25		
Collected By	**Mark Swann**				1		03/31/15 13:04		
Collected Date	**2/20/15**				1		03/31/15 13:04		
Collected Date	**2/25/15**				1		03/04/15 13:25		
Collected Time	**14:30**				1		03/04/15 13:25		
Collected Time	**14:25**				1		03/31/15 13:04		
Field pH	**7.0**	Std. Units	0.10	0.10	1		03/04/15 13:25		
Field Temperature	**11.3**	deg C	0.50	0.50	1		03/04/15 13:25		
Static Water Level	**84.65**	feet			1		03/31/15 13:04		
Static Water Level	**84.45**	feet			1		03/04/15 13:25		
Field Specific Conductance	**651.1**	umhos/cm	1.0	1.0	1		03/04/15 13:25		
Turbidity	**7.40**	NTU	1.0	1.0	1		03/04/15 13:25		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/03/15 14:55	03/04/15 01:19	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/03/15 14:55	03/04/15 01:19	7440-38-2	
Barium	**46.9**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 01:19	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/03/15 14:55	03/04/15 01:19	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/03/15 14:55	03/04/15 01:19	7440-43-9	
Chromium	**3.0J**	ug/L	5.0	0.40	1	03/03/15 14:55	03/04/15 01:19	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	03/03/15 14:55	03/04/15 01:19	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	03/03/15 14:55	03/04/15 01:19	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/03/15 14:55	03/04/15 01:19	7439-92-1	
Nickel	**2.3J**	ug/L	5.0	1.7	1	03/03/15 14:55	03/04/15 01:19	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	03/03/15 14:55	03/04/15 01:19	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	03/03/15 14:55	03/04/15 01:19	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/03/15 14:55	03/04/15 01:19	7440-28-0	
Vanadium	**2.6J**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 01:19	7440-62-2	
Zinc	**5.4J**	ug/L	10.0	0.40	1	03/03/15 14:55	03/04/15 01:19	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 03:00	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 03:00	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 03:00	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 03:00	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/28/15 03:00	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 03:00	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 03:00	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 03:00	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 03:00	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 03:00	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 03:00	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 03:00	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 03:00	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-15 **Lab ID: 92238730014** Collected: 02/25/15 14:30 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 03:00	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 03:00	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 03:00	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 03:00	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 03:00	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 03:00	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 03:00	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 03:00	74-95-3	
1,2-Dichlorobenzene	**5.7**	ug/L	1.0	0.30	1		02/28/15 03:00	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 03:00	541-73-1	
1,4-Dichlorobenzene	**0.50J**	ug/L	1.0	0.33	1		02/28/15 03:00	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 03:00	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 03:00	75-71-8	
1,1-Dichloroethane	**0.45J**	ug/L	1.0	0.32	1		02/28/15 03:00	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/28/15 03:00	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 03:00	75-35-4	
cis-1,2-Dichloroethene	**1.8**	ug/L	1.0	0.19	1		02/28/15 03:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 03:00	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 03:00	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 03:00	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 03:00	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 03:00	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 03:00	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 03:00	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 03:00	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 03:00	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 03:00	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 03:00	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 03:00	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 03:00	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/28/15 03:00	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 03:00	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 03:00	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 03:00	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 03:00	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 03:00	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 03:00	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 03:00	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/28/15 03:00	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 03:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 03:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 03:00	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/28/15 03:00	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 03:00	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 03:00	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 03:00	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-15 **Lab ID: 92238730014** Collected: 02/25/15 14:30 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 03:00	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 03:00	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 03:00	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 03:00	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	95	%	70-130		1		02/28/15 03:00	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		02/28/15 03:00	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		02/28/15 03:00	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/05/15 11:53	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-25 **Lab ID: 92238730015** Collected: 02/25/15 15:15 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/04/15 13:28		
Collected By	**Mark Swann**				1		03/31/15 13:06		
Collected Date	**2/20/15**				1		03/31/15 13:06		
Collected Date	**2/25/15**				1		03/04/15 13:28		
Collected Time	**15:15**				1		03/04/15 13:28		
Collected Time	**13:55**				1		03/31/15 13:06		
Field pH	**8.1**	Std. Units	0.10	0.10	1		03/04/15 13:28		
Field Temperature	**11.2**	deg C	0.50	0.50	1		03/04/15 13:28		
Static Water Level	**175.44**	feet			1		03/04/15 13:28		
Static Water Level	**176.95**	feet			1		03/31/15 13:06		
Field Specific Conductance	**429.4**	umhos/cm	1.0	1.0	1		03/04/15 13:28		
Turbidity	**9.42**	NTU	1.0	1.0	1		03/04/15 13:28		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 19:52	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 19:52	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 19:52	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 19:52	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 19:52	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	84	%	20-130		1	03/03/15 14:20	03/09/15 19:52	877-09-8	
Decachlorobiphenyl (S)	55	%	20-130		1	03/03/15 14:20	03/09/15 19:52	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/03/15 14:55	03/04/15 01:22	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/03/15 14:55	03/04/15 01:22	7440-38-2	
Barium	**32.9**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 01:22	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-25 **Lab ID: 92238730015** Collected: 02/25/15 15:15 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	ND	ug/L	1.0	0.10	1	03/03/15 14:55	03/04/15 01:22	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/03/15 14:55	03/04/15 01:22	7440-43-9	
Chromium	**12.0**	ug/L	5.0	0.40	1	03/03/15 14:55	03/04/15 01:22	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	03/03/15 14:55	03/04/15 01:22	7440-48-4	
Copper	**0.96J**	ug/L	5.0	0.30	1	03/03/15 14:55	03/04/15 01:22	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/03/15 14:55	03/04/15 01:22	7439-92-1	
Nickel	**8.8**	ug/L	5.0	1.7	1	03/03/15 14:55	03/04/15 01:22	7440-02-0	
Selenium	**0.16J**	ug/L	10.0	0.10	1	03/03/15 14:55	03/04/15 01:22	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	03/03/15 14:55	03/04/15 01:22	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/03/15 14:55	03/04/15 01:22	7440-28-0	
Vanadium	**2.5J**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 01:22	7440-62-2	
Zinc	**15.0**	ug/L	10.0	0.40	1	03/03/15 14:55	03/04/15 01:22	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/28/15 03:33	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/28/15 03:33	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/28/15 03:33	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/28/15 03:33	107-05-1	
Benzene	**0.92J**	ug/L	1.0	0.25	1		02/28/15 03:33	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/28/15 03:33	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/28/15 03:33	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/28/15 03:33	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/28/15 03:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/28/15 03:33	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/28/15 03:33	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/28/15 03:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/28/15 03:33	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		02/28/15 03:33	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/28/15 03:33	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/28/15 03:33	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/28/15 03:33	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/28/15 03:33	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/28/15 03:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/28/15 03:33	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/28/15 03:33	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/28/15 03:33	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/28/15 03:33	541-73-1	
1,4-Dichlorobenzene	**1.2**	ug/L	1.0	0.33	1		02/28/15 03:33	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/28/15 03:33	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/28/15 03:33	75-71-8	
1,1-Dichloroethane	**10.9**	ug/L	1.0	0.32	1		02/28/15 03:33	75-34-3	
1,2-Dichloroethane	**0.63J**	ug/L	1.0	0.12	1		02/28/15 03:33	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/28/15 03:33	75-35-4	
cis-1,2-Dichloroethene	**9.2**	ug/L	1.0	0.19	1		02/28/15 03:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/28/15 03:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/28/15 03:33	78-87-5	

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

ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-25 **Lab ID: 92238730015** Collected: 02/25/15 15:15 Received: 02/25/15 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/28/15 03:33	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/28/15 03:33	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/28/15 03:33	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/28/15 03:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/28/15 03:33	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/28/15 03:33	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/28/15 03:33	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/28/15 03:33	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/28/15 03:33	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/28/15 03:33	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/28/15 03:33	126-98-7	
Methylene Chloride	**4.9**	ug/L	1.0	0.97	1		02/28/15 03:33	75-09-2	C9
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/28/15 03:33	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/28/15 03:33	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/28/15 03:33	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/28/15 03:33	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/28/15 03:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/28/15 03:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/28/15 03:33	79-34-5	
Tetrachloroethene	**1.0**	ug/L	1.0	0.46	1		02/28/15 03:33	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/28/15 03:33	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/28/15 03:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/28/15 03:33	79-00-5	
Trichloroethene	**1.3**	ug/L	1.0	0.47	1		02/28/15 03:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/28/15 03:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/28/15 03:33	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/28/15 03:33	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/28/15 03:33	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/28/15 03:33	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/28/15 03:33	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/28/15 03:33	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		02/28/15 03:33	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		02/28/15 03:33	17060-07-0	
Toluene-d8 (S)	93	%	70-130		1		02/28/15 03:33	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-8 **Lab ID: 92238730016** Collected: 03/02/15 15:40 Received: 03/02/15 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 13:09		
Collected By	**Mark Swann**				1		03/26/15 09:11		
Collected Date	**3/2/15**				1		03/26/15 09:11		
Collected Date	**2/20/15**				1		03/31/15 13:09		
Collected Time	**12:35**				1		03/31/15 13:09		
Collected Time	**15:40**				1		03/26/15 09:11		
Field pH	**6.60**	Std. Units	0.10	0.10	1		03/26/15 09:11		
Field Temperature	**10.1**	deg C	0.50	0.50	1		03/26/15 09:11		
Static Water Level	**5.13**	feet			1		03/31/15 13:09		
Static Water Level	**4.68**	feet			1		03/26/15 09:11		
Field Specific Conductance	**168**	umhos/cm	1.0	1.0	1		03/26/15 09:11		
Turbidity	**8.89**	NTU	1.0	1.0	1		03/26/15 09:11		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/03/15 14:55	03/04/15 02:02	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/03/15 14:55	03/04/15 02:02	7440-38-2	
Barium	**25.8**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 02:02	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/03/15 14:55	03/04/15 02:02	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/03/15 14:55	03/04/15 02:02	7440-43-9	
Chromium	**6.2**	ug/L	5.0	0.40	1	03/03/15 14:55	03/04/15 02:02	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	03/03/15 14:55	03/04/15 02:02	7440-48-4	
Copper	**0.86J**	ug/L	5.0	0.30	1	03/03/15 14:55	03/04/15 02:02	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/03/15 14:55	03/04/15 02:02	7439-92-1	
Nickel	**2.3J**	ug/L	5.0	1.7	1	03/03/15 14:55	03/04/15 02:02	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	03/03/15 14:55	03/04/15 02:02	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	03/03/15 14:55	03/04/15 02:02	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/03/15 14:55	03/04/15 02:02	7440-28-0	
Vanadium	**3.9J**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 02:02	7440-62-2	
Zinc	**7.7J**	ug/L	10.0	0.40	1	03/03/15 14:55	03/04/15 02:02	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/11/15 11:32	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/11/15 11:32	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/11/15 11:32	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/11/15 11:32	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/11/15 11:32	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/11/15 11:32	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/11/15 11:32	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/11/15 11:32	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/11/15 11:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/11/15 11:32	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/11/15 11:32	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/11/15 11:32	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/11/15 11:32	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-8 **Lab ID: 92238730016** Collected: 03/02/15 15:40 Received: 03/02/15 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		03/11/15 11:32	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/11/15 11:32	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/11/15 11:32	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/11/15 11:32	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/11/15 11:32	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/11/15 11:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/11/15 11:32	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/11/15 11:32	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/11/15 11:32	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/11/15 11:32	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/11/15 11:32	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/11/15 11:32	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/11/15 11:32	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/11/15 11:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/11/15 11:32	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/11/15 11:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/11/15 11:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/11/15 11:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/11/15 11:32	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/11/15 11:32	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/11/15 11:32	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/11/15 11:32	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/11/15 11:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/11/15 11:32	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/11/15 11:32	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/11/15 11:32	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/11/15 11:32	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/11/15 11:32	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/11/15 11:32	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/11/15 11:32	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/11/15 11:32	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/11/15 11:32	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/11/15 11:32	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/11/15 11:32	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/11/15 11:32	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/11/15 11:32	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/11/15 11:32	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/11/15 11:32	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/11/15 11:32	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/11/15 11:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/11/15 11:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/11/15 11:32	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/11/15 11:32	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/11/15 11:32	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/11/15 11:32	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/11/15 11:32	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-8 **Lab ID: 92238730016** Collected: 03/02/15 15:40 Received: 03/02/15 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/11/15 11:32	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/11/15 11:32	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/11/15 11:32	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/11/15 11:32	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		03/11/15 11:32	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1		03/11/15 11:32	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/11/15 11:32	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/13/15 16:32	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-9 **Lab ID: 92238730017** Collected: 03/02/15 15:20 Received: 03/02/15 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:21		
Collected By	**Mark Swann**				1		03/31/15 13:14		
Collected Date	**3/2/15**				1		03/26/15 09:21		
Collected Date	**2/20/15**				1		03/31/15 13:14		
Collected Time	**11:20**				1		03/31/15 13:14		
Collected Time	**15:20**				1		03/26/15 09:21		
Field pH	**6.4**	Std. Units	0.10	0.10	1		03/26/15 09:21		
Field Temperature	**9.1**	deg C	0.50	0.50	1		03/26/15 09:21		
Static Water Level	**2.21**	feet			1		03/31/15 13:14		
Static Water Level	**1.95**	feet			1		03/26/15 09:21		
Field Specific Conductance	**121**	umhos/cm	1.0	1.0	1		03/26/15 09:21		
Turbidity	**19.4**	NTU	1.0	1.0	1		03/26/15 09:21		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 20:10	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/03/15 14:20	03/09/15 20:10	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 20:10	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/03/15 14:20	03/09/15 20:10	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/03/15 14:20	03/09/15 20:10	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	72	%	20-130		1	03/03/15 14:20	03/09/15 20:10	877-09-8	
Decachlorobiphenyl (S)	73	%	20-130		1	03/03/15 14:20	03/09/15 20:10	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/03/15 14:55	03/04/15 02:15	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/03/15 14:55	03/04/15 02:15	7440-38-2	
Barium	**137**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 02:15	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-9 **Lab ID: 92238730017** Collected: 03/02/15 15:20 Received: 03/02/15 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	**0.12J**	ug/L	1.0	0.10	1	03/03/15 14:55	03/04/15 02:15	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/03/15 14:55	03/04/15 02:15	7440-43-9	
Chromium	**12.4**	ug/L	5.0	0.40	1	03/03/15 14:55	03/04/15 02:15	7440-47-3	
Cobalt	**2.4J**	ug/L	5.0	0.60	1	03/03/15 14:55	03/04/15 02:15	7440-48-4	
Copper	**4.5J**	ug/L	5.0	0.30	1	03/03/15 14:55	03/04/15 02:15	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/03/15 14:55	03/04/15 02:15	7439-92-1	
Nickel	**6.5**	ug/L	5.0	1.7	1	03/03/15 14:55	03/04/15 02:15	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	03/03/15 14:55	03/04/15 02:15	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	03/03/15 14:55	03/04/15 02:15	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/03/15 14:55	03/04/15 02:15	7440-28-0	
Vanadium	**14.3**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 02:15	7440-62-2	
Zinc	**14.5**	ug/L	10.0	0.40	1	03/03/15 14:55	03/04/15 02:15	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/11/15 11:49	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/11/15 11:49	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/11/15 11:49	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/11/15 11:49	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/11/15 11:49	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/11/15 11:49	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/11/15 11:49	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/11/15 11:49	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/11/15 11:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/11/15 11:49	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/11/15 11:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/11/15 11:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/11/15 11:49	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		03/11/15 11:49	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/11/15 11:49	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/11/15 11:49	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/11/15 11:49	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/11/15 11:49	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/11/15 11:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/11/15 11:49	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/11/15 11:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/11/15 11:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/11/15 11:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/11/15 11:49	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/11/15 11:49	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/11/15 11:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/11/15 11:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/11/15 11:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/11/15 11:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/11/15 11:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/11/15 11:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/11/15 11:49	78-87-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-9 **Lab ID: 92238730017** Collected: 03/02/15 15:20 Received: 03/02/15 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/11/15 11:49	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/11/15 11:49	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/11/15 11:49	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/11/15 11:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/11/15 11:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/11/15 11:49	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/11/15 11:49	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/11/15 11:49	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/11/15 11:49	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/11/15 11:49	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/11/15 11:49	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/11/15 11:49	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/11/15 11:49	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/11/15 11:49	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/11/15 11:49	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/11/15 11:49	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/11/15 11:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/11/15 11:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/11/15 11:49	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/11/15 11:49	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/11/15 11:49	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/11/15 11:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/11/15 11:49	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/11/15 11:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/11/15 11:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/11/15 11:49	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/11/15 11:49	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/11/15 11:49	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/11/15 11:49	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/11/15 11:49	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/11/15 11:49	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		03/11/15 11:49	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130		1		03/11/15 11:49	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		03/11/15 11:49	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-24 **Lab ID: 92238730018** Collected: 03/02/15 15:00 Received: 03/02/15 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:25		
Collected By	**Mark Swann**				1		03/31/15 13:16		
Collected Date	**2/20/15**				1		03/31/15 13:16		
Collected Date	**3/2/15**				1		03/26/15 09:25		
Collected Time	**15:00**				1		03/26/15 09:25		
Collected Time	**10:45**				1		03/31/15 13:16		
Field pH	**6.9**	Std. Units	0.10	0.10	1		03/26/15 09:25		
Field Temperature	**10.5**	deg C	0.50	0.50	1		03/26/15 09:25		
Static Water Level	**4.26**	feet			1		03/26/15 09:25		
Static Water Level	**4.50**	feet			1		03/31/15 13:16		
Field Specific Conductance	**63.1**	umhos/cm	1.0	1.0	1		03/26/15 09:25		
Turbidity	**1.63**	NTU	1.0	1.0	1		03/26/15 09:25		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/03/15 14:55	03/04/15 02:18	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/03/15 14:55	03/04/15 02:18	7440-38-2	
Barium	**27.2**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 02:18	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/03/15 14:55	03/04/15 02:18	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/03/15 14:55	03/04/15 02:18	7440-43-9	
Chromium	**0.89J**	ug/L	5.0	0.40	1	03/03/15 14:55	03/04/15 02:18	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	03/03/15 14:55	03/04/15 02:18	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	03/03/15 14:55	03/04/15 02:18	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/03/15 14:55	03/04/15 02:18	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	03/03/15 14:55	03/04/15 02:18	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	03/03/15 14:55	03/04/15 02:18	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	03/03/15 14:55	03/04/15 02:18	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/03/15 14:55	03/04/15 02:18	7440-28-0	
Vanadium	**0.51J**	ug/L	5.0	0.20	1	03/03/15 14:55	03/04/15 02:18	7440-62-2	
Zinc	**4.0J**	ug/L	10.0	0.40	1	03/03/15 14:55	03/04/15 02:18	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/11/15 12:06	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/11/15 12:06	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/11/15 12:06	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/11/15 12:06	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/11/15 12:06	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/11/15 12:06	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/11/15 12:06	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/11/15 12:06	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/11/15 12:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/11/15 12:06	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/11/15 12:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/11/15 12:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/11/15 12:06	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-24 **Lab ID: 92238730018** Collected: 03/02/15 15:00 Received: 03/02/15 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		03/11/15 12:06	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/11/15 12:06	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/11/15 12:06	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/11/15 12:06	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/11/15 12:06	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/11/15 12:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/11/15 12:06	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/11/15 12:06	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/11/15 12:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/11/15 12:06	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/11/15 12:06	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/11/15 12:06	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/11/15 12:06	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/11/15 12:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/11/15 12:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/11/15 12:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/11/15 12:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/11/15 12:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/11/15 12:06	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/11/15 12:06	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/11/15 12:06	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/11/15 12:06	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/11/15 12:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/11/15 12:06	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/11/15 12:06	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/11/15 12:06	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/11/15 12:06	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/11/15 12:06	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/11/15 12:06	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/11/15 12:06	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/11/15 12:06	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/11/15 12:06	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/11/15 12:06	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/11/15 12:06	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/11/15 12:06	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/11/15 12:06	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/11/15 12:06	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/11/15 12:06	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/11/15 12:06	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/11/15 12:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/11/15 12:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/11/15 12:06	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/11/15 12:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/11/15 12:06	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/11/15 12:06	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/11/15 12:06	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-24 **Lab ID: 92238730018** Collected: 03/02/15 15:00 Received: 03/02/15 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/11/15 12:06	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/11/15 12:06	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/11/15 12:06	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/11/15 12:06	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		03/11/15 12:06	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70-130		1		03/11/15 12:06	17060-07-0	
Toluene-d8 (S)	95	%	70-130		1		03/11/15 12:06	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-2A **Lab ID: 92238730019** Collected: 03/03/15 16:45 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:26		
Collected By	**Mark Swann**				1		03/31/15 13:20		
Collected Date	**3/3/15**				1		03/26/15 09:26		
Collected Date	**2/20/15**				1		03/31/15 13:20		
Collected Time	**14:40**				1		03/31/15 13:20		
Collected Time	**16:45**				1		03/26/15 09:26		
Field pH	**6.1**	Std. Units	0.10	0.10	1		03/26/15 09:26		
Field Temperature	**13.3**	deg C	0.50	0.50	1		03/26/15 09:26		
Static Water Level	**24.49**	feet			1		03/26/15 09:26		
Static Water Level	**25.60**	feet			1		03/31/15 13:20		
Field Specific Conductance	**538**	umhos/cm	1.0	1.0	1		03/26/15 09:26		
Turbidity	**4.55**	NTU	1.0	1.0	1		03/26/15 09:26		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/05/15 12:15	03/09/15 18:05	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/05/15 12:15	03/09/15 18:05	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/05/15 12:15	03/09/15 18:05	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/05/15 12:15	03/09/15 18:05	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/05/15 12:15	03/09/15 18:05	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	61	%	20-130		1	03/05/15 12:15	03/09/15 18:05	877-09-8	
Decachlorobiphenyl (S)	77	%	20-130		1	03/05/15 12:15	03/09/15 18:05	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 01:45	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 01:45	7440-38-2	
Barium	**182**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 01:45	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-2A **Lab ID: 92238730019** Collected: 03/03/15 16:45 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 01:45	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 01:45	7440-43-9	
Chromium	**0.86J**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 01:45	7440-47-3	
Cobalt	**55.0**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 01:45	7440-48-4	
Copper	**5.7**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 01:45	7440-50-8	
Lead	**4.4J**	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 01:45	7439-92-1	
Nickel	**1.8J**	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 01:45	7440-02-0	
Selenium	**2.4J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 01:45	7782-49-2	B
Silver	**0.35J**	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 01:45	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 01:45	7440-28-0	
Vanadium	**13.4**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 01:45	7440-62-2	
Zinc	**21.4**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 01:45	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/11/15 12:23	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/11/15 12:23	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/11/15 12:23	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/11/15 12:23	107-05-1	
Benzene	**0.53J**	ug/L	1.0	0.25	1		03/11/15 12:23	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/11/15 12:23	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/11/15 12:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/11/15 12:23	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/11/15 12:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/11/15 12:23	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/11/15 12:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/11/15 12:23	56-23-5	
Chlorobenzene	**0.47J**	ug/L	1.0	0.23	1		03/11/15 12:23	108-90-7	
Chloroethane	**2.1**	ug/L	1.0	0.54	1		03/11/15 12:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/11/15 12:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/11/15 12:23	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/11/15 12:23	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/11/15 12:23	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/11/15 12:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/11/15 12:23	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/11/15 12:23	74-95-3	
1,2-Dichlorobenzene	**1.0J**	ug/L	1.0	0.30	1		03/11/15 12:23	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/11/15 12:23	541-73-1	
1,4-Dichlorobenzene	**6.4**	ug/L	1.0	0.33	1		03/11/15 12:23	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/11/15 12:23	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/11/15 12:23	75-71-8	
1,1-Dichloroethane	**0.86J**	ug/L	1.0	0.32	1		03/11/15 12:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/11/15 12:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/11/15 12:23	75-35-4	
cis-1,2-Dichloroethene	**2.7**	ug/L	1.0	0.19	1		03/11/15 12:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/11/15 12:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/11/15 12:23	78-87-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-2A **Lab ID: 92238730019** Collected: 03/03/15 16:45 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/11/15 12:23	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/11/15 12:23	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/11/15 12:23	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/11/15 12:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/11/15 12:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/11/15 12:23	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/11/15 12:23	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/11/15 12:23	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/11/15 12:23	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/11/15 12:23	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/11/15 12:23	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/11/15 12:23	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/11/15 12:23	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/11/15 12:23	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/11/15 12:23	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/11/15 12:23	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/11/15 12:23	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/11/15 12:23	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/11/15 12:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/11/15 12:23	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/11/15 12:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/11/15 12:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/11/15 12:23	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/11/15 12:23	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/11/15 12:23	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/11/15 12:23	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/11/15 12:23	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/11/15 12:23	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/11/15 12:23	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/11/15 12:23	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/11/15 12:23	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		03/11/15 12:23	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1		03/11/15 12:23	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/11/15 12:23	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/13/15 16:40	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-3A **Lab ID: 92238730020** Collected: 03/03/15 16:30 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:28		
Collected By	**Mark Swann**				1		03/31/15 13:23		
Collected Date	**2/20/15**				1		03/31/15 13:23		
Collected Date	**3/3/15**				1		03/26/15 09:28		
Collected Time	**16:30**				1		03/26/15 09:28		
Collected Time	**14:31**				1		03/31/15 13:23		
Field pH	**5.9**	Std. Units	0.10	0.10	1		03/26/15 09:28		
Field Temperature	**13.0**	deg C	0.50	0.50	1		03/26/15 09:28		
Static Water Level	**39.31**	feet			1		03/31/15 13:23		
Static Water Level	**38.58**	feet			1		03/26/15 09:28		
Field Specific Conductance	**202**	umhos/cm	1.0	1.0	1		03/26/15 09:28		
Turbidity	**4.20**	NTU	1.0	1.0	1		03/26/15 09:28		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 01:57	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 01:57	7440-38-2	
Barium	**162**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 01:57	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 01:57	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 01:57	7440-43-9	
Chromium	**2.9J**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 01:57	7440-47-3	
Cobalt	**84.3**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 01:57	7440-48-4	
Copper	**3.8J**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 01:57	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 01:57	7439-92-1	
Nickel	**15.4**	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 01:57	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 01:57	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 01:57	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 01:57	7440-28-0	
Vanadium	**15.0**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 01:57	7440-62-2	
Zinc	**44.7**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 01:57	7440-66-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/11/15 12:56	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/11/15 12:56	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/11/15 12:56	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/11/15 12:56	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/11/15 12:56	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/11/15 12:56	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/11/15 12:56	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/11/15 12:56	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/11/15 12:56	74-83-9	M1
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/11/15 12:56	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/11/15 12:56	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/11/15 12:56	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/11/15 12:56	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-3A **Lab ID: 92238730020** Collected: 03/03/15 16:30 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	**1.7**	ug/L	1.0	0.54	1		03/11/15 12:56	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/11/15 12:56	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/11/15 12:56	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/11/15 12:56	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/11/15 12:56	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/11/15 12:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/11/15 12:56	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/11/15 12:56	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/11/15 12:56	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/11/15 12:56	541-73-1	
1,4-Dichlorobenzene	**0.46J**	ug/L	1.0	0.33	1		03/11/15 12:56	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/11/15 12:56	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/11/15 12:56	75-71-8	M1
1,1-Dichloroethane	**3.2**	ug/L	1.0	0.32	1		03/11/15 12:56	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.12	1		03/11/15 12:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/11/15 12:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/11/15 12:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/11/15 12:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/11/15 12:56	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/11/15 12:56	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/11/15 12:56	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/11/15 12:56	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/11/15 12:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/11/15 12:56	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/11/15 12:56	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/11/15 12:56	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/11/15 12:56	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/11/15 12:56	74-88-4	M1
Isobutanol	ND	ug/L	100	35.0	1		03/11/15 12:56	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/11/15 12:56	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/11/15 12:56	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/11/15 12:56	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/11/15 12:56	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/11/15 12:56	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/11/15 12:56	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/11/15 12:56	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/11/15 12:56	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/11/15 12:56	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/11/15 12:56	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/11/15 12:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/11/15 12:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/11/15 12:56	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/11/15 12:56	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/11/15 12:56	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/11/15 12:56	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/11/15 12:56	108-05-4	M1

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-3A **Lab ID: 92238730020** Collected: 03/03/15 16:30 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/11/15 12:56	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/11/15 12:56	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/11/15 12:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/11/15 12:56	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		03/11/15 12:56	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70-130		1		03/11/15 12:56	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/11/15 12:56	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/13/15 16:41	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-6 **Lab ID: 92238730021** Collected: 03/03/15 13:50 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 13:26		
Collected By	**Mark Swann**				1		03/26/15 09:29		
Collected Date	**2/20/15**				1		03/31/15 13:26		
Collected Date	**3/3/15**				1		03/26/15 09:29		
Collected Time	**12:05**				1		03/31/15 13:26		
Collected Time	**13:50**				1		03/26/15 09:29		
Field pH	**6.0**	Std. Units	0.10	0.10	1		03/26/15 09:29		
Field Temperature	**10.7**	deg C	0.50	0.50	1		03/26/15 09:29		
Static Water Level	**5.96**	feet			1		03/26/15 09:29		
Static Water Level	**6.35**	feet			1		03/31/15 13:26		
Field Specific Conductance	**52**	umhos/cm	1.0	1.0	1		03/26/15 09:29		
Turbidity	**11.2**	NTU	1.0	1.0	1		03/26/15 09:29		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:01	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:01	7440-38-2	
Barium	**60.5**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:01	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:01	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:01	7440-43-9	
Chromium	**6.9**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:01	7440-47-3	
Cobalt	**2.4J**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:01	7440-48-4	
Copper	**3.5J**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:01	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:01	7439-92-1	
Nickel	**3.2J**	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:01	7440-02-0	
Selenium	**0.34J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:01	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:01	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:01	7440-28-0	
Vanadium	**8.9**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:01	7440-62-2	
Zinc	**39.4**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:01	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 04:28	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 04:28	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 04:28	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 04:28	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 04:28	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 04:28	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 04:28	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 04:28	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 04:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 04:28	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 04:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 04:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/12/15 04:28	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-6 **Lab ID: 92238730021** Collected: 03/03/15 13:50 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 04:28	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 04:28	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 04:28	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 04:28	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 04:28	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 04:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 04:28	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 04:28	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/12/15 04:28	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 04:28	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/12/15 04:28	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 04:28	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 04:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/12/15 04:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/12/15 04:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 04:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/12/15 04:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 04:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 04:28	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 04:28	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 04:28	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 04:28	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 04:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 04:28	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 04:28	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 04:28	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 04:28	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 04:28	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 04:28	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 04:28	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 04:28	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 04:28	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 04:28	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 04:28	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 04:28	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 04:28	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 04:28	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 04:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 04:28	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 04:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 04:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 04:28	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 04:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 04:28	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 04:28	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 04:28	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-6 **Lab ID: 92238730021** Collected: 03/03/15 13:50 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 04:28	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 04:28	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 04:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 04:28	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		03/12/15 04:28	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1		03/12/15 04:28	17060-07-0	
Toluene-d8 (S)	95	%	70-130		1		03/12/15 04:28	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/13/15 16:42	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-7 **Lab ID: 92238730022** Collected: 03/03/15 14:10 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:31		
Collected By	**Mark Swann**				1		03/31/15 13:28		
Collected Date	**3/3/15**				1		03/26/15 09:31		
Collected Date	**2/20/15**				1		03/31/15 13:28		
Collected Time	**12:15**				1		03/31/15 13:28		
Collected Time	**14:10**				1		03/26/15 09:31		
Field pH	**5.8**	Std. Units	0.10	0.10	1		03/26/15 09:31		
Field Temperature	**12.0**	deg C	0.50	0.50	1		03/26/15 09:31		
Static Water Level	**7.96**	feet			1		03/26/15 09:31		
Static Water Level	**8.56**	feet			1		03/31/15 13:28		
Field Specific Conductance	**297**	umhos/cm	1.0	1.0	1		03/26/15 09:31		
Turbidity	**11.7**	NTU	1.0	1.0	1		03/26/15 09:31		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	309-00-2	
alpha-BHC	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	319-84-6	
beta-BHC	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	319-85-7	
delta-BHC	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	58-89-9	
Chlordane (Technical)	ND	ug/L	0.25	0.25	1	03/05/15 12:15	03/09/15 18:23	57-74-9	
4,4'-DDD	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	72-54-8	
4,4'-DDE	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	72-55-9	
4,4'-DDT	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	50-29-3	
Dieldrin	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	60-57-1	
Endosulfan I	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	959-98-8	
Endosulfan II	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	1031-07-8	
Endrin	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	72-20-8	
Endrin aldehyde	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	7421-93-4	
Endrin ketone	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	53494-70-5	
Heptachlor	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	76-44-8	
Heptachlor epoxide	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.062	0.062	1	03/05/15 12:15	03/09/15 18:23	118-74-1	
Methoxychlor	ND	ug/L	0.19	0.19	1	03/05/15 12:15	03/09/15 18:23	72-43-5	
Mirex	ND	ug/L	0.19	0.19	1	03/05/15 12:15	03/09/15 18:23	2385-85-5	
Toxaphene	ND	ug/L	0.25	0.25	1	03/05/15 12:15	03/09/15 18:23	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	101	%	20-130		1	03/05/15 12:15	03/09/15 18:23	877-09-8	
Decachlorobiphenyl (S)	92	%	20-130		1	03/05/15 12:15	03/09/15 18:23	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:04	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:04	7440-38-2	
Barium	**181**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:04	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-7 **Lab ID: 92238730022** Collected: 03/03/15 14:10 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:04	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:04	7440-43-9	
Chromium	**2.4J**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:04	7440-47-3	
Cobalt	**1.5J**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:04	7440-48-4	
Copper	**1.4J**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:04	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:04	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:04	7440-02-0	
Selenium	**1.2J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:04	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:04	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:04	7440-28-0	
Vanadium	**4.1J**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:04	7440-62-2	
Zinc	**9.2J**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:04	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 04:45	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 04:45	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 04:45	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 04:45	107-05-1	
Benzene	**0.59J**	ug/L	1.0	0.25	1		03/12/15 04:45	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 04:45	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 04:45	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 04:45	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 04:45	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 04:45	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 04:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 04:45	56-23-5	
Chlorobenzene	**1.1**	ug/L	1.0	0.23	1		03/12/15 04:45	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 04:45	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 04:45	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 04:45	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 04:45	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 04:45	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 04:45	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 04:45	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 04:45	74-95-3	
1,2-Dichlorobenzene	**1.9**	ug/L	1.0	0.30	1		03/12/15 04:45	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 04:45	541-73-1	
1,4-Dichlorobenzene	**2.0**	ug/L	1.0	0.33	1		03/12/15 04:45	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 04:45	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 04:45	75-71-8	
1,1-Dichloroethane	**2.4**	ug/L	1.0	0.32	1		03/12/15 04:45	75-34-3	
1,2-Dichloroethane	**1.8**	ug/L	1.0	0.12	1		03/12/15 04:45	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 04:45	75-35-4	
cis-1,2-Dichloroethene	**1.8**	ug/L	1.0	0.19	1		03/12/15 04:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 04:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 04:45	78-87-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-7 **Lab ID: 92238730022** Collected: 03/03/15 14:10 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 04:45	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 04:45	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 04:45	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 04:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 04:45	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 04:45	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 04:45	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 04:45	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 04:45	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 04:45	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 04:45	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 04:45	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 04:45	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 04:45	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 04:45	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 04:45	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 04:45	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 04:45	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 04:45	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 04:45	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 04:45	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 04:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 04:45	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 04:45	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 04:45	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 04:45	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 04:45	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 04:45	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 04:45	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 04:45	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 04:45	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		03/12/15 04:45	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		03/12/15 04:45	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		03/12/15 04:45	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/13/15 16:45	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-10 **Lab ID: 92238730023** Collected: 03/03/15 13:15 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:35		
Collected By	**Mark Swann**				1		03/31/15 13:30		
Collected Date	**2/20/15**				1		03/31/15 13:30		
Collected Date	**3/3/15**				1		03/26/15 09:35		
Collected Time	**11:17**				1		03/31/15 13:30		
Collected Time	**13:15**				1		03/26/15 09:35		
Field pH	**5.9**	Std. Units	0.10	0.10	1		03/26/15 09:35		
Field Temperature	**10.7**	deg C	0.50	0.50	1		03/26/15 09:35		
Static Water Level	**2.22**	feet			1		03/31/15 13:30		
Static Water Level	**2.18**	feet			1		03/26/15 09:35		
Field Specific Conductance	**58**	umhos/cm	1.0	1.0	1		03/26/15 09:35		
Turbidity	**28.2**	NTU	1.0	1.0	1		03/26/15 09:35		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:07	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:07	7440-38-2	
Barium	**87.2**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:07	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:07	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:07	7440-43-9	
Chromium	**3.2J**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:07	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:07	7440-48-4	
Copper	**2.8J**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:07	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:07	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:07	7440-02-0	
Selenium	**0.61J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:07	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:07	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:07	7440-28-0	
Vanadium	**5.2**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:07	7440-62-2	
Zinc	**8.3J**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:07	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 05:02	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 05:02	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 05:02	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 05:02	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 05:02	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 05:02	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 05:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 05:02	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 05:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 05:02	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 05:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 05:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/12/15 05:02	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-10 **Lab ID: 92238730023** Collected: 03/03/15 13:15 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 05:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 05:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 05:02	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 05:02	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 05:02	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 05:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 05:02	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 05:02	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/12/15 05:02	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 05:02	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/12/15 05:02	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 05:02	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 05:02	75-71-8	
1,1-Dichloroethane	**1.6**	ug/L	1.0	0.32	1		03/12/15 05:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/12/15 05:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 05:02	75-35-4	
cis-1,2-Dichloroethene	**1.4**	ug/L	1.0	0.19	1		03/12/15 05:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 05:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 05:02	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 05:02	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 05:02	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 05:02	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 05:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 05:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 05:02	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 05:02	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 05:02	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 05:02	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 05:02	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 05:02	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 05:02	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 05:02	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 05:02	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 05:02	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 05:02	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 05:02	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 05:02	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 05:02	79-34-5	
Tetrachloroethene	**0.47J**	ug/L	1.0	0.46	1		03/12/15 05:02	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 05:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 05:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 05:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 05:02	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 05:02	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 05:02	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 05:02	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-10 **Lab ID: 92238730023** Collected: 03/03/15 13:15 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 05:02	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 05:02	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 05:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 05:02	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		03/12/15 05:02	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		03/12/15 05:02	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		03/12/15 05:02	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-19 **Lab ID: 92238730024** Collected: 03/03/15 14:30 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:37		
Collected By	**Mark Swann**				1		03/31/15 13:33		
Collected Date	**2/20/15**				1		03/31/15 13:33		
Collected Date	**3/3/15**				1		03/26/15 09:37		
Collected Time	**12:21**				1		03/31/15 13:33		
Collected Time	**14:30**				1		03/26/15 09:37		
Field pH	**5.8**	Std. Units	0.10	0.10	1		03/26/15 09:37		
Field Temperature	**11.4**	deg C	0.50	0.50	1		03/26/15 09:37		
Static Water Level	**6.60**	feet			1		03/31/15 13:33		
Static Water Level	**6.44**	feet			1		03/26/15 09:37		
Field Specific Conductance	**229**	umhos/cm	1.0	1.0	1		03/26/15 09:37		
Turbidity	**2.87**	NTU	1.0	1.0	1		03/26/15 09:37		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/16/15 09:00	03/17/15 12:13	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:13	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/16/15 09:00	03/17/15 12:13	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/16/15 09:00	03/17/15 12:13	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/16/15 09:00	03/17/15 12:13	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	106	%	20-130		1	03/16/15 09:00	03/17/15 12:13	877-09-8	H2
Decachlorobiphenyl (S)	104	%	20-130		1	03/16/15 09:00	03/17/15 12:13	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:10	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:10	7440-38-2	
Barium	**136**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:10	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-19 **Lab ID: 92238730024** Collected: 03/03/15 14:30 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:10	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:10	7440-43-9	
Chromium	**1.0J**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:10	7440-47-3	
Cobalt	**1.1J**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:10	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:10	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:10	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:10	7440-02-0	
Selenium	**0.41J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:10	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:10	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:10	7440-28-0	
Vanadium	**1.8J**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:10	7440-62-2	B
Zinc	**57.3**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:10	7440-66-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 05:19	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 05:19	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 05:19	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 05:19	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 05:19	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 05:19	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 05:19	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 05:19	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 05:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 05:19	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 05:19	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 05:19	56-23-5	
Chlorobenzene	**0.50J**	ug/L	1.0	0.23	1		03/12/15 05:19	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 05:19	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 05:19	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 05:19	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 05:19	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 05:19	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 05:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 05:19	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 05:19	74-95-3	
1,2-Dichlorobenzene	**1.1**	ug/L	1.0	0.30	1		03/12/15 05:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 05:19	541-73-1	
1,4-Dichlorobenzene	**1.3**	ug/L	1.0	0.33	1		03/12/15 05:19	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 05:19	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 05:19	75-71-8	
1,1-Dichloroethane	**3.0**	ug/L	1.0	0.32	1		03/12/15 05:19	75-34-3	
1,2-Dichloroethane	**2.6**	ug/L	1.0	0.12	1		03/12/15 05:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 05:19	75-35-4	
cis-1,2-Dichloroethene	**1.3**	ug/L	1.0	0.19	1		03/12/15 05:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 05:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 05:19	78-87-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-19 **Lab ID: 92238730024** Collected: 03/03/15 14:30 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 05:19	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 05:19	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 05:19	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 05:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 05:19	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 05:19	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 05:19	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 05:19	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 05:19	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 05:19	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 05:19	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 05:19	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 05:19	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 05:19	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 05:19	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 05:19	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 05:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 05:19	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 05:19	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 05:19	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 05:19	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 05:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 05:19	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 05:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 05:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 05:19	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 05:19	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 05:19	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 05:19	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 05:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 05:19	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		03/12/15 05:19	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		03/12/15 05:19	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		03/12/15 05:19	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-19D **Lab ID: 92238730025** Collected: 03/03/15 14:45 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:38		
Collected By	**Mark Swann**				1		03/31/15 13:35		
Collected Date	**3/3/15**				1		03/26/15 09:38		
Collected Date	**2/20/15**				1		03/31/15 13:35		
Collected Time	**12:20**				1		03/31/15 13:35		
Collected Time	**14:45**				1		03/26/15 09:38		
Field pH	**6.1**	Std. Units	0.10	0.10	1		03/26/15 09:38		
Field Temperature	**12.1**	deg C	0.50	0.50	1		03/26/15 09:38		
Static Water Level	**6.26**	feet			1		03/26/15 09:38		
Static Water Level	**6.59**	feet			1		03/31/15 13:35		
Field Specific Conductance	**574**	umhos/cm	1.0	1.0	1		03/26/15 09:38		
Turbidity	**4.27**	NTU	1.0	1.0	1		03/26/15 09:38		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/16/15 09:00	03/17/15 12:31	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/16/15 09:00	03/17/15 12:31	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/16/15 09:00	03/17/15 12:31	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/16/15 09:00	03/17/15 12:31	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/16/15 09:00	03/17/15 12:31	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	163	%	20-130		1	03/16/15 09:00	03/17/15 12:31	877-09-8	H2,S5
Decachlorobiphenyl (S)	97	%	20-130		1	03/16/15 09:00	03/17/15 12:31	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:13	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:13	7440-38-2	
Barium	**271**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:13	7440-39-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-19D **Lab ID: 92238730025** Collected: 03/03/15 14:45 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:13	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:13	7440-43-9	
Chromium	**1.3J**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:13	7440-47-3	
Cobalt	**12.6**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:13	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:13	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:13	7439-92-1	
Nickel	**13.0**	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:13	7440-02-0	
Selenium	**1.6J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:13	7782-49-2	B
Silver	**0.74J**	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:13	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:13	7440-28-0	
Vanadium	**3.9J**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:13	7440-62-2	
Zinc	**18.8**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:13	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 05:36	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 05:36	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 05:36	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 05:36	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 05:36	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 05:36	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 05:36	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 05:36	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 05:36	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 05:36	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 05:36	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 05:36	56-23-5	
Chlorobenzene	**2.1**	ug/L	1.0	0.23	1		03/12/15 05:36	108-90-7	
Chloroethane	**2.0**	ug/L	1.0	0.54	1		03/12/15 05:36	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 05:36	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 05:36	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 05:36	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 05:36	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 05:36	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 05:36	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 05:36	74-95-3	
1,2-Dichlorobenzene	**3.2**	ug/L	1.0	0.30	1		03/12/15 05:36	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 05:36	541-73-1	
1,4-Dichlorobenzene	**2.8**	ug/L	1.0	0.33	1		03/12/15 05:36	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 05:36	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 05:36	75-71-8	
1,1-Dichloroethane	**2.4**	ug/L	1.0	0.32	1		03/12/15 05:36	75-34-3	
1,2-Dichloroethane	**3.0**	ug/L	1.0	0.12	1		03/12/15 05:36	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 05:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/12/15 05:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 05:36	156-60-5	
1,2-Dichloropropane	**0.50J**	ug/L	1.0	0.27	1		03/12/15 05:36	78-87-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-19D **Lab ID: 92238730025** Collected: 03/03/15 14:45 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 05:36	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 05:36	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 05:36	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 05:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 05:36	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 05:36	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 05:36	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 05:36	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 05:36	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 05:36	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 05:36	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 05:36	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 05:36	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 05:36	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 05:36	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 05:36	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 05:36	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 05:36	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 05:36	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 05:36	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 05:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 05:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 05:36	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 05:36	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 05:36	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 05:36	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 05:36	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 05:36	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 05:36	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 05:36	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 05:36	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		03/12/15 05:36	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		03/12/15 05:36	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		03/12/15 05:36	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-20 **Lab ID: 92238730026** Collected: 03/03/15 12:50 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:39		
Collected By	**Mark Swann**				1		03/31/15 13:38		
Collected Date	**2/20/15**				1		03/31/15 13:38		
Collected Date	**3/3/15**				1		03/26/15 09:39		
Collected Time	**11:15**				1		03/31/15 13:38		
Collected Time	**12:50**				1		03/26/15 09:39		
Field pH	**6.9**	Std. Units	0.10	0.10	1		03/26/15 09:39		
Field Temperature	**13.0**	deg C	0.50	0.50	1		03/26/15 09:39		
Static Water Level	**1.96**	feet			1		03/26/15 09:39		
Static Water Level	**2.13**	feet			1		03/31/15 13:38		
Field Specific Conductance	**64.3**	umhos/cm	1.0	1.0	1		03/26/15 09:39		
Turbidity	**16.7**	NTU	1.0	1.0	1		03/26/15 09:39		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:16	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:16	7440-38-2	
Barium	**68.3**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:16	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:16	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:16	7440-43-9	
Chromium	**6.0**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:16	7440-47-3	
Cobalt	**2.4J**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:16	7440-48-4	
Copper	**6.8**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:16	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:16	7439-92-1	
Nickel	**4.9J**	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:16	7440-02-0	
Selenium	**0.86J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:16	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:16	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:16	7440-28-0	
Vanadium	**8.1**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:16	7440-62-2	
Zinc	**26.7**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:16	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 05:53	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 05:53	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 05:53	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 05:53	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 05:53	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 05:53	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 05:53	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 05:53	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 05:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 05:53	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 05:53	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 05:53	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/12/15 05:53	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-20 **Lab ID: 92238730026** Collected: 03/03/15 12:50 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 05:53	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 05:53	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 05:53	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 05:53	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 05:53	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 05:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 05:53	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 05:53	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/12/15 05:53	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 05:53	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/12/15 05:53	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 05:53	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 05:53	75-71-8	
1,1-Dichloroethane	**0.77J**	ug/L	1.0	0.32	1		03/12/15 05:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/12/15 05:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 05:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/12/15 05:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 05:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 05:53	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 05:53	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 05:53	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 05:53	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 05:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 05:53	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 05:53	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 05:53	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 05:53	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 05:53	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 05:53	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 05:53	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 05:53	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 05:53	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 05:53	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 05:53	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 05:53	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 05:53	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 05:53	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 05:53	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 05:53	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 05:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 05:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 05:53	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 05:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 05:53	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 05:53	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 05:53	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-20 **Lab ID: 92238730026** Collected: 03/03/15 12:50 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 05:53	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 05:53	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 05:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 05:53	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		03/12/15 05:53	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		03/12/15 05:53	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/12/15 05:53	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-20D **Lab ID: 92238730027** Collected: 03/03/15 13:00 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:43		
Collected By	**Mark Swann**				1		03/31/15 13:41		
Collected Date	**2/20/15**				1		03/31/15 13:41		
Collected Date	**3/3/15**				1		03/26/15 09:43		
Collected Time	**11:10**				1		03/31/15 13:41		
Collected Time	**13:00**				1		03/26/15 09:43		
Field pH	**6.7**	Std. Units	0.10	0.10	1		03/26/15 09:43		
Field Temperature	**12.3**	deg C	0.50	0.50	1		03/26/15 09:43		
Static Water Level	**1.24**	feet			1		03/31/15 13:41		
Static Water Level	**1.04**	feet			1		03/26/15 09:43		
Field Specific Conductance	**83.5**	umhos/cm	1.0	1.0	1		03/26/15 09:43		
Turbidity	**80.8**	NTU	1.0	1.0	1		03/26/15 09:43		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:19	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:19	7440-38-2	
Barium	**187**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:19	7440-39-3	
Beryllium	**0.73J**	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:19	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:19	7440-43-9	
Chromium	**17.3**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:19	7440-47-3	
Cobalt	**4.9J**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:19	7440-48-4	
Copper	**21.2**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:19	7440-50-8	
Lead	**6.3**	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:19	7439-92-1	
Nickel	**10.7**	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:19	7440-02-0	
Selenium	**1.6J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:19	7782-49-2	B
Silver	**1.0J**	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:19	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:19	7440-28-0	
Vanadium	**27.2**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:19	7440-62-2	
Zinc	**48.1**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:19	7440-66-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 06:10	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 06:10	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 06:10	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 06:10	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 06:10	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 06:10	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 06:10	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 06:10	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 06:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 06:10	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 06:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 06:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/12/15 06:10	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-20D **Lab ID: 92238730027** Collected: 03/03/15 13:00 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 06:10	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 06:10	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 06:10	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 06:10	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 06:10	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 06:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 06:10	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 06:10	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/12/15 06:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 06:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/12/15 06:10	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 06:10	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 06:10	75-71-8	
1,1-Dichloroethane	**1.0**	ug/L	1.0	0.32	1		03/12/15 06:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/12/15 06:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 06:10	75-35-4	
cis-1,2-Dichloroethene	**0.74J**	ug/L	1.0	0.19	1		03/12/15 06:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 06:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 06:10	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 06:10	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 06:10	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 06:10	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 06:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 06:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 06:10	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 06:10	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 06:10	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 06:10	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 06:10	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 06:10	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 06:10	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 06:10	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 06:10	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 06:10	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 06:10	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 06:10	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 06:10	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 06:10	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 06:10	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 06:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 06:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 06:10	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 06:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 06:10	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 06:10	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 06:10	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-20D **Lab ID: 92238730027** Collected: 03/03/15 13:00 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 06:10	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 06:10	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 06:10	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 06:10	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	104	%	70-130		1		03/12/15 06:10	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70-130		1		03/12/15 06:10	17060-07-0	
Toluene-d8 (S)	95	%	70-130		1		03/12/15 06:10	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-21 **Lab ID: 92238730028** Collected: 03/03/15 13:40 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 13:43		
Collected By	**Mark Swann**				1		03/26/15 09:55		
Collected Date	**2/20/15**				1		03/31/15 13:43		
Collected Date	**3/3/15**				1		03/26/15 09:55		
Collected Time	**11:25**				1		03/31/15 13:43		
Collected Time	**13:40**				1		03/26/15 09:55		
Field pH	**6.2**	Std. Units	0.10	0.10	1		03/26/15 09:55		
Field Temperature	**12.8**	deg C	0.50	0.50	1		03/26/15 09:55		
Static Water Level	**22.50**	feet			1		03/26/15 09:55		
Static Water Level	**22.61**	feet			1		03/31/15 13:43		
Field Specific Conductance	**18.7**	umhos/cm	1.0	1.0	1		03/26/15 09:55		
Turbidity	**3.98**	NTU	1.0	1.0	1		03/26/15 09:55		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:22	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:22	7440-38-2	
Barium	**32.3**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:22	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:22	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:22	7440-43-9	
Chromium	**1.4J**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:22	7440-47-3	
Cobalt	**0.74J**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:22	7440-48-4	
Copper	**0.77J**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:22	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:22	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:22	7440-02-0	
Selenium	**1.8J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:22	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:22	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:22	7440-28-0	
Vanadium	**1.5J**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:22	7440-62-2	B
Zinc	**7.9J**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:22	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 06:27	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 06:27	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 06:27	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 06:27	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 06:27	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 06:27	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 06:27	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 06:27	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 06:27	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 06:27	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 06:27	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 06:27	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/12/15 06:27	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-21 **Lab ID: 92238730028** Collected: 03/03/15 13:40 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 06:27	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 06:27	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 06:27	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 06:27	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 06:27	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 06:27	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 06:27	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 06:27	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/12/15 06:27	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 06:27	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/12/15 06:27	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 06:27	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 06:27	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/12/15 06:27	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/12/15 06:27	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 06:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/12/15 06:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 06:27	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 06:27	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 06:27	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 06:27	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 06:27	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 06:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 06:27	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 06:27	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 06:27	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 06:27	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 06:27	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 06:27	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 06:27	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 06:27	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 06:27	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 06:27	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 06:27	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 06:27	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 06:27	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 06:27	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 06:27	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 06:27	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 06:27	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 06:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 06:27	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 06:27	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 06:27	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 06:27	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 06:27	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-21 **Lab ID: 92238730028** Collected: 03/03/15 13:40 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 06:27	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 06:27	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 06:27	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 06:27	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		03/12/15 06:27	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70-130		1		03/12/15 06:27	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		03/12/15 06:27	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-23 **Lab ID: 92238730029** Collected: 03/03/15 11:40 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/26/15 09:56		
Collected By	**Mark Swann**				1		03/31/15 13:45		
Collected Date	**2/20/15**				1		03/31/15 13:45		
Collected Date	**3/3/15**				1		03/26/15 09:56		
Collected Time	**12:55**				1		03/31/15 13:45		
Collected Time	**11:40**				1		03/26/15 09:56		
Field pH	**6.6**	Std. Units	0.10	0.10	1		03/26/15 09:56		
Field Temperature	**7.3**	deg C	0.50	0.50	1		03/26/15 09:56		
Static Water Level	**1.49**	feet			1		03/31/15 13:45		
Static Water Level	**1.04**	feet			1		03/26/15 09:56		
Field Specific Conductance	**100.0**	umhos/cm	1.0	1.0	1		03/26/15 09:56		
Turbidity	**33.9**	NTU	1.0	1.0	1		03/26/15 09:56		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:26	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:26	7440-38-2	
Barium	**198**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:26	7440-39-3	
Beryllium	**0.16J**	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:26	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:26	7440-43-9	
Chromium	**24.7**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:26	7440-47-3	
Cobalt	**5.6**	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:26	7440-48-4	
Copper	**16.9**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:26	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:26	7439-92-1	
Nickel	**10.2**	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:26	7440-02-0	
Selenium	**0.20J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:26	7782-49-2	B
Silver	**0.61J**	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:26	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:26	7440-28-0	
Vanadium	**42.9**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:26	7440-62-2	
Zinc	**112**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:26	7440-66-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	**10.3J**	ug/L	25.0	10.0	1		03/12/15 06:44	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 06:44	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 06:44	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 06:44	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 06:44	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 06:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 06:44	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 06:44	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 06:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 06:44	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 06:44	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 06:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/12/15 06:44	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-23 **Lab ID: 92238730029** Collected: 03/03/15 11:40 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 06:44	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 06:44	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 06:44	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 06:44	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 06:44	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 06:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 06:44	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 06:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/12/15 06:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 06:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/12/15 06:44	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 06:44	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 06:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/12/15 06:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/12/15 06:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 06:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/12/15 06:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 06:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 06:44	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 06:44	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 06:44	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 06:44	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 06:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 06:44	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 06:44	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 06:44	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 06:44	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 06:44	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 06:44	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 06:44	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 06:44	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 06:44	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 06:44	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 06:44	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 06:44	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 06:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 06:44	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 06:44	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 06:44	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 06:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 06:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 06:44	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 06:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 06:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 06:44	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 06:44	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-23 **Lab ID: 92238730029** Collected: 03/03/15 11:40 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 06:44	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 06:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 06:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 06:44	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		03/12/15 06:44	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		03/12/15 06:44	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/12/15 06:44	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-23D **Lab ID: 92238730030** Collected: 03/03/15 11:50 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 13:47		
Collected By	**Mark Swann**				1		03/26/15 09:57		
Collected Date	**2/20/15**				1		03/31/15 13:47		
Collected Date	**3/3/15**				1		03/26/15 09:57		
Collected Time	**11:50**				1		03/26/15 09:57		
Collected Time	**12:58**				1		03/31/15 13:47		
Field pH	**6.7**	Std. Units	0.10	0.10	1		03/26/15 09:57		
Field Temperature	**8.5**	deg C	0.50	0.50	1		03/26/15 09:57		
Static Water Level	**1.81**	feet			1		03/31/15 13:47		
Static Water Level	**1.54**	feet			1		03/26/15 09:57		
Field Specific Conductance	**109.5**	umhos/cm	1.0	1.0	1		03/26/15 09:57		
Turbidity	**6.92**	NTU	1.0	1.0	1		03/26/15 09:57		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:38	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:38	7440-38-2	
Barium	**73.5**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:38	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:38	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:38	7440-43-9	
Chromium	**2.0J**	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:38	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:38	7440-48-4	
Copper	**1.5J**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:38	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:38	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:38	7440-02-0	
Selenium	**1.0J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:38	7782-49-2	B
Silver	**0.50J**	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:38	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:38	7440-28-0	
Vanadium	**3.6J**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:38	7440-62-2	B
Zinc	**6.4J**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:38	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	**16.6J**	ug/L	25.0	10.0	1		03/12/15 07:01	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 07:01	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 07:01	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 07:01	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 07:01	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 07:01	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 07:01	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 07:01	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 07:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 07:01	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 07:01	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 07:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/12/15 07:01	108-90-7	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-23D **Lab ID: 92238730030** Collected: 03/03/15 11:50 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 07:01	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 07:01	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 07:01	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 07:01	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 07:01	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 07:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 07:01	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 07:01	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/12/15 07:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 07:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/12/15 07:01	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 07:01	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 07:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/12/15 07:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/12/15 07:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 07:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/12/15 07:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 07:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 07:01	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 07:01	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 07:01	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 07:01	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 07:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 07:01	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 07:01	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 07:01	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 07:01	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 07:01	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 07:01	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 07:01	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 07:01	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 07:01	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 07:01	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 07:01	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 07:01	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 07:01	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 07:01	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 07:01	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 07:01	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 07:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 07:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 07:01	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 07:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 07:01	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 07:01	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 07:01	108-05-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-23D **Lab ID: 92238730030** Collected: 03/03/15 11:50 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 07:01	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 07:01	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 07:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 07:01	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		03/12/15 07:01	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1		03/12/15 07:01	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/12/15 07:01	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: EQUIP BLK **Lab ID: 92238730031** Collected: 03/03/15 00:00 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	03/04/15 18:35	03/11/15 02:41	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	03/04/15 18:35	03/11/15 02:41	7440-38-2	
Barium	ND	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:41	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	03/04/15 18:35	03/11/15 02:41	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	03/04/15 18:35	03/11/15 02:41	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	03/04/15 18:35	03/11/15 02:41	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	03/04/15 18:35	03/11/15 02:41	7440-48-4	
Copper	**0.44J**	ug/L	5.0	0.30	1	03/04/15 18:35	03/11/15 02:41	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	03/04/15 18:35	03/11/15 02:41	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	03/04/15 18:35	03/11/15 02:41	7440-02-0	
Selenium	**1.0J**	ug/L	10.0	0.10	1	03/04/15 18:35	03/11/15 02:41	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	03/04/15 18:35	03/11/15 02:41	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	03/04/15 18:35	03/11/15 02:41	7440-28-0	
Vanadium	**0.51J**	ug/L	5.0	0.20	1	03/04/15 18:35	03/11/15 02:41	7440-62-2	B
Zinc	**5.0J**	ug/L	10.0	0.40	1	03/04/15 18:35	03/11/15 02:41	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 07:18	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 07:18	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 07:18	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 07:18	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 07:18	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 07:18	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 07:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 07:18	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 07:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 07:18	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 07:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 07:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/12/15 07:18	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 07:18	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 07:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 07:18	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 07:18	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 07:18	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 07:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 07:18	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 07:18	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/12/15 07:18	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 07:18	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/12/15 07:18	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 07:18	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 07:18	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/12/15 07:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/12/15 07:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 07:18	75-35-4	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: EQUIP BLK **Lab ID: 92238730031** Collected: 03/03/15 00:00 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/12/15 07:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 07:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 07:18	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 07:18	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 07:18	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 07:18	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 07:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 07:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 07:18	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 07:18	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 07:18	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 07:18	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 07:18	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 07:18	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 07:18	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 07:18	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 07:18	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 07:18	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 07:18	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 07:18	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 07:18	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 07:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 07:18	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 07:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 07:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 07:18	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 07:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 07:18	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 07:18	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 07:18	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 07:18	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 07:18	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 07:18	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 07:18	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		03/12/15 07:18	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1		03/12/15 07:18	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		03/12/15 07:18	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: TVL BLK **Lab ID: 92238730032** Collected: 03/03/15 00:00 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		03/12/15 07:35	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		03/12/15 07:35	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		03/12/15 07:35	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		03/12/15 07:35	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		03/12/15 07:35	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		03/12/15 07:35	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		03/12/15 07:35	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		03/12/15 07:35	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		03/12/15 07:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		03/12/15 07:35	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		03/12/15 07:35	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		03/12/15 07:35	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		03/12/15 07:35	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		03/12/15 07:35	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		03/12/15 07:35	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		03/12/15 07:35	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		03/12/15 07:35	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		03/12/15 07:35	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		03/12/15 07:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		03/12/15 07:35	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		03/12/15 07:35	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		03/12/15 07:35	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		03/12/15 07:35	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		03/12/15 07:35	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		03/12/15 07:35	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		03/12/15 07:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/12/15 07:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		03/12/15 07:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/12/15 07:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/12/15 07:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/12/15 07:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		03/12/15 07:35	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		03/12/15 07:35	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		03/12/15 07:35	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		03/12/15 07:35	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		03/12/15 07:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		03/12/15 07:35	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		03/12/15 07:35	100-41-4	
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		03/12/15 07:35	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		03/12/15 07:35	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		03/12/15 07:35	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		03/12/15 07:35	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		03/12/15 07:35	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		03/12/15 07:35	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		03/12/15 07:35	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		03/12/15 07:35	108-10-1	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: TVL BLK **Lab ID: 92238730032** Collected: 03/03/15 00:00 Received: 03/03/15 18:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Naphthalene	ND	ug/L	1.0	0.24	1		03/12/15 07:35	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		03/12/15 07:35	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		03/12/15 07:35	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		03/12/15 07:35	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		03/12/15 07:35	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/12/15 07:35	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		03/12/15 07:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/12/15 07:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/12/15 07:35	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/12/15 07:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		03/12/15 07:35	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		03/12/15 07:35	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		03/12/15 07:35	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/12/15 07:35	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		03/12/15 07:35	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		03/12/15 07:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		03/12/15 07:35	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		03/12/15 07:35	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130		1		03/12/15 07:35	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		03/12/15 07:35	2037-26-5	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-19 **Lab ID: 92238730033** Collected: 03/20/15 13:00 Received: 03/20/15 15:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 13:50		
Collected Date	**3/20/15**				1		03/31/15 13:50		
Collected Time	**13:00**				1		03/31/15 13:50		
Static Water Level	**6.53**	feet			1		03/31/15 13:50		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/23/15 13:15	03/25/15 00:42	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:42	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/23/15 13:15	03/25/15 00:42	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/23/15 13:15	03/25/15 00:42	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/23/15 13:15	03/25/15 00:42	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	110	%	20-130		1	03/23/15 13:15	03/25/15 00:42	877-09-8	
Decachlorobiphenyl (S)	85	%	20-130		1	03/23/15 13:15	03/25/15 00:42	2051-24-3	

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ANALYTICAL RESULTS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Sample: MW-19D **Lab ID: 92238730034** Collected: 03/20/15 12:45 Received: 03/20/15 15:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/31/15 13:51		
Collected Date	**3/20/15**				1		03/31/15 13:51		
Collected Time	**12:45**				1		03/31/15 13:51		
Static Water Level	**6.30**	feet			1		03/31/15 13:51		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	03/23/15 13:15	03/25/15 00:59	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	03/23/15 13:15	03/25/15 00:59	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	03/23/15 13:15	03/25/15 00:59	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	03/23/15 13:15	03/25/15 00:59	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	03/23/15 13:15	03/25/15 00:59	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	117	%	20-130		1	03/23/15 13:15	03/25/15 00:59	877-09-8	
Decachlorobiphenyl (S)	95	%	20-130		1	03/23/15 13:15	03/25/15 00:59	2051-24-3	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: MPRP/17974 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92238730001, 92238730002, 92238730003, 92238730004, 92238730005, 92238730006, 92238730007, 92238730008, 92238730009, 92238730010, 92238730011

METHOD BLANK: 1398789 Matrix: Water
Associated Lab Samples: 92238730001, 92238730002, 92238730003, 92238730004, 92238730005, 92238730006, 92238730007, 92238730008, 92238730009, 92238730010, 92238730011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	02/27/15 23:53	
Arsenic	ug/L	ND	10.0	02/27/15 23:53	
Barium	ug/L	ND	5.0	02/27/15 23:53	
Beryllium	ug/L	ND	1.0	02/27/15 23:53	
Cadmium	ug/L	ND	1.0	02/27/15 23:53	
Chromium	ug/L	ND	5.0	02/27/15 23:53	
Cobalt	ug/L	ND	5.0	02/27/15 23:53	
Copper	ug/L	0.55J	5.0	02/27/15 23:53	
Lead	ug/L	ND	5.0	02/27/15 23:53	
Nickel	ug/L	ND	5.0	02/27/15 23:53	
Selenium	ug/L	1.7J	10.0	02/27/15 23:53	
Silver	ug/L	ND	5.0	02/27/15 23:53	
Thallium	ug/L	ND	5.4	02/27/15 23:53	
Vanadium	ug/L	ND	5.0	02/27/15 23:53	
Zinc	ug/L	5.2J	10.0	02/27/15 23:53	

LABORATORY CONTROL SAMPLE: 1398790

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	498	100	80-120	
Arsenic	ug/L	500	491	98	80-120	
Barium	ug/L	500	459	92	80-120	
Beryllium	ug/L	500	445	89	80-120	
Cadmium	ug/L	500	490	98	80-120	
Chromium	ug/L	500	473	95	80-120	
Cobalt	ug/L	500	493	99	80-120	
Copper	ug/L	500	490	98	80-120	
Lead	ug/L	500	492	98	80-120	
Nickel	ug/L	500	490	98	80-120	
Selenium	ug/L	500	487	97	80-120	
Silver	ug/L	250	244	98	80-120	
Thallium	ug/L	500	482	96	80-120	
Vanadium	ug/L	500	484	97	80-120	
Zinc	ug/L	500	499	100	80-120	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1398791 1398792

Parameter	Units	92238381001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	498	510	99	102	75-125	2	25	
Arsenic	ug/L	ND	500	500	491	502	98	100	75-125	2	25	
Barium	ug/L	36.1	500	500	501	510	93	95	75-125	2	25	
Beryllium	ug/L	0.15J	500	500	454	460	91	92	75-125	1	25	
Cadmium	ug/L	ND	500	500	490	503	98	101	75-125	3	25	
Chromium	ug/L	0.94J	500	500	480	489	96	98	75-125	2	25	
Cobalt	ug/L	ND	500	500	491	503	98	101	75-125	2	25	
Copper	ug/L	0.97J	500	500	497	503	99	100	75-125	1	25	
Lead	ug/L	ND	500	500	490	502	98	100	75-125	2	25	
Nickel	ug/L	ND	500	500	490	501	98	100	75-125	2	25	
Selenium	ug/L	1.6J	500	500	485	497	97	99	75-125	2	25	
Silver	ug/L	ND	250	250	247	251	99	100	75-125	2	25	
Thallium	ug/L	ND	500	500	483	495	96	98	75-125	2	25	
Vanadium	ug/L	0.78J	500	500	489	499	98	100	75-125	2	25	
Zinc	ug/L	5.5J	500	500	508	530	101	105	75-125	4	25	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: MPRP/17992 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92238730012, 92238730013, 92238730014, 92238730015, 92238730016, 92238730017, 92238730018

METHOD BLANK: 1401363 Matrix: Water
Associated Lab Samples: 92238730012, 92238730013, 92238730014, 92238730015, 92238730016, 92238730017, 92238730018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	03/04/15 01:00	
Arsenic	ug/L	ND	10.0	03/04/15 01:00	
Barium	ug/L	ND	5.0	03/04/15 01:00	
Beryllium	ug/L	ND	1.0	03/04/15 01:00	
Cadmium	ug/L	ND	1.0	03/04/15 01:00	
Chromium	ug/L	ND	5.0	03/04/15 01:00	
Cobalt	ug/L	ND	5.0	03/04/15 01:00	
Copper	ug/L	ND	5.0	03/04/15 01:00	
Lead	ug/L	ND	5.0	03/04/15 01:00	
Nickel	ug/L	ND	5.0	03/04/15 01:00	
Selenium	ug/L	ND	10.0	03/04/15 01:00	
Silver	ug/L	ND	5.0	03/04/15 01:00	
Thallium	ug/L	ND	5.4	03/04/15 01:00	
Vanadium	ug/L	ND	5.0	03/04/15 01:00	
Zinc	ug/L	1.7J	10.0	03/04/15 01:00	

LABORATORY CONTROL SAMPLE: 1401364

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	468	94	80-120	
Arsenic	ug/L	500	446	89	80-120	
Barium	ug/L	500	472	94	80-120	
Beryllium	ug/L	500	476	95	80-120	
Cadmium	ug/L	500	469	94	80-120	
Chromium	ug/L	500	468	94	80-120	
Cobalt	ug/L	500	457	91	80-120	
Copper	ug/L	500	476	95	80-120	
Lead	ug/L	500	458	92	80-120	
Nickel	ug/L	500	467	93	80-120	
Selenium	ug/L	500	452	90	80-120	
Silver	ug/L	250	235	94	80-120	
Thallium	ug/L	500	466	93	80-120	
Vanadium	ug/L	500	467	93	80-120	
Zinc	ug/L	500	439	88	80-120	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1401365 1401366

Parameter	Units	92238730012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	468	478	94	96	75-125	2	25	
Arsenic	ug/L	ND	500	500	449	459	89	91	75-125	2	25	
Barium	ug/L	262	500	500	749	760	97	100	75-125	2	25	
Beryllium	ug/L	ND	500	500	482	493	96	99	75-125	2	25	
Cadmium	ug/L	ND	500	500	467	476	93	95	75-125	2	25	
Chromium	ug/L	4.5J	500	500	466	478	92	95	75-125	3	25	
Cobalt	ug/L	ND	500	500	442	452	88	90	75-125	2	25	
Copper	ug/L	2.8J	500	500	489	494	97	98	75-125	1	25	
Lead	ug/L	ND	500	500	443	454	88	91	75-125	2	25	
Nickel	ug/L	9.7	500	500	461	472	90	92	75-125	2	25	
Selenium	ug/L	ND	500	500	450	462	90	92	75-125	3	25	
Silver	ug/L	ND	250	250	237	241	95	96	75-125	1	25	
Thallium	ug/L	ND	500	500	451	463	90	92	75-125	3	25	
Vanadium	ug/L	7.7	500	500	476	486	94	96	75-125	2	25	
Zinc	ug/L	122	500	500	576	557	91	87	75-125	3	25	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: MPRP/18005 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92238730019, 92238730020, 92238730021, 92238730022, 92238730023, 92238730024, 92238730025, 92238730026, 92238730027, 92238730028, 92238730029, 92238730030, 92238730031

METHOD BLANK: 1403013 Matrix: Water
Associated Lab Samples: 92238730019, 92238730020, 92238730021, 92238730022, 92238730023, 92238730024, 92238730025, 92238730026, 92238730027, 92238730028, 92238730029, 92238730030, 92238730031

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	03/11/15 01:17	
Arsenic	ug/L	ND	10.0	03/11/15 01:17	
Barium	ug/L	ND	5.0	03/11/15 01:17	
Beryllium	ug/L	ND	1.0	03/11/15 01:17	
Cadmium	ug/L	ND	1.0	03/11/15 01:17	
Chromium	ug/L	ND	5.0	03/11/15 01:17	
Cobalt	ug/L	ND	5.0	03/11/15 01:17	
Copper	ug/L	0.31J	5.0	03/11/15 01:17	
Lead	ug/L	ND	5.0	03/11/15 01:17	
Nickel	ug/L	ND	5.0	03/11/15 01:17	
Selenium	ug/L	1.4J	10.0	03/11/15 01:17	
Silver	ug/L	0.32J	5.0	03/11/15 01:17	
Thallium	ug/L	ND	5.4	03/11/15 01:17	
Vanadium	ug/L	0.36J	5.0	03/11/15 01:17	
Zinc	ug/L	4.1J	10.0	03/11/15 01:17	

LABORATORY CONTROL SAMPLE: 1403014

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	512	102	80-120	
Arsenic	ug/L	500	494	99	80-120	
Barium	ug/L	500	474	95	80-120	
Beryllium	ug/L	500	482	96	80-120	
Cadmium	ug/L	500	496	99	80-120	
Chromium	ug/L	500	474	95	80-120	
Cobalt	ug/L	500	489	98	80-120	
Copper	ug/L	500	503	101	80-120	
Lead	ug/L	500	491	98	80-120	
Nickel	ug/L	500	488	98	80-120	
Selenium	ug/L	500	498	100	80-120	
Silver	ug/L	250	243	97	80-120	
Thallium	ug/L	500	490	98	80-120	
Vanadium	ug/L	500	478	96	80-120	
Zinc	ug/L	500	494	99	80-120	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1403015 1403016

Parameter	Units	92239447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	499	515	100	103	75-125	3	25	
Arsenic	ug/L	ND	500	500	484	498	97	100	75-125	3	25	
Barium	ug/L	97.7	500	500	562	581	93	97	75-125	3	25	
Beryllium	ug/L	ND	500	500	473	490	94	98	75-125	3	25	
Cadmium	ug/L	ND	500	500	486	500	97	100	75-125	3	25	
Chromium	ug/L	ND	500	500	466	476	93	95	75-125	2	25	
Cobalt	ug/L	4.8J	500	500	482	494	95	98	75-125	3	25	
Copper	ug/L	ND	500	500	492	506	98	101	75-125	3	25	
Lead	ug/L	ND	500	500	477	489	95	98	75-125	2	25	
Nickel	ug/L	4.2J	500	500	481	494	95	98	75-125	3	25	
Selenium	ug/L	ND	500	500	489	501	98	100	75-125	2	25	
Silver	ug/L	ND	250	250	238	245	95	98	75-125	3	25	
Thallium	ug/L	ND	500	500	481	494	96	99	75-125	3	25	
Vanadium	ug/L	ND	500	500	471	485	94	96	75-125	3	25	
Zinc	ug/L	11.0	500	500	472	485	92	95	75-125	3	25	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: MSV/30523 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 92238730001, 92238730002, 92238730003, 92238730004, 92238730005, 92238730006, 92238730007, 92238730008, 92238730009, 92238730010, 92238730011, 92238730012, 92238730013, 92238730014, 92238730015

METHOD BLANK: 1399631 Matrix: Water
Associated Lab Samples: 92238730001, 92238730002, 92238730003, 92238730004, 92238730005, 92238730006, 92238730007, 92238730008, 92238730009, 92238730010, 92238730011, 92238730012, 92238730013, 92238730014, 92238730015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	02/27/15 23:03	
1,1,1-Trichloroethane	ug/L	ND	1.0	02/27/15 23:03	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	02/27/15 23:03	
1,1,2-Trichloroethane	ug/L	ND	1.0	02/27/15 23:03	
1,1-Dichloroethane	ug/L	ND	1.0	02/27/15 23:03	
1,1-Dichloroethene	ug/L	ND	1.0	02/27/15 23:03	
1,1-Dichloropropene	ug/L	ND	1.0	02/27/15 23:03	
1,2,3-Trichloropropane	ug/L	ND	1.0	02/27/15 23:03	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	02/27/15 23:03	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	02/27/15 23:03	
1,2-Dichlorobenzene	ug/L	ND	1.0	02/27/15 23:03	
1,2-Dichloroethane	ug/L	ND	1.0	02/27/15 23:03	
1,2-Dichloropropane	ug/L	ND	1.0	02/27/15 23:03	
1,3-Dichlorobenzene	ug/L	ND	1.0	02/27/15 23:03	
1,3-Dichloropropane	ug/L	ND	1.0	02/27/15 23:03	
1,4-Dichlorobenzene	ug/L	ND	1.0	02/27/15 23:03	
2,2-Dichloropropane	ug/L	ND	1.0	02/27/15 23:03	
2-Butanone (MEK)	ug/L	ND	5.0	02/27/15 23:03	
2-Hexanone	ug/L	ND	5.0	02/27/15 23:03	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	02/27/15 23:03	
Acetone	ug/L	ND	25.0	02/27/15 23:03	
Acetonitrile	ug/L	ND	50.0	02/27/15 23:03	
Acrylonitrile	ug/L	ND	10.0	02/27/15 23:03	
Allyl chloride	ug/L	ND	2.0	02/27/15 23:03	
Benzene	ug/L	ND	1.0	02/27/15 23:03	
Bromochloromethane	ug/L	ND	1.0	02/27/15 23:03	
Bromodichloromethane	ug/L	ND	1.0	02/27/15 23:03	
Bromoform	ug/L	ND	1.0	02/27/15 23:03	
Bromomethane	ug/L	ND	2.0	02/27/15 23:03	
Carbon disulfide	ug/L	ND	2.0	02/27/15 23:03	
Carbon tetrachloride	ug/L	ND	1.0	02/27/15 23:03	
Chlorobenzene	ug/L	ND	1.0	02/27/15 23:03	
Chloroethane	ug/L	ND	1.0	02/27/15 23:03	
Chloroform	ug/L	ND	1.0	02/27/15 23:03	
Chloromethane	ug/L	ND	1.0	02/27/15 23:03	
Chloroprene	ug/L	ND	5.0	02/27/15 23:03	
cis-1,2-Dichloroethene	ug/L	ND	1.0	02/27/15 23:03	
cis-1,3-Dichloropropene	ug/L	ND	1.0	02/27/15 23:03	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

METHOD BLANK: 1399631 Matrix: Water

Associated Lab Samples: 92238730001, 92238730002, 92238730003, 92238730004, 92238730005, 92238730006, 92238730007, 92238730008, 92238730009, 92238730010, 92238730011, 92238730012, 92238730013, 92238730014, 92238730015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromochloromethane	ug/L	ND	1.0	02/27/15 23:03	
Dibromomethane	ug/L	ND	1.0	02/27/15 23:03	
Dichlorodifluoromethane	ug/L	ND	1.0	02/27/15 23:03	
Ethyl methacrylate	ug/L	ND	1.0	02/27/15 23:03	
Ethylbenzene	ug/L	ND	1.0	02/27/15 23:03	
Iodomethane	ug/L	ND	5.0	02/27/15 23:03	
Isobutanol	ug/L	ND	100	02/27/15 23:03	
m&p-Xylene	ug/L	ND	2.0	02/27/15 23:03	
Methacrylonitrile	ug/L	ND	10.0	02/27/15 23:03	
Methyl methacrylate	ug/L	ND	2.0	02/27/15 23:03	
Methylene Chloride	ug/L	ND	1.0	02/27/15 23:03	
Naphthalene	ug/L	ND	1.0	02/27/15 23:03	
o-Xylene	ug/L	ND	1.0	02/27/15 23:03	
Propionitrile	ug/L	ND	20.0	02/27/15 23:03	
Styrene	ug/L	ND	1.0	02/27/15 23:03	
Tetrachloroethene	ug/L	ND	1.0	02/27/15 23:03	
Toluene	ug/L	ND	1.0	02/27/15 23:03	
trans-1,2-Dichloroethene	ug/L	ND	1.0	02/27/15 23:03	
trans-1,3-Dichloropropene	ug/L	ND	1.0	02/27/15 23:03	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	02/27/15 23:03	
Trichloroethene	ug/L	ND	1.0	02/27/15 23:03	
Trichlorofluoromethane	ug/L	ND	1.0	02/27/15 23:03	
Vinyl acetate	ug/L	ND	2.0	02/27/15 23:03	
Vinyl chloride	ug/L	ND	1.0	02/27/15 23:03	
Xylene (Total)	ug/L	ND	2.0	02/27/15 23:03	
1,2-Dichloroethane-d4 (S)	%	97	70-130	02/27/15 23:03	
4-Bromofluorobenzene (S)	%	99	70-130	02/27/15 23:03	
Toluene-d8 (S)	%	92	70-130	02/27/15 23:03	

LABORATORY CONTROL SAMPLE: 1399632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	45.8	92	80-125	
1,1,1-Trichloroethane	ug/L	50	47.5	95	71-129	
1,1,2,2-Tetrachloroethane	ug/L	50	44.3	89	79-124	
1,1,2-Trichloroethane	ug/L	50	45.4	91	85-125	
1,1-Dichloroethane	ug/L	50	46.1	92	73-126	
1,1-Dichloroethene	ug/L	50	45.1	90	66-135	
1,1-Dichloropropene	ug/L	50	47.1	94	74-135	
1,2,3-Trichloropropane	ug/L	50	46.5	93	75-130	
1,2-Dibromo-3-chloropropane	ug/L	50	47.0	94	71-133	
1,2-Dibromoethane (EDB)	ug/L	50	47.3	95	83-124	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1399632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichlorobenzene	ug/L	50	47.5	95	80-133	
1,2-Dichloroethane	ug/L	50	48.0	96	67-128	
1,2-Dichloropropane	ug/L	50	45.1	90	75-132	
1,3-Dichlorobenzene	ug/L	50	46.4	93	77-130	
1,3-Dichloropropane	ug/L	50	46.3	93	76-131	
1,4-Dichlorobenzene	ug/L	50	46.7	93	78-130	
2,2-Dichloropropane	ug/L	50	40.5	81	40-160	
2-Butanone (MEK)	ug/L	100	101	101	61-144	
2-Hexanone	ug/L	100	92.2	92	68-143	
4-Methyl-2-pentanone (MIBK)	ug/L	100	95.5	95	72-135	
Acetone	ug/L	100	98.7	99	48-146	
Acetonitrile	ug/L	500	521	104	62-150	
Acrylonitrile	ug/L	250	259	103	40-160	
Allyl chloride	ug/L	50	41.8	84	66-137	
Benzene	ug/L	50	46.6	93	80-125	
Bromochloromethane	ug/L	50	44.7	89	71-125	
Bromodichloromethane	ug/L	50	42.5	85	78-124	
Bromoform	ug/L	50	41.3	83	71-128	
Bromomethane	ug/L	50	45.2	90	40-160	
Carbon disulfide	ug/L	50	38.1	76	50-160	
Carbon tetrachloride	ug/L	50	48.0	96	69-131	
Chlorobenzene	ug/L	50	45.1	90	81-122	
Chloroethane	ug/L	50	36.6	73	39-148	
Chloroform	ug/L	50	43.4	87	73-127	
Chloromethane	ug/L	50	47.1	94	44-146	
Chloroprene	ug/L	50	44.2	88	75-145	
cis-1,2-Dichloroethene	ug/L	50	47.3	95	74-124	
cis-1,3-Dichloropropene	ug/L	50	44.1	88	72-132	
Dibromochloromethane	ug/L	50	42.2	84	78-125	
Dibromomethane	ug/L	50	46.3	93	82-120	
Dichlorodifluoromethane	ug/L	50	54.8	110	34-157	
Ethyl methacrylate	ug/L	50	45.6	91	82-121	
Ethylbenzene	ug/L	50	45.0	90	79-121	
Iodomethane	ug/L	100	93.5	93	39-154	
Isobutanol	ug/L	1000	845	85	34-160	
m&p-Xylene	ug/L	100	89.4	89	81-124	
Methacrylonitrile	ug/L	500	492	98	74-134	
Methyl methacrylate	ug/L	50	43.1	86	84-124	
Methylene Chloride	ug/L	50	52.7	105	64-133	
Naphthalene	ug/L	50	44.6	89	73-133	
o-Xylene	ug/L	50	44.0	88	79-131	
Propionitrile	ug/L	500	478	96	73-140	
Styrene	ug/L	50	45.2	90	84-126	
Tetrachloroethene	ug/L	50	43.9	88	78-122	
Toluene	ug/L	50	45.0	90	80-121	
trans-1,2-Dichloroethene	ug/L	50	46.6	93	71-127	
trans-1,3-Dichloropropene	ug/L	50	44.5	89	69-141	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1399632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
trans-1,4-Dichloro-2-butene	ug/L	50	46.7	93	40-160	
Trichloroethene	ug/L	50	45.1	90	78-122	
Trichlorofluoromethane	ug/L	50	53.4	107	53-137	
Vinyl acetate	ug/L	100	106	106	40-160	
Vinyl chloride	ug/L	50	40.0	80	58-137	
Xylene (Total)	ug/L	150	133	89	81-126	
1,2-Dichloroethane-d4 (S)	%			95	70-130	
4-Bromofluorobenzene (S)	%			97	70-130	
Toluene-d8 (S)	%			97	70-130	

MATRIX SPIKE SAMPLE: 1399634

Parameter	Units	92238730015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20.6	103	70-130	
1,1,1-Trichloroethane	ug/L	ND	20	21.8	109	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	19.2	96	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	19.2	96	70-130	
1,1-Dichloroethane	ug/L	10.9	20	31.3	102	70-130	
1,1-Dichloroethene	ug/L	ND	20	20.7	104	70-166	
1,1-Dichloropropene	ug/L	ND	20	21.1	106	70-130	
1,2,3-Trichloropropane	ug/L	ND	20	21.0	105	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	18.6	93	70-130	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20.3	102	70-130	
1,2-Dichlorobenzene	ug/L	ND	20	20.5	102	70-130	
1,2-Dichloroethane	ug/L	0.63J	20	21.4	104	70-130	
1,2-Dichloropropane	ug/L	ND	20	18.9	94	70-130	
1,3-Dichlorobenzene	ug/L	ND	20	20.5	103	70-130	
1,3-Dichloropropane	ug/L	ND	20	19.6	98	70-130	
1,4-Dichlorobenzene	ug/L	1.2	20	21.7	102	70-130	
2,2-Dichloropropane	ug/L	ND	20	14.3	72	70-130	
2-Butanone (MEK)	ug/L	ND	40	38.0	95	70-130	
2-Hexanone	ug/L	ND	40	38.3	96	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	37.9	95	70-130	
Acetone	ug/L	ND	40	45.5	100	70-130	
Acetonitrile	ug/L	ND	200	216	108	70-130	
Acrylonitrile	ug/L	ND	100	107	107	70-130	
Allyl chloride	ug/L	ND	20	17.5	87	70-130	
Benzene	ug/L	0.92J	20	21.4	102	70-148	
Bromochloromethane	ug/L	ND	20	20.2	101	70-130	
Bromodichloromethane	ug/L	ND	20	18.5	93	70-130	
Bromoform	ug/L	ND	20	17.8	89	70-130	
Bromomethane	ug/L	ND	20	12.1	60	70-130	M0
Carbon disulfide	ug/L	ND	20	17.2	81	70-130	
Carbon tetrachloride	ug/L	ND	20	23.2	116	70-130	
Chlorobenzene	ug/L	ND	20	20.7	104	70-146	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

MATRIX SPIKE SAMPLE: 1399634

Parameter	Units	92238730015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroethane	ug/L	ND	20	16.5	82	70-130	
Chloroform	ug/L	ND	20	19.0	95	70-130	
Chloromethane	ug/L	ND	20	17.4	87	70-130	
Chloroprene	ug/L	ND	20	18.6	93	70-130	
cis-1,2-Dichloroethene	ug/L	9.2	20	29.1	99	70-130	
cis-1,3-Dichloropropene	ug/L	ND	20	16.4	82	70-130	
Dibromochloromethane	ug/L	ND	20	18.0	90	70-130	
Dibromomethane	ug/L	ND	20	19.1	96	70-130	
Dichlorodifluoromethane	ug/L	ND	20	20.3	102	70-130	
Ethyl methacrylate	ug/L	ND	20	17.6	88	70-130	
Ethylbenzene	ug/L	ND	20	20.8	104	70-130	
Iodomethane	ug/L	ND	40	32.6	81	70-130	
Isobutanol	ug/L	ND	400	326	81	70-130	
m&p-Xylene	ug/L	ND	40	41.9	105	70-130	
Methacrylonitrile	ug/L	ND	200	213	106	70-130	
Methyl methacrylate	ug/L	ND	20	15.0	75	70-130	
Methylene Chloride	ug/L	4.9	20	27.4	113	70-130	
Naphthalene	ug/L	ND	20	17.2	86	70-130	
o-Xylene	ug/L	ND	20	19.1	96	70-130	
Propionitrile	ug/L	ND	200	202	101	70-130	
Styrene	ug/L	ND	20	19.8	99	70-130	
Tetrachloroethene	ug/L	1.0	20	21.0	100	70-130	
Toluene	ug/L	ND	20	20.0	100	70-155	
trans-1,2-Dichloroethene	ug/L	ND	20	20.2	101	70-130	
trans-1,3-Dichloropropene	ug/L	ND	20	17.5	87	70-130	
trans-1,4-Dichloro-2-butene	ug/L	ND	20	18.7	94	70-130	
Trichloroethene	ug/L	1.3	20	22.8	107	69-151	
Trichlorofluoromethane	ug/L	ND	20	25.3	127	70-130	
Vinyl acetate	ug/L	ND	40	31.8	79	70-130	
Vinyl chloride	ug/L	ND	20	15.8	79	70-130	
1,2-Dichloroethane-d4 (S)	%				95	70-130	
4-Bromofluorobenzene (S)	%				94	70-130	
Toluene-d8 (S)	%				95	70-130	

SAMPLE DUPLICATE: 1399633

Parameter	Units	92238730014 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	0.45J	0.42J		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	
1,2,3-Trichloropropane	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

SAMPLE DUPLICATE: 1399633

Parameter	Units	92238730014 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	5.7	5.8	2	30	
1,2-Dichloroethane	ug/L	ND	ND		30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	0.50J	0.55J		30	
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	ND	ND		30	
2-Hexanone	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	ND	ND		30	
Acetonitrile	ug/L	ND	ND		30	
Acrylonitrile	ug/L	ND	ND		30	
Allyl chloride	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30	
Carbon disulfide	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
Chloroprene	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	1.8	1.7	7	30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Ethyl methacrylate	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Iodomethane	ug/L	ND	ND		30	
Isobutanol	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methacrylonitrile	ug/L	ND	ND		30	
Methyl methacrylate	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
o-Xylene	ug/L	ND	ND		30	
Propionitrile	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

SAMPLE DUPLICATE: 1399633

Parameter	Units	92238730014 Result	Dup Result	RPD	Max RPD	Qualifiers
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
trans-1,4-Dichloro-2-butene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	104	98	6		
4-Bromofluorobenzene (S)	%	95	97	2		
Toluene-d8 (S)	%	94	92	2		

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: MSV/30668 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 92238730016, 92238730017, 92238730018, 92238730019, 92238730020

METHOD BLANK: 1407480 Matrix: Water
Associated Lab Samples: 92238730016, 92238730017, 92238730018, 92238730019, 92238730020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	03/11/15 06:45	
1,1,1-Trichloroethane	ug/L	ND	1.0	03/11/15 06:45	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	03/11/15 06:45	
1,1,2-Trichloroethane	ug/L	ND	1.0	03/11/15 06:45	
1,1-Dichloroethane	ug/L	ND	1.0	03/11/15 06:45	
1,1-Dichloroethene	ug/L	ND	1.0	03/11/15 06:45	
1,1-Dichloropropene	ug/L	ND	1.0	03/11/15 06:45	
1,2,3-Trichloropropane	ug/L	ND	1.0	03/11/15 06:45	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	03/11/15 06:45	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	03/11/15 06:45	
1,2-Dichlorobenzene	ug/L	ND	1.0	03/11/15 06:45	
1,2-Dichloroethane	ug/L	ND	1.0	03/11/15 06:45	
1,2-Dichloropropane	ug/L	ND	1.0	03/11/15 06:45	
1,3-Dichlorobenzene	ug/L	ND	1.0	03/11/15 06:45	
1,3-Dichloropropane	ug/L	ND	1.0	03/11/15 06:45	
1,4-Dichlorobenzene	ug/L	ND	1.0	03/11/15 06:45	
2,2-Dichloropropane	ug/L	ND	1.0	03/11/15 06:45	
2-Butanone (MEK)	ug/L	ND	5.0	03/11/15 06:45	
2-Hexanone	ug/L	ND	5.0	03/11/15 06:45	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	03/11/15 06:45	
Acetone	ug/L	ND	25.0	03/11/15 06:45	
Acetonitrile	ug/L	ND	50.0	03/11/15 06:45	
Acrylonitrile	ug/L	ND	10.0	03/11/15 06:45	
Allyl chloride	ug/L	ND	2.0	03/11/15 06:45	
Benzene	ug/L	ND	1.0	03/11/15 06:45	
Bromochloromethane	ug/L	ND	1.0	03/11/15 06:45	
Bromodichloromethane	ug/L	ND	1.0	03/11/15 06:45	
Bromoform	ug/L	ND	1.0	03/11/15 06:45	
Bromomethane	ug/L	ND	2.0	03/11/15 06:45	
Carbon disulfide	ug/L	ND	2.0	03/11/15 06:45	
Carbon tetrachloride	ug/L	ND	1.0	03/11/15 06:45	
Chlorobenzene	ug/L	ND	1.0	03/11/15 06:45	
Chloroethane	ug/L	ND	1.0	03/11/15 06:45	
Chloroform	ug/L	ND	1.0	03/11/15 06:45	
Chloromethane	ug/L	ND	1.0	03/11/15 06:45	
Chloroprene	ug/L	ND	5.0	03/11/15 06:45	
cis-1,2-Dichloroethene	ug/L	ND	1.0	03/11/15 06:45	
cis-1,3-Dichloropropene	ug/L	ND	1.0	03/11/15 06:45	
Dibromochloromethane	ug/L	ND	1.0	03/11/15 06:45	
Dibromomethane	ug/L	ND	1.0	03/11/15 06:45	
Dichlorodifluoromethane	ug/L	ND	1.0	03/11/15 06:45	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

METHOD BLANK: 1407480 Matrix: Water
Associated Lab Samples: 92238730016, 92238730017, 92238730018, 92238730019, 92238730020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Ethyl methacrylate	ug/L	ND	1.0	03/11/15 06:45	
Ethylbenzene	ug/L	ND	1.0	03/11/15 06:45	
Iodomethane	ug/L	ND	5.0	03/11/15 06:45	
Isobutanol	ug/L	ND	100	03/11/15 06:45	
m&p-Xylene	ug/L	ND	2.0	03/11/15 06:45	
Methacrylonitrile	ug/L	ND	10.0	03/11/15 06:45	
Methyl methacrylate	ug/L	ND	2.0	03/11/15 06:45	
Methylene Chloride	ug/L	ND	1.0	03/11/15 06:45	
Naphthalene	ug/L	ND	1.0	03/11/15 06:45	
o-Xylene	ug/L	ND	1.0	03/11/15 06:45	
Propionitrile	ug/L	ND	20.0	03/11/15 06:45	
Styrene	ug/L	ND	1.0	03/11/15 06:45	
Tetrachloroethene	ug/L	ND	1.0	03/11/15 06:45	
Toluene	ug/L	ND	1.0	03/11/15 06:45	
trans-1,2-Dichloroethene	ug/L	ND	1.0	03/11/15 06:45	
trans-1,3-Dichloropropene	ug/L	ND	1.0	03/11/15 06:45	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	03/11/15 06:45	
Trichloroethene	ug/L	ND	1.0	03/11/15 06:45	
Trichlorofluoromethane	ug/L	ND	1.0	03/11/15 06:45	
Vinyl acetate	ug/L	ND	2.0	03/11/15 06:45	
Vinyl chloride	ug/L	ND	1.0	03/11/15 06:45	
Xylene (Total)	ug/L	ND	2.0	03/11/15 06:45	
1,2-Dichloroethane-d4 (S)	%	107	70-130	03/11/15 06:45	
4-Bromofluorobenzene (S)	%	99	70-130	03/11/15 06:45	
Toluene-d8 (S)	%	96	70-130	03/11/15 06:45	

LABORATORY CONTROL SAMPLE: 1407481

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.2	100	80-125	
1,1,1-Trichloroethane	ug/L	50	49.9	100	71-129	
1,1,2,2-Tetrachloroethane	ug/L	50	47.0	94	79-124	
1,1,2-Trichloroethane	ug/L	50	48.5	97	85-125	
1,1-Dichloroethane	ug/L	50	49.0	98	73-126	
1,1-Dichloroethene	ug/L	50	47.9	96	66-135	
1,1-Dichloropropene	ug/L	50	53.3	107	74-135	
1,2,3-Trichloropropane	ug/L	50	47.2	94	75-130	
1,2-Dibromo-3-chloropropane	ug/L	50	50.7	101	71-133	
1,2-Dibromoethane (EDB)	ug/L	50	49.3	99	83-124	
1,2-Dichlorobenzene	ug/L	50	48.1	96	80-133	
1,2-Dichloroethane	ug/L	50	48.9	98	67-128	
1,2-Dichloropropane	ug/L	50	48.2	96	75-132	
1,3-Dichlorobenzene	ug/L	50	48.3	97	77-130	
1,3-Dichloropropane	ug/L	50	49.2	98	76-131	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1407481

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	47.6	95	78-130	
2,2-Dichloropropane	ug/L	50	44.4	89	40-160	
2-Butanone (MEK)	ug/L	100	107	107	61-144	
2-Hexanone	ug/L	100	116	116	68-143	
4-Methyl-2-pentanone (MIBK)	ug/L	100	116	116	72-135	
Acetone	ug/L	100	108	108	48-146	
Acetonitrile	ug/L	500	533	107	62-150	
Acrylonitrile	ug/L	250	216	86	40-160	
Allyl chloride	ug/L	50	45.5	91	66-137	
Benzene	ug/L	50	49.1	98	80-125	
Bromochloromethane	ug/L	50	46.5	93	71-125	
Bromodichloromethane	ug/L	50	45.3	91	78-124	
Bromoform	ug/L	50	45.5	91	71-128	
Bromomethane	ug/L	50	53.4	107	40-160	
Carbon disulfide	ug/L	50	44.5	89	50-160	
Carbon tetrachloride	ug/L	50	49.3	99	69-131	
Chlorobenzene	ug/L	50	47.9	96	81-122	
Chloroethane	ug/L	50	50.3	101	39-148	
Chloroform	ug/L	50	43.7	87	73-127	
Chloromethane	ug/L	50	49.1	98	44-146	
Chloroprene	ug/L	50	53.3	107	75-145	
cis-1,2-Dichloroethene	ug/L	50	49.8	100	74-124	
cis-1,3-Dichloropropene	ug/L	50	49.6	99	72-132	
Dibromochloromethane	ug/L	50	44.7	89	78-125	
Dibromomethane	ug/L	50	46.8	94	82-120	
Dichlorodifluoromethane	ug/L	50	62.2	124	34-157	
Ethyl methacrylate	ug/L	50	51.2	102	82-121	
Ethylbenzene	ug/L	50	48.5	97	79-121	
Iodomethane	ug/L	100	99.1	99	39-154	
Isobutanol	ug/L	1000	1160	116	34-160	
m&p-Xylene	ug/L	100	97.0	97	81-124	
Methacrylonitrile	ug/L	500	539	108	74-134	
Methyl methacrylate	ug/L	50	45.4	91	84-124	
Methylene Chloride	ug/L	50	52.7	105	64-133	
Naphthalene	ug/L	50	46.8	94	73-133	
o-Xylene	ug/L	50	49.1	98	79-131	
Propionitrile	ug/L	500	547	109	73-140	
Styrene	ug/L	50	52.7	105	84-126	
Tetrachloroethene	ug/L	50	48.5	97	78-122	
Toluene	ug/L	50	47.4	95	80-121	
trans-1,2-Dichloroethene	ug/L	50	49.5	99	71-127	
trans-1,3-Dichloropropene	ug/L	50	51.1	102	69-141	
trans-1,4-Dichloro-2-butene	ug/L	50	55.4	111	40-160	
Trichloroethene	ug/L	50	47.5	95	78-122	
Trichlorofluoromethane	ug/L	50	51.0	102	53-137	
Vinyl acetate	ug/L	100	99.3	99	40-160	
Vinyl chloride	ug/L	50	51.7	103	58-137	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1407481

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	150	146	97	81-126	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
4-Bromofluorobenzene (S)	%			97	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE SAMPLE: 1407483

Parameter	Units	92238730020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	21.6	108	70-130	
1,1,1-Trichloroethane	ug/L	ND	20	22.9	115	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	19.2	96	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	20.2	101	70-130	
1,1-Dichloroethane	ug/L	3.2	20	24.2	105	70-130	
1,1-Dichloroethene	ug/L	ND	20	20.1	101	70-166	
1,1-Dichloropropene	ug/L	ND	20	22.2	111	70-130	
1,2,3-Trichloropropane	ug/L	ND	20	20.1	101	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	18.3	92	70-130	
1,2-Dibromoethane (EDB)	ug/L	ND	20	19.2	96	70-130	
1,2-Dichlorobenzene	ug/L	ND	20	20.2	100	70-130	
1,2-Dichloroethane	ug/L	0.16J	20	21.3	106	70-130	
1,2-Dichloropropane	ug/L	ND	20	19.6	98	70-130	
1,3-Dichlorobenzene	ug/L	ND	20	20.3	102	70-130	
1,3-Dichloropropane	ug/L	ND	20	19.5	97	70-130	
1,4-Dichlorobenzene	ug/L	0.46J	20	21.3	104	70-130	
2,2-Dichloropropane	ug/L	ND	20	16.2	81	70-130	
2-Butanone (MEK)	ug/L	ND	40	36.0	90	70-130	
2-Hexanone	ug/L	ND	40	41.2	103	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	41.9	105	70-130	
Acetone	ug/L	ND	40	40.1	100	70-130	
Acetonitrile	ug/L	ND	200	186	93	70-130	
Acrylonitrile	ug/L	ND	100	82.2	82	70-130	
Allyl chloride	ug/L	ND	20	22.0	110	70-130	
Benzene	ug/L	ND	20	21.2	106	70-148	
Bromochloromethane	ug/L	ND	20	22.1	110	70-130	
Bromodichloromethane	ug/L	ND	20	19.9	99	70-130	
Bromoform	ug/L	ND	20	18.4	92	70-130	
Bromomethane	ug/L	ND	20	11.9	60	70-130	M1
Carbon disulfide	ug/L	ND	20	18.3	92	70-130	
Carbon tetrachloride	ug/L	ND	20	24.3	122	70-130	
Chlorobenzene	ug/L	ND	20	21.1	104	70-146	
Chloroethane	ug/L	1.7	20	24.5	114	70-130	
Chloroform	ug/L	ND	20	19.2	96	70-130	
Chloromethane	ug/L	ND	20	18.8	94	70-130	
Chloroprene	ug/L	ND	20	20.9	105	70-130	
cis-1,2-Dichloroethene	ug/L	ND	20	20.3	102	70-130	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

MATRIX SPIKE SAMPLE: 1407483

Parameter	Units	92238730020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	20	16.7	84	70-130	
Dibromochloromethane	ug/L	ND	20	18.0	90	70-130	
Dibromomethane	ug/L	ND	20	19.4	97	70-130	
Dichlorodifluoromethane	ug/L	ND	20	26.4	132	70-130	M1
Ethyl methacrylate	ug/L	ND	20	17.8	89	70-130	
Ethylbenzene	ug/L	ND	20	21.0	105	70-130	
Iodomethane	ug/L	ND	40	24.0	60	70-130	M1
Isobutanol	ug/L	ND	400	312	78	70-130	
m&p-Xylene	ug/L	ND	40	42.7	107	70-130	
Methacrylonitrile	ug/L	ND	200	220	110	70-130	
Methyl methacrylate	ug/L	ND	20	15.5	77	70-130	
Methylene Chloride	ug/L	ND	20	20.3	102	70-130	
Naphthalene	ug/L	ND	20	15.2	76	70-130	
o-Xylene	ug/L	ND	20	19.6	98	70-130	
Propionitrile	ug/L	ND	200	200	100	70-130	
Styrene	ug/L	ND	20	21.8	109	70-130	
Tetrachloroethene	ug/L	ND	20	20.9	105	70-130	
Toluene	ug/L	ND	20	20.5	102	70-155	
trans-1,2-Dichloroethene	ug/L	ND	20	20.0	100	70-130	
trans-1,3-Dichloropropene	ug/L	ND	20	20.1	101	70-130	
trans-1,4-Dichloro-2-butene	ug/L	ND	20	18.5	92	70-130	
Trichloroethene	ug/L	ND	20	21.6	108	69-151	
Trichlorofluoromethane	ug/L	ND	20	25.0	125	70-130	
Vinyl acetate	ug/L	ND	40	25.5	64	70-130	M1
Vinyl chloride	ug/L	ND	20	21.1	106	70-130	
1,2-Dichloroethane-d4 (S)	%				97	70-130	
4-Bromofluorobenzene (S)	%				97	70-130	
Toluene-d8 (S)	%				97	70-130	

SAMPLE DUPLICATE: 1407482

Parameter	Units	92238730019 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	0.86J	0.92J		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	
1,2,3-Trichloropropane	ug/L	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	1.0J	0.99J		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
1,2-Dichloropropane	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

SAMPLE DUPLICATE: 1407482

Parameter	Units	92238730019 Result	Dup Result	RPD	Max RPD	Qualifiers
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	6.4	6.6	3	30	
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	ND	ND		30	
2-Hexanone	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	ND	ND		30	
Acetonitrile	ug/L	ND	ND		30	
Acrylonitrile	ug/L	ND	ND		30	
Allyl chloride	ug/L	ND	ND		30	
Benzene	ug/L	0.53J	0.51J		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30	
Carbon disulfide	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	0.47J	0.51J		30	
Chloroethane	ug/L	2.1	2.4	12	30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
Chloroprene	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	2.7	2.6	3	30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Ethyl methacrylate	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Iodomethane	ug/L	ND	ND		30	
Isobutanol	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methacrylonitrile	ug/L	ND	ND		30	
Methyl methacrylate	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
o-Xylene	ug/L	ND	ND		30	
Propionitrile	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
trans-1,4-Dichloro-2-butene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

SAMPLE DUPLICATE: 1407482

Parameter	Units	92238730019 Result	Dup Result	RPD	Max RPD	Qualifiers
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	0.75J		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	111	112	1		
4-Bromofluorobenzene (S)	%	103	101	2		
Toluene-d8 (S)	%	98	96	1		

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: MSV/30685 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 92238730021, 92238730022, 92238730023, 92238730024, 92238730025, 92238730026, 92238730027, 92238730028, 92238730029, 92238730030, 92238730031, 92238730032

METHOD BLANK: 1408429 | Matrix: Water
Associated Lab Samples: 92238730021, 92238730022, 92238730023, 92238730024, 92238730025, 92238730026, 92238730027, 92238730028, 92238730029, 92238730030, 92238730031, 92238730032

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	03/12/15 03:53	
1,1,1-Trichloroethane	ug/L	ND	1.0	03/12/15 03:53	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	03/12/15 03:53	
1,1,2-Trichloroethane	ug/L	ND	1.0	03/12/15 03:53	
1,1-Dichloroethane	ug/L	ND	1.0	03/12/15 03:53	
1,1-Dichloroethene	ug/L	ND	1.0	03/12/15 03:53	
1,1-Dichloropropene	ug/L	ND	1.0	03/12/15 03:53	
1,2,3-Trichloropropane	ug/L	ND	1.0	03/12/15 03:53	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	03/12/15 03:53	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	03/12/15 03:53	
1,2-Dichlorobenzene	ug/L	ND	1.0	03/12/15 03:53	
1,2-Dichloroethane	ug/L	ND	1.0	03/12/15 03:53	
1,2-Dichloropropane	ug/L	ND	1.0	03/12/15 03:53	
1,3-Dichlorobenzene	ug/L	ND	1.0	03/12/15 03:53	
1,3-Dichloropropane	ug/L	ND	1.0	03/12/15 03:53	
1,4-Dichlorobenzene	ug/L	ND	1.0	03/12/15 03:53	
2,2-Dichloropropane	ug/L	ND	1.0	03/12/15 03:53	
2-Butanone (MEK)	ug/L	ND	5.0	03/12/15 03:53	
2-Hexanone	ug/L	ND	5.0	03/12/15 03:53	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	03/12/15 03:53	
Acetone	ug/L	ND	25.0	03/12/15 03:53	
Acetonitrile	ug/L	ND	50.0	03/12/15 03:53	
Acrylonitrile	ug/L	ND	10.0	03/12/15 03:53	
Allyl chloride	ug/L	ND	2.0	03/12/15 03:53	
Benzene	ug/L	ND	1.0	03/12/15 03:53	
Bromochloromethane	ug/L	ND	1.0	03/12/15 03:53	
Bromodichloromethane	ug/L	ND	1.0	03/12/15 03:53	
Bromoform	ug/L	ND	1.0	03/12/15 03:53	
Bromomethane	ug/L	ND	2.0	03/12/15 03:53	
Carbon disulfide	ug/L	ND	2.0	03/12/15 03:53	
Carbon tetrachloride	ug/L	ND	1.0	03/12/15 03:53	
Chlorobenzene	ug/L	ND	1.0	03/12/15 03:53	
Chloroethane	ug/L	ND	1.0	03/12/15 03:53	
Chloroform	ug/L	ND	1.0	03/12/15 03:53	
Chloromethane	ug/L	ND	1.0	03/12/15 03:53	
Chloroprene	ug/L	ND	5.0	03/12/15 03:53	
cis-1,2-Dichloroethene	ug/L	ND	1.0	03/12/15 03:53	
cis-1,3-Dichloropropene	ug/L	ND	1.0	03/12/15 03:53	
Dibromochloromethane	ug/L	ND	1.0	03/12/15 03:53	
Dibromomethane	ug/L	ND	1.0	03/12/15 03:53	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

METHOD BLANK: 1408429 Matrix: Water

Associated Lab Samples: 92238730021, 92238730022, 92238730023, 92238730024, 92238730025, 92238730026, 92238730027, 92238730028, 92238730029, 92238730030, 92238730031, 92238730032

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	03/12/15 03:53	
Ethyl methacrylate	ug/L	ND	1.0	03/12/15 03:53	
Ethylbenzene	ug/L	ND	1.0	03/12/15 03:53	
Iodomethane	ug/L	ND	5.0	03/12/15 03:53	
Isobutanol	ug/L	ND	100	03/12/15 03:53	
m&p-Xylene	ug/L	ND	2.0	03/12/15 03:53	
Methacrylonitrile	ug/L	ND	10.0	03/12/15 03:53	
Methyl methacrylate	ug/L	ND	2.0	03/12/15 03:53	
Methylene Chloride	ug/L	ND	1.0	03/12/15 03:53	
Naphthalene	ug/L	ND	1.0	03/12/15 03:53	
o-Xylene	ug/L	ND	1.0	03/12/15 03:53	
Propionitrile	ug/L	ND	20.0	03/12/15 03:53	
Styrene	ug/L	ND	1.0	03/12/15 03:53	
Tetrachloroethene	ug/L	ND	1.0	03/12/15 03:53	
Toluene	ug/L	ND	1.0	03/12/15 03:53	
trans-1,2-Dichloroethene	ug/L	ND	1.0	03/12/15 03:53	
trans-1,3-Dichloropropene	ug/L	ND	1.0	03/12/15 03:53	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	03/12/15 03:53	
Trichloroethene	ug/L	ND	1.0	03/12/15 03:53	
Trichlorofluoromethane	ug/L	ND	1.0	03/12/15 03:53	
Vinyl acetate	ug/L	ND	2.0	03/12/15 03:53	
Vinyl chloride	ug/L	ND	1.0	03/12/15 03:53	
Xylene (Total)	ug/L	ND	2.0	03/12/15 03:53	
1,2-Dichloroethane-d4 (S)	%	105	70-130	03/12/15 03:53	
4-Bromofluorobenzene (S)	%	100	70-130	03/12/15 03:53	
Toluene-d8 (S)	%	96	70-130	03/12/15 03:53	

LABORATORY CONTROL SAMPLE: 1408430

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	49.8	100	80-125	
1,1,1-Trichloroethane	ug/L	50	49.7	99	71-129	
1,1,2,2-Tetrachloroethane	ug/L	50	46.3	93	79-124	
1,1,2-Trichloroethane	ug/L	50	49.1	98	85-125	
1,1-Dichloroethane	ug/L	50	47.4	95	73-126	
1,1-Dichloroethene	ug/L	50	47.3	95	66-135	
1,1-Dichloropropene	ug/L	50	51.7	103	74-135	
1,2,3-Trichloropropane	ug/L	50	46.7	93	75-130	
1,2-Dibromo-3-chloropropane	ug/L	50	50.3	101	71-133	
1,2-Dibromoethane (EDB)	ug/L	50	49.5	99	83-124	
1,2-Dichlorobenzene	ug/L	50	48.8	98	80-133	
1,2-Dichloroethane	ug/L	50	48.2	96	67-128	
1,2-Dichloropropane	ug/L	50	48.4	97	75-132	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1408430

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	ug/L	50	47.8	96	77-130	
1,3-Dichloropropane	ug/L	50	49.1	98	76-131	
1,4-Dichlorobenzene	ug/L	50	48.2	96	78-130	
2,2-Dichloropropane	ug/L	50	45.5	91	40-160	
2-Butanone (MEK)	ug/L	100	101	101	61-144	
2-Hexanone	ug/L	100	108	108	68-143	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	72-135	
Acetone	ug/L	100	104	104	48-146	
Acetonitrile	ug/L	500	490	98	62-150	
Acrylonitrile	ug/L	250	212	85	40-160	
Allyl chloride	ug/L	50	44.2	88	66-137	
Benzene	ug/L	50	49.6	99	80-125	
Bromochloromethane	ug/L	50	49.7	99	71-125	
Bromodichloromethane	ug/L	50	45.9	92	78-124	
Bromoform	ug/L	50	46.3	93	71-128	
Bromomethane	ug/L	50	54.1	108	40-160	
Carbon disulfide	ug/L	50	43.7	87	50-160	
Carbon tetrachloride	ug/L	50	50.9	102	69-131	
Chlorobenzene	ug/L	50	47.8	96	81-122	
Chloroethane	ug/L	50	50.2	100	39-148	
Chloroform	ug/L	50	44.3	89	73-127	
Chloromethane	ug/L	50	47.6	95	44-146	
Chloroprene	ug/L	50	52.2	104	75-145	
cis-1,2-Dichloroethene	ug/L	50	49.4	99	74-124	
cis-1,3-Dichloropropene	ug/L	50	50.7	101	72-132	
Dibromochloromethane	ug/L	50	45.0	90	78-125	
Dibromomethane	ug/L	50	49.2	98	82-120	
Dichlorodifluoromethane	ug/L	50	54.8	110	34-157	
Ethyl methacrylate	ug/L	50	50.4	101	82-121	
Ethylbenzene	ug/L	50	48.4	97	79-121	
Iodomethane	ug/L	100	97.5	98	39-154	
Isobutanol	ug/L	1000	1050	105	34-160	
m&p-Xylene	ug/L	100	96.1	96	81-124	
Methacrylonitrile	ug/L	500	521	104	74-134	
Methyl methacrylate	ug/L	50	44.1	88	84-124	
Methylene Chloride	ug/L	50	51.0	102	64-133	
Naphthalene	ug/L	50	44.5	89	73-133	
o-Xylene	ug/L	50	48.6	97	79-131	
Propionitrile	ug/L	500	508	102	73-140	
Styrene	ug/L	50	51.6	103	84-126	
Tetrachloroethene	ug/L	50	49.1	98	78-122	
Toluene	ug/L	50	48.0	96	80-121	
trans-1,2-Dichloroethene	ug/L	50	46.8	94	71-127	
trans-1,3-Dichloropropene	ug/L	50	51.3	103	69-141	
trans-1,4-Dichloro-2-butene	ug/L	50	52.6	105	40-160	
Trichloroethene	ug/L	50	48.4	97	78-122	
Trichlorofluoromethane	ug/L	50	49.0	98	53-137	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1408430

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vinyl acetate	ug/L	100	99.0	99	40-160	
Vinyl chloride	ug/L	50	50.6	101	58-137	
Xylene (Total)	ug/L	150	145	97	81-126	
1,2-Dichloroethane-d4 (S)	%			97	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE SAMPLE: 1408432

Parameter	Units	92239827004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	22.0	110	70-130	
1,1,1-Trichloroethane	ug/L	ND	20	22.8	114	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	19.5	97	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	20.5	102	70-130	
1,1-Dichloroethane	ug/L	ND	20	20.2	101	70-130	
1,1-Dichloroethene	ug/L	ND	20	20.2	101	70-166	
1,1-Dichloropropene	ug/L	ND	20	22.1	110	70-130	
1,2,3-Trichloropropane	ug/L	ND	20	20.6	103	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20.7	103	70-130	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20.0	100	70-130	
1,2-Dichlorobenzene	ug/L	ND	20	20.6	103	70-130	
1,2-Dichloroethane	ug/L	ND	20	21.4	107	70-130	
1,2-Dichloropropane	ug/L	ND	20	19.6	98	70-130	
1,3-Dichlorobenzene	ug/L	ND	20	20.6	103	70-130	
1,3-Dichloropropane	ug/L	ND	20	20.1	101	70-130	
1,4-Dichlorobenzene	ug/L	0.82J	20	21.8	105	70-130	
2,2-Dichloropropane	ug/L	ND	20	16.6	83	70-130	
2-Butanone (MEK)	ug/L	ND	40	39.2	98	70-130	
2-Hexanone	ug/L	ND	40	42.5	106	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	44.0	110	70-130	
Acetone	ug/L	ND	40	43.5	109	70-130	
Acetonitrile	ug/L	ND	200	200	100	70-130	
Acrylonitrile	ug/L	ND	100	85.3	85	70-130	
Allyl chloride	ug/L	ND	20	17.3	86	70-130	
Benzene	ug/L	ND	20	21.6	108	70-148	
Bromochloromethane	ug/L	ND	20	22.2	111	70-130	
Bromodichloromethane	ug/L	ND	20	20.0	100	70-130	
Bromoform	ug/L	ND	20	19.4	97	70-130	
Bromomethane	ug/L	ND	20	19.2	96	70-130	
Carbon disulfide	ug/L	ND	20	17.8	89	70-130	
Carbon tetrachloride	ug/L	ND	20	24.6	123	70-130	
Chlorobenzene	ug/L	ND	20	21.3	106	70-146	
Chloroethane	ug/L	ND	20	22.4	112	70-130	
Chloroform	ug/L	ND	20	19.2	96	70-130	
Chloromethane	ug/L	ND	20	20.4	102	70-130	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

MATRIX SPIKE SAMPLE: 1408432

Parameter	Units	92239827004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroprene	ug/L	ND	20	21.1	106	70-130	
cis-1,2-Dichloroethene	ug/L	ND	20	20.3	101	70-130	
cis-1,3-Dichloropropene	ug/L	ND	20	16.7	83	70-130	
Dibromochloromethane	ug/L	ND	20	18.9	95	70-130	
Dibromomethane	ug/L	ND	20	20.4	102	70-130	
Dichlorodifluoromethane	ug/L	ND	20	25.6	128	70-130	
Ethyl methacrylate	ug/L	ND	20	18.1	91	70-130	
Ethylbenzene	ug/L	ND	20	21.1	105	70-130	
Iodomethane	ug/L	ND	40	36.9	92	70-130	
Isobutanol	ug/L	ND	400	390	97	70-130	
m&p-Xylene	ug/L	ND	40	43.0	108	70-130	
Methacrylonitrile	ug/L	ND	200	223	112	70-130	
Methyl methacrylate	ug/L	ND	20	16.5	82	70-130	
Methylene Chloride	ug/L	ND	20	19.8	99	70-130	
Naphthalene	ug/L	ND	20	16.2	81	70-130	
o-Xylene	ug/L	ND	20	19.4	97	70-130	
Propionitrile	ug/L	ND	200	212	106	70-130	
Styrene	ug/L	ND	20	21.6	108	70-130	
Tetrachloroethene	ug/L	ND	20	21.1	106	70-130	
Toluene	ug/L	ND	20	20.4	102	70-155	
trans-1,2-Dichloroethene	ug/L	ND	20	20.3	102	70-130	
trans-1,3-Dichloropropene	ug/L	ND	20	20.3	101	70-130	
trans-1,4-Dichloro-2-butene	ug/L	ND	20	21.1	106	70-130	
Trichloroethene	ug/L	ND	20	21.9	110	69-151	
Trichlorofluoromethane	ug/L	ND	20	23.3	117	70-130	
Vinyl acetate	ug/L	ND	40	27.9	70	70-130	
Vinyl chloride	ug/L	ND	20	21.5	108	70-130	
1,2-Dichloroethane-d4 (S)	%				98	70-130	
4-Bromofluorobenzene (S)	%				100	70-130	
Toluene-d8 (S)	%				95	70-130	

SAMPLE DUPLICATE: 1408431

Parameter	Units	92239827003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	
1,2,3-Trichloropropane	ug/L	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

SAMPLE DUPLICATE: 1408431

Parameter	Units	92239827003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	0.73J	0.72J		30	
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	ND	ND		30	
2-Hexanone	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	ND	ND		30	
Acetonitrile	ug/L	ND	ND		30	
Acrylonitrile	ug/L	ND	ND		30	
Allyl chloride	ug/L	ND	ND		30	
Benzene	ug/L	ND	0.55J		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30	
Carbon disulfide	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	8.1	7.9	2	30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
Chloroprene	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Ethyl methacrylate	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Iodomethane	ug/L	ND	ND		30	
Isobutanol	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methacrylonitrile	ug/L	ND	ND		30	
Methyl methacrylate	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
o-Xylene	ug/L	ND	ND		30	
Propionitrile	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
trans-1,4-Dichloro-2-butene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

SAMPLE DUPLICATE: 1408431

Parameter	Units	92239827003 Result	Dup Result	RPD	Max RPD	Qualifiers
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	114	114	0		
4-Bromofluorobenzene (S)	%	102	102	0		
Toluene-d8 (S)	%	97	96	1		

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: OEXT/33298 Analysis Method: EPA 8081
QC Batch Method: EPA 3510 Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92238730002, 92238730004, 92238730011, 92238730012, 92238730015, 92238730017

METHOD BLANK: 1401382 Matrix: Water
Associated Lab Samples: 92238730002, 92238730004, 92238730011, 92238730012, 92238730015, 92238730017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	03/09/15 21:04	
4,4'-DDE	ug/L	ND	0.050	03/09/15 21:04	
4,4'-DDT	ug/L	ND	0.050	03/09/15 21:04	
Aldrin	ug/L	ND	0.050	03/09/15 21:04	
alpha-BHC	ug/L	ND	0.050	03/09/15 21:04	
beta-BHC	ug/L	ND	0.050	03/09/15 21:04	
Chlordane (Technical)	ug/L	ND	0.20	03/09/15 21:04	
delta-BHC	ug/L	ND	0.050	03/09/15 21:04	
Dieldrin	ug/L	ND	0.050	03/09/15 21:04	
Endosulfan I	ug/L	ND	0.050	03/09/15 21:04	
Endosulfan II	ug/L	ND	0.050	03/09/15 21:04	
Endosulfan sulfate	ug/L	ND	0.050	03/09/15 21:04	
Endrin	ug/L	ND	0.050	03/09/15 21:04	
Endrin aldehyde	ug/L	ND	0.050	03/09/15 21:04	
Endrin ketone	ug/L	ND	0.050	03/09/15 21:04	
gamma-BHC (Lindane)	ug/L	ND	0.050	03/09/15 21:04	
Heptachlor	ug/L	ND	0.050	03/09/15 21:04	
Heptachlor epoxide	ug/L	ND	0.050	03/09/15 21:04	
Hexachlorobenzene	ug/L	ND	0.050	03/09/15 21:04	
Methoxychlor	ug/L	ND	0.15	03/09/15 21:04	
Mirex	ug/L	ND	0.15	03/09/15 21:04	
Toxaphene	ug/L	ND	0.20	03/09/15 21:04	
Decachlorobiphenyl (S)	%	89	20-130	03/09/15 21:04	
Tetrachloro-m-xylene (S)	%	82	20-130	03/09/15 21:04	

LABORATORY CONTROL SAMPLE: 1401383

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.23	93	20-150	
4,4'-DDE	ug/L	.25	0.20	80	20-150	
4,4'-DDT	ug/L	.25	0.16	63	20-150	
Aldrin	ug/L	.25	0.17	68	20-150	
alpha-BHC	ug/L	.25	0.19	78	20-150	
beta-BHC	ug/L	.25	0.22	87	20-150	
delta-BHC	ug/L	.25	0.21	85	20-150	
Dieldrin	ug/L	.25	0.20	82	20-150	
Endosulfan I	ug/L	.25	0.21	86	20-150	
Endosulfan II	ug/L	.25	0.22	90	20-150	
Endosulfan sulfate	ug/L	.25	0.22	90	20-150	
Endrin	ug/L	.25	0.23	92	20-150	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1401383

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/L	.25	0.19	78	20-150	
Endrin ketone	ug/L	.25	0.18	73	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.20	81	20-150	
Heptachlor	ug/L	.25	0.16	66	20-150	
Heptachlor epoxide	ug/L	.25	0.19	76	20-150	
Hexachlorobenzene	ug/L	.25	0.15	63	20-150	
Methoxychlor	ug/L	.74	0.51	69	20-150	
Mirex	ug/L	.74	0.63	84	20-150	
Decachlorobiphenyl (S)	%			65	20-130	
Tetrachloro-m-xylene (S)	%			76	20-130	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: OEXT/33363 | Analysis Method: EPA 8081
QC Batch Method: EPA 3510 | Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92238730019, 92238730022

METHOD BLANK: 1403595 | Matrix: Water
Associated Lab Samples: 92238730019, 92238730022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	03/09/15 16:54	
4,4'-DDE	ug/L	ND	0.050	03/09/15 16:54	
4,4'-DDT	ug/L	ND	0.050	03/09/15 16:54	
Aldrin	ug/L	ND	0.050	03/09/15 16:54	
alpha-BHC	ug/L	ND	0.050	03/09/15 16:54	
beta-BHC	ug/L	ND	0.050	03/09/15 16:54	
Chlordane (Technical)	ug/L	ND	0.20	03/09/15 16:54	
delta-BHC	ug/L	ND	0.050	03/09/15 16:54	
Dieldrin	ug/L	ND	0.050	03/09/15 16:54	
Endosulfan I	ug/L	ND	0.050	03/09/15 16:54	
Endosulfan II	ug/L	ND	0.050	03/09/15 16:54	
Endosulfan sulfate	ug/L	ND	0.050	03/09/15 16:54	
Endrin	ug/L	ND	0.050	03/09/15 16:54	
Endrin aldehyde	ug/L	ND	0.050	03/09/15 16:54	
Endrin ketone	ug/L	ND	0.050	03/09/15 16:54	
gamma-BHC (Lindane)	ug/L	ND	0.050	03/09/15 16:54	
Heptachlor	ug/L	ND	0.050	03/09/15 16:54	
Heptachlor epoxide	ug/L	ND	0.050	03/09/15 16:54	
Hexachlorobenzene	ug/L	ND	0.050	03/09/15 16:54	
Methoxychlor	ug/L	ND	0.15	03/09/15 16:54	
Mirex	ug/L	ND	0.15	03/09/15 16:54	
Toxaphene	ug/L	ND	0.20	03/09/15 16:54	
Decachlorobiphenyl (S)	%	98	20-130	03/09/15 16:54	
Tetrachloro-m-xylene (S)	%	87	20-130	03/09/15 16:54	

LABORATORY CONTROL SAMPLE: 1403596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.25	100	20-150	
4,4'-DDE	ug/L	.25	0.23	94	20-150	
4,4'-DDT	ug/L	.25	0.24	99	20-150	
Aldrin	ug/L	.25	0.19	76	20-150	
alpha-BHC	ug/L	.25	0.24	97	20-150	
beta-BHC	ug/L	.25	0.27	109	20-150	
delta-BHC	ug/L	.25	0.27	110	20-150	
Dieldrin	ug/L	.25	0.26	105	20-150	
Endosulfan I	ug/L	.25	0.26	103	20-150	
Endosulfan II	ug/L	.25	0.28	111	20-150	
Endosulfan sulfate	ug/L	.25	0.27	109	20-150	
Endrin	ug/L	.25	0.26	105	20-150	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1403596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/L	.25	0.21	87	20-150	
Endrin ketone	ug/L	.25	0.23	95	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.25	100	20-150	
Heptachlor	ug/L	.25	0.19	78	20-150	
Heptachlor epoxide	ug/L	.25	0.25	101	20-150	
Hexachlorobenzene	ug/L	.25	0.20	80	20-150	
Methoxychlor	ug/L	.74	0.72	98	20-150	
Mirex	ug/L	.74	0.76	102	20-150	
Decachlorobiphenyl (S)	%			104	20-130	
Tetrachloro-m-xylene (S)	%			100	20-130	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: OEXT/33586 | Analysis Method: EPA 8081
QC Batch Method: EPA 3510 | Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92238730024, 92238730025

METHOD BLANK: 1411577 | Matrix: Water
Associated Lab Samples: 92238730024, 92238730025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	03/17/15 11:38	
4,4'-DDE	ug/L	ND	0.050	03/17/15 11:38	
4,4'-DDT	ug/L	ND	0.050	03/17/15 11:38	
Aldrin	ug/L	ND	0.050	03/17/15 11:38	
alpha-BHC	ug/L	ND	0.050	03/17/15 11:38	
beta-BHC	ug/L	ND	0.050	03/17/15 11:38	
Chlordane (Technical)	ug/L	ND	0.20	03/17/15 11:38	
delta-BHC	ug/L	ND	0.050	03/17/15 11:38	
Dieldrin	ug/L	ND	0.050	03/17/15 11:38	
Endosulfan I	ug/L	ND	0.050	03/17/15 11:38	
Endosulfan II	ug/L	ND	0.050	03/17/15 11:38	
Endosulfan sulfate	ug/L	ND	0.050	03/17/15 11:38	
Endrin	ug/L	ND	0.050	03/17/15 11:38	
Endrin aldehyde	ug/L	0.056	0.050	03/17/15 11:38	
Endrin ketone	ug/L	ND	0.050	03/17/15 11:38	
gamma-BHC (Lindane)	ug/L	ND	0.050	03/17/15 11:38	
Heptachlor	ug/L	ND	0.050	03/17/15 11:38	
Heptachlor epoxide	ug/L	ND	0.050	03/17/15 11:38	
Hexachlorobenzene	ug/L	ND	0.050	03/17/15 11:38	
Methoxychlor	ug/L	ND	0.15	03/17/15 11:38	
Mirex	ug/L	ND	0.15	03/17/15 11:38	
Toxaphene	ug/L	ND	0.20	03/17/15 11:38	
Decachlorobiphenyl (S)	%	93	20-130	03/17/15 11:38	
Tetrachloro-m-xylene (S)	%	104	20-130	03/17/15 11:38	

LABORATORY CONTROL SAMPLE: 1411578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.25	101	20-150	
4,4'-DDE	ug/L	.25	0.24	96	20-150	
4,4'-DDT	ug/L	.25	0.25	99	20-150	
Aldrin	ug/L	.25	0.20	82	20-150	
alpha-BHC	ug/L	.25	0.24	97	20-150	
beta-BHC	ug/L	.25	0.26	103	20-150	
delta-BHC	ug/L	.25	0.26	104	20-150	
Dieldrin	ug/L	.25	0.25	101	20-150	
Endosulfan I	ug/L	.25	0.24	98	20-150	
Endosulfan II	ug/L	.25	0.26	105	20-150	
Endosulfan sulfate	ug/L	.25	0.25	103	20-150	
Endrin	ug/L	.25	0.28	113	20-150	

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1411578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/L	.25	0.20	81	20-150	
Endrin ketone	ug/L	.25	0.24	98	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.24	98	20-150	
Heptachlor	ug/L	.25	0.21	84	20-150	
Heptachlor epoxide	ug/L	.25	0.24	98	20-150	
Hexachlorobenzene	ug/L	.25	0.20	82	20-150	
Methoxychlor	ug/L	.74	0.74	99	20-150	
Mirex	ug/L	.74	0.71	95	20-150	
Decachlorobiphenyl (S)	%			77	20-130	
Tetrachloro-m-xylene (S)	%			106	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1411579 1411580

Parameter	Units	92241240003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4,4'-DDD	ug/L	ND	.5	.5	0.53	0.52	106	105	20-150	1	30	
4,4'-DDE	ug/L	ND	.5	.5	0.46	0.46	93	93	20-150	0	30	
4,4'-DDT	ug/L	ND	.5	.5	0.48	0.48	97	97	20-150	0	30	
Aldrin	ug/L	ND	.5	.5	0.39	0.38	78	77	20-150	1	30	
alpha-BHC	ug/L	ND	.5	.5	0.41	0.39	83	79	20-150	6	30	
beta-BHC	ug/L	ND	.5	.5	0.40	0.39	82	80	20-150	2	30	
delta-BHC	ug/L	ND	.5	.5	0.45	0.43	91	87	20-150	5	30	
Dieldrin	ug/L	ND	.5	.5	0.56	0.53	114	108	20-150	6	30	
Endosulfan I	ug/L	ND	.5	.5	0.50	0.49	101	100	20-150	1	30	
Endosulfan II	ug/L	ND	.5	.5	0.51	0.50	103	101	20-150	2	30	
Endosulfan sulfate	ug/L	ND	.5	.5	0.56	0.53	112	108	20-150	4	30	
Endrin	ug/L	ND	.5	.5	0.58	0.58	116	117	20-150	0	30	
Endrin aldehyde	ug/L	ND	.5	.5	0.40	0.38	82	77	20-150	6	30	
Endrin ketone	ug/L	ND	.5	.5	0.47	0.46	95	93	20-150	2	30	
gamma-BHC (Lindane)	ug/L	ND	.5	.5	0.43	0.41	86	84	20-150	3	30	
Heptachlor	ug/L	ND	.5	.5	0.40	0.40	81	80	20-150	1	30	
Heptachlor epoxide	ug/L	ND	.5	.5	0.43	0.41	86	83	20-150	4	30	
Hexachlorobenzene	ug/L	ND	.5	.5	0.30	0.27	62	54	20-150	14	30	
Methoxychlor	ug/L	ND	1.5	1.5	1.5	1.5	100	100	20-150	0	30	
Mirex	ug/L	ND	1.5	1.5	1.4	1.4	96	96	20-150	1	30	
Decachlorobiphenyl (S)	%						91	93	20-130			
Tetrachloro-m-xylene (S)	%						67	57	20-130			

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QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: OEXT/33750 | Analysis Method: EPA 8081
QC Batch Method: EPA 3510 | Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92238730033, 92238730034

METHOD BLANK: 1417055 | Matrix: Water
Associated Lab Samples: 92238730033, 92238730034

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	03/24/15 13:31	
4,4'-DDE	ug/L	ND	0.050	03/24/15 13:31	
4,4'-DDT	ug/L	ND	0.050	03/24/15 13:31	
Aldrin	ug/L	ND	0.050	03/24/15 13:31	
alpha-BHC	ug/L	ND	0.050	03/24/15 13:31	
beta-BHC	ug/L	ND	0.050	03/24/15 13:31	
Chlordane (Technical)	ug/L	ND	0.20	03/24/15 13:31	
delta-BHC	ug/L	ND	0.050	03/24/15 13:31	
Dieldrin	ug/L	ND	0.050	03/24/15 13:31	
Endosulfan I	ug/L	ND	0.050	03/24/15 13:31	
Endosulfan II	ug/L	ND	0.050	03/24/15 13:31	
Endosulfan sulfate	ug/L	ND	0.050	03/24/15 13:31	
Endrin	ug/L	ND	0.050	03/24/15 13:31	
Endrin aldehyde	ug/L	ND	0.050	03/24/15 13:31	
Endrin ketone	ug/L	ND	0.050	03/24/15 13:31	
gamma-BHC (Lindane)	ug/L	ND	0.050	03/24/15 13:31	
Heptachlor	ug/L	ND	0.050	03/24/15 13:31	
Heptachlor epoxide	ug/L	ND	0.050	03/24/15 13:31	
Hexachlorobenzene	ug/L	ND	0.050	03/24/15 13:31	
Methoxychlor	ug/L	ND	0.15	03/24/15 13:31	
Mirex	ug/L	ND	0.15	03/24/15 13:31	
Toxaphene	ug/L	ND	0.20	03/24/15 13:31	
Decachlorobiphenyl (S)	%	82	20-130	03/24/15 13:31	
Tetrachloro-m-xylene (S)	%	77	20-130	03/24/15 13:31	

LABORATORY CONTROL SAMPLE: 1417056

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.22	90	20-150	
4,4'-DDE	ug/L	.25	0.21	86	20-150	
4,4'-DDT	ug/L	.25	0.22	91	20-150	
Aldrin	ug/L	.25	0.18	73	20-150	
alpha-BHC	ug/L	.25	0.22	91	20-150	
beta-BHC	ug/L	.25	0.23	92	20-150	
delta-BHC	ug/L	.25	0.23	91	20-150	
Dieldrin	ug/L	.25	0.23	93	20-150	
Endosulfan I	ug/L	.25	0.22	91	20-150	
Endosulfan II	ug/L	.25	0.24	97	20-150	
Endosulfan sulfate	ug/L	.25	0.25	99	20-150	
Endrin	ug/L	.25	0.26	107	20-150	

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

QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

LABORATORY CONTROL SAMPLE: 1417056

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/L	.25	0.20	80	20-150	
Endrin ketone	ug/L	.25	0.23	94	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.22	90	20-150	
Heptachlor	ug/L	.25	0.18	74	20-150	
Heptachlor epoxide	ug/L	.25	0.22	88	20-150	
Hexachlorobenzene	ug/L	.25	0.18	72	20-150	
Methoxychlor	ug/L	.74	0.68	92	20-150	
Mirex	ug/L	.74	0.71	95	20-150	
Decachlorobiphenyl (S)	%			79	20-130	
Tetrachloro-m-xylene (S)	%			90	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1417057 1417058

Parameter	Units	92241686001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4,4'-DDD	ug/L	ND	.5	.5	0.50	0.51	101	103	20-150	2	30	
4,4'-DDE	ug/L	ND	.5	.5	0.48	0.48	97	98	20-150	1	30	
4,4'-DDT	ug/L	ND	.5	.5	0.50	0.50	100	100	20-150	0	30	
Aldrin	ug/L	ND	.5	.5	0.45	0.46	91	93	20-150	2	30	
alpha-BHC	ug/L	ND	.5	.5	0.48	0.49	97	99	20-150	2	30	
beta-BHC	ug/L	ND	.5	.5	0.55	0.53	112	107	20-150	4	30	
delta-BHC	ug/L	ND	.5	.5	0.50	0.52	101	106	20-150	4	30	
Dieldrin	ug/L	ND	.5	.5	0.49	0.51	100	103	20-150	4	30	
Endosulfan I	ug/L	ND	.5	.5	0.48	0.49	97	100	20-150	2	30	
Endosulfan II	ug/L	ND	.5	.5	0.51	0.52	104	105	20-150	1	30	
Endosulfan sulfate	ug/L	ND	.5	.5	0.51	0.51	104	104	20-150	0	30	
Endrin	ug/L	ND	.5	.5	0.57	0.57	115	116	20-150	0	30	
Endrin aldehyde	ug/L	ND	.5	.5	0.42	0.42	86	86	20-150	0	30	
Endrin ketone	ug/L	ND	.5	.5	0.49	0.49	99	99	20-150	0	30	
gamma-BHC (Lindane)	ug/L	ND	.5	.5	0.49	0.50	100	101	20-150	2	30	
Heptachlor	ug/L	ND	.5	.5	0.44	0.46	88	93	20-150	5	30	
Heptachlor epoxide	ug/L	ND	.5	.5	0.46	0.48	92	97	20-150	5	30	
Hexachlorobenzene	ug/L	ND	.5	.5	0.42	0.42	84	85	20-150	1	30	
Methoxychlor	ug/L	ND	1.5	1.5	1.5	1.5	99	100	20-150	2	30	
Mirex	ug/L	ND	1.5	1.5	1.5	1.5	98	98	20-150	0	30	
Decachlorobiphenyl (S)	%						96	96	20-130			
Tetrachloro-m-xylene (S)	%						98	95	20-130			

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: WETA/22095 Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92238730001, 92238730003, 92238730004, 92238730011, 92238730012, 92238730014

METHOD BLANK: 1402193 Matrix: Water
Associated Lab Samples: 92238730001, 92238730003, 92238730004, 92238730011, 92238730012, 92238730014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0080	03/05/15 11:38	

LABORATORY CONTROL SAMPLE: 1402194

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1402195 1402196

Parameter	Units	92239013003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	0.012	.1	.1	0.11	0.11	101	99	75-125	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1402197 1402198

Parameter	Units	92238730014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.10	0.10	101	100	75-125	0	10	

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

QUALITY CONTROL DATA

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

QC Batch: WETA/22200 Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92238730016, 92238730019, 92238730020, 92238730021, 92238730022

METHOD BLANK: 1410054 Matrix: Water
Associated Lab Samples: 92238730016, 92238730019, 92238730020, 92238730021, 92238730022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0080	03/13/15 16:28	

LABORATORY CONTROL SAMPLE: 1410055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.094	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1410056 1410057

Parameter	Units	92239466012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.068	0.070	64	66	75-125	3	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1410058 1410059

Parameter	Units	92238730021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.083	0.088	80	85	75-125	6	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

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.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
C9	Common Laboratory Contaminant.
H2	Extraction or preparation conducted outside EPA method holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92238730001	MW-1A		FLD/		
92238730002	MW-4		FLD/		
92238730003	MW-5		FLD/		
92238730004	MW-11		FLD/		
92238730005	MW-12		FLD/		
92238730006	MW-16		FLD/		
92238730007	MW-16D		FLD/		
92238730008	MW-17		FLD/		
92238730009	MW-18		FLD/		
92238730010	MW-22		FLD/		
92238730011	MW-13		FLD/		
92238730012	MW-14		FLD/		
92238730013	MW-14D		FLD/		
92238730014	MW-15		FLD/		
92238730015	MW-25		FLD/		
92238730016	MW-8		FLD/		
92238730017	MW-9		FLD/		
92238730018	MW-24		FLD/		
92238730019	MW-2A		FLD/		
92238730020	MW-3A		FLD/		
92238730021	MW-6		FLD/		
92238730022	MW-7		FLD/		
92238730023	MW-10		FLD/		
92238730024	MW-19		FLD/		
92238730025	MW-19D		FLD/		
92238730026	MW-20		FLD/		
92238730027	MW-20D		FLD/		
92238730028	MW-21		FLD/		
92238730029	MW-23		FLD/		
92238730030	MW-23D		FLD/		
92238730033	MW-19		FLD/		
92238730034	MW-19D		FLD/		
92238730002	MW-4	EPA 3510	OEXT/33298	EPA 8081	GCSV/20553
92238730004	MW-11	EPA 3510	OEXT/33298	EPA 8081	GCSV/20553
92238730011	MW-13	EPA 3510	OEXT/33298	EPA 8081	GCSV/20553
92238730012	MW-14	EPA 3510	OEXT/33298	EPA 8081	GCSV/20553
92238730015	MW-25	EPA 3510	OEXT/33298	EPA 8081	GCSV/20553
92238730017	MW-9	EPA 3510	OEXT/33298	EPA 8081	GCSV/20553
92238730019	MW-2A	EPA 3510	OEXT/33363	EPA 8081	GCSV/20551
92238730022	MW-7	EPA 3510	OEXT/33363	EPA 8081	GCSV/20551
92238730024	MW-19	EPA 3510	OEXT/33586	EPA 8081	GCSV/20661
92238730025	MW-19D	EPA 3510	OEXT/33586	EPA 8081	GCSV/20661
92238730033	MW-19	EPA 3510	OEXT/33750	EPA 8081	GCSV/20734
92238730034	MW-19D	EPA 3510	OEXT/33750	EPA 8081	GCSV/20734
92238730001	MW-1A	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730002	MW-4	EPA 3010	MPRP/17974	EPA 6010	ICP/16160

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(828)254-7176

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92238730003	MW-5	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730004	MW-11	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730005	MW-12	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730006	MW-16	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730007	MW-16D	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730008	MW-17	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730009	MW-18	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730010	MW-22	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730011	MW-13	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238730012	MW-14	EPA 3010	MPRP/17992	EPA 6010	ICP/16178
92238730013	MW-14D	EPA 3010	MPRP/17992	EPA 6010	ICP/16178
92238730014	MW-15	EPA 3010	MPRP/17992	EPA 6010	ICP/16178
92238730015	MW-25	EPA 3010	MPRP/17992	EPA 6010	ICP/16178
92238730016	MW-8	EPA 3010	MPRP/17992	EPA 6010	ICP/16178
92238730017	MW-9	EPA 3010	MPRP/17992	EPA 6010	ICP/16178
92238730018	MW-24	EPA 3010	MPRP/17992	EPA 6010	ICP/16178
92238730019	MW-2A	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730020	MW-3A	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730021	MW-6	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730022	MW-7	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730023	MW-10	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730024	MW-19	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730025	MW-19D	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730026	MW-20	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730027	MW-20D	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730028	MW-21	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730029	MW-23	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730030	MW-23D	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730031	EQUIP BLK	EPA 3010	MPRP/18005	EPA 6010	ICP/16187
92238730001	MW-1A	EPA 8260	MSV/30523		
92238730002	MW-4	EPA 8260	MSV/30523		
92238730003	MW-5	EPA 8260	MSV/30523		
92238730004	MW-11	EPA 8260	MSV/30523		
92238730005	MW-12	EPA 8260	MSV/30523		
92238730006	MW-16	EPA 8260	MSV/30523		
92238730007	MW-16D	EPA 8260	MSV/30523		
92238730008	MW-17	EPA 8260	MSV/30523		
92238730009	MW-18	EPA 8260	MSV/30523		
92238730010	MW-22	EPA 8260	MSV/30523		
92238730011	MW-13	EPA 8260	MSV/30523		
92238730012	MW-14	EPA 8260	MSV/30523		
92238730013	MW-14D	EPA 8260	MSV/30523		
92238730014	MW-15	EPA 8260	MSV/30523		
92238730015	MW-25	EPA 8260	MSV/30523		
92238730016	MW-8	EPA 8260	MSV/30668		
92238730017	MW-9	EPA 8260	MSV/30668		
92238730018	MW-24	EPA 8260	MSV/30668		

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Asheville, NC 28804
(828)254-7176

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Francis Farm LF 2/24
Pace Project No.: 92238730

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92238730019	MW-2A	EPA 8260	MSV/30668		
92238730020	MW-3A	EPA 8260	MSV/30668		
92238730021	MW-6	EPA 8260	MSV/30685		
92238730022	MW-7	EPA 8260	MSV/30685		
92238730023	MW-10	EPA 8260	MSV/30685		
92238730024	MW-19	EPA 8260	MSV/30685		
92238730025	MW-19D	EPA 8260	MSV/30685		
92238730026	MW-20	EPA 8260	MSV/30685		
92238730027	MW-20D	EPA 8260	MSV/30685		
92238730028	MW-21	EPA 8260	MSV/30685		
92238730029	MW-23	EPA 8260	MSV/30685		
92238730030	MW-23D	EPA 8260	MSV/30685		
92238730031	EQUIP BLK	EPA 8260	MSV/30685		
92238730032	TVL BLK	EPA 8260	MSV/30685		
92238730001	MW-1A	SM 4500-CN-E	WETA/22095		
92238730003	MW-5	SM 4500-CN-E	WETA/22095		
92238730004	MW-11	SM 4500-CN-E	WETA/22095		
92238730011	MW-13	SM 4500-CN-E	WETA/22095		
92238730012	MW-14	SM 4500-CN-E	WETA/22095		
92238730014	MW-15	SM 4500-CN-E	WETA/22095		
92238730016	MW-8	SM 4500-CN-E	WETA/22200		
92238730019	MW-2A	SM 4500-CN-E	WETA/22200		
92238730020	MW-3A	SM 4500-CN-E	WETA/22200		
92238730021	MW-6	SM 4500-CN-E	WETA/22200		
92238730022	MW-7	SM 4500-CN-E	WETA/22200		

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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

1817826

Section A Required Client Information:

Company: Haywood Co
Address: Clyde NC
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Stephen King
Copy To: BLG
Purchase Order No.:
Project Name: Francis 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

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	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	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): Fecal Total Strep Fecal	Total Coliform	Ammonia	VOC 8260	Metals 6010	CN - 4500-CN-E	8021							Residual Chlorine (Y/N)	92238730 Pace Project No./ Lab I.D.
1	MW-1A					2-24-15	15:00		4			1	3	1				✓	X	X	X	X	X									92238730001
2	MW-4					2-24	15:45		5	2		1	3					X	Y	X	X		X									002
3	MW-5						16:15		4			1	3					X	X	X	X	X										003
4	MW-11						15:20		7	2		1	3					X	X	X	X	X	X									004
5	MW-12						16:30		4			1	3					X	X	X	X											005
6	MW-16						13:15		4			1	3					X	✓	X	X											006
7	MW 16D						13:20		4			1	3					X	X	X	X											007
8	MW-17						14:00		4			1	3					X	X	X	X											008
9	MW-18						14:20		4			1	3					X	X	X	X											009
10	MW-22						14:50		4			1	3					X	X	X	X											010
11																																
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		2-24-15	~~17:45~~ 16:50	[signature] Pace	2-24-15	~~17:45~~ 16:50				
	[signature] Pace	2-24-15	17:45	[signature]	2/25/15	8:00	3.1	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK L. SWANN

SIGNATURE of SAMPLER: [signature] Pace DATE Signed (MM/DD/YY): 2-24-15

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.

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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: 2 of

1817827

Section A Required Client Information:

Company: Hardwood Co
Address: CLYDE NC
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Stephen King
Copy To: BLE
Purchase Order No.:
Project Name: Francis 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

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	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	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	pH Temp Sulfide Cyan	Sta. 1.2 H_2O	Appendix II VOC	Appendix I metals 6010B	CN-							Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92238730
1	MW-13					2-25-15	1405		7	2		1	3	1					X	X	X	X	X	X							011
2	MW-14					2-25	1340		7	2		1	3	1					X	X	X	X	X	X							012
3	MW-14D					2-25	~~1400~~ 1500		4			1	3						X	X	X	X									013
4	MW-15					2-25	1430		5			1	3	1					X	X	X	X		X							014
5	MW-25					2-25	1515		6	2		1	3						X	X	X	X	X								015
6																															
7																															
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		2-25-15	1520	[signature] Pace	2-25-15	1520				
	[signature] Pace	2-25-15	1600	[signature]	2/25/15	1604	0.6	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK C. SWANN

SIGNATURE of SAMPLER: [signature] Pace

DATE Signed (MM/DD/YY): 2-25-15

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.

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 3 of

1818322

Section A Required Client Information:

Company: Haywood Co
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Stephen King
Copy To:
Purchase Order No.:
Project Name: Francis 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

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Fe, Mn, Tap Speco	Turb	Sulfate, Alk	Nitrate II, V2N	Arsenic, Iron, Mn II	Boron	Cr	Residual Chlorine (Y/N)	Pace Project No./Lab I.D. 92238730
1	MW-8						1540		5			1	3	1					X	X	X	X	X		X		016
2	MW 9						1520		6	2		1	3						X	X	X	X	X	X			017
3	MW-24						1500		4			1	3						X	X	X	X	X				018
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		3-2-15	1600	[signature] Pace	3-2-15	1600				
	[signature] Pace	3-2-15	1645	[signature]	3/2/15	1645	4.9	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark L. Swan

SIGNATURE of SAMPLER: [signature] Pace

DATE Signed (MM/DD/YY): 3-2-15

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.

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 3 of 4

1818260

Section A Required Client Information:

Company: Harwood Co
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: BLE
Copy To: Stephen King
Purchase Order No.:
Project Name: Francis 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

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED 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): Fld Alkalinity Standard Units	Total H_2O	Nitrate + Nitrite	Metals 8021	CN-	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. (92238730)
1	MW-2A					3-3-15	1645		7	2		1	3	1				Y	Y	Y	Y	Y	Y	019
2																						Y		
3	MW-3A					3-3-15	1630		5			1	3	1				Y	Y	Y			Y	020
4																								
5	MW-6					3-3-15	1350		5			1	3	1				Y	Y	Y	Y		Y	021
6	MW-7					3-3-15	1410		7	2		1	3	1				Y	Y	Y	Y	Y	Y	022
7	~~MW-8~~								~~5~~									~~Y~~	~~Y~~	~~Y~~	~~Y~~		~~Y~~	
8	~~MW-9~~								~~6~~									~~Y~~	~~Y~~	~~Y~~	~~Y~~	~~Y~~		
9	MW-10					3-3-15	1315		4				1	3				Y	Y	Y	Y			023
10	MW-19					3-3-15	1430		6				1	3				Y	Y	Y	Y	Y		024
11	MW-19D					3-3-15	1445		6	2			1	3				Y	Y	Y	Y	Y		025
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		3-3-15	1715	[signature] Pace	3-3-15	1715				
	[signature] Pace	3-3-15	1805	[signature]	3-3-15	1805	4.4	Y	N	Y

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

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK C. SWANN

SIGNATURE of SAMPLER: [signature] Pace

DATE Signed (MM/DD/YY): 3-3-15

*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.

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1818261

Section A Required Client Information:

Company: HASWOOD CO
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: BLE
Copy To: Stephen King
Purchase Order No.:
Project Name: FRANCIS 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

Requested Analysis Filtered (Y/N): Y/N

Analysis Test: pH Temperature; Sulfide; H_2O; Alkalinity; VOC; Alkalinity; Tanks

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	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92238730
1	MW-20					3-3-15	1250		4			1	3						026
2	MW-20D					3-3-15	1300		4			1	3						027
3	MW-21					3-3-15	1340		4			1	3						028
4	MW-23					3-3-15	1140		4			1	3						029
5	MW-23D					3-3-15	1150		4			1	3						030
6	~~MW-24~~								~~4~~										
7																			
8																			
9	EQUIP BLK								3			1	2						031
10	TVL BLK								2				2						032
11																			
12																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		3-3-15	1715	[signature] Pace	3-3-15	1715				
	[signature] Pace	3-3-15	1805	[signature]	3/3/15	1805	2.1	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK L. SWANN

SIGNATURE of SAMPLER: [signature] Pace

DATE Signed (MM/DD/YY): 3-3-15

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.

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: (of)

1818112

Section A Required Client Information:

Company: HAYWOOD Co FF LF
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: BLE
Copy To: Stephen King/Haywood
Purchase Order No.:
Project Name: FRANCIS FARM LF Resample
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 Resample

Site Location STATE: NC

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

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	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED 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): Strat. H2O	PO4	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-19					3-20-15	1300		2	2								X	X		92238730 033
2	MW-19D					3-20-15	1245		2	2								X	X		034
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS			RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
MW	To H2O	Gallons		3-20-15	1330	Mark Pa Pace	3-20-15	1330				
19	6.53	7.00 3voc	Mark Pa Pace	3-20-15	1535		3/20/15	1535	2.6	Y	N	Y
19D	6.30	26.5 3voc										

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

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.

Pace Analytical Services, Inc.
Report Form
for
Solid Waste Field Monitoring

Page _____ of _____

Facility Permit #	Waste Unit # (Gallons)	(VOC)	Sample ID	Sampler(s)	Date of Sampling	Time of Sampling	Water Level Depth (Ft.)	Temperature (degrees C)	pH (units)	Specific Conductance (uhmos)	Turbidity (NTU)
	7.00	3	MW.17	MCJ	2.24	1400	51.07	10.7	6.8	68.1	2.70
	7.50	3	MW.18		2.24	1420	25.87	10.5	6.6	60.1	5.68
	11.5	3	MW-22		2.24	1450	1.47	6.7	6.0	64.6	6.07
	14.00	1	MW.25		2.25	1515	175.44	11.2	8.1	429.4	9.42

Recommended Field Data Template for NC DENR EDD Reporting

Pace Analytical	Document Name: Report Form for Field Monitoring	Document Revised: August 4, 2011 Page 1 of 1
	Document No.: F-AVL-F-004-rev.00	Issuing Authorities: Pace Asheville Quality Office

Pace Analytical Services, Inc
Report Form for Field Monitoring

Location HAYWOOD CO FRANCIS FARM

Date	Time	Sampler	Sample ID	Water Level (Ft)	pH (units)	Temp (°C)	Specific Conductivity (uhmos)	Turbidity (NTU)	ORP	Comments
3-3-15	1645	MPS	MW-2A	24.49	6.1	13.3	538	4.55		
	to									
3-3-15	1630		MW-3A	38.52	5.9	13.0	202	4.40		
3-3-15	1550		MW-6	5.96	6.0	10.7	52	11.2		
3-3	1410		MW-7	7.96	5.8	12.0	297	11.7		
3-2	1540	X	MW-8	4.67	6.60	10.1	168	8.85		
3-2	1520	X	MW-9	1.95	6.4	9.1	121	19.4		
3-3	1315		MW-10	2.18	5.9	10.7	58	28.2		
3-3	1430		MW-19	6.44	5.8	11.4	229	2.87		
3-3	1445		MW-19D	6.27	6.1	12.1	574	4.27		

Pace Analytical	Document Name: Report Form for Field Monitoring	Document Revised: August 4, 2011 Page 1 of 1
	Document No.: F-AVL-F-004-rev.00	Issuing Authorities: Pace Asheville Quality Office

Pace Analytical Services, Inc

Report Form for Field Monitoring

Location Haywood Co Frenchburn

Date	Time	Sampler	Sample ID	Water Level (Ft)	pH (units)	Temp (°C)	Specific Conductivity (uhmos)	Turbidity (NTU)	~~ORP~~	Comments
3-3-15	1200	MBS	MW-20	1.96	6.9	13.0	64.3	16.7		
3-3	1300		MW-20D	1.04	6.7	12.3	83.5	80.8		
3-3-15	1340		MW-21	22.50	6.2	12.8	18.7	3.98		3 vol
3-3-15	1140		MW-23	1.04	~~7.0~~ 6.6	~~12~~ 7.3	100.1	33.9		
3-3-15	1150		MW-23D	1.54	6.7	8.5	109.5	6.98		
3-2	~~3-2~~ 1500		MW-24	4.26	6.9	10.5	63.1	1.63		3 vol

Pace Analytical Services, Inc.
Report Form
for
Solid Waste Field Monitoring

HARWOOD CO.
FRANKLIN FARM

Page 1 of ____

Facility Permit #	~~Waste Unit #~~ Gallons	Vol	Sample ID	Sampler(s)	Date of Sampling	Time of Sampling	Water Level Depth (Ft.)	Temperature (degrees C)	pH (units)	Specific Conductance (uhmos)	Turbidity (NTU)
	2.50	3	MW-1A	MCS	2-24-15	1500	49.62	11.6	6.0	~~307~~ 309.0	0.92
			~~MW-1~~								
	5.50	3	~~MW-4~~		2-24-15	1545	69.14	11.7	5.6	221.5	4.22
	7.25	3	MW-5		2-24-15	1615	71.41	10.4	5.8	198.3	1.80
	4.50	3	MW-11		2-24-15	1520	77.03	12.9	6.3	517.8	3.87
	7.50	3	MW-12		2-24-15	1630	67.53	10.1	6.3	99.0	4.34
	3.75	3	MW-13		2-25-15	1405	81.75	11.8	6.6	439.8	1.87
DRY @	7.00	1.93	MW-14		2-25-15	1340	87.32	11.8	6.9	687	4.91
DRY @	19.00	1.79	MW-14D		2-25-15	1320	148.14	11.8	9.6	239.7	5.64
	3.5	3	MW-15		2-25-15	1430	84.45	11.3	7.0	651.1	7.40
	7.50	3	MW-16		2-24-15	1315	54.39	10.9	6.3	109.5	15.2
DRY @	11.00	1.25	MW-16D		2-24-15	1330		10.4	6.7	181.8	4.87

Recommended Field Data Template for NC DENR EDD Reporting

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 3

1817895

Section A Required Client Information:

Company: HAYWOOD CO FRANCIS FARM
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: BLE
Copy To: Stephen King
Purchase Order No.:
Project Name: Francis Farm Water Levels
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

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE — WL ft

Requested Analysis Filtered (Y/N): Analysis Test: Water Levels

ITEM #	SAMPLE ID	WL ft	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1A	-49.65					2-20-15	1340		0									Y		
2	MW-2A	-25.60					2-20	1440		0									X		
3	MW-3A	-39.31					2-20	1431		0									X		
4	MW-4	-69.12					2-20	1342		0									X		
5	MW-5	-71.33					2-20	1350		0									X		
6	MW-6	-6.35					2-20	1205		0									X		
7	MW-7	-8.56					2-20	1215		0									X		
8	MW-8	-5.13					2-20	1235		0									X		
9	MW-9	-2.21					2-20	1120		0									X		
10	MW-10	-2.22					2-20	1117		0									X		
11	MW-11	-77.16					2-20	1410		0									X		
12	MW-12	67.50					2-20	1355		0									X		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		2-20-15	1500	[signature]	2-20-15	1500	
	[signature]	2-20-15	1545				

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK R. SWANN

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 2-20-15

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.

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CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 2 of 3

1817896

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Haywood Francis Farm	Report To: Stephen King	Attention:
Address:	Copy To: BLG	Company Name:
		Address:
Email To:	Purchase Order No.:	Pace Quote Reference:
Phone: / Fax:	Project Name: Francis Farm WL	Pace Project Manager:
Requested Due Date/TAT:	Project Number:	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

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	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	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): Water Level	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-13 — 81.78					2-20-15	1415		0									X		
2	MW-14 — 87.57						1420		0									X		
3	MW-14D — 142.22						1418		0									X		
4	MW-15 — 84.65						1425		0									X		
5	MW-16 — 54.27						1030		0									X		
6	MW-16D — 73.35						1025		0									X		
7	MW-17 — 51.05						1020		0									X		
8	MW-18 — 25.92						1042		0									X		
9	MW-19 — 6.60						1221		0									X		
10	MW-19D — 6.59						1220		0									X		
11	MW-20 — 2.13						1125		0									X		
12	MW-20D — 1.24						1110		0									X		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		2-20-15	1500	[signature]	2-20-15	1500	
	[signature]	2-20-15	1545				

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK L. SWANN

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 2-20-15

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.

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 3 of 3

1817898

Section A Required Client Information:

Company: Haywood Francis Farm
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Stephy King
Copy To: BLE
Purchase Order No.:
Project Name: Francis Farm WL's
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

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE: Water Level

Requested Analysis Filtered (Y/N): Y/N

Analysis Test: Water Level

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Water Level)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-21 — 22.61					2-20-15	1125		0									X		
2	MW-22 — 1.32					2-20	1010		0									X		
3	MW 23 — 1.49					2-20	1255		0									X		
4	MW 23D — 1.81					2-20	1250		0									X		
5	MW-24 — 4.50					2-20	1045		0									X		
6	MW 25 — 176.95					2-20	1355		0									X		
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		2-20-15	1500	[signature] Pace	2-20-15	1500	
	[signature] Pace	2-20-15	1545				

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: MARK P. SWANN

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 2-20-15

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.

Pace Analytical www.pacelabs.com	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: June 10, 2014 Page 1 of 2
	Document No.: F-ASV-CS-003-rev.14	Issuing Authorities: Pace Asheville Quality Office

Client Name: Haywood Co

Courier (Circle): Fed Ex UPS USPS Client Commercial Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no **Seals intact:** ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other_____

Thermometer Used: IR Gun#3 -130265963 **Type of Ice:** Wet Blue None ☑ Samples on ice, cooling process has begun

IR Gun #4 SN:140290365 Other:_____

Temp Correction Factor: Add / Subtract 0.0 C

Corrected Cooler Temp.: 2.1 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: RDB 2/25/15

Comments:

Chain of Custody Present:	☑Yes ☑No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☑No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☐Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☐N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WW		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☑No	
Samples checked for dechlorination:	☑Yes ☐No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review:		**Date:**	
SRF Review:		**Date:**	

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 92238730

92238730

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

March 16, 2015

Randy Siske
Haywood Co. Solid Waste
278 Recycle Rd
Clyde, NC 28721

RE: Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Dear Randy Siske:
Enclosed are the analytical results for sample(s) received by the laboratory on February 20, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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

Sincerely,

Chris Derouen
christopher.derouen@pacelabs.com
Project Manager

Enclosures

cc: Andy Alexander, BLE
David Francis, Haywood Co. Soild Waste
Mr. Stephen King, Haywood Co. Solid Waste
Randy Siske, Haywood Co. Solid Waste

REPORT OF LABORATORY ANALYSIS

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

CERTIFICATIONS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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Asheville, NC 28804
(828)254-7176

SAMPLE SUMMARY

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92238381001	**US-1**	Water	02/20/15 11:40	02/20/15 15:40
92238381002	**DS-1**	Water	02/20/15 11:00	02/20/15 15:40
92238381003	**DS-2**	Water	02/20/15 12:10	02/20/15 15:40
92238381004	**DS-3**	Water	02/20/15 13:15	02/20/15 15:40

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(828)254-7176

SAMPLE ANALYTE COUNT

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92238381001	**US-1**	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92238381002	**DS-1**	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92238381003	**DS-2**	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92238381004	**DS-3**	EPA 8081	RES	24	PASI-C
		EPA 6010	JMW	15	PASI-A
		EPA 8260	GAW	66	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: US-1 **Lab ID: 92238381001** Collected: 02/20/15 11:40 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/16/15 16:46		
Collected Date	**2/20/15**				1		03/16/15 16:46		
Collected Time	**11:40**				1		03/16/15 16:46		
Field pH	**6.9**	Std. Units	0.10	0.10	1		03/16/15 16:46		
Field Temperature	**2.1**	deg C	0.50	0.50	1		03/16/15 16:46		
Field Specific Conductance	**78**	umhos/cm	1.0	1.0	1		03/16/15 16:46		
Turbidity	**0.50**	NTU	1.0	1.0	1		03/16/15 16:46		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	02/24/15 09:15	02/26/15 05:44	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	02/24/15 09:15	02/26/15 05:44	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	02/24/15 09:15	02/26/15 05:44	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	02/24/15 09:15	02/26/15 05:44	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	02/24/15 09:15	02/26/15 05:44	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	70	%	20-130		1	02/24/15 09:15	02/26/15 05:44	877-09-8	
Decachlorobiphenyl (S)	70	%	20-130		1	02/24/15 09:15	02/26/15 05:44	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/27/15 23:59	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/27/15 23:59	7440-38-2	
Barium	**36.1**	ug/L	5.0	0.20	1	02/26/15 18:15	02/27/15 23:59	7440-39-3	
Beryllium	**0.15J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/27/15 23:59	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/27/15 23:59	7440-43-9	
Chromium	**0.94J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/27/15 23:59	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	02/26/15 18:15	02/27/15 23:59	7440-48-4	
Copper	**0.97J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/27/15 23:59	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/27/15 23:59	7439-92-1	

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

ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: US-1 **Lab ID: 92238381001** Collected: 02/20/15 11:40 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Nickel	ND	ug/L	5.0	1.7	1	02/26/15 18:15	02/27/15 23:59	7440-02-0	
Selenium	**1.6J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/27/15 23:59	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	02/26/15 18:15	02/27/15 23:59	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/27/15 23:59	7440-28-0	
Vanadium	**0.78J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/27/15 23:59	7440-62-2	
Zinc	**5.5J**	ug/L	10.0	0.40	1	02/26/15 18:15	02/27/15 23:59	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/25/15 21:14	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/25/15 21:14	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/25/15 21:14	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/25/15 21:14	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/25/15 21:14	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/25/15 21:14	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/25/15 21:14	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/25/15 21:14	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/25/15 21:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/25/15 21:14	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/25/15 21:14	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/25/15 21:14	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/25/15 21:14	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		02/25/15 21:14	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/25/15 21:14	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/25/15 21:14	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/25/15 21:14	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/25/15 21:14	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/25/15 21:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/25/15 21:14	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/25/15 21:14	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/25/15 21:14	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/25/15 21:14	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/25/15 21:14	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/25/15 21:14	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/25/15 21:14	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		02/25/15 21:14	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/25/15 21:14	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/25/15 21:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		02/25/15 21:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/25/15 21:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/25/15 21:14	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/25/15 21:14	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/25/15 21:14	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/25/15 21:14	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/25/15 21:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/25/15 21:14	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/25/15 21:14	100-41-4	

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

ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: US-1 **Lab ID: 92238381001** Collected: 02/20/15 11:40 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/25/15 21:14	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/25/15 21:14	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/25/15 21:14	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/25/15 21:14	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/25/15 21:14	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/25/15 21:14	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/25/15 21:14	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/25/15 21:14	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/25/15 21:14	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/25/15 21:14	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/25/15 21:14	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/25/15 21:14	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/25/15 21:14	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/25/15 21:14	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/25/15 21:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/25/15 21:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/25/15 21:14	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/25/15 21:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/25/15 21:14	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/25/15 21:14	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/25/15 21:14	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/25/15 21:14	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/25/15 21:14	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/25/15 21:14	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/25/15 21:14	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		02/25/15 21:14	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		02/25/15 21:14	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		02/25/15 21:14	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/02/15 14:45	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: DS-1 **Lab ID: 92238381002** Collected: 02/20/15 11:00 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/16/15 16:47		
Collected Date	**2/20/15**				1		03/16/15 16:47		
Collected Time	**11:00**				1		03/16/15 16:47		
Field pH	**7.0**	Std. Units	0.10	0.10	1		03/16/15 16:47		
Field Temperature	**1.5**	deg C	0.50	0.50	1		03/16/15 16:47		
Field Specific Conductance	**78**	umhos/cm	1.0	1.0	1		03/16/15 16:47		
Turbidity	**0.47**	NTU	1.0	1.0	1		03/16/15 16:47		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	02/23/15 10:00	02/26/15 02:23	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:23	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	02/23/15 10:00	02/26/15 02:23	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	02/23/15 10:00	02/26/15 02:23	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	02/23/15 10:00	02/26/15 02:23	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	78	%	20-130		1	02/23/15 10:00	02/26/15 02:23	877-09-8	
Decachlorobiphenyl (S)	78	%	20-130		1	02/23/15 10:00	02/26/15 02:23	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:08	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:08	7440-38-2	
Barium	**39.9**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:08	7440-39-3	
Beryllium	**0.23J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:08	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:08	7440-43-9	
Chromium	**1.4J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:08	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:08	7440-48-4	
Copper	**1.2J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:08	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:08	7439-92-1	

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ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: DS-1 **Lab ID: 92238381002** Collected: 02/20/15 11:00 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Nickel	ND	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:08	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:08	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:08	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:08	7440-28-0	
Vanadium	**1.7J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:08	7440-62-2	
Zinc	**5.6J**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:08	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/25/15 21:31	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/25/15 21:31	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/25/15 21:31	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/25/15 21:31	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/25/15 21:31	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/25/15 21:31	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/25/15 21:31	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/25/15 21:31	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/25/15 21:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/25/15 21:31	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/25/15 21:31	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/25/15 21:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/25/15 21:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		02/25/15 21:31	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/25/15 21:31	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/25/15 21:31	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/25/15 21:31	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/25/15 21:31	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/25/15 21:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/25/15 21:31	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/25/15 21:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/25/15 21:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/25/15 21:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/25/15 21:31	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/25/15 21:31	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/25/15 21:31	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		02/25/15 21:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/25/15 21:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/25/15 21:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		02/25/15 21:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/25/15 21:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/25/15 21:31	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/25/15 21:31	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/25/15 21:31	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/25/15 21:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/25/15 21:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/25/15 21:31	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/25/15 21:31	100-41-4	

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ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: DS-1 **Lab ID: 92238381002** Collected: 02/20/15 11:00 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/25/15 21:31	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/25/15 21:31	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/25/15 21:31	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/25/15 21:31	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/25/15 21:31	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/25/15 21:31	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/25/15 21:31	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/25/15 21:31	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/25/15 21:31	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/25/15 21:31	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/25/15 21:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/25/15 21:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/25/15 21:31	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/25/15 21:31	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/25/15 21:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/25/15 21:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/25/15 21:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/25/15 21:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/25/15 21:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/25/15 21:31	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/25/15 21:31	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/25/15 21:31	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/25/15 21:31	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/25/15 21:31	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/25/15 21:31	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		02/25/15 21:31	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		02/25/15 21:31	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		02/25/15 21:31	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/02/15 14:47	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: DS-2 **Lab ID: 92238381003** Collected: 02/20/15 12:10 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/16/15 16:53		
Collected Date	**2/20/15**				1		03/16/15 16:53		
Collected Time	**12:10**				1		03/16/15 16:53		
Field pH	**7.1**	Std. Units	0.10	0.10	1		03/16/15 16:53		
Field Temperature	**2.9**	deg C	0.50	0.50	1		03/16/15 16:53		
Field Specific Conductance	**81**	umhos/cm	1.0	1.0	1		03/16/15 16:53		
Turbidity	**2.26**	NTU	1.0	1.0	1		03/16/15 16:53		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	02/23/15 10:00	02/26/15 02:41	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 02:41	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	02/23/15 10:00	02/26/15 02:41	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	02/23/15 10:00	02/26/15 02:41	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	02/23/15 10:00	02/26/15 02:41	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	94	%	20-130		1	02/23/15 10:00	02/26/15 02:41	877-09-8	
Decachlorobiphenyl (S)	89	%	20-130		1	02/23/15 10:00	02/26/15 02:41	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:20	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:20	7440-38-2	
Barium	**41.6**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:20	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:20	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:20	7440-43-9	
Chromium	**1.8J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:20	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:20	7440-48-4	
Copper	**1.4J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:20	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:20	7439-92-1	

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Asheville, NC 28804
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ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: DS-2 **Lab ID: 92238381003** Collected: 02/20/15 12:10 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Nickel	ND	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:20	7440-02-0	
Selenium	**2.2J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:20	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:20	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:20	7440-28-0	
Vanadium	**2.0J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:20	7440-62-2	
Zinc	**7.5J**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:20	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/25/15 21:48	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/25/15 21:48	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/25/15 21:48	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/25/15 21:48	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/25/15 21:48	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/25/15 21:48	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/25/15 21:48	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/25/15 21:48	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/25/15 21:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/25/15 21:48	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/25/15 21:48	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/25/15 21:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/25/15 21:48	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		02/25/15 21:48	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/25/15 21:48	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/25/15 21:48	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/25/15 21:48	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/25/15 21:48	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/25/15 21:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/25/15 21:48	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/25/15 21:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/25/15 21:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/25/15 21:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/25/15 21:48	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/25/15 21:48	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/25/15 21:48	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		02/25/15 21:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/25/15 21:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/25/15 21:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		02/25/15 21:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/25/15 21:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/25/15 21:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/25/15 21:48	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/25/15 21:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/25/15 21:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/25/15 21:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/25/15 21:48	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/25/15 21:48	100-41-4	

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ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: DS-2 **Lab ID: 92238381003** Collected: 02/20/15 12:10 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/25/15 21:48	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/25/15 21:48	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/25/15 21:48	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/25/15 21:48	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/25/15 21:48	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/25/15 21:48	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/25/15 21:48	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/25/15 21:48	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/25/15 21:48	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/25/15 21:48	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/25/15 21:48	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/25/15 21:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/25/15 21:48	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/25/15 21:48	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/25/15 21:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/25/15 21:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/25/15 21:48	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/25/15 21:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/25/15 21:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/25/15 21:48	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/25/15 21:48	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/25/15 21:48	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/25/15 21:48	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/25/15 21:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/25/15 21:48	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		02/25/15 21:48	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		02/25/15 21:48	17060-07-0	
Toluene-d8 (S)	94	%	70-130		1		02/25/15 21:48	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/02/15 14:48	57-12-5	

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ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: DS-3 **Lab ID: 92238381004** Collected: 02/20/15 13:15 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**Mark Swann**				1		03/16/15 16:56		
Collected Date	**2/20/15**				1		03/16/15 16:56		
Collected Time	**13:15**				1		03/16/15 16:56		
Field pH	**7.1**	Std. Units	0.10	0.10	1		03/16/15 16:56		
Field Temperature	**2.7**	deg C	0.50	0.50	1		03/16/15 16:56		
Field Specific Conductance	**87**	umhos/cm	1.0	1.0	1		03/16/15 16:56		
Turbidity	**2.26**	NTU	1.0	1.0	1		03/16/15 16:56		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	02/23/15 10:00	02/26/15 03:00	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	02/23/15 10:00	02/26/15 03:00	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	02/23/15 10:00	02/26/15 03:00	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	02/23/15 10:00	02/26/15 03:00	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	02/23/15 10:00	02/26/15 03:00	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	69	%	20-130		1	02/23/15 10:00	02/26/15 03:00	877-09-8	
Decachlorobiphenyl (S)	82	%	20-130		1	02/23/15 10:00	02/26/15 03:00	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	02/26/15 18:15	02/28/15 00:23	7440-36-0	
Arsenic	**3.4J**	ug/L	10.0	2.7	1	02/26/15 18:15	02/28/15 00:23	7440-38-2	
Barium	**43.4**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:23	7440-39-3	
Beryllium	**0.14J**	ug/L	1.0	0.10	1	02/26/15 18:15	02/28/15 00:23	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/26/15 18:15	02/28/15 00:23	7440-43-9	
Chromium	**1.5J**	ug/L	5.0	0.40	1	02/26/15 18:15	02/28/15 00:23	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	02/26/15 18:15	02/28/15 00:23	7440-48-4	
Copper	**1.2J**	ug/L	5.0	0.30	1	02/26/15 18:15	02/28/15 00:23	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	02/26/15 18:15	02/28/15 00:23	7439-92-1	

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ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: DS-3 **Lab ID: 92238381004** Collected: 02/20/15 13:15 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Nickel	ND	ug/L	5.0	1.7	1	02/26/15 18:15	02/28/15 00:23	7440-02-0	
Selenium	**1.7J**	ug/L	10.0	0.10	1	02/26/15 18:15	02/28/15 00:23	7782-49-2	B
Silver	**0.15J**	ug/L	5.0	0.10	1	02/26/15 18:15	02/28/15 00:23	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	02/26/15 18:15	02/28/15 00:23	7440-28-0	
Vanadium	**1.9J**	ug/L	5.0	0.20	1	02/26/15 18:15	02/28/15 00:23	7440-62-2	
Zinc	**9.1J**	ug/L	10.0	0.40	1	02/26/15 18:15	02/28/15 00:23	7440-66-6	B
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		02/25/15 22:22	67-64-1	
Acetonitrile	ND	ug/L	50.0	2.2	1		02/25/15 22:22	75-05-8	
Acrylonitrile	ND	ug/L	10.0	1.9	1		02/25/15 22:22	107-13-1	
Allyl chloride	ND	ug/L	2.0	1.5	1		02/25/15 22:22	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		02/25/15 22:22	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		02/25/15 22:22	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		02/25/15 22:22	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		02/25/15 22:22	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		02/25/15 22:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		02/25/15 22:22	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		02/25/15 22:22	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		02/25/15 22:22	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		02/25/15 22:22	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		02/25/15 22:22	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		02/25/15 22:22	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		02/25/15 22:22	74-87-3	
Chloroprene	ND	ug/L	5.0	0.27	1		02/25/15 22:22	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		02/25/15 22:22	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		02/25/15 22:22	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		02/25/15 22:22	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		02/25/15 22:22	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		02/25/15 22:22	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.24	1		02/25/15 22:22	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		02/25/15 22:22	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		02/25/15 22:22	110-57-6	
Dichlorodifluoromethane	ND	ug/L	1.0	0.21	1		02/25/15 22:22	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		02/25/15 22:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		02/25/15 22:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		02/25/15 22:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		02/25/15 22:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		02/25/15 22:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		02/25/15 22:22	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		02/25/15 22:22	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.13	1		02/25/15 22:22	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.49	1		02/25/15 22:22	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		02/25/15 22:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		02/25/15 22:22	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		02/25/15 22:22	100-41-4	

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ANALYTICAL RESULTS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Sample: DS-3 **Lab ID: 92238381004** Collected: 02/20/15 13:15 Received: 02/20/15 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Ethyl methacrylate	ND	ug/L	1.0	0.20	1		02/25/15 22:22	97-63-2	
2-Hexanone	ND	ug/L	5.0	0.46	1		02/25/15 22:22	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		02/25/15 22:22	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		02/25/15 22:22	78-83-1	
Methacrylonitrile	ND	ug/L	10.0	0.93	1		02/25/15 22:22	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		02/25/15 22:22	75-09-2	
Methyl methacrylate	ND	ug/L	2.0	2.0	1		02/25/15 22:22	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		02/25/15 22:22	108-10-1	
Naphthalene	ND	ug/L	1.0	0.24	1		02/25/15 22:22	91-20-3	
Propionitrile	ND	ug/L	20.0	3.6	1		02/25/15 22:22	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		02/25/15 22:22	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		02/25/15 22:22	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		02/25/15 22:22	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		02/25/15 22:22	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		02/25/15 22:22	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		02/25/15 22:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		02/25/15 22:22	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		02/25/15 22:22	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		02/25/15 22:22	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		02/25/15 22:22	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		02/25/15 22:22	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		02/25/15 22:22	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		02/25/15 22:22	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		02/25/15 22:22	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		02/25/15 22:22	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		02/25/15 22:22	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		02/25/15 22:22	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		02/25/15 22:22	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0080	0.0040	1		03/02/15 14:49	57-12-5	

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

QC Batch: MPRP/17974 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92238381001, 92238381002, 92238381003, 92238381004

METHOD BLANK: 1398789 Matrix: Water
Associated Lab Samples: 92238381001, 92238381002, 92238381003, 92238381004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	02/27/15 23:53	
Arsenic	ug/L	ND	10.0	02/27/15 23:53	
Barium	ug/L	ND	5.0	02/27/15 23:53	
Beryllium	ug/L	ND	1.0	02/27/15 23:53	
Cadmium	ug/L	ND	1.0	02/27/15 23:53	
Chromium	ug/L	ND	5.0	02/27/15 23:53	
Cobalt	ug/L	ND	5.0	02/27/15 23:53	
Copper	ug/L	0.55J	5.0	02/27/15 23:53	
Lead	ug/L	ND	5.0	02/27/15 23:53	
Nickel	ug/L	ND	5.0	02/27/15 23:53	
Selenium	ug/L	1.7J	10.0	02/27/15 23:53	
Silver	ug/L	ND	5.0	02/27/15 23:53	
Thallium	ug/L	ND	5.4	02/27/15 23:53	
Vanadium	ug/L	ND	5.0	02/27/15 23:53	
Zinc	ug/L	5.2J	10.0	02/27/15 23:53	

LABORATORY CONTROL SAMPLE: 1398790

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	498	100	80-120	
Arsenic	ug/L	500	491	98	80-120	
Barium	ug/L	500	459	92	80-120	
Beryllium	ug/L	500	445	89	80-120	
Cadmium	ug/L	500	490	98	80-120	
Chromium	ug/L	500	473	95	80-120	
Cobalt	ug/L	500	493	99	80-120	
Copper	ug/L	500	490	98	80-120	
Lead	ug/L	500	492	98	80-120	
Nickel	ug/L	500	490	98	80-120	
Selenium	ug/L	500	487	97	80-120	
Silver	ug/L	250	244	98	80-120	
Thallium	ug/L	500	482	96	80-120	
Vanadium	ug/L	500	484	97	80-120	
Zinc	ug/L	500	499	100	80-120	

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1398791 1398792

Parameter	Units	92238381001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	498	510	99	102	75-125	2	25	
Arsenic	ug/L	ND	500	500	491	502	98	100	75-125	2	25	
Barium	ug/L	36.1	500	500	501	510	93	95	75-125	2	25	
Beryllium	ug/L	0.15J	500	500	454	460	91	92	75-125	1	25	
Cadmium	ug/L	ND	500	500	490	503	98	101	75-125	3	25	
Chromium	ug/L	0.94J	500	500	480	489	96	98	75-125	2	25	
Cobalt	ug/L	ND	500	500	491	503	98	101	75-125	2	25	
Copper	ug/L	0.97J	500	500	497	503	99	100	75-125	1	25	
Lead	ug/L	ND	500	500	490	502	98	100	75-125	2	25	
Nickel	ug/L	ND	500	500	490	501	98	100	75-125	2	25	
Selenium	ug/L	1.6J	500	500	485	497	97	99	75-125	2	25	
Silver	ug/L	ND	250	250	247	251	99	100	75-125	2	25	
Thallium	ug/L	ND	500	500	483	495	96	98	75-125	2	25	
Vanadium	ug/L	0.78J	500	500	489	499	98	100	75-125	2	25	
Zinc	ug/L	5.5J	500	500	508	530	101	105	75-125	4	25	

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

QC Batch: MSV/30489 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 92238381001, 92238381002, 92238381003, 92238381004

METHOD BLANK: 1397928 Matrix: Water
Associated Lab Samples: 92238381001, 92238381002, 92238381003, 92238381004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	02/25/15 17:18	
1,1,1-Trichloroethane	ug/L	ND	1.0	02/25/15 17:18	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	02/25/15 17:18	
1,1,2-Trichloroethane	ug/L	ND	1.0	02/25/15 17:18	
1,1-Dichloroethane	ug/L	ND	1.0	02/25/15 17:18	
1,1-Dichloroethene	ug/L	ND	1.0	02/25/15 17:18	
1,1-Dichloropropene	ug/L	ND	1.0	02/25/15 17:18	
1,2,3-Trichloropropane	ug/L	ND	1.0	02/25/15 17:18	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	02/25/15 17:18	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	02/25/15 17:18	
1,2-Dichlorobenzene	ug/L	ND	1.0	02/25/15 17:18	
1,2-Dichloroethane	ug/L	ND	1.0	02/25/15 17:18	
1,2-Dichloropropane	ug/L	ND	1.0	02/25/15 17:18	
1,3-Dichlorobenzene	ug/L	ND	1.0	02/25/15 17:18	
1,3-Dichloropropane	ug/L	ND	1.0	02/25/15 17:18	
1,4-Dichlorobenzene	ug/L	ND	1.0	02/25/15 17:18	
2,2-Dichloropropane	ug/L	ND	1.0	02/25/15 17:18	
2-Butanone (MEK)	ug/L	ND	5.0	02/25/15 17:18	
2-Hexanone	ug/L	ND	5.0	02/25/15 17:18	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	02/25/15 17:18	
Acetone	ug/L	ND	25.0	02/25/15 17:18	
Acetonitrile	ug/L	ND	50.0	02/25/15 17:18	
Acrylonitrile	ug/L	ND	10.0	02/25/15 17:18	
Allyl chloride	ug/L	ND	2.0	02/25/15 17:18	
Benzene	ug/L	ND	1.0	02/25/15 17:18	
Bromochloromethane	ug/L	ND	1.0	02/25/15 17:18	
Bromodichloromethane	ug/L	ND	1.0	02/25/15 17:18	
Bromoform	ug/L	ND	1.0	02/25/15 17:18	
Bromomethane	ug/L	ND	2.0	02/25/15 17:18	
Carbon disulfide	ug/L	ND	2.0	02/25/15 17:18	
Carbon tetrachloride	ug/L	ND	1.0	02/25/15 17:18	
Chlorobenzene	ug/L	ND	1.0	02/25/15 17:18	
Chloroethane	ug/L	ND	1.0	02/25/15 17:18	
Chloroform	ug/L	ND	1.0	02/25/15 17:18	
Chloromethane	ug/L	ND	1.0	02/25/15 17:18	
Chloroprene	ug/L	ND	5.0	02/25/15 17:18	
cis-1,2-Dichloroethene	ug/L	ND	1.0	02/25/15 17:18	
cis-1,3-Dichloropropene	ug/L	ND	1.0	02/25/15 17:18	
Dibromochloromethane	ug/L	ND	1.0	02/25/15 17:18	
Dibromomethane	ug/L	ND	1.0	02/25/15 17:18	
Dichlorodifluoromethane	ug/L	ND	1.0	02/25/15 17:18	

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

METHOD BLANK: 1397928 Matrix: Water
Associated Lab Samples: 92238381001, 92238381002, 92238381003, 92238381004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Ethyl methacrylate	ug/L	ND	1.0	02/25/15 17:18	
Ethylbenzene	ug/L	ND	1.0	02/25/15 17:18	
Iodomethane	ug/L	ND	5.0	02/25/15 17:18	
Isobutanol	ug/L	ND	100	02/25/15 17:18	
m&p-Xylene	ug/L	ND	2.0	02/25/15 17:18	
Methacrylonitrile	ug/L	ND	10.0	02/25/15 17:18	
Methyl methacrylate	ug/L	ND	2.0	02/25/15 17:18	
Methylene Chloride	ug/L	ND	1.0	02/25/15 17:18	
Naphthalene	ug/L	ND	1.0	02/25/15 17:18	
o-Xylene	ug/L	ND	1.0	02/25/15 17:18	
Propionitrile	ug/L	ND	20.0	02/25/15 17:18	
Styrene	ug/L	ND	1.0	02/25/15 17:18	
Tetrachloroethene	ug/L	ND	1.0	02/25/15 17:18	
Toluene	ug/L	ND	1.0	02/25/15 17:18	
trans-1,2-Dichloroethene	ug/L	ND	1.0	02/25/15 17:18	
trans-1,3-Dichloropropene	ug/L	ND	1.0	02/25/15 17:18	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	02/25/15 17:18	
Trichloroethene	ug/L	ND	1.0	02/25/15 17:18	
Trichlorofluoromethane	ug/L	ND	1.0	02/25/15 17:18	
Vinyl acetate	ug/L	ND	2.0	02/25/15 17:18	
Vinyl chloride	ug/L	ND	1.0	02/25/15 17:18	
Xylene (Total)	ug/L	ND	2.0	02/25/15 17:18	
1,2-Dichloroethane-d4 (S)	%	99	70-130	02/25/15 17:18	
4-Bromofluorobenzene (S)	%	99	70-130	02/25/15 17:18	
Toluene-d8 (S)	%	95	70-130	02/25/15 17:18	

LABORATORY CONTROL SAMPLE: 1397929

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	47.0	94	80-125	
1,1,1-Trichloroethane	ug/L	50	48.3	97	71-129	
1,1,2,2-Tetrachloroethane	ug/L	50	46.4	93	79-124	
1,1,2-Trichloroethane	ug/L	50	48.3	97	85-125	
1,1-Dichloroethane	ug/L	50	48.2	96	73-126	
1,1-Dichloroethene	ug/L	50	46.4	93	66-135	
1,1-Dichloropropene	ug/L	50	49.6	99	74-135	
1,2,3-Trichloropropane	ug/L	50	48.1	96	75-130	
1,2-Dibromo-3-chloropropane	ug/L	50	46.5	93	71-133	
1,2-Dibromoethane (EDB)	ug/L	50	50.1	100	83-124	
1,2-Dichlorobenzene	ug/L	50	49.1	98	80-133	
1,2-Dichloroethane	ug/L	50	49.2	98	67-128	
1,2-Dichloropropane	ug/L	50	48.7	97	75-132	
1,3-Dichlorobenzene	ug/L	50	48.3	97	77-130	
1,3-Dichloropropane	ug/L	50	47.8	96	76-131	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

LABORATORY CONTROL SAMPLE: 1397929

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	48.6	97	78-130	
2,2-Dichloropropane	ug/L	50	44.0	88	40-160	
2-Butanone (MEK)	ug/L	100	104	104	61-144	
2-Hexanone	ug/L	100	93.8	94	68-143	
4-Methyl-2-pentanone (MIBK)	ug/L	100	98.0	98	72-135	
Acetone	ug/L	100	105	105	48-146	
Acetonitrile	ug/L	500	559	112	62-150	
Acrylonitrile	ug/L	250	258	103	40-160	
Allyl chloride	ug/L	50	43.5	87	66-137	
Benzene	ug/L	50	49.8	100	80-125	
Bromochloromethane	ug/L	50	46.6	93	71-125	
Bromodichloromethane	ug/L	50	44.6	89	78-124	
Bromoform	ug/L	50	42.7	85	71-128	
Bromomethane	ug/L	50	44.4	89	40-160	
Carbon disulfide	ug/L	50	40.4	81	50-160	
Carbon tetrachloride	ug/L	50	48.4	97	69-131	
Chlorobenzene	ug/L	50	47.2	94	81-122	
Chloroethane	ug/L	50	36.8	74	39-148	
Chloroform	ug/L	50	44.2	88	73-127	
Chloromethane	ug/L	50	48.1	96	44-146	
Chloroprene	ug/L	50	47.0	94	75-145	
cis-1,2-Dichloroethene	ug/L	50	49.3	99	74-124	
cis-1,3-Dichloropropene	ug/L	50	47.4	95	72-132	
Dibromochloromethane	ug/L	50	43.8	88	78-125	
Dibromomethane	ug/L	50	48.4	97	82-120	
Dichlorodifluoromethane	ug/L	50	51.9	104	34-157	
Ethyl methacrylate	ug/L	50	46.1	92	82-121	
Ethylbenzene	ug/L	50	47.6	95	79-121	
Iodomethane	ug/L	100	100	100	39-154	
Isobutanol	ug/L	1000	929	93	34-160	
m&p-Xylene	ug/L	100	95.3	95	81-124	
Methacrylonitrile	ug/L	500	496	99	74-134	
Methyl methacrylate	ug/L	50	45.7	91	84-124	
Methylene Chloride	ug/L	50	53.0	106	64-133	
Naphthalene	ug/L	50	47.3	95	73-133	
o-Xylene	ug/L	50	47.2	94	79-131	
Propionitrile	ug/L	500	502	100	73-140	
Styrene	ug/L	50	48.5	97	84-126	
Tetrachloroethene	ug/L	50	47.5	95	78-122	
Toluene	ug/L	50	48.5	97	80-121	
trans-1,2-Dichloroethene	ug/L	50	48.6	97	71-127	
trans-1,3-Dichloropropene	ug/L	50	47.3	95	69-141	
trans-1,4-Dichloro-2-butene	ug/L	50	49.5	99	40-160	
Trichloroethene	ug/L	50	48.8	98	78-122	
Trichlorofluoromethane	ug/L	50	54.8	110	53-137	
Vinyl acetate	ug/L	100	108	108	40-160	
Vinyl chloride	ug/L	50	42.6	85	58-137	

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

LABORATORY CONTROL SAMPLE: 1397929

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	150	143	95	81-126	
1,2-Dichloroethane-d4 (S)	%			95	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE SAMPLE: 1398024

Parameter	Units	92238381004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	40	42.6	107	70-130	
1,1,1-Trichloroethane	ug/L	ND	40	45.7	114	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	40	39.9	100	70-130	
1,1,2-Trichloroethane	ug/L	ND	40	42.5	106	70-130	
1,1-Dichloroethane	ug/L	ND	40	43.1	108	70-130	
1,1-Dichloroethene	ug/L	ND	40	45.1	113	70-166	
1,1-Dichloropropene	ug/L	ND	40	45.7	114	70-130	
1,2,3-Trichloropropane	ug/L	ND	40	41.4	103	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	40	38.4	96	70-130	
1,2-Dibromoethane (EDB)	ug/L	ND	40	43.6	109	70-130	
1,2-Dichlorobenzene	ug/L	ND	40	43.0	107	70-130	
1,2-Dichloroethane	ug/L	ND	40	44.3	111	70-130	
1,2-Dichloropropane	ug/L	ND	40	41.7	104	70-130	
1,3-Dichlorobenzene	ug/L	ND	40	41.9	105	70-130	
1,3-Dichloropropane	ug/L	ND	40	42.1	105	70-130	
1,4-Dichlorobenzene	ug/L	ND	40	43.1	108	70-130	
2,2-Dichloropropane	ug/L	ND	40	33.0	83	70-130	
2-Butanone (MEK)	ug/L	ND	80	86.6	108	70-130	
2-Hexanone	ug/L	ND	80	79.9	100	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	80	82.5	103	70-130	
Acetone	ug/L	ND	80	86.6	104	70-130	
Acetonitrile	ug/L	ND	400	470	117	70-130	
Acrylonitrile	ug/L	ND	200	227	113	70-130	
Allyl chloride	ug/L	ND	40	38.8	97	70-130	
Benzene	ug/L	ND	40	44.8	112	70-148	
Bromochloromethane	ug/L	ND	40	43.2	108	70-130	
Bromodichloromethane	ug/L	ND	40	39.3	98	70-130	
Bromoform	ug/L	ND	40	36.2	90	70-130	
Bromomethane	ug/L	ND	40	36.4	91	70-130	
Carbon disulfide	ug/L	ND	40	36.6	92	70-130	
Carbon tetrachloride	ug/L	ND	40	45.7	114	70-130	
Chlorobenzene	ug/L	ND	40	42.1	105	70-146	
Chloroethane	ug/L	ND	40	35.1	88	70-130	
Chloroform	ug/L	ND	40	40.1	100	70-130	
Chloromethane	ug/L	ND	40	41.7	104	70-130	
Chloroprene	ug/L	ND	40	43.1	108	70-130	
cis-1,2-Dichloroethene	ug/L	ND	40	44.2	111	70-130	

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

MATRIX SPIKE SAMPLE: 1398024

Parameter	Units	92238381004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
cis-1,3-Dichloropropene	ug/L	ND	40	38.8	97	70-130	
Dibromochloromethane	ug/L	ND	40	38.4	96	70-130	
Dibromomethane	ug/L	ND	40	41.8	104	70-130	
Dichlorodifluoromethane	ug/L	ND	40	49.5	124	70-130	
Ethyl methacrylate	ug/L	ND	40	40.5	101	70-130	
Ethylbenzene	ug/L	ND	40	42.8	107	70-130	
Iodomethane	ug/L	ND	80	85.0	106	70-130	
Isobutanol	ug/L	ND	800	734	92	70-130	
m&p-Xylene	ug/L	ND	80	85.0	106	70-130	
Methacrylonitrile	ug/L	ND	400	445	111	70-130	
Methyl methacrylate	ug/L	ND	40	37.7	94	70-130	
Methylene Chloride	ug/L	ND	40	47.8	120	70-130	
Naphthalene	ug/L	ND	40	38.6	97	70-130	
o-Xylene	ug/L	ND	40	41.4	103	70-130	
Propionitrile	ug/L	ND	400	447	112	70-130	
Styrene	ug/L	ND	40	42.7	107	70-130	
Tetrachloroethene	ug/L	ND	40	42.0	105	70-130	
Toluene	ug/L	ND	40	42.9	107	70-155	
trans-1,2-Dichloroethene	ug/L	ND	40	44.8	112	70-130	
trans-1,3-Dichloropropene	ug/L	ND	40	40.0	100	70-130	
trans-1,4-Dichloro-2-butene	ug/L	ND	40	39.4	99	70-130	
Trichloroethene	ug/L	ND	40	43.7	109	69-151	
Trichlorofluoromethane	ug/L	ND	40	52.0	130	70-130	
Vinyl acetate	ug/L	ND	80	70.6	88	70-130	
Vinyl chloride	ug/L	ND	40	37.9	95	70-130	
1,2-Dichloroethane-d4 (S)	%				97	70-130	
4-Bromofluorobenzene (S)	%				99	70-130	
Toluene-d8 (S)	%				98	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1398900 1398901

Parameter	Units	92237647005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	20.6	20.5	103	103	70-130	0	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	21.9	22.1	109	111	70-130	1	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	19.6	19.5	98	98	70-130	1	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.5	20.6	103	103	70-130	0	30	
1,1-Dichloroethane	ug/L	ND	20	20	20.8	21.2	104	106	70-130	2	30	
1,1-Dichloroethene	ug/L	ND	20	20	20.9	22.1	105	111	70-166	6	30	
1,1-Dichloropropene	ug/L	ND	20	20	21.6	22.2	108	111	70-130	3	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	21.2	21.3	106	107	70-130	0	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	18.9	18.6	95	93	70-130	2	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	20.4	20.8	102	104	70-130	2	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	21.2	21.0	106	105	70-130	1	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1398900 1398901

Parameter	Units	92237647005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	ND	20	20	20.9	20.9	105	105	70-130	0	30	
1,2-Dichloropropane	ug/L	ND	20	20	19.9	20.1	100	101	70-130	1	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	21.2	20.8	106	104	70-130	2	30	
1,3-Dichloropropane	ug/L	ND	20	20	20.1	20.1	100	101	70-130	0	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	21.2	21.4	106	107	70-130	1	30	
2,2-Dichloropropane	ug/L	ND	20	20	15.1	15.4	75	77	70-130	2	30	
2-Butanone (MEK)	ug/L	ND	40	40	41.4	40.0	104	100	70-130	4	30	
2-Hexanone	ug/L	ND	40	40	41.3	40.5	103	101	70-130	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	41.1	41.1	103	103	70-130	0	30	
Acetone	ug/L	ND	40	40	45.9	43.5	115	109	70-130	5	30	
Acetonitrile	ug/L	ND	200	200	254	232	127	116	70-130	9	30	
Acrylonitrile	ug/L	ND	100	100	114	113	114	113	70-130	1	30	
Allyl chloride	ug/L	ND	20	20	18.4	18.5	92	93	70-130	1	30	
Benzene	ug/L	ND	20	20	22.0	22.4	110	112	70-148	2	30	
Bromochloromethane	ug/L	ND	20	20	20.1	21.3	100	106	70-130	6	30	
Bromodichloromethane	ug/L	ND	20	20	18.6	18.7	93	94	70-130	0	30	
Bromoform	ug/L	ND	20	20	17.6	17.4	88	87	70-130	1	30	
Bromomethane	ug/L	ND	20	20	15.0	17.4	75	87	70-130	15	30	
Carbon disulfide	ug/L	ND	20	20	17.6	17.9	88	89	70-130	1	30	
Carbon tetrachloride	ug/L	ND	20	20	23.1	22.8	115	114	70-130	1	30	
Chlorobenzene	ug/L	ND	20	20	20.8	20.6	104	103	70-146	1	30	
Chloroethane	ug/L	ND	20	20	17.9	18.7	89	94	70-130	5	30	
Chloroform	ug/L	ND	20	20	18.7	19.4	93	97	70-130	4	30	
Chloromethane	ug/L	ND	20	20	21.1	20.8	105	104	70-130	1	30	
Chloroprene	ug/L	ND	20	20	19.3	19.5	97	97	70-130	1	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	21.0	21.2	105	106	70-130	1	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.6	17.8	88	89	70-130	1	30	
Dibromochloromethane	ug/L	ND	20	20	17.9	18.0	90	90	70-130	0	30	
Dibromomethane	ug/L	ND	20	20	19.7	19.9	99	99	70-130	1	30	
Dichlorodifluoromethane	ug/L	ND	20	20	24.7	24.5	124	122	70-130	1	30	
Ethyl methacrylate	ug/L	ND	20	20	18.5	18.3	93	91	70-130	1	30	
Ethylbenzene	ug/L	ND	20	20	21.1	21.4	105	107	70-130	1	30	
Iodomethane	ug/L	ND	40	40	35.9	39.1	90	98	70-130	8	30	
Isobutanol	ug/L	ND	400	400	391	351	98	88	70-130	11	30	
m&p-Xylene	ug/L	ND	40	40	42.8	43.0	107	107	70-130	0	30	
Methacrylonitrile	ug/L	ND	200	200	221	221	110	110	70-130	0	30	
Methyl methacrylate	ug/L	ND	20	20	17.0	16.7	85	84	70-130	1	30	
Methylene Chloride	ug/L	ND	20	20	22.9	23.0	115	115	70-130	0	30	
Naphthalene	ug/L	ND	20	20	19.3	19.0	97	95	70-130	2	30	
o-Xylene	ug/L	ND	20	20	20.1	19.8	100	99	70-130	1	30	
Propionitrile	ug/L	ND	200	200	218	212	109	106	70-130	3	30	
Styrene	ug/L	ND	20	20	19.8	19.8	99	99	70-130	0	30	
Tetrachloroethene	ug/L	ND	20	20	20.2	20.2	101	101	70-130	0	30	
Toluene	ug/L	ND	20	20	21.0	21.2	105	106	70-155	1	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	21.1	20.9	106	104	70-130	1	30	

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1398900 1398901

Parameter	Units	92237647005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
trans-1,3-Dichloropropene	ug/L	ND	20	20	18.4	18.3	92	91	70-130	1	30	
trans-1,4-Dichloro-2-butene	ug/L	ND	20	20	20.9	19.8	104	99	70-130	5	30	
Trichloroethene	ug/L	ND	20	20	21.9	21.7	109	109	69-151	1	30	
Trichlorofluoromethane	ug/L	ND	20	20	27.1	25.9	135	130	70-130	4	30	M0
Vinyl acetate	ug/L	ND	40	40	31.9	32.8	80	82	70-130	3	30	
Vinyl chloride	ug/L	ND	20	20	18.2	18.5	91	93	70-130	2	30	
1,2-Dichloroethane-d4 (S)	%						97	99	70-130			
4-Bromofluorobenzene (S)	%						93	92	70-130			H5
Toluene-d8 (S)	%						98	97	70-130			

SAMPLE DUPLICATE: 1398023

Parameter	Units	92238381003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	
1,2,3-Trichloropropane	ug/L	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	ND	ND		30	
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	ND	ND		30	
2-Hexanone	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	ND	ND		30	
Acetonitrile	ug/L	ND	ND		30	
Acrylonitrile	ug/L	ND	ND		30	
Allyl chloride	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30	
Carbon disulfide	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

SAMPLE DUPLICATE: 1398023

Parameter	Units	92238381003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
Chloroprene	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Ethyl methacrylate	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Iodomethane	ug/L	ND	ND		30	
Isobutanol	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methacrylonitrile	ug/L	ND	ND		30	
Methyl methacrylate	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
o-Xylene	ug/L	ND	ND		30	
Propionitrile	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
trans-1,4-Dichloro-2-butene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	104	101	3		
4-Bromofluorobenzene (S)	%	98	100	2		
Toluene-d8 (S)	%	94	94	1		

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

QC Batch: OEXT/33131 | Analysis Method: EPA 8081
QC Batch Method: EPA 3510 | Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92238381002, 92238381003, 92238381004

METHOD BLANK: 1396100 | Matrix: Water
Associated Lab Samples: 92238381002, 92238381003, 92238381004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	02/25/15 16:39	
4,4'-DDE	ug/L	ND	0.050	02/25/15 16:39	
4,4'-DDT	ug/L	ND	0.050	02/25/15 16:39	
Aldrin	ug/L	ND	0.050	02/25/15 16:39	
alpha-BHC	ug/L	ND	0.050	02/25/15 16:39	
beta-BHC	ug/L	ND	0.050	02/25/15 16:39	
Chlordane (Technical)	ug/L	ND	0.20	02/25/15 16:39	
delta-BHC	ug/L	ND	0.050	02/25/15 16:39	
Dieldrin	ug/L	ND	0.050	02/25/15 16:39	
Endosulfan I	ug/L	ND	0.050	02/25/15 16:39	
Endosulfan II	ug/L	ND	0.050	02/25/15 16:39	
Endosulfan sulfate	ug/L	ND	0.050	02/25/15 16:39	
Endrin	ug/L	ND	0.050	02/25/15 16:39	
Endrin aldehyde	ug/L	ND	0.050	02/25/15 16:39	
Endrin ketone	ug/L	ND	0.050	02/25/15 16:39	
gamma-BHC (Lindane)	ug/L	ND	0.050	02/25/15 16:39	
Heptachlor	ug/L	ND	0.050	02/25/15 16:39	
Heptachlor epoxide	ug/L	ND	0.050	02/25/15 16:39	
Hexachlorobenzene	ug/L	ND	0.050	02/25/15 16:39	
Methoxychlor	ug/L	ND	0.15	02/25/15 16:39	
Mirex	ug/L	ND	0.15	02/25/15 16:39	
Toxaphene	ug/L	ND	0.20	02/25/15 16:39	
Decachlorobiphenyl (S)	%	90	20-130	02/25/15 16:39	
Tetrachloro-m-xylene (S)	%	91	20-130	02/25/15 16:39	

LABORATORY CONTROL SAMPLE: 1396101

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.28	113	20-150	
4,4'-DDE	ug/L	.25	0.26	107	20-150	
4,4'-DDT	ug/L	.25	0.29	116	20-150	
Aldrin	ug/L	.25	0.22	89	20-150	
alpha-BHC	ug/L	.25	0.23	92	20-150	
beta-BHC	ug/L	.25	0.28	114	20-150	
delta-BHC	ug/L	.25	0.29	117	20-150	
Dieldrin	ug/L	.25	0.28	115	20-150	
Endosulfan I	ug/L	.25	0.28	112	20-150	
Endosulfan II	ug/L	.25	0.28	114	20-150	
Endosulfan sulfate	ug/L	.25	0.28	112	20-150	
Endrin	ug/L	.25	0.29	117	20-150	

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QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

LABORATORY CONTROL SAMPLE: 1396101

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/L	.25	0.23	94	20-150	
Endrin ketone	ug/L	.25	0.25	99	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.25	101	20-150	
Heptachlor	ug/L	.25	0.23	91	20-150	
Heptachlor epoxide	ug/L	.25	0.27	108	20-150	
Hexachlorobenzene	ug/L	.25	0.20	82	20-150	
Methoxychlor	ug/L	.74	0.82	110	20-150	
Mirex	ug/L	.74	0.80	108	20-150	
Decachlorobiphenyl (S)	%			82	20-130	
Tetrachloro-m-xylene (S)	%			96	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1396102 1396103

Parameter	Units	92238381004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4,4'-DDD	ug/L	ND	.5	.5	0.53	0.55	106	111	20-150	5	30	
4,4'-DDE	ug/L	ND	.5	.5	0.53	0.53	108	108	20-150	0	30	
4,4'-DDT	ug/L	ND	.5	.5	0.56	0.58	113	117	20-150	4	30	
Aldrin	ug/L	ND	.5	.5	0.43	0.47	88	95	20-150	8	30	
alpha-BHC	ug/L	ND	.5	.5	0.43	0.50	87	101	20-150	15	30	
beta-BHC	ug/L	ND	.5	.5	0.50	0.60	100	121	20-150	19	30	
delta-BHC	ug/L	ND	.5	.5	0.51	0.57	103	116	20-150	12	30	
Dieldrin	ug/L	ND	.5	.5	0.49	0.52	99	105	20-150	5	30	
Endosulfan I	ug/L	ND	.5	.5	0.53	0.54	107	110	20-150	3	30	
Endosulfan II	ug/L	ND	.5	.5	0.49	0.54	100	109	20-150	9	30	
Endosulfan sulfate	ug/L	ND	.5	.5	0.48	0.56	98	114	20-150	15	30	
Endrin	ug/L	ND	.5	.5	0.57	0.59	114	119	20-150	4	30	
Endrin aldehyde	ug/L	ND	.5	.5	0.36	0.47	73	95	20-150	26	30	
Endrin ketone	ug/L	ND	.5	.5	0.43	0.48	86	97	20-150	11	30	
gamma-BHC (Lindane)	ug/L	ND	.5	.5	0.48	0.53	98	107	20-150	9	30	
Heptachlor	ug/L	ND	.5	.5	0.43	0.48	86	97	20-150	11	30	
Heptachlor epoxide	ug/L	ND	.5	.5	0.49	0.52	100	105	20-150	5	30	
Hexachlorobenzene	ug/L	ND	.5	.5	0.30	0.43	61	87	20-150	36	30	R1
Methoxychlor	ug/L	ND	1.5	1.5	1.6	1.6	106	110	20-150	4	30	
Mirex	ug/L	ND	1.5	1.5	1.5	1.6	104	106	20-150	2	30	
Decachlorobiphenyl (S)	%						92	94	20-130			
Tetrachloro-m-xylene (S)	%						65	116	20-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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

QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

QC Batch: OEXT/33153
QC Batch Method: EPA 3510
Analysis Method: EPA 8081
Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92238381001

METHOD BLANK: 1396626
Matrix: Water
Associated Lab Samples: 92238381001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	02/26/15 03:54	
4,4'-DDE	ug/L	ND	0.050	02/26/15 03:54	
4,4'-DDT	ug/L	ND	0.050	02/26/15 03:54	
Aldrin	ug/L	ND	0.050	02/26/15 03:54	
alpha-BHC	ug/L	ND	0.050	02/26/15 03:54	
beta-BHC	ug/L	ND	0.050	02/26/15 03:54	
Chlordane (Technical)	ug/L	ND	0.20	02/26/15 03:54	
delta-BHC	ug/L	ND	0.050	02/26/15 03:54	
Dieldrin	ug/L	ND	0.050	02/26/15 03:54	
Endosulfan I	ug/L	ND	0.050	02/26/15 03:54	
Endosulfan II	ug/L	ND	0.050	02/26/15 03:54	
Endosulfan sulfate	ug/L	ND	0.050	02/26/15 03:54	
Endrin	ug/L	ND	0.050	02/26/15 03:54	
Endrin aldehyde	ug/L	ND	0.050	02/26/15 03:54	
Endrin ketone	ug/L	ND	0.050	02/26/15 03:54	
gamma-BHC (Lindane)	ug/L	ND	0.050	02/26/15 03:54	
Heptachlor	ug/L	ND	0.050	02/26/15 03:54	
Heptachlor epoxide	ug/L	ND	0.050	02/26/15 03:54	
Hexachlorobenzene	ug/L	ND	0.050	02/26/15 03:54	
Methoxychlor	ug/L	ND	0.15	02/26/15 03:54	
Mirex	ug/L	ND	0.15	02/26/15 03:54	
Toxaphene	ug/L	ND	0.20	02/26/15 03:54	
Decachlorobiphenyl (S)	%	82	20-130	02/26/15 03:54	
Tetrachloro-m-xylene (S)	%	82	20-130	02/26/15 03:54	

LABORATORY CONTROL SAMPLE: 1396627

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.24	97	20-150	
4,4'-DDE	ug/L	.25	0.22	90	20-150	
4,4'-DDT	ug/L	.25	0.25	99	20-150	
Aldrin	ug/L	.25	0.18	71	20-150	
alpha-BHC	ug/L	.25	0.22	90	20-150	
beta-BHC	ug/L	.25	0.26	104	20-150	
delta-BHC	ug/L	.25	0.26	107	20-150	
Dieldrin	ug/L	.25	0.23	93	20-150	
Endosulfan I	ug/L	.25	0.24	98	20-150	
Endosulfan II	ug/L	.25	0.25	101	20-150	
Endosulfan sulfate	ug/L	.25	0.26	107	20-150	
Endrin	ug/L	.25	0.26	107	20-150	

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REPORT OF LABORATORY ANALYSIS

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Asheville, NC 28804
(828)254-7176

QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

LABORATORY CONTROL SAMPLE: 1396627

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/L	.25	0.21	86	20-150	
Endrin ketone	ug/L	.25	0.23	91	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.23	94	20-150	
Heptachlor	ug/L	.25	0.18	74	20-150	
Heptachlor epoxide	ug/L	.25	0.22	91	20-150	
Hexachlorobenzene	ug/L	.25	0.18	71	20-150	
Methoxychlor	ug/L	.74	0.72	96	20-150	
Mirex	ug/L	.74	0.72	97	20-150	
Decachlorobiphenyl (S)	%			87	20-130	
Tetrachloro-m-xylene (S)	%			93	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1396628 1396629

Parameter	Units	92238381001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4,4'-DDD	ug/L	ND	.5	.5	0.42	0.56	84	113	20-150	29	30	
4,4'-DDE	ug/L	ND	.5	.5	0.41	0.54	83	109	20-150	27	30	
4,4'-DDT	ug/L	ND	.5	.5	0.43	0.58	88	116	20-150	28	30	
Aldrin	ug/L	ND	.5	.5	0.38	0.50	78	102	20-150	27	30	
alpha-BHC	ug/L	ND	.5	.5	0.41	0.53	83	108	20-150	26	30	
beta-BHC	ug/L	ND	.5	.5	0.47	0.58	96	117	20-150	20	30	
delta-BHC	ug/L	ND	.5	.5	0.47	0.58	96	118	20-150	21	30	
Dieldrin	ug/L	ND	.5	.5	0.41	0.55	84	111	20-150	28	30	
Endosulfan I	ug/L	ND	.5	.5	0.43	0.57	86	115	20-150	28	30	
Endosulfan II	ug/L	ND	.5	.5	0.44	0.56	88	113	20-150	25	30	
Endosulfan sulfate	ug/L	ND	.5	.5	0.45	0.57	91	115	20-150	24	30	
Endrin	ug/L	ND	.5	.5	0.46	0.61	93	124	20-150	29	30	
Endrin aldehyde	ug/L	ND	.5	.5	0.39	0.49	79	98	20-150	21	30	
Endrin ketone	ug/L	ND	.5	.5	0.40	0.49	80	99	20-150	21	30	
gamma-BHC (Lindane)	ug/L	ND	.5	.5	0.43	0.55	86	112	20-150	26	30	
Heptachlor	ug/L	ND	.5	.5	0.38	0.50	77	102	20-150	28	30	
Heptachlor epoxide	ug/L	ND	.5	.5	0.40	0.53	81	106	20-150	27	30	
Hexachlorobenzene	ug/L	ND	.5	.5	0.35	0.44	71	89	20-150	23	30	
Methoxychlor	ug/L	ND	1.5	1.5	1.2	1.6	83	109	20-150	27	30	
Mirex	ug/L	ND	1.5	1.5	1.3	1.6	86	106	20-150	21	30	
Decachlorobiphenyl (S)	%						73	92	20-130			
Tetrachloro-m-xylene (S)	%						82	106	20-130			

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

QUALITY CONTROL DATA

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

QC Batch: WETA/22070 Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92238381001, 92238381002, 92238381003, 92238381004

METHOD BLANK: 1400274 Matrix: Water
Associated Lab Samples: 92238381001, 92238381002, 92238381003, 92238381004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0080	03/02/15 14:31	

LABORATORY CONTROL SAMPLE: 1400275

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1400276 1400277

Parameter	Units	92238124001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.020	0.018	19	17	75-125	11	10	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1400278 1400279

Parameter	Units	92238381001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	.1	.1	0.10	0.10	103	103	75-125	0	10	

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

QUALIFIERS

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

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.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H5	Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Francis Farm SW 2/20
Pace Project No.: 92238381

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92238381001	**US-1**		FLD/		
92238381002	**DS-1**		FLD/		
92238381003	**DS-2**		FLD/		
92238381004	**DS-3**		FLD/		
92238381001	**US-1**	EPA 3510	OEXT/33153	EPA 8081	GCSV/20463
92238381002	**DS-1**	EPA 3510	OEXT/33131	EPA 8081	GCSV/20459
92238381003	**DS-2**	EPA 3510	OEXT/33131	EPA 8081	GCSV/20459
92238381004	**DS-3**	EPA 3510	OEXT/33131	EPA 8081	GCSV/20459
92238381001	**US-1**	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238381002	**DS-1**	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238381003	**DS-2**	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238381004	**DS-3**	EPA 3010	MPRP/17974	EPA 6010	ICP/16160
92238381001	**US-1**	EPA 8260	MSV/30489		
92238381002	**DS-1**	EPA 8260	MSV/30489		
92238381003	**DS-2**	EPA 8260	MSV/30489		
92238381004	**DS-3**	EPA 8260	MSV/30489		
92238381001	**US-1**	SM 4500-CN-E	WETA/22070		
92238381002	**DS-1**	SM 4500-CN-E	WETA/22070		
92238381003	**DS-2**	SM 4500-CN-E	WETA/22070		
92238381004	**DS-3**	SM 4500-CN-E	WETA/22070		

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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

1817899

Section A Required Client Information:
Company: Hayworth Co Francis Farm
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:
Report To: BLE
Copy To: Stephen King
Purchase Order No.:
Project Name: ~~Fax~~ Francis Farm SW'J
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

Requested Analysis Filtered (Y/N)

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

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N) All Trap Tests	Spectro Tests	Approx II VOC	Approx I Metals	8021	CN-	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92238381
1	US-1					2-20-15	1140		7	2		1	3	1				X	X	X	X	X	X			001
2	DS-1					2-20	1100		7	2		1	3	1				X	X	X	X	X	X			002
3	DS-2					2-20	1210		7	2		1	3	1				X	X	X	X	X	X			003
4	DS-3					2-20	1315		7	2		1	3	1				X	X	X	X	X	X			004
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
		2-20-15	1450	[signature] Pace	2-20-15	1450				
	[signature] Pace	2-20-15	1540	[signature]	2/20/15	15:40	5.2	Y	—	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: MARK L. SWANN
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM/DD/YY): 2-20-15

*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.

Client: HAYWOOD FRANCIS FARM **Date:** 2-20-15

~~Time on Site~~ TIME: 930 to 1545

ROUND TRIP

Time	Site	pH	Tmp	SPCOND	TURB	
1140	US-1	6.9	2.1	78	0.50	
1100	DS-1	7.0	1.5	78	0.47	
~~1120~~ 1210	DS-2	7.1	2.9	81	1.92	
1315	DS-3	7.1	2.7	87	2.26	

Pace Analytical www.pacelabs.com	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: June 10, 2014 Page 1 of 2
	Document No.: F-ASV-CS-003-rev.14	Issuing Authorities: Pace Asheville Quality Office

Client Name: Haywood Co LF

Courier (Circle): Fed Ex UPS USPS Client Commercial (Pace) Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun#3 -130265963 **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

IR Gun#4 SN:140290365 Other:_____

Temp Correction Factor: Add / (Subtract) 0 C

Corrected Cooler Temp.: 5.2 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 2/20/15

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☑Yes ☐No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: _____ Date: _____

SRF Review: _____ Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 92238381

92238381

APPENDIX D

STATISTICAL CALCULATIONS

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

COMPOUND	TOTAL	ND	DETECTED	%ND	STATISTICAL TEST
Total Antimony	220	217	3	98.6%	Poisson Prediction Limits
Total Arsenic	319	301	18	94.4%	Poisson Prediction Limits
Total Barium	319	5	314	1.6%	ANOVA
Total Beryllium	220	215	5	97.7%	Poisson Prediction Limits
Total Cadmium	319	293	26	91.8%	Poisson Prediction Limits
Total Chromium	319	222	97	69.6%	Kruskal-Wallis
Total Cobalt	220	142	78	64.5%	Kruskal-Wallis
Total Copper	220	177	43	80.5%	Kruskal-Wallis
Total Lead	319	284	35	89.0%	Kruskal-Wallis
Total Mercury	264	257	7	97.3%	Poisson Prediction Limits
Total Nickel	231	156	75	67.5%	Kruskal-Wallis
Total Selenium	310	289	21	93.2%	Poisson Prediction Limits
Total Silver	319	305	14	95.6%	Poisson Prediction Limits
Total Thallium	220	219	1	99.5%	Poisson Prediction Limits
Total Vanadium	220	153	67	69.5%	Kruskal-Wallis
Total Zinc	220	110	110	50.0%	Kruskal-Wallis
Acetone	293	291	2	99.3%	Poisson Prediction Limits
Benzene	293	226	67	77.1%	Kruskal-Wallis
Carbon Disulfide	293	288	5	98.3%	Poisson Prediction Limits
Chlorobenzene	293	256	37	87.4%	Poisson Prediction Limits
Chloroethane	293	207	86	70.6%	Poisson Prediction Limits
Chloroform	293	291	2	99.3%	Poisson Prediction Limits
1,2-Dichlorobenzene	293	232	61	79.2%	Poisson Prediction Limits
1,4-Dichlorobenzene	293	194	99	66.2%	Poisson Prediction Limits
1,1-Dichloroethane	293	128	165	43.7%	Kruskal-Wallis
1,2-Dichloroethane	293	241	52	82.3%	Poisson Prediction Limits
1,1-Dichloroethene	293	292	1	99.7%	Poisson Prediction Limits
cis-1,2-Dichloroethene	293	123	170	42.0%	Kruskal-Wallis
cis-1,3-Dichloropropene	293	292	1	99.7%	Poisson Prediction Limits
Ethylbenzene	293	287	6	98.0%	Poisson Prediction Limits
Dichloromethane	293	260	33	88.7%	Kruskal-Wallis
Tetrachloroethene	293	236	57	80.5%	Kruskal-Wallis
Toluene	293	280	13	95.6%	Poisson Prediction Limits
Trichloroethene	293	238	55	81.2%	Kruskal-Wallis
Trichlorofluoromethane	289	287	2	99.3%	Poisson Prediction Limits
Vinyl Chloride	293	288	5	98.3%	Poisson Prediction Limits
Total Xylenes	293	268	25	91.5%	Poisson Prediction Limits
Naphthalene	160	150	10	93.8%	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
N 19	35
N 20	40
N 21	38
N 22	42
N 23	126
N 24	113
N 25	132
N 26	142
N 27	155
N 28	175
N 29	147
N 30	148
N 31	154

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*
"J" flagged values are not statisatically analyzed

Total Detected Concentrations (per compound) =	1868
Total Detected Concentrations (per event) =	1868
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 J15-1957-44

Compound: **Total Antimony (Sb)**
NC MCL (µg/l): Not Established
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-24	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/09/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
09/01/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/16/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/26/07	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/13/07	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/11/08	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/25/08	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/23/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/24/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.1**	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**5**
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**5**
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**5**
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**5**
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
08/28/14	ND	**8.6**	ND	**5.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 20$

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).

$k = 1$
$n = 8$
$T_{n1} = 20$
$t\{7,.01\} = 2.998$

		MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-24	MW-24	MW-25
$c = 0.125$	$T_{n2} =$	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
$T^*_k = 8.1$																														

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 J15-1957-44

Compound: **Total Antimony (Sb)**
NC MCL (µg/l): Not Established
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-24	MW-24	MW-25	MDL
02/18/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/00	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/14/00	NP	ND	NS	**10**	ND	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
03/19/01	NP	ND	ND	ND	ND	**11**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/27/02	NP	ND	**23**	NT	**5.8**	**25**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/24/03	NP	ND	**16**	ND	ND	**23**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/11/03	NP	ND	**6.5**	ND	ND	**9.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	ND	ND	ND	ND	**8.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	ND	ND	ND	**6.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	ND	ND	ND	ND	**6.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	**5.9**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.8**	ND	**5.3**	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/22/11	ND	ND	ND	ND	ND	ND	ND	**8.7**	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	5
08/29/12	ND	ND	ND	**5.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	**11.2**	NP	ND	NP	NP	NP	NP	NP	5
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	10
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	10
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 30$

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).

$k = 1$
$n = 8$
$T_{n1} = 30$
$t\{7,.01\} = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-24	MW-24	MW-25
$T_{n2} =$	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

$T^*_k = 10.5$

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.

Compound: **Total Barium (Ba)**
NC MCL (µg/l): 700
Method: ANOVA
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
2/18/99	NP	300	NS	400	100	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/16/99	NP	230	NS	260	120	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
2/14/00	NP	270	NS	240	150	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/14/00	NP	410	NS	310	180	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
3/19/01	NP	340	830	310	120	2000	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/27/02	NP	250	2700	NT	150	2800	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
2/24/03	NP	310	1800	330	150	2500	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/11/03	NP	530	950	350	150	1200	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/9/04	NP	260	370	310	120	890	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/16/04	NP	280	300	310	140	1100	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/14/05	NP	310	300	300	160	520	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
9/1/05	NP	280	280	210	140	330	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/30/06	NP	290	220	240	160	250	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/26/07	NP	210	240	300	140	280	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/13/07	NP	176	256	Dry	137	208	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/11/08	NP	165	229	41.7	155	238	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/25/08	NP	150	265	Dry	142	195	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/23/09	NP	220	215	206	146	270	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/24/09	NP	203	173	210	136	264	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/22/10	NP	269	250	224	139	260	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/30/10	NP	192	203	206	125	246	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/22/11	197	171	191	241	163	237	54	213	72.8	1190	193	138	977	309	ND	68.7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/22/11	191	189	189	214	133	280	66.8	1640	76.4	202	71.9	104	972	284	NP	57.7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/22/12	196	222	266	175	134	214	48.7	207	62.7	126	102	90.2	970	237	NP	49.9	249	NP	93.5	135	141	NP	80.3	NP	56.3	NP	NP	NP	NP	NP	5
8/29/12	335	174	283	232	151	289	42.8	224	67.4	106	110	106	931	237	NP	64	184	NP	96.2	83.7	137	NP	615	NP	51	NP	NP	NP	NP	NP	5
2/18/13	216	267	221	172	128	229	16.2	200	41.3	75.7	86	95.5	815	238	34.6	42.6	118	56.1	65.6	91.5	131	265	100	54.5	45.6	103	1470	NP	31.6	64.6	5
8/26/13	207	264	259	149	163	255	23.7	204	50.7	79.8	77.5	111	854	281	30.9	45.1	97.1	36.4	48.8	135	112	264	58.9	253	49.6	96.6	283	NP	42	106	5
2/20/14	185	215	253	159	149	210	16.8	214	13	92.5	97.3	85.3	823	240	42.4	40.1	176	38.6	48.8	80.1	183	278	32.5	109	122	74.7	86.9	70.8	42.8	19.2	5
8/28/14	339	224	145	185	160	199	39.2	183	34.2	54.4	67.6	82.3	906	223	53.6	38	134	32.5	60	92.8	136	272	46.3	119	28.5	80	107	69.2	22.7	30.8	5
3/20/15	138	161	182	162	134	171	60.5	181	25.8	137	87.2	55.4	831	262	44.8	46.9	171	32.7	45.1	68	136	271	68.3	187	32.3	67.1	198	73.5	27.2	32.9	5

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

n_i =	9	31	27	28	31	27	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
Xi =	48.3093	165.435	150.03	146.923	149.495	155.588	32.3761	49.8985	33.967	44.0396	40.9277	40.8769	61.1751	49.8852	18.5055	35.0916	35.2888	18.2436	28.9667	31.8874	34.4972	27.9912	31.0287	24.2332	27.3154	22.107	27.3643	12.7941	17.3729	18.7076	1580.3 = X.
Xi.bar =	5.3677	5.3366	5.5567	5.24726	4.82242	5.76251	3.59734	5.54428	3.77412	4.89328	4.54752	4.54188	6.79724	5.5428	3.7011	3.89907	5.04126	3.64871	4.13809	4.55534	4.92818	5.59824	4.43267	4.84663	3.9022	4.4214	5.47286	4.26472	3.47459	3.74151	4.95 = X. bar
std dev =	0.2861	0.86729	1.1603	0.94624	0.73439	1.27702	0.54038	0.70033	0.58347	0.90426	0.3125	0.25206	0.07598	0.10941	0.21726	0.20775	0.31469	0.22374	0.31121	0.26008	0.14542	0.02107	0.95053	0.5848	0.46991	0.17838	1.12173	0.03043	0.27504	0.67285	
$ni*(Xi.bar-X..bar)^2$ =	1.54046	4.53817	9.8073	2.4083	0.53661	17.6501	16.5643	3.13601	12.5288	0.03316	1.48694	1.5285	30.5782	3.12035	7.84857	10.0156	0.05332	8.51866	4.65976	1.11244	0.00466	2.07535	1.90238	0.05762	7.74374	1.41824	1.34617	1.42528	10.9431	7.35048	
$(Xi.^2/ni)$ =	259.31	882.858	833.67	770.945	720.927	896.575	116.468	276.651	128.196	215.498	186.119	185.658	415.822	276.504	68.4908	136.825	177.9	66.5656	119.867	145.258	170.008	156.702	137.54	117.449	106.59	97.7439	149.761	54.5634	60.3639	69.9945	

	SS	df	MS	F	Fc
SSw	171.933	29	5.92871	9.748	1.47
SS_error	175.77	289	0.6082		
SSt	347.702	318			

The calculated F statistic is 9.75. The tabulated Fc value with 29 and 289 degrees of freedom and the a=0.05 level is 1.47 (Table 2 of IFG). Since the calculated value of F exceeds the tabulated value of Fc, the hypothesis of equal means must be rejected, and post hoc comparisons are necessary (see below).

Bonferroni t-statistics

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
$Xbar_i$ = avg per well =	5.3366	5.5567	5.24726	3.59734	5.54428	3.59734	5.54428	3.77412	4.89328	4.54752	4.54188	6.79724	5.5428	3.7011	3.89907	5.04126	3.64871	4.13809	4.55534	4.92818	5.59824	4.43267	4.84663	3.9022	4.4214	5.47286	4.26472	3.47459	3.74151
D_{ni} = $Xbar_i$ - $Xbar_{up}$ =	-0.0311	0.189	-0.1204	-1.77	0.18	-1.7704	0.17658	-1.5936	-0.4744	-0.8202	-0.8258	1.42953	0.1751	-1.6666	-1.4686	-0.3264	-1.719	-1.2296	-0.8124	-0.4395	0.23054	-0.935	-0.5211	-1.4655	-0.9463	0.10516	-1.103	-1.8931	-1.6262
= $[MS\text{-}error*(1/n_{up} + 1/n_i)]^{0.5}$ =	0.23029	0.2341	0.23305	0.28671	0.28671	0.28671	0.28671	0.28671	0.28671	0.28671	0.28671	0.28671	0.28671	0.33924	0.28671	0.3065	0.33924	0.3065	0.3065	0.3065	0.33924	0.3065	0.33924	0.3065	0.33924	0.33924	0.40547	0.33924	0.33924
$D_i = SE_i * t_c$ =	0.53657	0.5454	0.543	0.66803	0.66803	0.66803	0.66803	0.66803	0.66803	0.66803	0.66803	0.66803	0.66803	0.79042	0.66803	0.71415	0.79042	0.71415	0.71415	0.71415	0.79042	0.71415	0.79042	0.71415	0.79042	0.79042	0.94474	0.79042	0.79042
Statistical Significance ?	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSI, is current event above MCL?	-	-	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

9 = n_{up}
5.37 = $Xbar_{up}$(average background)
0.6082 = MS_error
289 = degrees of freedom
29 = m (number of compliance wells)
2.33 = t_c (from Table 3 of IFG)

The F test was significant at the 5% level. The Bonferroni multiple comparisons procedure was then used
to determine for which wells there was statistically significant evidence of contamination.
If the calculated D_{ij} value exceeds the corresponding D_i value, it can be concluded that there is significant evidence of contamination.
Significant evidence of contamination is present in the 1 monitoring wells indicated above.
Perform a Shewart-CUSUM Control Chart evaluation to determine if intrawell statistical significance is present.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **Total Barium (Ba)**
NC MCL (µg/l): 700
Method: Levene's Test for Homogeneity
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
2/18/99	NP	300	NS	400	100	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/16/99	NP	230	NS	260	120	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
2/14/00	NP	270	NS	240	150	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/14/00	NP	410	NS	310	180	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
3/19/01	NP	340	830	310	120	2000	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/27/02	NP	250	2700	NT	150	2800	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
2/24/03	NP	310	1800	330	150	2500	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/11/03	NP	530	950	350	150	1200	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/9/04	NP	260	370	310	120	890	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/16/04	NP	280	300	310	140	1100	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/14/05	NP	310	300	300	160	520	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
9/1/05	NP	280	280	210	140	330	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/30/06	NP	290	220	240	160	250	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/26/07	NP	210	240	300	140	280	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/13/07	NP	176	256	Dry	137	208	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/11/08	NP	165	229	41.7	155	238	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/25/08	NP	150	265	Dry	142	195	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/23/09	NP	220	215	206	146	270	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/24/09	NP	203	173	210	136	264	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/22/10	NP	269	250	224	139	260	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/30/10	NP	192	203	206	125	246	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/22/11	197	171	191	241	163	237	54	213	72.8	1190	193	138	977	309	NP	68.7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/22/11	191	189	189	214	133	280	66.8	1640	76.4	202	71.9	104	972	284	NP	57.7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/22/12	196	222	266	175	134	214	48.7	207	62.7	126	102	90.2	970	237	NP	49.9	249	NP	93.5	135	141	NP	80.3	NP	56.3	NP	NP	NP	NP	NP	5
8/29/12	335	174	283	232	151	289	42.8	224	67.4	106	110	106	931	237	NP	64	184	NP	96.2	83.7	137	NP	615	NP	51	NP	NP	NP	NP	NP	5
2/18/13	216	267	221	172	128	229	16.2	200	41.3	75.7	86	95.5	815	238	34.6	42.6	118	56.1	65.6	91.5	131	265	100	54.5	45.6	103	1470	NP	31.6	64.6	5
8/26/13	207	264	259	149	163	255	23.7	204	50.7	79.8	77.5	111	854	281	30.9	45.1	97.1	36.4	48.8	135	112	264	58.9	253	49.6	96.6	283	NP	42	106	5
2/20/14	185	215	253	159	149	210	16.8	214	13	92.5	97.3	85.3	823	240	42.4	40.1	176	38.6	48.8	80.1	183	278	32.5	109	122	74.7	86.9	70.8	42.8	19.2	5
8/28/14	339	224	145	185	160	199	39.2	183	34.2	54.4	67.6	82.3	906	223	53.6	38	134	32.5	60	92.8	136	272	46.3	119	28.5	80	107	69.2	22.7	30.8	5
3/20/15	138	161	182	162	134	171	60.5	181	25.8	137	87.2	55.4	831	262	44.8	46.9	171	32.7	45.1	68	136	271	68.3	187	32.3	67.1	198	73.5	27.2	32.9	5

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

	SS	df	MS	F Ratio	F critical
Between Well	1E+07	29	367314	1.88	1.47
Error	6E+07	289	195162		
Total	7E+07	318			

Since the F-ratio = 1.88 exceeds the tabulated value of F-critical = 1.47 (see Table 2 of IFG) with 29 and 289 df,
the assumption of equal variances should be rejected.
Re-test the data set using the natural log of the above values.

	SS	df	MS	F Ratio	F critical
Between Well	25.789	29	0.89	0.72	1.47
Error	357.9	289	1.24		
Total	383.69	318			

Since the F-ratio = 0.72 does not exceed the tabulated value of F-critical = 1.47 (see Table 2 of IFG) with 29 and 289 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 ,115-1957-44

Compound: **Total Barium (Ba)**
NC MCL (µg/l): 700
Method: Skewness Test for Normality
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
2/18/99	NP	300	NS	400	100	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/16/99	NP	230	NS	260	120	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
2/14/00	NP	270	NS	240	150	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/14/00	NP	410	NS	310	180	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
3/19/01	NP	340	830	310	120	2000	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/27/02	NP	250	2700	NT	150	2800	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
2/24/03	NP	310	1800	330	150	2500	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	100
8/11/03	NP	530	950	350	150	1200	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/9/04	NP	260	370	310	120	890	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/16/04	NP	280	300	310	140	1100	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/14/05	NP	310	300	300	160	520	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
9/1/05	NP	280	280	210	140	330	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/30/06	NP	290	220	240	160	250	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/26/07	NP	210	240	300	140	280	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/13/07	NP	176	256	Dry	137	208	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/11/08	NP	165	229	41.7	155	238	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/25/08	NP	150	265	Dry	142	195	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/23/09	NP	220	215	206	146	270	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/24/09	NP	203	173	210	136	264	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/22/10	NP	269	250	224	139	260	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/30/10	NP	192	203	206	125	246	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/22/11	197	171	191	241	163	237	54	213	72.8	1190	193	138	977	309	NP	68.7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
8/22/11	191	189	189	214	133	280	66.8	1640	76.4	202	71.9	104	972	284	NP	57.7	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
2/22/12	196	222	266	175	134	214	48.7	207	62.7	126	102	90.2	970	237	NP	49.9	249	NP	93.5	135	141	NP	80.3	NP	56.3	NP	NP	NP	NP	NP	5
8/29/12	335	174	283	232	151	289	42.8	224	67.4	106	110	106	931	237	NP	64	184	NP	96.2	83.7	137	NP	615	NP	51	NP	NP	NP	NP	NP	5
2/18/13	216	267	221	172	128	229	16.2	200	41.3	75.7	86	95.5	815	238	34.6	42.6	118	56.1	65.6	91.5	131	265	100	54.5	45.6	103	1470	NP	31.6	64.6	5
8/26/13	207	264	259	149	163	255	23.7	204	50.7	79.8	77.5	111	854	281	30.9	45.1	97.1	36.4	48.8	135	112	264	58.9	253	49.6	96.6	283	NP	42	106	5
2/20/14	185	215	253	159	149	210	16.8	214	13	92.5	97.3	85.3	823	240	42.4	40.1	176	38.6	48.8	80.1	183	278	32.5	109	122	74.7	86.9	70.8	42.8	19.2	5
8/28/14	339	224	145	185	160	199	39.2	183	34.2	54.4	67.6	82.3	906	223	53.6	38	134	32.5	60	92.8	136	272	46.3	119	28.5	80	107	69.2	22.7	30.8	5
3/20/15	138	161	182	162	134	171	60.5	181	25.8	137	87.2	55.4	831	262	44.8	46.9	171	32.7	45.1	68	136	271	68.3	187	32.3	67.1	198	73.5	27.2	32.9	5

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

X_{bar} = 239.91
SD = 351.8
N = 319
$1/N\Sigma_i(X_i-X_{bar})^3$ = 2E+08
γ_1 = 4.5049

Since the Coefficient of Skewness of 4.50 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.

X_{bar} = 4.954
SD = 1.0457
N = 319
$1/N\Sigma_i(X_i-X_{bar})^3$ = -0.6623
γ_1 = 0.582

Since the Coefficient of Skewness of 0.58 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.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**Total Barium (Ba)**
GA MCL (µg/l):	700
Method:	Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-13	MDL
2/22/11	**977**	**5**
8/22/11	**972**	**5**
2/22/12	**970**	**5**
8/29/12	**931**	**5**
2/18/13	**815**	**5**
8/26/13	**854**	**5**
2/20/14	**823**	**5**
8/28/14	**906**	**5**
3/20/15	**831**	**5**

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

	X_i values =
977	499306.3704
972	410724.7037
970	378456.037
931	37037.03704
815	-564925.6296
854	-83262.62963
823	-416274.963
906	578.7037037
831	-296296.2963

X_{bar} =	897.66667
SD =	68
N =	9
$1/N\Sigma_i(X_i-X_{bar})^3$ =	-3850.741
γ_1=	0.0146132

Since the Coefficient of Skewness of 0.01 is less than 1.0, the data appear not to be significantly skewed. Proceed with further statistical tests using the real detected values shown above.

ln =	X_i values =
6.8844867	0.000664164
6.8793558	0.000553747
6.8772961	0.000513115
6.8362593	5.94159E-05
6.7031881	-0.000831908
6.7499312	-0.00010587
6.7129562	-0.00059869
6.8090393	1.64356E-06
6.7226298	-0.000415299

X_{bar} =	6.797238
SD =	0.075977
N =	9

$1/N\Sigma_i(X_i-X_{bar})^3 =$ -1.77E-05

$\gamma_1 =$ 0.048272

Use the real values (not log-transformed) indicated in the previous section.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-13	MDL	Data for Testing
2/22/2011	977	5	977
8/22/2011	972	5	972
2/22/2012	970	5	970
8/29/2012	931	5	931
2/18/2013	815	5	815
8/26/2013	854	5	854
2/20/2014	823	5	823
8/28/2014	906	5	906
3/20/2015	831	5	831

Compute the mean and standard deviation of the historical data:

906 = x_{mean} (Mean of N1-N8 historical data)

67.603888 = s (Standard Deviation of N1-N8 historical data)

1 = k (constant, reference value)

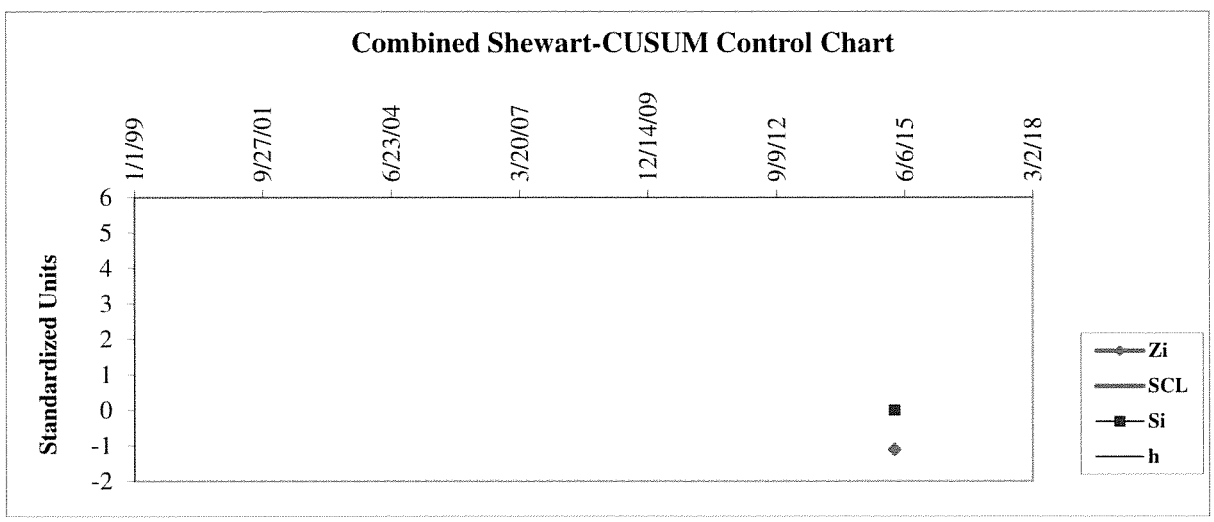
5 = h (constant, upper control limit for the CUSUM scheme)

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		
3/20/2015	831	-1.1094036	0	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 J15-1957-44

Compound: **Total Beryllium (Be)**
NC MCL (µg/l): Not Established
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/09/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
09/01/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/16/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/26/07	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/13/07	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/11/08	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/25/08	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/23/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/24/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3.6**	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	ND	ND	ND	ND	ND	ND	**2.4**	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	**1.1**	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.5**	NP	ND	ND	1
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.1**	ND	ND	ND	NP	ND	ND	1
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **Total Cadmium (Cd)**
NC MCL (µg/l): 2
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14E	MW-15	MW-16	MW-16E	MW-17	MW-18	MW-19	MW-19E	MW-20	MW-20E	MW-21	MW-22	MW-23	MW-23E	MW-24	MW-25	MDL
02/18/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
08/16/99	NP	**2.5**	NS	**7.4**	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
02/14/00	NP	**2**	NS	**9.1**	**1.4**	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
08/14/00	NP	**4.9**	NS	**13**	**1.3**	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
03/19/01	NP	**2.6**	**12**	**6.9**	ND	**18**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
08/27/02	NP	ND	**25**	NT	ND	**21**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
02/24/03	NP	**2.1**	**22**	**6.2**	ND	**19**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
08/11/03	NP	**2**	**3.1**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/14/05	NP	**2.4**	**7**	**4**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/13/07	NP	**1.5**	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	**2.2**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.4**	NP	ND	ND	1
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t\{7,.01\} = 2.998$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
$c = 0.125$ $T_{n2} =$	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **Total Chromium (Cr)**
NC MCL (µg/l): 10
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	20
08/16/99	NP	61	NS	14	35	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	20
02/14/00	NP	7.2	NS	5.6	11	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	20
08/14/00	NP	7.4	NS	ND	5.4	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	20
03/19/01	NP	12	32	7.7	5.2	140	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	20
08/27/02	NP	ND	130	NT	5.4	210	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	20
02/24/03	NP	5.1	79	14	ND	200	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	20
08/11/03	NP	19	38	6.7	81	81	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	2
02/09/04	NP	ND	2.1	4.9	ND	57	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	2
08/16/04	NP	4	2.8	2	3.3	52	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	2
02/14/05	NP	7.6	18	12	4.1	11	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	2
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	2
02/16/06	NP	ND	ND	ND	ND	16	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	2
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	2
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/11/08	NP	ND	ND	10.3	ND	6.3	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/23/09	NP	ND	ND	ND	ND	7.2	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/24/09	NP	ND	ND	ND	ND	6.5	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/10	NP	ND	ND	ND	ND	8.8	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/11	8.1	ND	ND	ND	ND	ND	ND	ND	6.3	161	17.6	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/22/11	8.3	ND	ND	ND	ND	ND	ND	105	ND	19.3	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/12	11.1	ND	ND	ND	ND	ND	ND	5.2	6.9	10.6	6.2	ND	ND	ND	NP	ND	5.7	NP	ND	7.3	ND	NP	6.4	NP	ND	NP	NP	NP	NP	NP	5
08/29/12	40.2	ND	6.2	5.5	ND	7.1	6.1	9.7	ND	7.9	6.5	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	56.3	NP	ND	NP	NP	NP	NP	NP	5
02/18/13	16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6	1.7	2.6	ND	ND	7	ND	ND	ND	292	NP	ND	51.4	5
08/26/13	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.9	ND	ND	ND	ND	ND	6.6	ND	ND	ND	23.8	ND	ND	40.6	NP	ND	151	5
02/20/14	6.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.6	ND	ND	ND	ND	ND	ND	10.8	11	ND	ND	ND	ND	ND	5
08/28/14	20.4	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.6	ND	ND	ND	ND	ND	8.8	5
03/20/15	5.1	ND	ND	ND	ND	ND	6.9	ND	6.2	12.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6	17.3	ND	ND	24.7	ND	ND	12	5
N_i	9	31	27	28	31	27	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	2438.0	4832.5	4333.5	4599.0	4619.5	5300.5	1285.0	1488.5	1426.0	1887.0	1463.0	1003.5	1003.5	1166.0	557.5	1003.5	1040.0	690.0	892.0	1192.0	780.5	557.5	1396.5	1258.5	948.0	557.5	1143.0	334.5	557.5	1286.0	
avg rank value (Rbar)	270.9	155.9	160.5	164.3	149.0	196.3	142.8	165.4	158.4	209.7	162.6	111.5	111.5	129.6	111.5	111.5	148.6	138.0	127.4	170.3	111.5	111.5	199.5	251.7	135.4	111.5	228.6	111.5	111.5	257.2	

Number of each rank value

																														Rank Value
rank value of NDs =	0	22	19	18	23	14	7	6	6	4	6	9	9	8	5	9	5	4	6	4	7	5	3	1	6	5	2	3	5	1	111.5
rank value of 1.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	223
rank value of 2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	224
rank value of 2.1s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225
rank value of 2.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	226
rank value of 2.8s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	227
rank value of 3.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	228
rank value of 4s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229
rank value of 4.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	230
rank value of 4.9s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	231
rank value of 5.1s =	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	232.5
rank value of 5.2s =	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	234.5
rank value of 5.4s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	236.5
rank value of 5.5s =	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	238.5
rank value of 5.6s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	240.5
rank value of 5.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	242
rank value of 6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	244
rank value of 6.1s =	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	246
rank value of 6.2s =	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	248
rank value of 6.3s =	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250.5
rank value of 6.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	252
rank value of 6.5s =	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254
rank value of 6.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	256
rank value of 6.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257
rank value of 6.9s =	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	258.5
rank value of 7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	260
rank value of 7.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261
rank value of 7.2s =	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	262.5
rank value of 7.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	264
rank value of 7.4s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	265

	Background	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	
rank value of 7.6s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	266
rank value of 7.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	267
rank value of 7.9s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	268
rank value of 8.1s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	269
rank value of 8.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	270
rank value of 8.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	271.5
rank value of 9.7s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	273
rank value of 9.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	274
rank value of 10.3s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	275
rank value of 10.6s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276
rank value of 10.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	277
rank value of 11s =	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	279
rank value of 11.1s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	281
rank value of 11.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	282
rank value of 12s =	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	284
rank value of 12.4s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	286
rank value of 14s =	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287.5
rank value of 16s =	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	289.5
rank value of 17.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	291
rank value of 17.6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	292
rank value of 18s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	293
rank value of 19s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	294
rank value of 19.3s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	295
rank value of 20.4s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	296
rank value of 23.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	297
rank value of 24.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	298
rank value of 32s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	299
rank value of 35s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300
rank value of 38s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	301
rank value of 40.2s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	302
rank value of 40.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	303
rank value of 51.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	304
rank value of 52s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	305
rank value of 56.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	306
rank value of 57s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	307
rank value of 61s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308
rank value of 79s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	309
rank value of 81s =	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	310.5
rank value of 105s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	312
rank value of 130s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	313
rank value of 140s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	314
rank value of 151s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	315
rank value of 161s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	316
rank value of 200s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	317
rank value of 210s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	318
rank value of 292s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	319
n =	**9**	**31**	**27**	**28**	**31**	**27**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
R_i^2/N_i =	660427.1	753324	695527	755386	688380	1040567	183469	246181	225942	395641	237819	111890	111890	151062	62161.3	111890	154514	95220	113666	202981	87025.8	62161.3	278602	316764	128386	62161.3	261290	37296.8	62161.3	330759

N_{bg} = 9
N = 319
H = 53.86

Adjust H for ties:

T_j = 1.1E+07 sum of T1..T18

$H' = H/(1-(T_j/(N^3-N)))$
H' = 81.24
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IPG. The value is 42.56 which is less than H' =81.24.
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) = $P(N(N+1)/12)^{0.5} * (1/N_{bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IPG

N = total sample size
N_{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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	155.9	160.5	164.3	149.0	196.3	142.8	165.4	158.4	209.7	162.6	111.5	111.5	129.6	111.5	111.5	148.6	138.0	127.4	170.3	111.5	111.5	199.5	251.7	135.4	111.5	228.6	111.5	111.5	257.2
avg Rbar (background) =	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9	270.9
Dx =	-115.0	-110.4	-106.6	-121.9	-74.6	-128.1	-105.5	-112.4	-61.2	-108.3	-159.4	-159.4	-141.3	-159.4	-159.4	-122.3	-132.9	-143.5	-100.6	-159.4	-159.4	-71.4	-19.2	-135.5	-159.4	-42.3	-159.4	-159.4	-13.7
Cx =	81.4	82.7	82.3	82.7	82.3	101.3	101.3	101.3	101.3	101.3	101.3	101.3	101.3	119.9	101.3	108.3	119.9	108.3	108.3	108.3	119.9	108.3	119.9	108.3	119.9	119.9	143.3	119.9	119.9
Statistical Significance ?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSL 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 J15-1957-44

Compound: **Total Cobalt (Co)**
NC MCL (µg/l): NE
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/09/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
09/01/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/16/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/26/07	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/13/07	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/11/08	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/25/08	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/23/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/24/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/11	**9.8**	**10.5**	**55.5**	**110**	**13.5**	**16.8**	ND	**5.4**	ND	**40.5**	**5.2**	**9.4**	ND	**6.1**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/22/11	ND	**8.9**	**45.4**	**51.9**	**6.8**	**9.7**	ND	**43.1**	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/22/12	ND	**10.1**	**30.9**	**54**	**5.7**	**5.8**	ND	ND	ND	ND	ND	ND	**5.5**	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**5**
08/29/12	**11.7**	**8.5**	**40**	**104**	**9.6**	**17.3**	ND	**5.1**	ND	ND	ND	ND	**15.8**	ND	NP	ND	ND	NP	ND	ND	ND	NP	**21.4**	NP	ND	NP	NP	NP	NP	NP	**5**
02/18/13	**7**	**26.1**	**49.7**	**84.3**	**6**	**14.8**	ND	ND	ND	ND	ND	ND	**20.7**	**6.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**72.7**	NP	ND	ND	**5**
08/26/13	**5.8**	**52.6**	**155**	**90.7**	**11.9**	**26.6**	ND	ND	ND	ND	ND	**5.3**	**16.9**	**19.5**	ND	ND	ND	ND	ND	**7.4**	ND	**13.3**	ND	**23.7**	ND	**5.4**	**22**	NP	ND	ND	**5**
02/20/14	ND	**18.3**	**36.6**	**48.8**	**8.5**	**6.9**	ND	ND	ND	ND	ND	ND	**11.9**	ND	ND	ND	ND	ND	ND	ND	**10.2**	**13.9**	ND	ND	**6**	ND	ND	ND	ND	ND	**5**
08/28/14	ND	**18.6**	**47.4**	**48**	ND	**8.1**	ND	ND	ND	ND	ND	ND	**9**	ND	ND	ND	ND	ND	ND	ND	ND	**11.6**	ND	ND	ND	ND	ND	ND	ND	ND	**5**
03/20/15	ND	**7.2**	**55**	**84.3**	**9.6**	**5.3**	ND	ND	ND	ND	ND	ND	**9.4**	ND	ND	ND	ND	ND	ND	ND	ND	**12.6**	ND	ND	ND	ND	**5.6**	ND	ND	ND	**5**
N_i	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	1021.0	1629.5	1862.0	1918.0	1403.0	1551.0	643.5	922.5	643.5	774.0	716.0	814.5	1374.0	934.0	357.5	643.5	500.5	357.5	500.5	591.0	604.0	795.5	623.0	482.0	583.5	433.5	702.0	214.5	357.5	357.5	
avg rank value (Rbar)	113.4	181.1	206.9	213.1	155.9	172.3	71.5	102.5	71.5	86.0	79.6	90.5	152.7	103.8	71.5	71.5	71.5	71.5	71.5	84.4	86.3	159.1	89.0	96.4	83.4	86.7	140.4	71.5	71.5	71.5	

	Number of each rank value																													Rank Value
rank value of ND's =	5	0	0	0	1	0	9	6	9	8	8	7	2	6	5	9	7	5	7	6	6	1	6	4	6	4	2	3	5	5	71.5
rank value of 5.1s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	143
rank value of 5.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
rank value of 5.3s =	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	145.5
rank value of 5.4s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	147.5
rank value of 5.5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149
rank value of 5.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	150
rank value of 5.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151
rank value of 5.8s =	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152.5
rank value of 6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	154.5
rank value of 6.1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156
rank value of 6.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157
rank value of 6.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	158
rank value of 6.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	159
rank value of 7s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	160
rank value of 7.2s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	161
rank value of 7.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	162
rank value of 8.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163
rank value of 8.5s =	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164.5
rank value of 8.9s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	166
rank value of 9s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167
rank value of 9.4s =	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	168.5
rank value of 9.6s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	170.5
rank value of 9.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	172
rank value of 9.8s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173
rank value of 10.1s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174
rank value of 10.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	175
rank value of 10.5s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176
rank value of 11.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	177
rank value of 11.7s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178

rank value of 11.9s =	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	179.5
rank value of 12.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	181
rank value of 13.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	182
rank value of 13.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	183
rank value of 13.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	184
rank value of 14.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	185
rank value of 15.8s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186
rank value of 16.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	187
rank value of 16.9s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	188
rank value of 17.3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189
rank value of 18.3s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	190
rank value of 18.6s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	191
rank value of 19.5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	192
rank value of 20.7s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193
rank value of 21.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	194
rank value of 22s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	195
rank value of 23.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	196
rank value of 26.1s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197
rank value of 26.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198
rank value of 30.9s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199
rank value of 36.6s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	200
rank value of 40s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	201
rank value of 40.5s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 43.1s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203
rank value of 45.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204
rank value of 47.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205
rank value of 48s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	206
rank value of 48.8s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	207
rank value of 49.7s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208
rank value of 51.9s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	209
rank value of 52.6s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210
rank value of 54s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	211
rank value of 55s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
rank value of 55.5s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	213
rank value of 72.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	214
rank value of 84.3s =	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215.5
rank value of 90.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217
rank value of 104s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	218
rank value of 110s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	219
rank value of 155s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	220
n =	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**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**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-8**	**MW-9**	**MW-10**	**MW-11**	**MW-13**	**MW-14**	**MW-14D**	**MW-15**	**MW-16**	**MW-16D**	**MW-17**	**MW-18**	**MW-19**	**MW-19D**	**MW-20**	**MW-20D**	**MW-21**	**MW-22**	**MW-23**	**MW-23D**	**MW-24**	**MW-25**
R_i^2/N_i =	115826.8	295030	385227	408747	218712	267289	46010.3	94556.3	46010.3	66564	56961.8	73712.3	209764	96928.4	25561.3	46010.3	35785.8	25561.3	35785.8	49897.3	52116.6	126564	55447	46464.8	48638.9	37584.5	98560.8	15336.8	25561.3	25561.3

$N_{i,bg}$ = 9
N = 220
H = 109.96

Adjust H for ties:

T_i = 2863200 sum of T1..T10

$H' = H/(1-(T_i/(N^3-N)))$
H' = 150.40
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IPG. The value is 42.56 which is less than H' =150.40.
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:

$$\text{Critical Value } (C_x) = P(N(N+1)/12)^{0.5} * (1/N_{i,bg}+1/N_x)^{0.5}$$

P = 2.33 Percentile of Standard Normal Distribution from Table 4 of IPG
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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	181.1	206.9	213.1	155.9	172.3	71.5	102.5	71.5	86.0	79.6	90.5	152.7	103.8	71.5	71.5	71.5	71.5	71.5	84.4	86.3	159.1	89.0	96.4	83.4	86.7	140.4	71.5	71.5	71.5
avg Rbar (background) =	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4	113.4
Dx =	67.6	93.4	99.7	42.4	58.9	-41.9	-10.9	-41.9	-27.4	-33.9	-22.9	39.2	-9.7	-41.9	-41.9	-41.9	-41.9	-41.9	-29.0	-27.2	45.7	-24.4	-17.0	-30.1	-26.7	27.0	-41.9	-41.9	-41.9
Cx =	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	82.7	69.9	74.7	82.7	74.7	74.7	74.7	82.7	74.7	82.7	74.7	82.7	82.7	98.9	82.7	82.7
Statistical Significance ?	-	**Yes**	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSI, is current event above MCL?	-	No	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 Cobalt (Co) averaged over these compliance wells
are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts or Wilcoxon Rank Sum Tests 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 J15-1957-44

Compound:	**Total Cobalt (Co)**
GA MCL (µg/l):	NE
Method:	Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-2A	MDL
2/22/11	**55.5**	**5**
8/22/11	**45.4**	**5**
2/22/12	**30.9**	**5**
8/29/12	**40**	**5**
2/18/13	**49.7**	**5**
8/26/13	**155**	**5**
2/20/14	**36.6**	**5**
8/28/14	**47.4**	**5**
3/20/15	**55**	**5**

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

		X_i values =
	55.5	-5.618655693
	45.4	-1675.735952
	30.9	-18353.3191
	40	-5157.789952
	49.7	-435.1365816
	155	933211.3304
	36.6	-8841.207656
	47.4	-963.7796557
	55	-11.81772977

X_{bar} = 57.277778
SD = 37.543201
N = 9
$1/N\Sigma_i(X_i-X_{bar})^3$ = 99751.881
γ_1 = 2.2493445

Since the Coefficient of Skewness of 2.25 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 =	4.016383	0.000652172
	3.8155121	-0.001487424
	3.4307562	-0.124181693
	3.6888795	-0.01395979
	3.9060049	-1.3241E-05
	5.0434251	1.381585144
	3.6000482	-0.035811197
	3.8586222	-0.000358524
	4.0073332	0.000468563

$X_{bar} =$ 3.9296627
SD = 0.4593728
N = 9
$1/N\Sigma_i(X_i-X_{bar})^3 =$ 0.1340993
$\gamma_1 =$ 1.6506679

Since the Coefficient of Skewness of 1.65 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 J15-1957-44

Compound:	**Total Cobalt (Co)**
NC MCL (µg/l):	NE
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-2A	MDL
02/18/99	NP	NS	NT
08/16/99	NP	NS	NT
02/14/00	NP	NS	NT
08/14/00	NP	NS	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	NT	NT
02/09/04	NP	NT	NT
08/16/04	NP	NT	NT
02/14/05	NP	NT	NT
09/01/05	NP	NT	NT
02/16/06	NP	NT	NT
08/30/06	NP	NT	NT
02/26/07	NP	NT	NT
08/13/07	NP	NT	NT
02/11/08	NP	NT	NT
08/25/08	NP	NT	NT
02/23/09	NP	NT	NT
08/24/09	NP	NT	NT
02/22/10	NP	NT	NT
08/30/10	NP	NT	NT
02/22/11	**9.8**	**55.5**	**5**
08/22/11	ND	**45.4**	**5**
02/22/12	ND	**30.9**	**5**
08/29/12	**11.7**	**40**	**5**
02/18/13	**7**	**49.7**	**5**
08/26/13	**5.8**	**155**	**5**
02/20/14	ND	**36.6**	**5**
08/28/14	ND	**47.4**	**5**
03/20/15	ND	**55**	**5**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-2A.

n =	9
m =	9
N =	18
Ci (MW-2A) =	126.0

# samples =	9	9	
sum of rank values (Ri) =	45.0	126.0	
avg rank value (Rbar) =	5.0	14.0	
			Rank Value
rank value of NDs =	5	0	3
rank value of 5.8s =	1	0	6
rank value of 7s =	1	0	7
rank value of 9.8s =	1	0	8
rank value of 11.7s =	1	0	9
rank value of 30.9s =	0	1	10
rank value of 36.6s =	0	1	11

rank value of 40s =	0	1	12
rank value of 45.4s =	0	1	13
rank value of 47.4s =	0	1	14
rank value of 49.7s =	0	1	15
rank value of 55s =	0	1	16
rank value of 55.5s =	0	1	17
rank value of 155s =	0	1	18
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 11.207$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.569$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.569$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**Total Cobalt (Co)**
GA MCL (µg/l):	NE
Method:	Shewhart-CUSUM Control Chart

Part 1: Check for Normality

	MW-3A	MDL
2/22/11	**110**	**5**
8/22/11	**51.9**	**5**
2/22/12	**54**	**5**
8/29/12	**104**	**5**
2/18/13	**84.3**	**5**
8/26/13	**90.7**	**5**
2/20/14	**48.8**	**5**
8/28/14	**48**	**5**
3/20/15	**84.3**	**5**

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

	X_i values =
110	42467.96159
51.9	-12505.11793
54	-9408.77915
104	24109.73937
84.3	775.8700727
90.7	3788.309776
48.8	-18214.51308
48	-19927.00137
84.3	775.8700727

X_{bar} = 75.111111
SD = 24.686557
N = 9
$1/N\Sigma_i(X_i-X_{bar})^3$ = 1318.0377
γ_1= 0.1045382

Since the Coefficient of Skewness of 0.10 is less than 1.0, the data appear not to be significantly skewed. Proceed with further statistical tests using the real detected values shown above.

	X_i values =
ln = 4.7004804	0.080490802
3.9493188	-0.032582577
3.988984	-0.02188856
4.6443909	0.053020433
4.4343819	0.004546889
4.5075574	0.013625084
3.8877303	-0.055299262
3.871201	-0.062813669
4.4343819	0.004546889

X_{bar} = 4.2687141
SD = 0.3396543
N = 9

$1/N\Sigma_i(X_i-X_{bar})^3 =$ -0.001817

$\gamma_1 =$ 0.0553348

Use the real values (not log-transformed) indicated in the previous section.

Part 2: Shewhart-CUSUM Control Chart

Date	MW-3A	MDL	Data for Testing
2/22/2011	110	5	110
8/22/2011	51.9	5	51.9
2/22/2012	54	5	54
8/29/2012	104	5	104
2/18/2013	84.3	5	84.3
8/26/2013	90.7	5	90.7
2/20/2014	48.8	5	48.8
8/28/2014	48	5	48
3/20/2015	84.3	5	84.3

Compute the mean and standard deviation of the historical data:

73.9625 = x_{mean} (Mean of N1-N8 historical data)

26.13268 = s (Standard Deviation of N1-N8 historical data)

1 = k (constant, reference value)

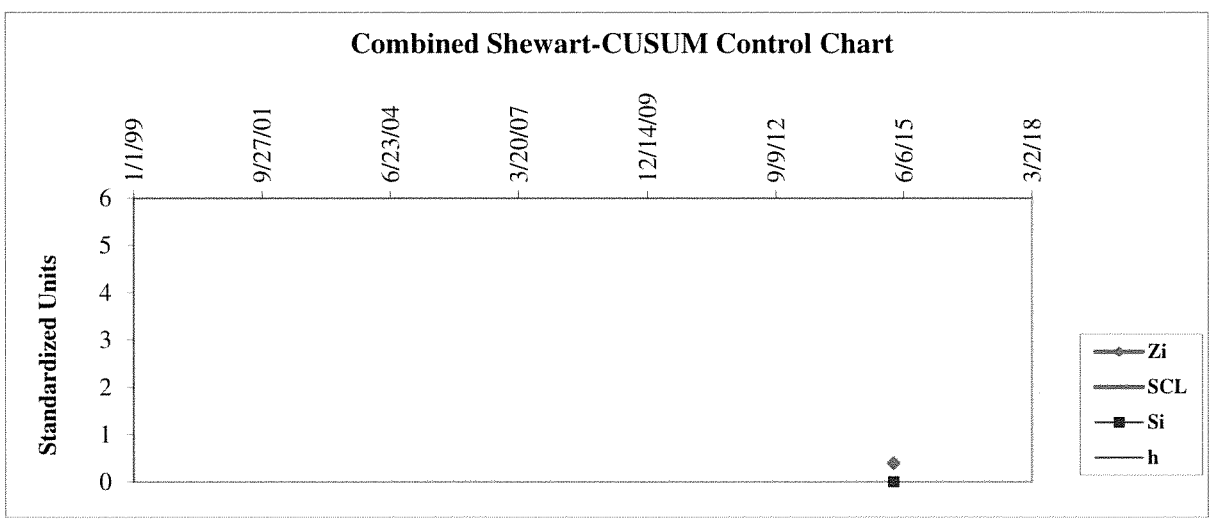
5 = h (constant, upper control limit for the CUSUM scheme)

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		
3/20/2015	84.3	0.39557749	0	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 J15-1957-44

Compound: **Total Copper (Cu)**
NC MCL (µg/l): 1,000
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/09/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
09/01/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/16/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/26/07	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/13/07	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/11/08	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/25/08	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/23/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/24/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/11	ND	ND	ND	**5.1**	ND	**155**	ND	ND	ND	**64.3**	**10.7**	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/22/11	ND	ND	ND	**7.9**	ND	**7.3**	ND	**125**	ND	**7.9**	ND	**7.5**	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/22/12	**8.3**	ND	ND	ND	ND	ND	ND	ND	**5.7**	**6.9**	ND	ND	ND	ND	NP	ND	**6.8**	NP	ND	**5.4**	ND	NP	**7.4**	NP	ND	NP	NP	NP	NP	NP	**5**
08/29/12	**17.3**	ND	**5.6**	**9.2**	ND	**16.2**	ND	**5.6**	ND	ND	**5**	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	**78.5**	NP	ND	NP	NP	NP	NP	NP	**5**
02/18/13	**9**	ND	ND	**12.8**	ND	**7.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.8**	ND	ND	ND	**207**	NP	ND	**12.3**	**5**
08/26/13	**6.3**	ND	ND	ND	ND	**8.4**	ND	ND	ND	ND	ND	ND	ND	**8.1**	ND	ND	ND	ND	ND	**5.6**	ND	ND	ND	**28**	ND	ND	**25.9**	NP	ND	ND	**5**
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10.8**	**8.3**	ND	ND	ND	ND	ND	**5**
08/28/14	**7.6**	ND	**12.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13.1**	ND	ND	ND	ND	ND	ND	**5**
03/20/15	ND	ND	**5.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.8**	**21.2**	ND	ND	**16.9**	ND	ND	ND	**5**
N_i	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	1348.5	801.0	1107.5	1230.5	801.0	1366.0	801.0	1023.0	896.5	1134.5	1005.0	905.0	801.0	909.0	445.0	801.0	721.5	445.0	623.0	807.0	623.0	445.0	1064.5	931.0	732.5	445.0	823.0	267.0	445.0	562.0	
avg rank value (Rbar)	149.8	89.0	123.1	136.7	89.0	151.8	89.0	113.7	99.6	126.1	111.7	100.6	89.0	101.0	89.0	89.0	103.1	89.0	89.0	115.3	89.0	89.0	152.1	186.2	104.6	89.0	164.6	89.0	89.0	112.4	

	Number of each rank value																														Rank Value
rank value of NDs =	4	9	6	5	9	4	9	7	8	6	7	8	9	8	5	9	6	5	7	5	7	5	3	1	6	5	2	3	5	4	89
rank value of 5s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178
rank value of 5.1s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	179
rank value of 5.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	180
rank value of 5.6s =	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	182
rank value of 5.7s =	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	184.5
rank value of 6.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186
rank value of 6.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	187.5
rank value of 6.9s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189
rank value of 7.3s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	190.5
rank value of 7.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	192
rank value of 7.5s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193
rank value of 7.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194
rank value of 7.9s =	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	195.5
rank value of 8.1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197
rank value of 8.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	198.5
rank value of 8.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	200
rank value of 8.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	201
rank value of 9s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 9.2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203
rank value of 10.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204
rank value of 10.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	205
rank value of 12.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	206
rank value of 12.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	207
rank value of 12.8s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208
rank value of 13.1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	209
rank value of 16.2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210
rank value of 16.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	211
rank value of 17.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
rank value of 21.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	213

rank value of 25.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	214
rank value of 28s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	215
rank value of 64.3s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	216
rank value of 78.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	217
rank value of 125s =	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	218
rank value of 155s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	219
rank value of 207s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	220
n =	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{(x=)} (R_x^2)/N_x]\} - 3(N+1)$$

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-8**	**MW-9**	**MW-10**	**MW-11**	**MW-13**	**MW-14**	**MW-14D**	**MW-15**	**MW-16**	**MW-16D**	**MW-17**	**MW-18**	**MW-19**	**MW-19D**	**MW-20**	**MW-20D**	**MW-21**	**MW-22**	**MW-23**	**MW-23D**	**MW-24**	**MW-25**
Rj^2/N_j =	202050.3	71289	136284	168237	71289	207328	71289	116281	89301.4	143010	112225	91002.8	71289	91809	39605	71289	74366	39605	55447	93035.6	55447	39605	161880	173352	76650.9	39605	135466	23763	39605	63168.8

$N_{j\,bg}$ = 9
N = 220
H = 34.14

Adjust H for ties:

T_j = 5545110 sum of T1..T7

$H' = H/(1-(T_j/(N^3-N)))$
H' = 71.24
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IPG. The value is 42.56 which is less than H' =71.24.
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) = $P(N(N+1)/12)^{0.5} * (1/N_{j\,bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution from Table 4 of IPG
N = total sample size
$N_{j\,bg}$ = total samples (N_j) of background data
N_x = total samples (N_j) of well x

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

Well =	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	89.0	123.1	136.7	89.0	151.8	89.0	113.7	99.6	126.1	111.7	100.6	89.0	101.0	89.0	89.0	103.1	89.0	89.0	115.3	89.0	89.0	152.1	186.2	104.6	89.0	164.6	89.0	89.0	112.4
avg Rbar (background) =	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8
Dx =	-60.8	-26.8	-13.1	-60.8	1.9	-60.8	-36.2	-50.2	-23.8	-38.2	-49.3	-60.8	-48.8	-60.8	-60.8	-46.8	-60.8	-60.8	-34.5	-60.8	-60.8	2.2	36.4	-45.2	-60.8	14.8	-60.8	-60.8	-37.4
Cx =	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	82.7	69.9	74.7	82.7	74.7	74.7	74.7	82.7	74.7	82.7	74.7	82.7	82.7	98.9	82.7	82.7
Statistical Significance ?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSL 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 J15-1957-44

Compound: **Total Lead (Pb)**
NC MCL (µg/l): 15
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
08/16/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
02/14/00	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
08/14/00	NP	ND	NS	ND	ND	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
03/19/01	NP	ND	**16**	ND	ND	**38**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
08/27/02	NP	ND	**31**	NT	ND	**47**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
02/24/03	NP	ND	**27**	ND	ND	**41**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
08/11/03	NP	**10**	**28**	**17**	**30**	**30**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/09/04	NP	ND	**9.4**	**7.4**	ND	**18**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/16/04	NP	ND	**11**	**9.4**	ND	**23**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/14/05	NP	ND	ND	ND	ND	**7.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
09/01/05	NP	ND	**14**	**7.4**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/06	NP	**5.2**	**5.7**	ND	**7.6**	**6.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/22/11	ND	ND	ND	ND	ND	**7.2**	ND	ND	ND	**16.2**	**6.3**	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/22/11	ND	ND	ND	ND	ND	ND	ND	**37.2**	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**5**
08/29/12	**9.2**	ND	ND	**5.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	**13.3**	NP	ND	NP	NP	NP	NP	NP	**5**
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.4**	NP	ND	ND	**5**
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.7**	ND	ND	ND	NP	ND	ND	**5**
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
08/28/14	ND	ND	**6.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.3**	ND	ND	ND	ND	ND	ND	**5**
N_i	9	31	27	28	31	27	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	1439.0	4719.5	5296.0	4763.5	4743.0	5336.5	1282.5	1456.0	1282.5	1447.0	1431.5	1282.5	1282.5	1282.5	712.5	1282.5	997.5	712.5	997.5	997.5	997.5	712.5	1159.0	1007.5	997.5	712.5	856.5	427.5	712.5	712.5	
avg rank value (Rbar)	159.9	152.2	196.1	170.1	153.0	197.6	142.5	161.8	142.5	160.8	159.1	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	165.6	201.5	142.5	142.5	171.3	142.5	142.5	142.5	

Number of each rank value

																															Rank Value
rank value of NDs =	8	29	18	23	29	18	9	8	9	8	8	9	9	9	5	9	7	5	7	7	7	5	6	3	7	5	4	3	5	5	142.5
rank value of 5.2s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285
rank value of 5.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	286.5
rank value of 5.7s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	288.5
rank value of 6.1s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290
rank value of 6.3s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	291.5
rank value of 6.5s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	293
rank value of 7.2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	294
rank value of 7.4s =	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	295.5
rank value of 7.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	297
rank value of 7.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	298
rank value of 9.2s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	299
rank value of 9.4s =	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300.5
rank value of 10s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	302
rank value of 11s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	303
rank value of 13.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	304
rank value of 14s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	305
rank value of 16s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	306
rank value of 16.2s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	307
rank value of 17s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308
rank value of 18s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	309
rank value of 23s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	310
rank value of 27s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	311
rank value of 28s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	312
rank value of 30s =	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	313.5
rank value of 31s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	315
rank value of 37.2s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	316
rank value of 38s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	317
rank value of 41s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	318
rank value of 47s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	319

n =	9	31	27	28	31	27	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Ri^2/N_i =	230080.1	718506	1038801	810390	725679	1054749	182756	235548	182756	232645	227688	182756	182756	182756	101531	182756	142144	101531	142144	142144	142144	101531	191897	203011	142144	101531	146718	60918.8	101531	101531

N_{bkg} = 9
N = 319
H = 14.89

Adjust H for ties:

T_i = 2.3E+07 sum of T1..T7

$H' = H/(1-(T_i/(N^3-N)))$
H' = 50.59
Chi-square = 42.56

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 42.56 which is less than H' =50.59.
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) = $P(N(N+1)/12)^{0.5} * (1/N_{bkg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution from Table 4 of IFG
N = total sample size
N_{bkg} = 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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	152.2	196.1	170.1	153.0	197.6	142.5	161.8	142.5	160.8	159.1	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	165.6	201.5	142.5	142.5	171.3	142.5	142.5	142.5
avg Rbar (background) =	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9	159.9
Dx =	-7.6	36.3	10.2	-6.9	37.8	-17.4	1.9	-17.4	0.9	-0.8	-17.4	-17.4	-17.4	-17.4	-17.4	-17.4	-17.4	-17.4	-17.4	-17.4	-17.4	5.7	41.6	-17.4	-17.4	11.4	-17.4	-17.4	-17.4
Cx =	81.4	82.7	82.3	82.7	82.3	101.3	101.3	101.3	101.3	101.3	101.3	101.3	101.3	119.9	101.3	108.3	119.9	108.3	108.3	108.3	119.9	108.3	119.9	108.3	119.9	119.9	143.3	119.9	119.9
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 J15-1957-44

Compound: **Total Mercury (Hg)**
NC MCL (µg/l): 1
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/16/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/14/00	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/14/00	NP	**0.4**	NS	ND	ND	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
03/19/01	NP	ND	**0.2**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/27/02	NP	ND	ND	NT	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/16/04	NP	**1.4**	**3.5**	**0.6**	**0.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
09/01/05	NP	ND	ND	ND	**0.2**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
02/22/11	ND	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.2
08/22/11	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	0.2
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	ND	NP	NP	ND	NP	NP	NP	NP	NP	0.2
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	0.2
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	0.2
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
08/28/14	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 5$
$T_{n1} = 0.5$

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).

$k = 1$
$n = 5$
$T_{n1} = 0.5$
$t[4,.01] = 3.747$

$c = 0.2$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

$T^*_k = 3.4$

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 J15-1957-44

Compound: **Total Nickel (Ni)**
NC MCL (µg/l): 100
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
08/27/02	NP	ND	ND	NT	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
08/11/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
08/16/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
02/14/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
09/01/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
02/16/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
08/30/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
02/26/07	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	50
08/13/07	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/11/08	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/25/08	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/23/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/24/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/11	**7.6**	ND	ND	**39**	**5**	**5.4**	**8**	ND	ND	**97.3**	**8.4**	ND	**15.9**	**7.5**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/22/11	**7.7**	ND	**5.7**	**11.6**	**8.2**	**7.4**	**5.5**	**62.1**	ND	**10.9**	ND	**5.2**	**20.1**	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/12	**9.6**	ND	ND	**11**	**9.2**	ND	ND	ND	ND	**5**	ND	ND	**24.6**	**5.2**	NP	ND	ND	NP	ND	**6.2**	ND	NP	**5.9**	NP	ND	NP	NP	NP	NP	NP	5
08/29/12	**22.3**	ND	**13.3**	**23**	**10.3**	**9.2**	ND	**5.5**	ND	ND	ND	ND	**34.9**	ND	NP	ND	ND	NP	ND	ND	ND	NP	**60.8**	NP	ND	NP	NP	NP	NP	NP	5
02/18/13	**11.3**	ND	ND	**11.9**	ND	**6**	ND	ND	ND	ND	ND	ND	**36.5**	ND	ND	ND	ND	ND	ND	ND	ND	**6.6**	**8.4**	ND	ND	ND	**104**	NP	ND	**18.5**	5
08/26/13	**5.1**	ND	ND	ND	**10.1**	**8.1**	ND	ND	ND	ND	ND	ND	**32.2**	**7.9**	ND	ND	ND	ND	ND	**6.3**	ND	**6.2**	ND	**11.7**	ND	ND	**14.3**	NP	ND	ND	5
02/20/14	**8**	ND	ND	**6.2**	**8.1**	ND	ND	ND	ND	ND	ND	ND	**28.6**	ND	ND	ND	ND	ND	ND	ND	ND	**6.5**	ND	ND	ND	ND	ND	ND	ND	ND	5
08/28/14	**17.3**	ND	**7.4**	**5.6**	ND	**5.5**	ND	ND	ND	ND	ND	ND	**30.2**	ND	ND	ND	ND	ND	ND	ND	ND	**11.2**	ND	**6.9**	ND	ND	ND	ND	ND	ND	5
03/20/15	**13.2**	ND	ND	**15.4**	**13.9**	**5.2**	ND	ND	ND	**6.5**	ND	ND	**13.1**	**9.7**	ND	ND	ND	ND	ND	ND	ND	**13**	ND	**10.7**	ND	ND	**10.2**	ND	ND	**8.8**	5
N_i	9	11	11	11	12	11	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	1753.5	863.5	1186.5	1849.5	1728.0	1533.5	900.0	943.5	706.5	1156.5	818.5	789.0	1983.0	1114.5	392.5	706.5	549.5	392.5	549.5	738.5	549.5	935.5	901.5	741.0	549.5	392.5	799.0	235.5	392.5	644.5	
avg rank value (Rbar)	194.8	78.5	107.9	168.1	144.0	139.4	100.0	104.8	78.5	128.5	90.9	87.7	220.3	123.8	78.5	78.5	78.5	78.5	78.5	105.5	78.5	187.1	128.8	148.2	78.5	78.5	159.8	78.5	78.5	128.9	

	Number of each rank value																													Rank Value
rank value of NDs =	0	11	8	3	5	4	7	7	9	5	8	8	0	5	5	9	7	5	7	5	7	0	4	2	7	5	2	3	5	3	78.5
rank value of 5s =	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
rank value of 5.1s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	159
rank value of 5.2s =	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	161
rank value of 5.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163
rank value of 5.5s =	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165
rank value of 5.6s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167
rank value of 5.7s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	168
rank value of 5.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	169
rank value of 6s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	170
rank value of 6.2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	172
rank value of 6.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	174
rank value of 6.5s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	175.5
rank value of 6.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	177
rank value of 6.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	178
rank value of 7.4s =	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	179.5
rank value of 7.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	181
rank value of 7.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	182
rank value of 7.7s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	183
rank value of 7.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	184
rank value of 8s =	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	185.5
rank value of 8.1s =	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	187.5
rank value of 8.2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189
rank value of 8.4s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	190.5
rank value of 8.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	192
rank value of 9.2s =	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193.5
rank value of 9.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	195
rank value of 9.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196
rank value of 10.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197
rank value of 10.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	198

rank value of 10.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199
rank value of 10.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	200
rank value of 10.9s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	201
rank value of 11s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 11.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	203
rank value of 11.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204
rank value of 11.6s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205
rank value of 11.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	206
rank value of 11.9s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	207
rank value of 13s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	208
rank value of 13.1s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	209
rank value of 13.2s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210
rank value of 13.3s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	211
rank value of 13.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
rank value of 14.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	213
rank value of 15.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	214
rank value of 15.9s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215
rank value of 17.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	216
rank value of 18.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	217
rank value of 20.1s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	218
rank value of 22.3s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	219
rank value of 23s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	220
rank value of 24.6s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	221
rank value of 28.6s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	222
rank value of 30.2s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	223
rank value of 32.2s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	224
rank value of 34.9s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225
rank value of 36.5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	226
rank value of 39s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	227
rank value of 60.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	228
rank value of 62.1s =	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229
rank value of 97.3s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	230
rank value of 104s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	231
n =	**9**	**11**	**11**	**11**	**12**	**11**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**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**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-8**	**MW-9**	**MW-10**	**MW-11**	**MW-13**	**MW-14**	**MW-14D**	**MW-15**	**MW-16**	**MW-16D**	**MW-17**	**MW-18**	**MW-19**	**MW-19D**	**MW-20**	**MW-20D**	**MW-21**	**MW-22**	**MW-22**	**MW-23**	**MW-24**	**MW-25**
R_i^2/N_i =	341640.3	67784.8	127980	310968	248832	213784	90000	98910.3	55460.3	148610	74438	69169	436921	138012	30811.3	55460.3	43135.8	30811.3	43135.8	77911.8	43135.8	175032	116100	109816	43135.8	30811.3	30811.3	127680	30811.3	83076.1

$N_{i,bg}$ = 9
N = 231
H = 86.40

Adjust H for ties:

T_i = 3796374 sum of T1 T11

$H' = H/(1-(T_i/(N^3-N)))$
H' = 124.85
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IFG. The value is 42.56 which is less than H' = 124.85.
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 = 2.33 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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-22	MW-23	MW-24	MW-25
Rbar (well x) =	78.5	107.9	168.1	144.0	139.4	100.0	104.8	78.5	128.5	90.9	87.7	220.3	123.8	78.5	78.5	78.5	78.5	78.5	105.5	78.5	187.1	128.8	148.2	78.5	78.5	78.5	159.8	78.5	128.9
avg Rbar (background) =	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8	194.8
Dx =	-116.3	-87.0	-26.7	-50.8	-55.4	-94.8	-90.0	-116.3	-66.3	-103.9	-107.2	25.5	-71.0	-116.3	-116.3	-116.3	-116.3	-116.3	-89.3	-116.3	-7.7	-66.0	-46.6	-116.3	-116.3	-116.3	-35.0	-116.3	-65.9
Cx =	70.0	70.0	70.0	70.0	70.0	73.4	73.4	73.4	73.4	73.4	73.4	73.4	73.4	86.9	73.4	78.5	86.9	78.5	78.5	78.5	86.9	78.5	86.9	78.5	86.9	86.9	86.9	86.9	86.9

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Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **Total Selenium (Se)**
NC MCL (µg/l): 20
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/00	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/14/00	NP	ND	NS	ND	ND	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
03/19/01	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/11/03	NP	ND	**7.3**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	**6.9**	**13**	**16**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	**5.5**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	**16**	**39**	**24**	**5.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	**10**	**8.9**	**9.5**	**6.9**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
08/13/07	NP	ND	**29.2**	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
02/11/08	NP	ND	**13.5**	**81.7**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
08/25/08	NP	ND	**13.9**	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	10
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	10
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	10
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**67.9**	NP	ND	ND	10
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**15**	ND	**15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**12**	10
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 40$

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).

$k = 1$
$n = 8$
$T_{n1} = 40$
$t[7,.01] = 2.998$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
$c = 0.125$																													
$T_{n2} =$	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

$T^*_k = 12.7$

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 J15-1957-44

Compound: **Total Silver (Ag)**
NC MCL (µg/l): 20
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**50**
08/16/99	NP	ND	NS	ND	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**50**
02/14/00	NP	**4.3**	NS	**4.9**	ND	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**50**
08/14/00	NP	**8.9**	NS	**7.8**	**4**	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**50**
03/19/01	NP	ND	**6.6**	**4.7**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**50**
08/27/02	NP	ND	ND	NT	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**50**
02/24/03	NP	**7.3**	**3.5**	**8.5**	**4.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**50**
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/14/05	NP	ND	**5.8**	**3.6**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**5**
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**5**
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**5**
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**102**	NP	ND	ND	**5**
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_{n1}).

$n = 8$
$T_{n1} = 20$

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).

$k = 1$
$n = 8$
$T_{n1} = 20$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

$T^*_k = 8.1$

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 J15-1957-44

Compound: **Total Thallum (Th)**
NC MCL (µg/l): Not Established
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/09/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
09/01/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/16/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/26/07	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/13/07	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/11/08	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/25/08	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/23/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/24/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	5
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	5
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	5
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	5
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 21.6$

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).

$k = 1$
$n = 8$
$T_{n1} = 21.6$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7

$T^*_k = 8.5$

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 J15-1957-44

Compound: **Total Vanadium (V)**
NC MCL (µg/l): Not Established
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-14A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/09/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
09/01/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/16/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/26/07	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/13/07	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/11/08	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/25/08	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/23/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/24/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/11	**7.8**	ND	ND	ND	**6.1**	ND	ND	ND	**5.6**	**205**	**22.8**	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/22/11	**8.1**	ND	ND	ND	ND	ND	ND	**185**	ND	**23.1**	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/12	**14.1**	ND	ND	ND	ND	ND	ND	ND	**8.8**	**12.5**	**8.6**	ND	**5**	ND	NP	ND	**11**	NP	ND	**9.8**	**6.1**	NP	**7.6**	NP	ND	NP	NP	NP	NP	NP	5
08/29/12	**49**	ND	**8.1**	**5.9**	ND	**14.7**	ND	**9.9**	ND	**10.6**	**10**	ND	ND	ND	NP	ND	**5.5**	NP	ND	ND	ND	NP	**86.2**	NP	ND	NP	NP	NP	NP	NP	5
02/18/13	**20.8**	ND	ND	ND	ND	ND	ND	ND	**5.3**	ND	ND	ND	ND	ND	**6.2**	ND	ND	ND	ND	ND	ND	ND	**10.6**	**5.1**	ND	ND	**393**	NP	ND	**24.5**	5
08/26/13	**6.8**	ND	ND	ND	ND	ND	ND	ND	ND	**6**	ND	ND	**6.6**	**14.8**	ND	ND	ND	ND	ND	**8.8**	ND	ND	**5.8**	**37.2**	ND	ND	ND	NP	ND	ND	5
02/20/14	**7.4**	ND	ND	ND	ND	ND	ND	ND	ND	**6.5**	**7.6**	ND	**6.2**	ND	ND	ND	**12.8**	ND	ND	ND	ND	ND	ND	**15.8**	**16.5**	ND	**5.3**	ND	ND	**9.2**	5
08/28/14	**24.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13.3**	ND	ND	ND	**7.3**	ND	ND	ND	ND	ND	ND	**17.3**	ND	ND	**15.4**	ND	ND	**5.3**	5
03/20/15	**5.8**	**10.1**	**13.4**	**15**	ND	ND	**8.9**	ND	ND	**14.3**	**5.2**	ND	ND	**7.7**	ND	ND	**10.9**	ND	ND	ND	ND	ND	**8.1**	**27.2**	ND	ND	**42.9**	ND	ND	ND	5
N_i	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	1701.5	806.0	917.0	906.0	782.5	817.0	801.0	945.0	964.5	1504.5	1219.5	693.0	1075.5	918.0	476.5	693.0	1070.0	385.0	539.0	755.5	628.5	385.0	1080.5	994.0	668.0	385.0	874.0	231.0	385.0	709.0	
avg rank value (Rbar)	189.1	89.6	101.9	100.7	86.9	90.8	89.0	105.0	107.2	167.2	135.5	77.0	119.5	102.0	95.3	77.0	152.9	77.0	77.0	107.9	89.8	77.0	154.4	198.8	95.4	77.0	174.8	77.0	77.0	141.8	

	Number of each rank value																													Rank Value
rank value of NDs =	0	8	7	7	8	8	8	7	6	2	4	9	5	7	4	9	2	5	7	5	6	5	2	0	6	5	1	3	5	2	77
rank value of 5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	154
rank value of 5.1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	155
rank value of 5.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156
rank value of 5.3s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	158
rank value of 5.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	160
rank value of 5.6s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	161
rank value of 5.8s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	162.5
rank value of 5.9s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164
rank value of 6s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165
rank value of 6.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	166.5
rank value of 6.2s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	168.5
rank value of 6.5s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	170
rank value of 6.6s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	171
rank value of 6.8s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	172
rank value of 7.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	173
rank value of 7.4s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174
rank value of 7.6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	175.5
rank value of 7.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	177
rank value of 7.8s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178
rank value of 8.1s =	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	180
rank value of 8.6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	182
rank value of 8.8s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	183.5
rank value of 8.9s =	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	185
rank value of 9.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	186
rank value of 9.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	187
rank value of 9.9s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	188
rank value of 10s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189
rank value of 10.1s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	190
rank value of 10.6s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	191.5

rank value of 10.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	193
rank value of 11s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	194
rank value of 12.5s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	195
rank value of 12.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	196
rank value of 13.3s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197
rank value of 13.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198
rank value of 14.1s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199
rank value of 14.3s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	200
rank value of 14.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	201
rank value of 14.8s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 15s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203
rank value of 15.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	204
rank value of 15.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	205
rank value of 16.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	206
rank value of 17.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	207
rank value of 20.8s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208
rank value of 22.8s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	209
rank value of 23.1s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210
rank value of 24.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	211
rank value of 24.8s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
rank value of 27.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	213
rank value of 37.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	214
rank value of 42.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	215
rank value of 49s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	216
rank value of 86.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	217
rank value of 185s =	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	218
rank value of 205s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	219
rank value of 393s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	220
n =	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**5**

Compute the Kruskal-Wallis statistic:

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

Well =	**Background**	**MW-1A**	**MW-2A**	**MW-3A**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-8**	**MW-9**	**MW-10**	**MW-11**	**MW-13**	**MW-14**	**MW-14D**	**MW-15**	**MW-16**	**MW-16D**	**MW-17**	**MW-18**	**MW-19**	**MW-19D**	**MW-20**	**MW-20D**	**MW-21**	**MW-22**	**MW-23**	**MW-23D**	**MW-24**	**MW-25**
R_i^2/N_i =	321678.0	72181.8	93432.1	91204	68034	74165.4	71289	99225	103362	251502	165242	53361	128522	93636	45410.5	53361	163557	29645	41503	81540	56430.3	29645	166783	197607	63746.3	29645	152775	17787	29645	100536

$N_{i\,bg}$ = 9
N = 220
H = 64.22

Adjust H for ties:

T_i = 3581508 sum of T1 T9

$H' = H/(1-(T_i/(N^3-N)))$
H' = 96.77
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IPG. The value is 42.56 which is less than H' =96.77.
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 = 2.33 Percentile of Standard Normal Distribution from Table 4 of IPG
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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	89.6	101.9	100.7	86.9	90.8	89.0	105.0	107.2	167.2	135.5	77.0	119.5	102.0	95.3	77.0	152.9	77.0	77.0	107.9	89.8	77.0	154.4	198.8	95.4	77.0	174.8	77.0	77.0	141.8
avg Rbar (background) =	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1	189.1
Dx =	-99.5	-87.2	-88.4	-102.1	-98.3	-100.1	-84.1	-81.9	-21.9	-53.6	-112.1	-69.6	-87.1	-93.8	-112.1	-36.2	-112.1	-112.1	-81.1	-99.3	-112.1	-34.7	9.7	-93.6	-112.1	-14.3	-112.1	-112.1	-47.3
Cx =	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	82.7	69.9	74.7	82.7	74.7	74.7	74.7	82.7	74.7	82.7	74.7	82.7	82.7	98.9	82.7	82.7
Statistical Significance ?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSL 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 J15-1957-44

Compound: **Total Zinc (Zn)**
NC MCL (µg/l): 1000
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/09/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/04	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
09/01/05	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/16/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/06	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/26/07	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/13/07	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/11/08	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/25/08	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/23/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/24/09	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/10	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/11	**26.5**	ND	ND	ND	**30.7**	**90.4**	ND	**19.8**	ND	**162**	**36.7**	**10.3**	ND	**16**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/22/11	ND	ND	ND	**59.2**	ND	**16.9**	ND	**283**	ND	**15.9**	ND	**50.6**	ND	**21**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/22/12	**10.9**	**16.7**	ND	**10.5**	ND	ND	**10.4**	**16.7**	**16.8**	**23.1**	**31.8**	ND	**11**	**143**	NP	ND	**21.4**	NP	**12.4**	**17.2**	**24.3**	NP	**26.9**	NP	**15.3**	NP	NP	NP	NP	NP	**10**
08/29/12	**21**	ND	**28**	**194**	ND	**12.7**	**37.8**	**20.3**	**14.5**	**10.4**	**19.5**	ND	**10.8**	**12.4**	NP	ND	ND	NP	ND	ND	**13.6**	NP	**198**	NP	**11.7**	NP	NP	NP	NP	NP	**10**
02/18/13	**13.6**	**123**	**25.7**	**14.2**	**24**	**11.5**	**19.5**	ND	**20.2**	ND	ND	ND	ND	**13.7**	ND	ND	ND	ND	ND	**12.4**	ND	ND	**24.8**	**21.4**	ND	ND	**195**	NP	ND	**39.2**	**10**
08/26/13	**11**	**14.8**	ND	ND	ND	**29**	**34.3**	**10.8**	**14.1**	**11.6**	**17.1**	ND	**12.8**	**37.6**	ND	ND	ND	ND	ND	**21.8**	**22.1**	**102**	**45**	**129**	**11.4**	**25.5**	ND	NP	**34.7**	**12.1**	**10**
02/20/14	ND	ND	ND	**19.2**	ND	ND	ND	**54**	ND	ND	ND	ND	ND	ND	ND	ND	**14**	ND	ND	ND	**12.5**	ND	ND	**42.2**	**22.2**	**35.2**	ND	ND	**13.8**	ND	**10**
08/28/14	**20.7**	ND	ND	**27.2**	ND	ND	**83**	ND	ND	ND	ND	ND	**12**	ND	ND	ND	**11.8**	ND	ND	**10.4**	ND	ND	ND	**27.7**	ND	ND	ND	ND	ND	ND	**10**
03/20/15	**21.2**	ND	**21.4**	**44.7**	**20.4**	ND	**39.4**	ND	ND	**14.5**	ND	**19.6**	**39.6**	**122**	**105**	ND	**61.5**	ND	ND	ND	**57.3**	**18.8**	**26.7**	**48.1**	ND	**16.7**	**112**	ND	ND	**15**	**10**
N_i	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	1159.5	838.0	866.0	1326.0	858.0	1022.0	1223.0	1177.0	870.0	1080.0	968.0	805.0	914.0	1308.5	432.0	499.5	804.5	277.5	462.0	733.5	928.5	530.5	1070.0	966.0	729.5	629.0	595.5	166.5	493.5	577.0	
avg rank value (Rbar)	128.8	93.1	96.2	147.3	95.3	113.6	135.9	130.8	96.7	120.0	107.6	89.4	101.6	145.4	86.4	55.5	114.9	55.5	66.0	104.8	132.6	106.1	152.9	193.2	104.2	125.8	119.1	55.5	98.7	115.4	

	Number of each rank value																													Rank Value
rank value of NDs =	2	6	6	2	6	4	3	3	5	3	5	6	4	2	4	9	3	5	6	3	2	3	2	0	3	2	3	3	3	2	55.5
rank value of 10.3s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111
rank value of 10.4s =	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	113
rank value of 10.5s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	115
rank value of 10.8s =	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	116.5
rank value of 10.9s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118
rank value of 11s =	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119.5
rank value of 11.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	121
rank value of 11.5s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122
rank value of 11.6s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123
rank value of 11.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	124
rank value of 11.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	125
rank value of 12s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	126
rank value of 12.1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	127
rank value of 12.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	129
rank value of 12.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	131
rank value of 12.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132
rank value of 12.8s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	133
rank value of 13.6s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	134.5
rank value of 13.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	136
rank value of 13.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	137
rank value of 14s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	138
rank value of 14.1s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
rank value of 14.2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140
rank value of 14.5s =	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141.5
rank value of 14.8s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	143
rank value of 15s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	144
rank value of 15.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	145
rank value of 15.9s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	146
rank value of 16s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	147

rank value of 16.7s =	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	149
rank value of 16.8s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151
rank value of 16.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152
rank value of 17.1s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	153
rank value of 17.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	154
rank value of 18.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	155
rank value of 19.2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156
rank value of 19.5s =	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157.5
rank value of 19.6s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	159
rank value of 19.8s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	160
rank value of 20.2s =	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	161
rank value of 20.3s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	162
rank value of 20.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163
rank value of 20.7s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164
rank value of 21s =	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165.5
rank value of 21.2s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167
rank value of 21.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	169
rank value of 21.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	171
rank value of 22.1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	172
rank value of 22.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	173
rank value of 23.1s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174
rank value of 24s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	175
rank value of 24.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	176
rank value of 24.8s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	177
rank value of 25.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	178
rank value of 25.7s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	179
rank value of 26.5s =	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180
rank value of 26.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	181
rank value of 26.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	182
rank value of 27.2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	183
rank value of 27.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	184
rank value of 28s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	185
rank value of 29s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186
rank value of 30.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	187
rank value of 31.8s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	188
rank value of 34.3s =	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189
rank value of 34.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	190
rank value of 35.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	191
rank value of 36.7s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	192
rank value of 37.6s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193
rank value of 37.8s =	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194
rank value of 39.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	195
rank value of 39.4s =	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196
rank value of 39.6s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197
rank value of 42.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	198
rank value of 44.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199
rank value of 45s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	200
rank value of 48.1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	201
rank value of 50.6s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 54s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203
rank value of 57.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	204
rank value of 59.2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205
rank value of 61.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	206
rank value of 83s =	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	207
rank value of 90.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208
rank value of 102s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	209
rank value of 105s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210
rank value of 112s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	211
rank value of 122s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
rank value of 123s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	213
rank value of 129s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	214
rank value of 143s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215
rank value of 162s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	216
rank value of 194s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217
rank value of 195s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	218
rank value of 198s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	219
rank value of 283s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	220
n =	9	9	9	9	9	9	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
R_i^2/N_i =	149382.3	78027.1	83328.4	195364	81796	116054	166192	153925	84100	129600	104114	72002.8	92821.8	190241	37324.8	27722.3	92460	15401.3	30492	76860.3	123159	56286.1	163557	186631	76024.3	79128.2	70924.1	9240.75	48708.5	66585.8

$N_{bg} = 9$
$N = 220$
$H = 42.25$

Adjust H for ties:

$T_i = 1331022$ sum of T1..T11

$H' = H/(1-(T_i/(N^3-N)))$
$H' = 48.29$
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups - 1 = 12df at the 5% significance level from Table 1 of the IFG. The value is 42.56 which is less than H'=48.29
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) = $P(N(N+1)/12)^{0.5} * (1/N_{bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution
from Table 4 of IFG
N = total sample size
N_{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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	93.1	96.2	147.3	95.3	113.6	135.9	130.8	96.7	120.0	107.6	89.4	101.6	145.4	86.4	55.5	114.9	55.5	66.0	104.8	132.6	106.1	152.9	193.2	104.2	125.8	119.1	55.5	98.7	115.4
avg Rbar (background) =	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8	128.8
Dx =	-35.7	-32.6	18.5	-33.5	-15.3	7.1	1.9	-32.2	-8.8	-21.3	-39.4	-27.3	16.6	-42.4	-73.3	-13.9	-73.3	-62.8	-24.0	3.8	-22.7	24.0	64.4	-24.6	-3.0	-9.7	-73.3	-30.1	-13.4
Cx =	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	82.7	69.9	74.7	82.7	74.7	74.7	74.7	82.7	74.7	82.7	74.7	82.7	82.7	98.9	82.7	82.7
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 J15-1957-44

Compound: **Acetone**
NC MCL (µg/l): 6000
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/09/04	NP	ND	**25**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
02/14/05	NP	ND	ND	ND	**53**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**25**
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**25**
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**25**
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**25**
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**25**
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**25**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 100$

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).

$k = 1$
$n = 8$
$T_{n1} = 100$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5

$T^*_k = 24.3$

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 J15-1957-44

Compound: **Benzene**
NC MCL (µg/l): 1
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	**7.2**	**9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/09/04	NP	ND	ND	ND	**14**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/16/04	NP	ND	ND	ND	**13**	**6.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/14/05	NP	ND	ND	ND	**20**	**7.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
09/01/05	NP	ND	ND	ND	**13**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/06	NP	ND	ND	ND	**16**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/26/07	NP	ND	ND	ND	**15**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/13/07	NP	ND	ND	Dry	**17**	**1.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/11/08	NP	ND	ND	ND	**18.5**	**2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/25/08	NP	ND	ND	Dry	**18.9**	**2.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/23/09	NP	ND	ND	ND	**14.3**	**2.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/24/09	NP	ND	ND	ND	**16.3**	**3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/10	NP	ND	ND	**1.5**	**17.6**	**3.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/30/10	NP	ND	**1.3**	**1.3**	**19.9**	**4.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/11	ND	ND	ND	ND	**15.5**	**5.1**	ND	ND	ND	ND	ND	ND	**5.3**	**1.3**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/22/11	ND	ND	ND	ND	**16.9**	**4.2**	ND	ND	ND	ND	ND	ND	**4.4**	**1.2**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/12	ND	ND	ND	ND	**16.9**	**3.9**	ND	ND	ND	ND	ND	ND	**5**	**1.3**	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
08/29/12	ND	ND	ND	ND	**15.6**	**3.3**	ND	ND	ND	ND	ND	ND	**4.4**	**1.1**	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	ND	ND	ND	**17.1**	**4.1**	ND	ND	ND	ND	ND	ND	**3.5**	**1.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**1**
08/26/13	ND	ND	ND	ND	**15.7**	**3.7**	ND	ND	ND	ND	ND	ND	**3.8**	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	**8.6**	**1**
02/20/14	ND	ND	ND	ND	**16.5**	**4.4**	ND	ND	ND	ND	ND	ND	**3.6**	**1.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.7**	**1**
08/28/14	ND	ND	**1.2**	ND	**15.9**	**3.2**	ND	ND	ND	ND	ND	ND	**1.9**	**1.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**	**1**
03/20/15	ND	ND	ND	ND	**13.1**	**1.4**	ND	ND	ND	ND	ND	ND	**1.3**	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
N_j	9	24	24	22	24	24	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_j)	1021.5	2724.0	2965.5	2747.5	6597.5	5403.5	1021.5	1021.5	1021.5	1021.5	1021.5	1021.5	2288.5	2101.5	567.5	1021.5	794.5	567.5	794.5	794.5	794.5	567.5	794.5	567.5	794.5	567.5	567.5	340.5	567.5	991.0	
avg rank value (Rbar)	113.5	113.5	123.6	124.9	274.9	225.1	113.5	113.5	113.5	113.5	113.5	113.5	254.3	233.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	198.2	

Number of each rank value

																														Rank Value
rank value of NDs =	9	24	22	20	1	5	9	9	9	9	9	9	0	0	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	2	113.5
rank value of 1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	228
rank value of 1.1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	230
rank value of 1.2s =	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	232
rank value of 1.3s =	0	0	1	1	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	236.5
rank value of 1.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	240
rank value of 1.5s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	241
rank value of 1.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	242
rank value of 1.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	243
rank value of 1.9s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244
rank value of 2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	245
rank value of 2.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	246
rank value of 2.3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	247
rank value of 3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	248
rank value of 3.2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249
rank value of 3.3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250
rank value of 3.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	251
rank value of 3.5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252
rank value of 3.6s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	253
rank value of 3.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254
rank value of 3.8s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	255
rank value of 3.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	256
rank value of 4.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257
rank value of 4.2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	258
rank value of 4.4s =	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	260
rank value of 4.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	262
rank value of 5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263
rank value of 5.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	264
rank value of 5.3s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	265
rank value of 5.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	266

rank value of 6.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	267
rank value of 7.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	268
rank value of 7.2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	269
rank value of 8.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	270
rank value of 9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	271
rank value of 13s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272.5
rank value of 13.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	274
rank value of 14s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	275
rank value of 14.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276
rank value of 15s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277
rank value of 15.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	278
rank value of 15.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	279
rank value of 15.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	280
rank value of 15.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	281
rank value of 16s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	282
rank value of 16.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283
rank value of 16.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	284
rank value of 16.9s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285.5
rank value of 17s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287
rank value of 17.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	288
rank value of 17.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	289
rank value of 18.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290
rank value of 18.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291
rank value of 19.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	292
rank value of 20s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	293
n =	**9**	**24**	**24**	**22**	**24**	**24**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**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**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-8**	**MW-9**	**MW-10**	**MW-11**	**MW-13**	**MW-14**	**MW-14D**	**MW-15**	**MW-16**	**MW-16D**	**MW-17**	**MW-18**	**MW-19**	**MW-19D**	**MW-20**	**MW-20D**	**MW-21**	**MW-22**	**MW-23**	**MW-23D**	**MW-24**	**MW-25**
R_i^2/N_i =	115940.3	309174	366425	343125	1813625	1216576	115940	115940	115940	115940	115940	115940	581915	490700	64411.3	115940	90175.8	64411.3	90175.8	90175.8	90175.8	64411.3	90175.8	64411.3	90175.8	64411.3	64411.3	38646.8	64411.3	196416

$N_{bg} = 9$
$N = 293$
$H = 131.59$

Adjust H for ties:

$T_1 = 1.2E+07$ sum of T1 T7

$H' = H/(1-(T_1/(N^3-N)))$
$H' = 243.20$
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IFG. The value is 42.56 which is less than H' =243.20.
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) = $P[N(N+1)/12]^{0.5} * (1/N_{bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution from Table 4 of IFG
N = total sample size
N_{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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	113.5	123.6	124.9	274.9	225.1	113.5	113.5	113.5	113.5	113.5	113.5	254.3	233.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	198.2
avg Rbar (background) =	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5	113.5
Dx =	0.0	10.1	11.4	161.4	111.6	0.0	0.0	0.0	0.0	0.0	0.0	140.8	120.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	84.7
Cx =	77.2	77.2	78.1	77.2	78.1	93.1	93.1	93.1	93.1	93.1	93.1	93.1	93.1	110.1	93.1	99.5	110.1	99.5	99.5	99.5	110.1	99.5	110.1	99.5	110.1	110.1	131.6	110.1	110.1
Statistical Significance ?	-	-	-	**Yes**	**Yes**	-	-	-	-	-	-	**Yes**	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSI, is current event above MCL?	-	-	-	**Yes**	**Yes**	-	-	-	-	-	-	**Yes**	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 Benzene averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts or Wilcoxon Rank Sum Tests 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 J15-1957-44

Compound:	**Benzene**
NC MCL (µg/l):	1
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-4	MDL
02/18/99	NP	NT	NT
08/16/99	NP	NT	NT
02/14/00	NP	NT	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**7.2**	**5**
02/09/04	NP	**14**	**5**
08/16/04	NP	**13**	**5**
02/14/05	NP	**20**	**5**
09/01/05	NP	**13**	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	**16**	**5**
02/26/07	NP	**15**	**5**
08/13/07	NP	**17**	**1**
02/11/08	NP	**18.5**	**1**
08/25/08	NP	**18.9**	**1**
02/23/09	NP	**14.3**	**1**
08/24/09	NP	**16.3**	**1**
02/22/10	NP	**17.6**	**1**
08/30/10	NP	**19.9**	**1**
02/22/11	ND	**15.5**	**1**
08/22/11	ND	**16.9**	**1**
02/22/12	ND	**16.9**	**1**
08/29/12	ND	**15.6**	**1**
02/18/13	ND	**17.1**	**1**
08/26/13	ND	**15.7**	**1**
02/20/14	ND	**16.5**	**1**
08/28/14	ND	**15.9**	**1**
03/20/15	ND	**13.1**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	24
m =	9
N =	33
Ci (MW-4) =	511.5

# samples =	9	24
sum of rank values (Ri) =	49.5	511.5
avg rank value (Rbar) =	5.5	21.3

	Number of each rank value		Rank Value
rank value of NDs =	9	1	5.5
rank value of 7.2s =	0	1	11
rank value of 13s =	0	2	12.5
rank value of 13.1s =	0	1	14
rank value of 14s =	0	1	15
rank value of 14.3s =	0	1	16
rank value of 15s =	0	1	17

rank value of 15.5s =	0	1	18
rank value of 15.6s =	0	1	19
rank value of 15.7s =	0	1	20
rank value of 15.9s =	0	1	21
rank value of 16s =	0	1	22
rank value of 16.3s =	0	1	23
rank value of 16.5s =	0	1	24
rank value of 16.9s =	0	2	25.5
rank value of 17s =	0	1	27
rank value of 17.1s =	0	1	28
rank value of 17.6s =	0	1	29
rank value of 18.5s =	0	1	30
rank value of 18.9s =	0	1	31
rank value of 19.9s =	0	1	32
rank value of 20s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 211.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.391$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.223$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.223$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**Benzene**
NC MCL (µg/l):	1
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-5	MDL
02/18/99	NP	NS	NT
08/16/99	NP	NS	NT
02/14/00	NP	NS	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**9**	**5**
02/09/04	NP	ND	**5**
08/16/04	NP	**6.1**	**5**
02/14/05	NP	**7.1**	**5**
09/01/05	NP	ND	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	ND	**5**
02/26/07	NP	ND	**5**
08/13/07	NP	**1.7**	**1**
02/11/08	NP	**2**	**1**
08/25/08	NP	**2.3**	**1**
02/23/09	NP	**2.1**	**1**
08/24/09	NP	**3**	**1**
02/22/10	NP	**3.4**	**1**
08/30/10	NP	**4.8**	**1**
02/22/11	ND	**5.1**	**1**
08/22/11	ND	**4.2**	**1**
02/22/12	ND	**3.9**	**1**
08/29/12	ND	**3.3**	**1**
02/18/13	ND	**4.1**	**1**
08/26/13	ND	**3.7**	**1**
02/20/14	ND	**4.4**	**1**
08/28/14	ND	**3.2**	**1**
03/20/15	ND	**1.4**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-5.

n =	24
m =	9
N =	33
Ci (MW-5) =	493.5

# samples =	9	24
sum of rank values (Ri) =	67.5	493.5
avg rank value (Rbar) =	7.5	20.6

	Number of each rank value		Rank Value
rank value of NDs =	9	5	7.5
rank value of 1.4s =	0	1	15
rank value of 1.7s =	0	1	16
rank value of 2s =	0	1	17
rank value of 2.1s =	0	1	18
rank value of 2.3s =	0	1	19
rank value of 3s =	0	1	20

rank value of 3.2s =	0	1	21
rank value of 3.3s =	0	1	22
rank value of 3.4s =	0	1	23
rank value of 3.7s =	0	1	24
rank value of 3.9s =	0	1	25
rank value of 4.1s =	0	1	26
rank value of 4.2s =	0	1	27
rank value of 4.4s =	0	1	28
rank value of 4.8s =	0	1	29
rank value of 5.1s =	0	1	30
rank value of 6.1s =	0	1	31
rank value of 7.1s =	0	1	32
rank value of 9s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 193.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 23.780$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.575$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.575$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**Benzene**
NC MCL (µg/l):	1
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-13	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**5.3**	**1**
08/22/11	ND	**4.4**	**1**
02/22/12	ND	**5**	**1**
08/29/12	ND	**4.4**	**1**
02/18/13	ND	**3.5**	**1**
08/26/13	ND	**3.8**	**1**
02/20/14	ND	**3.6**	**1**
08/28/14	ND	**1.9**	**1**
03/20/15	ND	**1.3**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-13.

n =	9
m =	9
N =	18
Ci (MW-13) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 1.3s =	0	1	10
rank value of 1.9s =	0	1	11
rank value of 3.5s =	0	1	12
rank value of 3.6s =	0	1	13
rank value of 3.8s =	0	1	14
rank value of 4.4s =	0	2	15.5

rank value of 5s =	0	1	17
rank value of 5.3s =	0	1	18
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.594$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.776$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.776$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**Benzene**
NC MCL (µg/l):	1
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-14	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**1.3**	**1**
08/22/11	ND	**1.2**	**1**
02/22/12	ND	**1.3**	**1**
08/29/12	ND	**1.1**	**1**
02/18/13	ND	**1.2**	**1**
08/26/13	ND	**1**	**1**
02/20/14	ND	**1.3**	**1**
08/28/14	ND	**1.6**	**1**
03/20/15	ND	**1**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-14.

n =	9
m =	9
N =	18
Ci (MW-14) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 1s =	0	2	10.5
rank value of 1.1s =	0	1	12
rank value of 1.2s =	0	2	13.5
rank value of 1.3s =	0	3	16
rank value of 1.6s =	0	1	18
	0	0	0

	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.563$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.787$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.787$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **Carbon Disulfide**
NC MCL (µg/l): 700
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/09/04	NP	**12**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**100**
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**2**
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**2**
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	**3.9**	**2**
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	**5.8**	**2**
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 8$

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).

$k = 1$
$n = 8$
$T_{n1} = 8$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

$T^*_k = 4.8$

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 J15-1957-44

Compound: **Chlorobenzene**
NC MCL (µg/l): 50
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	**2.5**	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	**2.5**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	**3.1**	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	**2.7**	ND	**1**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	**3.4**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	**4.5**	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	**2.5**	ND	**1.2**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	**1.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.6**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	**2.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.7**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	**2.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.5**	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	**2.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.4**	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	**3.1**	ND	ND	ND	ND	ND	**1.1**	ND	ND	ND	ND	ND	**1.5**	ND	ND	ND	ND	ND	ND	ND	**2.3**	ND	ND	ND	ND	ND	NP	ND	ND	1
08/26/13	ND	**3.8**	ND	ND	ND	ND	ND	**1.2**	ND	ND	ND	ND	ND	**1.8**	ND	ND	ND	ND	ND	ND	ND	**2.3**	ND	ND	ND	ND	ND	NP	ND	ND	1
02/20/14	ND	**2.5**	ND	ND	ND	ND	ND	**1.2**	ND	ND	ND	ND	ND	**1.5**	ND	ND	ND	ND	ND	ND	**1.8**	**2**	ND	ND	ND	ND	ND	ND	ND	ND	1
08/28/14	ND	**1.8**	ND	ND	ND	ND	ND	**1.3**	ND	ND	ND	ND	ND	**1.5**	ND	ND	ND	ND	ND	ND	ND	**2.3**	ND	ND	ND	ND	ND	ND	ND	ND	1
03/20/15	ND	ND	ND	ND	ND	ND	ND	**1.1**	ND	ND	ND	ND	ND	**1.3**	ND	ND	ND	ND	ND	ND	ND	**2.1**	ND	ND	ND	ND	ND	ND	ND	ND	1

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	0.5	0.5	0.5	1.1	0.5	0.5	0.5	0.5	0.5	1.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **Chloroethane**
NC MCL (µg/l): 3000
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	**20**	**11**	ND	**52**	**33**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/14/05	NP	ND	ND	ND	**16**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/13/07	NP	**2.3**	**4.8**	Dry	**5.5**	**2.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/11/08	NP	**2.5**	**2.1**	**7.6**	**4.2**	**2.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/25/08	NP	**2.6**	**4.2**	Dry	**6.2**	**2.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/23/09	NP	**1.8**	ND	**7.6**	**2.3**	**2.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/24/09	NP	**2.3**	**4.7**	**6.1**	**2.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/10	NP	**3.5**	**1.3**	**4.8**	**4.8**	**3.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/30/10	NP	**1.9**	**4.7**	**5.6**	**2.9**	**4.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/11	ND	**1.5**	ND	**7.3**	**3.1**	**4**	ND	**1.3**	ND	ND	ND	ND	**1.3**	**1.3**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/22/11	ND	**2.2**	**2.5**	ND	**2.7**	**2.9**	ND	**1.2**	ND	ND	ND	ND	**1.2**	**1.6**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/12	ND	**1.7**	ND	**3.7**	**1.7**	**2.3**	ND	ND	ND	ND	ND	ND	**1.2**	**1.2**	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
08/29/12	ND	ND	ND	**1.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	**2.1**	ND	**2.7**	**1.3**	**2.4**	ND	**1.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.1**	ND	ND	ND	ND	ND	ND	ND	ND	**1**
08/26/13	ND	**2.3**	ND	**5.7**	ND	**2.1**	ND	**1.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.8**	ND	ND	ND	ND	ND	NP	ND	**2.4**	**1**
02/20/14	ND	**1.2**	ND	**1.1**	ND	**1.4**	ND	**1.2**	ND	ND	ND	ND	ND	**1**	ND	ND	ND	ND	ND	ND	ND	**1.7**	**1.6**	ND	ND	ND	ND	ND	ND	ND	**1**
08/28/14	ND	**1.5**	**3.9**	**3**	ND	**1.8**	ND	**1.8**	ND	ND	ND	ND	ND	**1.2**	ND	ND	ND	ND	ND	ND	ND	**2.6**	ND	ND	ND	ND	ND	ND	ND	ND	**1**
03/20/15	ND	ND	**2.1**	**1.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**	ND	ND	ND	ND	ND	ND	ND	ND	**1**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
$c = 0.125$																													
$T_{n2} =$	0.5	2.1	1.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
$T^*_k = 3.4$																													

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 J15-1957-44

Compound: **Chloroform**
NC MCL (µg/l): 70
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NT	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NT	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
$T_{n2} =$	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **1,2-Dichlorobenzene**
NC MCL (µg/l): 20
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	**22**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/11/08	NP	ND	**1.2**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/25/08	NP	ND	**1.9**	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/24/09	NP	ND	**1.6**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/30/10	NP	ND	**2.1**	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/11	ND	ND	ND	**1.1**	ND	ND	ND	**1.4**	ND	ND	ND	**4.2**	ND	**104**	NP	**3.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/22/11	ND	ND	**1.3**	ND	ND	ND	ND	**1.5**	ND	ND	ND	**4**	ND	**97.1**	NP	**2.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/12	ND	ND	ND	ND	ND	ND	ND	**1.6**	ND	ND	ND	**5**	ND	**75.9**	NP	**4**	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
08/29/12	ND	ND	**1.8**	ND	ND	ND	ND	**1.6**	ND	ND	ND	**5.9**	ND	**70.7**	NP	**4.4**	ND	NP	ND	ND	**1.2**	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	ND	ND	ND	ND	ND	ND	**2.2**	ND	ND	ND	**5.9**	ND	**76.7**	**5.9**	**9.2**	ND	ND	ND	ND	**1.1**	**3.2**	ND	ND	ND	ND	ND	NP	ND	ND	**1**
08/26/13	ND	ND	ND	ND	ND	ND	ND	**2.6**	ND	ND	ND	**4.2**	ND	**78.6**	**2.3**	**8.2**	ND	ND	ND	ND	**1.2**	**3.4**	ND	ND	ND	ND	ND	NP	ND	ND	**1**
02/20/14	ND	ND	ND	ND	ND	ND	ND	**2.8**	ND	ND	ND	**3.3**	ND	**70.5**	**1.6**	**7.2**	ND	ND	ND	ND	**3.1**	**3.3**	ND	ND	ND	ND	ND	ND	ND	ND	**1**
08/28/14	ND	ND	**2**	ND	ND	ND	ND	**2.6**	ND	ND	ND	**2.5**	ND	**60.5**	**1.4**	**6.3**	ND	ND	ND	ND	**1.5**	**3.4**	ND	ND	ND	ND	ND	ND	ND	ND	**1**
03/20/15	ND	ND	ND	ND	ND	ND	ND	**1.9**	ND	ND	ND	**1.9**	ND	**58.6**	**1.8**	**5.7**	ND	ND	ND	ND	**1.1**	**3.2**	ND	ND	ND	ND	ND	ND	ND	ND	**1**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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 IPG).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	0.5	0.5	0.5	1.9	0.5	0.5	0.5	1.9	0.5	58.6	1.8	5.7	0.5	0.5	0.5	0.5	1.1	3.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 exceeded in one, or more of the wells, Wilcoxon Rank Sum Tests must be performed to test the possibility that the detected concentrations are statistically significant.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,2-Dichlorobenzene**
NC MCL (µg/l):	20
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-14	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**104**	**1**
08/22/11	ND	**97.1**	**1**
02/22/12	ND	**75.9**	**1**
08/29/12	ND	**70.7**	**1**
02/18/13	ND	**76.7**	**1**
08/26/13	ND	**78.6**	**1**
02/20/14	ND	**70.5**	**1**
08/28/14	ND	**60.5**	**1**
03/20/15	ND	**58.6**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-14.

n =	9
m =	9
N =	18
Ci (MW-14) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 58.6s =	0	1	10
rank value of 60.5s =	0	1	11
rank value of 70.5s =	0	1	12
rank value of 70.7s =	0	1	13
rank value of 75.9s =	0	1	14
rank value of 76.7s =	0	1	15

rank value of 78.6s =	0	1	16
rank value of 97.1s =	0	1	17
rank value of 104s =	0	1	18
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.600$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.773$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.773$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,2-Dichlorobenzene**
NC MCL (µg/l):	20
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-15	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**3.3**	**1**
08/22/11	ND	**2.8**	**1**
02/22/12	ND	**4**	**1**
08/29/12	ND	**4.4**	**1**
02/18/13	ND	**9.2**	**1**
08/26/13	ND	**8.2**	**1**
02/20/14	ND	**7.2**	**1**
08/28/14	ND	**6.3**	**1**
03/20/15	ND	**5.7**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-15.

n =	9		
m =	9		
N =	18		
Ci (MW-15) =	126.0		
# samples =	0	9	9
sum of rank values (Ri) =		45.0	126.0
avg rank value (Rbar) =		5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 2.8s =	0	1	10
rank value of 3.3s =	0	1	11
rank value of 4s =	0	1	12
rank value of 4.4s =	0	1	13
rank value of 5.7s =	0	1	14
rank value of 6.3s =	0	1	15

rank value of 7.2s =	0	1	16
rank value of 8.2s =	0	1	17
rank value of 9.2s =	0	1	18
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.600$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.773$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.773$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **1,4-Dichlorobenzene**
NC MCL (µg/l): 6
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	ND	5.9	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	11	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	ND	14	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	ND	13	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	10	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	ND	12.1	Dry	3.7	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	ND	10.8	1.1	4.5	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	ND	8.6	Dry	5.1	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	ND	6	1.3	5.2	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	ND	10.3	1.1	4.8	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	ND	2.4	ND	5.3	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	ND	12.3	1.3	4.7	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	ND	7	1.2	4.7	1.3	ND	1.7	ND	ND	ND	1.4	5.9	21.4	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	ND	7.3	ND	5.1	1.1	ND	1.6	ND	ND	ND	1.5	5.6	21.7	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	ND	3.1	ND	4.9	ND	ND	1.6	ND	ND	ND	1.6	6	18.7	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	ND	8.6	ND	5.0	ND	ND	1.4	ND	ND	ND	1.8	5.6	17.5	NP	ND	ND	NP	ND	ND	1.3	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	ND	2.2	ND	5.6	1.1	ND	1.9	ND	ND	ND	1.6	5.2	18.1	1.1	1.6	ND	ND	ND	ND	1.1	2.7	ND	ND	ND	ND	ND	NP	ND	ND	1
08/26/13	ND	ND	5.7	ND	6.2	1.1	ND	2.2	ND	ND	ND	1.5	6.4	20.7	ND	1.1	ND	ND	ND	ND	1.2	3	ND	ND	ND	ND	ND	NP	ND	3.9	1
02/20/14	ND	ND	4	ND	6.1	1.4	ND	2.3	ND	ND	ND	1	7.3	18	ND	ND	ND	ND	ND	ND	2.8	2.5	ND	ND	ND	ND	ND	ND	ND	2.8	1
08/28/14	ND	ND	11.5	ND	6.0	ND	ND	2.3	ND	ND	ND	ND	6.6	16	ND	ND	ND	ND	ND	ND	1.8	3	ND	ND	ND	ND	ND	ND	ND	1.4	1
03/20/15	ND	ND	6.4	ND	6.1	ND	ND	2	ND	ND	ND	ND	5.8	15.4	ND	ND	ND	ND	ND	ND	1.3	2.8	ND	ND	ND	ND	ND	ND	ND	1.2	1

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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 IPG).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t\{7,.01\} = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	6.4	0.5	6.1	0.5	0.5	2	0.5	0.5	0.5	0.5	5.8	15.4	0.5	0.5	0.5	0.5	0.5	0.5	1.3	2.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.2

$T^*_k = 3.4$

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 exceeded in one, or more of the wells, Wilcoxon Rank Sum Tests must be performed to test the possibility that the detected concentrations are statistically significant.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,4-Dichlorobenzene**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-2A	MDL
02/18/99	NP	NS	NT
08/16/99	NP	NS	NT
02/14/00	NP	NS	NT
08/14/00	NP	NS	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	ND	**5**
02/09/04	NP	**5.9**	**5**
08/16/04	NP	**11**	**5**
02/14/05	NP	**14**	**5**
09/01/05	NP	**13**	**5**
02/16/06	NP	**10**	**5**
08/30/06	NP	ND	**5**
02/26/07	NP	ND	**5**
08/13/07	NP	**12.1**	**1**
02/11/08	NP	**10.8**	**1**
08/25/08	NP	**8.6**	**1**
02/23/09	NP	**6**	**1**
08/24/09	NP	**10.3**	**1**
02/22/10	NP	**2.4**	**1**
08/30/10	NP	**12.3**	**1**
02/22/11	ND	**7**	**1**
08/22/11	ND	**7.3**	**1**
02/22/12	ND	**3.1**	**1**
08/29/12	ND	**8.6**	**1**
02/18/13	ND	**2.2**	**1**
08/26/13	ND	**5.7**	**1**
02/20/14	ND	**4**	**1**
08/28/14	ND	**11.5**	**1**
03/20/15	ND	**6.4**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-2A.

n =	24
m =	9
N =	33
Ci (MW-2A) =	502.5

# samples =	0	9	24
sum of rank values (Ri) =		58.5	502.5
avg rank value (Rbar) =		6.5	20.9

	Number of each rank value		Rank Value
rank value of NDs =	9	3	6.5
rank value of 2.2s =	0	1	13
rank value of 2.4s =	0	1	14
rank value of 3.1s =	0	1	15
rank value of 4s =	0	1	16
rank value of 5.7s =	0	1	17
rank value of 5.9s =	0	1	18

rank value of 6s =	0	1	19
rank value of 6.4s =	0	1	20
rank value of 7s =	0	1	21
rank value of 7.3s =	0	1	22
rank value of 8.6s =	0	2	23.5
rank value of 10s =	0	1	25
rank value of 10.3s =	0	1	26
rank value of 10.8s =	0	1	27
rank value of 11s =	0	1	28
rank value of 11.5s =	0	1	29
rank value of 12.1s =	0	1	30
rank value of 12.3s =	0	1	31
rank value of 13s =	0	1	32
rank value of 14s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 202.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.138$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.894$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.894$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,4-Dichlorobenzene**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-4	MDL
02/18/99	NP	NT	NT
08/16/99	NP	NT	NT
02/14/00	NP	NT	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	ND	**5**
02/09/04	NP	ND	**5**
08/16/04	NP	ND	**5**
02/14/05	NP	ND	**5**
09/01/05	NP	ND	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	ND	**5**
02/26/07	NP	ND	**5**
08/13/07	NP	**3.7**	**1**
02/11/08	NP	**4.5**	**1**
08/25/08	NP	**5.1**	**1**
02/23/09	NP	**5.2**	**1**
08/24/09	NP	**4.8**	**1**
02/22/10	NP	**5.3**	**1**
08/30/10	NP	**4.7**	**1**
02/22/11	ND	**4.7**	**1**
08/22/11	ND	**5.1**	**1**
02/22/12	ND	**4.9**	**1**
08/29/12	ND	**5**	**1**
02/18/13	ND	**5.6**	**1**
08/26/13	ND	**6.2**	**1**
02/20/14	ND	**6.1**	**1**
08/28/14	ND	**6**	**1**
03/20/15	ND	**6.1**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	24
m =	9
N =	33
Ci (MW-4) =	480.0

# samples =	0	9	24
sum of rank values (Ri) =		81.0	480.0
avg rank value (Rbar) =		9.0	20.0

	Number of each rank value		Rank Value
rank value of NDs =	9	8	9
rank value of 3.7s =	0	1	18
rank value of 4.5s =	0	1	19
rank value of 4.7s =	0	2	20.5
rank value of 4.8s =	0	1	22
rank value of 4.9s =	0	1	23
rank value of 5s =	0	1	24

rank value of 5.1s =	0	2	25.5
rank value of 5.2s =	0	1	27
rank value of 5.3s =	0	1	28
rank value of 5.6s =	0	1	29
rank value of 6s =	0	1	30
rank value of 6.1s =	0	2	31.5
rank value of 6.2s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 180$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 22.983$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.111$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.111$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,4-Dichlorobenzene**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-13	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**5.9**	**1**
08/22/11	ND	**5.6**	**1**
02/22/12	ND	**6**	**1**
08/29/12	ND	**5.6**	**1**
02/18/13	ND	**5.2**	**1**
08/26/13	ND	**6.4**	**1**
02/20/14	ND	**7.3**	**1**
08/28/14	ND	**6.6**	**1**
03/20/15	ND	**5.8**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-13.

n =	9		
m =	9		
N =	18		
Ci (MW-13) =	126.0		
# samples =	0	9	9
sum of rank values (Ri) =		45.0	126.0
avg rank value (Rbar) =		5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 5.2s =	0	1	10
rank value of 5.6s =	0	2	11.5
rank value of 5.8s =	0	1	13
rank value of 5.9s =	0	1	14
rank value of 6s =	0	1	15
rank value of 6.4s =	0	1	16

rank value of 6.6s =	0	1	17
rank value of 7.3s =	0	1	18
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.594$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.776$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.776$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,4-Dichlorobenzene**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-14	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**21.4**	**1**
08/22/11	ND	**21.7**	**1**
02/22/12	ND	**18.7**	**1**
08/29/12	ND	**17.5**	**1**
02/18/13	ND	**18.1**	**1**
08/26/13	ND	**20.7**	**1**
02/20/14	ND	**18**	**1**
08/28/14	ND	**16**	**1**
03/20/15	ND	**15.4**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-14.

n =	9		
m =	9		
N =	18		
Ci (MW-14) =	126.0		
# samples =	0	9	9
sum of rank values (Ri) =		45.0	126.0
avg rank value (Rbar) =		5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 15.4s =	0	1	10
rank value of 16s =	0	1	11
rank value of 17.5s =	0	1	12
rank value of 18s =	0	1	13
rank value of 18.1s =	0	1	14
rank value of 18.7s =	0	1	15

rank value of 20.7s =	0	1	16
rank value of 21.4s =	0	1	17
rank value of 21.7s =	0	1	18
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.600$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.773$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.773$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **1,1-Dichloroethane**
NC MCL (µg/l): 6
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	**8.8**	**5.2**	**10**	**22**	**23**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	**6.2**	ND	**8.2**	**40**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	ND	**12**	**38**	**12**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	**5.5**	ND	**11**	**70**	**15**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	**6.3**	ND	**8.6**	**42**	**10**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	**13**	ND	**7.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	**7.6**	**23**	**42**	**5.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	**17**	**36**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	**1.8**	**4.4**	Dry	**40.3**	**4.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	**1.5**	**1.5**	**15.4**	**39**	**4.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	**1.4**	**2.6**	Dry	**39.3**	**5.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	**1.1**	**1**	**14.4**	**29.9**	**5.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	**1.5**	**2.4**	**19.3**	**30.5**	**7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	**1.6**	ND	**15.5**	**34.5**	**10.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	**1.6**	**2.5**	**27.8**	**32.1**	**11.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	**1.2**	**1.4**	**17.5**	**31.9**	**12.9**	ND	**4.4**	ND	ND	**3.1**	**7.5**	**4.8**	**1.5**	NP	**1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	**1.4**	**1.7**	**14.7**	**33.2**	**9.6**	ND	**4.6**	ND	**1.5**	**2.8**	**9.6**	**4.3**	**1.3**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	**1.2**	ND	**8.4**	**30.1**	**8.1**	ND	**3**	ND	ND	**2.1**	**8.5**	**4.7**	ND	NP	ND	**1.8**	NP	ND	ND	**3.4**	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	**1.3**	**1.50**	**15.2**	**26.5**	**7.4**	ND	**2.6**	ND	ND	**1.8**	**6.8**	**3.3**	ND	NP	ND	**1.6**	NP	ND	ND	**4.5**	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	**1.4**	ND	**7**	**27.5**	**7.9**	ND	**2.9**	ND	ND	**1.8**	**5.7**	**2.7**	ND	ND	ND	ND	**1.1**	ND	ND	**3.6**	**3.4**	ND	ND	ND	ND	ND	NP	ND	**3.1**	1
08/26/13	ND	**1.3**	ND	**7.9**	**20.8**	**7.8**	ND	**2.6**	ND	ND	**1.5**	**6.6**	**2.1**	ND	ND	ND	ND	**1.1**	ND	ND	**2.8**	**2.7**	ND	ND	ND	ND	ND	NP	ND	**16.3**	1
02/20/14	ND	**1.2**	ND	**3.2**	**21.2**	**6.8**	ND	**2.3**	ND	ND	**1.1**	**5.2**	**1.7**	ND	ND	ND	ND	**1.2**	ND	ND	**3.4**	**2.3**	ND	**1.1**	ND	ND	ND	ND	ND	**8.7**	1
08/28/14	ND	ND	**1.40**	**9.7**	**21.8**	**8.1**	ND	**3**	ND	**1.1**	**1.6**	**6**	**1.8**	ND	ND	ND	ND	**1.4**	ND	ND	**3.9**	**2.9**	ND	**1.2**	ND	ND	ND	ND	ND	**14.7**	1
03/20/15	ND	ND	ND	**3.2**	**14.1**	**4.3**	ND	**2.4**	ND	ND	**1.6**	**5**	**1.4**	ND	ND	ND	ND	**1.2**	ND	ND	**3**	**2.4**	ND	**1**	ND	ND	ND	ND	ND	**10.9**	1
N_j	9	24	24	22	24	24	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_j)	580.5	3399.0	2878.0	5483.0	6522.5	5287.5	580.5	1703.5	580.5	743.0	1511.0	2033.5	1668.0	753.5	322.5	646.0	655.5	700.0	451.5	451.5	1386.5	925.5	451.5	534.0	451.5	322.5	322.5	193.5	322.5	1210.0	
avg rank value (Rbar)	64.5	141.6	119.9	249.2	271.8	220.3	64.5	189.3	64.5	82.6	167.9	225.9	185.3	83.7	64.5	71.8	93.6	140.0	64.5	64.5	198.1	185.1	64.5	106.8	64.5	64.5	64.5	64.5	64.5	242.0	

Number of each rank value

																														Rank Value
rank value of NDs =	9	6	12	0	1	2	9	0	9	7	0	0	0	7	5	8	5	0	7	7	0	0	7	2	7	5	5	3	5	0	64.5
rank value of 1s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	130
rank value of 1.1s =	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	134.5
rank value of 1.2s =	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	140.5
rank value of 1.3s =	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	145
rank value of 1.4s =	0	3	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	150
rank value of 1.5s =	0	2	2	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157
rank value of 1.6s =	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	163
rank value of 1.7s =	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	166.5
rank value of 1.8s =	0	1	0	0	0	0	0	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	170
rank value of 2.1s =	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173.5
rank value of 2.3s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	175.5
rank value of 2.4s =	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	178
rank value of 2.5s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180
rank value of 2.6s =	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	182
rank value of 2.7s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	184.5
rank value of 2.8s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	186.5
rank value of 2.9s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	188.5
rank value of 3s =	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	191
rank value of 3.1s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	193.5
rank value of 3.2s =	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	195.5
rank value of 3.3s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197
rank value of 3.4s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	199
rank value of 3.6s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	201
rank value of 3.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	202
rank value of 4.3s =	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204
rank value of 4.4s =	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	206.5
rank value of 4.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	208
rank value of 4.6s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	209
rank value of 4.7s =	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210.5

rank value of 4.8s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
rank value of 5s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	213
rank value of 5.2s =	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215
rank value of 5.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217
rank value of 5.5s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	218
rank value of 5.7s =	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	219.5
rank value of 6s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	221
rank value of 6.2s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	222
rank value of 6.3s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	223
rank value of 6.6s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	224
rank value of 6.8s =	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225.5
rank value of 7s =	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	227.5
rank value of 7.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229
rank value of 7.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	230
rank value of 7.5s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	231
rank value of 7.6s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	232
rank value of 7.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233
rank value of 7.9s =	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	234.5
rank value of 8.1s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	236.5
rank value of 8.2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	238
rank value of 8.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	239
rank value of 8.5s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	240
rank value of 8.6s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	241
rank value of 8.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	242
rank value of 8.8s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	243
rank value of 9.6s =	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244.5
rank value of 9.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	246
rank value of 10s =	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	247.5
rank value of 10.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249
rank value of 10.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	250
rank value of 11s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	251
rank value of 11.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252
rank value of 12s =	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	253.5
rank value of 12.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	255
rank value of 13s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	256
rank value of 14.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257
rank value of 14.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	258
rank value of 14.7s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	259.5
rank value of 15s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261
rank value of 15.2s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	262
rank value of 15.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263
rank value of 15.5s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	264
rank value of 16.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	265
rank value of 17s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	266
rank value of 17.5s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	267
rank value of 19.3s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	268
rank value of 20.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	269
rank value of 21.2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	270
rank value of 21.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	271
rank value of 22.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272
rank value of 23.8s =	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	273.5
rank value of 26.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	275
rank value of 27.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276
rank value of 27.8s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277
rank value of 29.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	278
rank value of 30.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	279
rank value of 30.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	280
rank value of 31.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	281
rank value of 32.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	282
rank value of 33.2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283
rank value of 34.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	284
rank value of 36s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285
rank value of 38s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	286
rank value of 39s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287
rank value of 39.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	288
rank value of 40s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	289
rank value of 40.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290
rank value of 42s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291.5
rank value of 70s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	293
n =	**9**	**24**	**24**	**22**	**24**	**24**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
R_i^2/N_i =	37442.3	481383	345120	1366513	1772625	1164902	37442.3	322435	37442.3	61338.8	253680	459458	309136	63084.7	20801.3	46368.4	61382.9	98000	29121.8	29121.8	274626	171310	29121.8	57031.2	29121.8	20801.3	20801.3	12480.8	20801.3	292820

N_{bkg} = 9
N = 293
H = 222.09

Adjust H for ties:

T_i = 2098674 sum of T1..T36

$H' = H/(1-(T_i/(N^3-N)))$
H' = 242.31
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IFG. The value is 42.56 which is less than H' =242.31.
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) = $P(N(N+1)/12)^{0.5} * (1/N_{bkg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution from Table 4 of IFG
N = 37442.3
N_{bkg} = 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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	141.6	119.9	249.2	271.8	220.3	64.5	189.3	64.5	82.6	167.9	225.9	185.3	83.7	64.5	71.8	93.6	140.0	64.5	64.5	198.1	185.1	64.5	106.8	64.5	64.5	64.5	64.5	64.5	242.0
avg Rbar (background) =	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5
Dx =	77.1	55.4	184.7	207.3	155.8	0.0	124.8	0.0	18.1	103.4	161.4	120.8	19.2	0.0	7.3	29.1	75.5	0.0	0.0	133.6	120.6	0.0	42.3	0.0	0.0	0.0	0.0	0.0	177.5
Cx =	77.2	77.2	78.1	77.2	78.1	93.1	93.1	93.1	93.1	93.1	93.1	93.1	93.1	110.1	93.1	99.5	110.1	99.5	99.5	99.5	110.1	99.5	110.1	99.5	110.1	110.1	131.6	110.1	110.1
Statistical Significance ?	-	-	**Yes**	**Yes**	**Yes**	-	**Yes**	-	-	**Yes**	**Yes**	**Yes**	-	-	-	-	-	-	-	**Yes**	**Yes**	-	-	-	-	-	-	-	**Yes**
If SSL is current event above MCL?	-	-	No	**Yes**	No	-	No	-	-	No	No	No	-	-	-	-	-	-	-	No	No	-	-	-	-	-	-	-	**Yes**

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 1,1-Dichloroethane averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts or Wilcoxon Rank Sum Tests 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 J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-3A	MDL
02/18/99	NP	NT	NT
08/16/99	NP	NT	NT
02/14/00	NP	NT	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**10**	**5**
02/09/04	NP	**8.2**	**5**
08/16/04	NP	**12**	**5**
02/14/05	NP	**11**	**5**
09/01/05	NP	**8.6**	**5**
02/16/06	NP	**13**	**5**
08/30/06	NP	**23**	**5**
02/26/07	NP	**17**	**5**
08/13/07	NP	Dry	**1**
02/11/08	NP	**15.4**	**1**
08/25/08	NP	Dry	**1**
02/23/09	NP	**14.4**	**1**
08/24/09	NP	**19.3**	**1**
02/22/10	NP	**15.5**	**1**
08/30/10	NP	**27.8**	**1**
02/22/11	ND	**17.5**	**1**
08/22/11	ND	**14.7**	**1**
02/22/12	ND	**8.4**	**1**
08/29/12	ND	**15.2**	**1**
02/18/13	ND	**7**	**1**
08/26/13	ND	**7.9**	**1**
02/20/14	ND	**3.2**	**1**
08/28/14	ND	**9.7**	**1**
03/20/15	ND	**3.2**	**1**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-3A.

n =	22
m =	9
N =	31
Ci (MW-3A) =	451.0

# samples =	9	22
sum of rank values (Ri) =	45.0	451.0
avg rank value (Rbar) =	5.0	20.5

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 3.2s =	0	2	10.5
rank value of 7s =	0	1	12
rank value of 7.9s =	0	1	13
rank value of 8.2s =	0	1	14
rank value of 8.4s =	0	1	15
rank value of 8.6s =	0	1	16

rank value of 9.7s =	0	1	17
rank value of 10s =	0	1	18
rank value of 11s =	0	1	19
rank value of 12s =	0	1	20
rank value of 13s =	0	1	21
rank value of 14.4s =	0	1	22
rank value of 14.7s =	0	1	23
rank value of 15.2s =	0	1	24
rank value of 15.4s =	0	1	25
rank value of 15.5s =	0	1	26
rank value of 17s =	0	1	27
rank value of 17.5s =	0	1	28
rank value of 19.3s =	0	1	29
rank value of 23s =	0	1	30
rank value of 27.8s =	0	1	31
# samples =	**9**	**22**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 198$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 99$

Adjustment for tie values:

$SD(W) = 22.696$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.340$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.340$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-4	MDL
02/18/99	NP	NT	NT
08/16/99	NP	NT	NT
02/14/00	NP	NT	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**22**	**5**
02/09/04	NP	**40**	**5**
08/16/04	NP	**38**	**5**
02/14/05	NP	**70**	**5**
09/01/05	NP	**42**	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	**42**	**5**
02/26/07	NP	**36**	**5**
08/13/07	NP	**40.3**	**1**
02/11/08	NP	**39**	**1**
08/25/08	NP	**39.3**	**1**
02/23/09	NP	**29.9**	**1**
08/24/09	NP	**30.5**	**1**
02/22/10	NP	**34.5**	**1**
08/30/10	NP	**32.1**	**1**
02/22/11	ND	**31.9**	**1**
08/22/11	ND	**33.2**	**1**
02/22/12	ND	**30.1**	**1**
08/29/12	ND	**26.5**	**1**
02/18/13	ND	**27.5**	**1**
08/26/13	ND	**20.8**	**1**
02/20/14	ND	**21.2**	**1**
08/28/14	ND	**21.8**	**1**
03/20/15	ND	**14.1**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	24
m =	9
N =	33
Ci (MW-4) =	511.5

# samples =	9	24
sum of rank values (Ri) =	49.5	511.5
avg rank value (Rbar) =	5.5	21.3

	Number of each rank value		Rank Value
rank value of NDs =	9	1	5.5
rank value of 14.1s =	0	1	11
rank value of 20.8s =	0	1	12
rank value of 21.2s =	0	1	13
rank value of 21.8s =	0	1	14
rank value of 22s =	0	1	15
rank value of 26.5s =	0	1	16

rank value of 27.5s =	0	1	17
rank value of 29.9s =	0	1	18
rank value of 30.1s =	0	1	19
rank value of 30.5s =	0	1	20
rank value of 31.9s =	0	1	21
rank value of 32.1s =	0	1	22
rank value of 33.2s =	0	1	23
rank value of 34.5s =	0	1	24
rank value of 36s =	0	1	25
rank value of 38s =	0	1	26
rank value of 39s =	0	1	27
rank value of 39.3s =	0	1	28
rank value of 40s =	0	1	29
rank value of 40.3s =	0	1	30
rank value of 42s =	0	2	31.5
rank value of 70s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 211.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.393$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.223$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.223$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-5	MDL
02/18/99	NP	NS	NT
08/16/99	NP	NS	NT
02/14/00	NP	NS	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**23**	**5**
02/09/04	NP	ND	**5**
08/16/04	NP	**12**	**5**
02/14/05	NP	**15**	**5**
09/01/05	NP	**10**	**5**
02/16/06	NP	**7.1**	**5**
08/30/06	NP	**5.7**	**5**
02/26/07	NP	ND	**5**
08/13/07	NP	**4.3**	**1**
02/11/08	NP	**4.7**	**1**
08/25/08	NP	**5.4**	**1**
02/23/09	NP	**5.2**	**1**
08/24/09	NP	**7**	**1**
02/22/10	NP	**10.1**	**1**
08/30/10	NP	**11.7**	**1**
02/22/11	ND	**12.9**	**1**
08/22/11	ND	**9.6**	**1**
02/22/12	ND	**8.1**	**1**
08/29/12	ND	**7.4**	**1**
02/18/13	ND	**7.9**	**1**
08/26/13	ND	**7.8**	**1**
02/20/14	ND	**6.8**	**1**
08/28/14	ND	**8.1**	**1**
03/20/15	ND	**4.3**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-5.

n =	24
m =	9
N =	33
Ci (MW-5) =	507.0

# samples =	9	24
sum of rank values (Ri) =	54.0	507.0
avg rank value (Rbar) =	6.0	21.1

	Number of each rank value		Rank Value
rank value of NDs =	9	2	6
rank value of 4.3s =	0	2	12.5
rank value of 4.7s =	0	1	14
rank value of 5.2s =	0	1	15
rank value of 5.4s =	0	1	16
rank value of 5.7s =	0	1	17
rank value of 6.8s =	0	1	18

rank value of 7s =	0	1	19
rank value of 7.1s =	0	1	20
rank value of 7.4s =	0	1	21
rank value of 7.8s =	0	1	22
rank value of 7.9s =	0	1	23
rank value of 8.1s =	0	2	24.5
rank value of 9.6s =	0	1	26
rank value of 10s =	0	1	27
rank value of 10.1s =	0	1	28
rank value of 11.7s =	0	1	29
rank value of 12s =	0	1	30
rank value of 12.9s =	0	1	31
rank value of 15s =	0	1	32
rank value of 23s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 207$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.275$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.058$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.058$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-7	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**4.4**	**1**
08/22/11	ND	**4.6**	**1**
02/22/12	ND	**3**	**1**
08/29/12	ND	**2.6**	**1**
02/18/13	ND	**2.9**	**1**
08/26/13	ND	**2.6**	**1**
02/20/14	ND	**2.3**	**1**
08/28/14	ND	**3**	**1**
03/20/15	ND	**2.4**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-7.

n =	9
m =	9
N =	18
Ci (MW-7) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 2.3s =	0	1	10
rank value of 2.4s =	0	1	11
rank value of 2.6s =	0	2	12.5
rank value of 2.9s =	0	1	14
rank value of 3s =	0	2	15.5
rank value of 4.4s =	0	1	17

rank value of 4.6s =	0	1	18
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.588$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.778$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.778$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-10	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**3.1**	**1**
08/22/11	ND	**2.8**	**1**
02/22/12	ND	**2.1**	**1**
08/29/12	ND	**1.8**	**1**
02/18/13	ND	**1.8**	**1**
08/26/13	ND	**1.5**	**1**
02/20/14	ND	**1.1**	**1**
08/28/14	ND	**1.6**	**1**
03/20/15	ND	**1.6**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-10.

n =	9
m =	9
N =	18
Ci (MW-10) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 1.1s =	0	1	10
rank value of 1.5s =	0	1	11
rank value of 1.6s =	0	2	12.5
rank value of 1.8s =	0	2	14.5
rank value of 2.1s =	0	1	16
rank value of 2.8s =	0	1	17

rank value of 3.1s =	0	1	18
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.588$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.778$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.778$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-11	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**7.5**	**1**
08/22/11	ND	**9.6**	**1**
02/22/12	ND	**8.5**	**1**
08/29/12	ND	**6.8**	**1**
02/18/13	ND	**5.7**	**1**
08/26/13	ND	**6.6**	**1**
02/20/14	ND	**5.2**	**1**
08/28/14	ND	**6**	**1**
03/20/15	ND	**5**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-11.

n =	9
m =	9
N =	18
Ci (MW-11) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 5s =	0	1	10
rank value of 5.2s =	0	1	11
rank value of 5.7s =	0	1	12
rank value of 6s =	0	1	13
rank value of 6.6s =	0	1	14
rank value of 6.8s =	0	1	15

rank value of 7.5s =	0	1	16
rank value of 8.5s =	0	1	17
rank value of 9.6s =	0	1	18
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.600$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.773$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.773$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-13	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**4.8**	**1**
08/22/11	ND	**4.3**	**1**
02/22/12	ND	**4.7**	**1**
08/29/12	ND	**3.3**	**1**
02/18/13	ND	**2.7**	**1**
08/26/13	ND	**2.1**	**1**
02/20/14	ND	**1.7**	**1**
08/28/14	ND	**1.8**	**1**
03/20/15	ND	**1.4**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-13.

n =	9
m =	9
N =	18
Ci (MW-13) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 1.4s =	0	1	10
rank value of 1.7s =	0	1	11
rank value of 1.8s =	0	1	12
rank value of 2.1s =	0	1	13
rank value of 2.7s =	0	1	14
rank value of 3.3s =	0	1	15

rank value of 4.3s =	0	1	16
rank value of 4.7s =	0	1	17
rank value of 4.8s =	0	1	18
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.600$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.773$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.773$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-19	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	NP	**1**
08/22/11	ND	NP	**1**
02/22/12	ND	**3.4**	**1**
08/29/12	ND	**4.5**	**1**
02/18/13	ND	**3.6**	**1**
08/26/13	ND	**2.8**	**1**
02/20/14	ND	**3.4**	**1**
08/28/14	ND	**3.9**	**1**
03/20/15	ND	**3**	**1**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-19.

n =	7
m =	9
N =	16
Ci (MW-19) =	91.0

# samples =	9	7
sum of rank values (Ri) =	45.0	91.0
avg rank value (Rbar) =	5.0	13.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 2.8s =	0	1	10
rank value of 3s =	0	1	11
rank value of 3.4s =	0	2	12.5
rank value of 3.6s =	0	1	14
rank value of 3.9s =	0	1	15
rank value of 4.5s =	0	1	16

	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**7**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 63$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 31.5$

Adjustment for tie values:

$SD(W) = 8.566$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.619$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.619$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-19D	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	NP	**1**
08/22/11	ND	NP	**1**
02/22/12	ND	NP	**1**
08/29/12	ND	NP	**1**
02/18/13	ND	**3.4**	**1**
08/26/13	ND	**2.7**	**1**
02/20/14	ND	**2.3**	**1**
08/28/14	ND	**2.9**	**1**
03/20/15	ND	**2.4**	**1**

1) Rank the N = 14 observations from the smallest to the largest from background wells and compliance well MW-19D.

n =	5
m =	9
N =	14
Ci (MW-19D) =	60.0

# samples =	9	5
sum of rank values (Ri) =	45.0	60.0
avg rank value (Rbar) =	5.0	12.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 2.3s =	0	1	10
rank value of 2.4s =	0	1	11
rank value of 2.7s =	0	1	12
rank value of 2.9s =	0	1	13
rank value of 3.4s =	0	1	14
	0	0	0

	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**5**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 45$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 22.5$

Adjustment for tie values:

$SD(W) = 6.435$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.419$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.419$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**1,1-Dichloroethane**
NC MCL (µg/l):	6
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-25	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	NP	**1**
08/22/11	ND	NP	**1**
02/22/12	ND	NP	**1**
08/29/12	ND	NP	**1**
02/18/13	ND	**3.1**	**1**
08/26/13	ND	**16.3**	**1**
02/20/14	ND	**8.7**	**1**
08/28/14	ND	**14.7**	**1**
03/20/15	ND	**10.9**	**1**

1) Rank the N = 14 observations from the smallest to the largest from background wells and compliance well MW-25.

n =	5
m =	9
N =	14
Ci (MW-25) =	60.0

# samples =	9	5
sum of rank values (Ri) =	45.0	60.0
avg rank value (Rbar) =	5.0	12.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 3.1s =	0	1	10
rank value of 8.7s =	0	1	11
rank value of 10.9s =	0	1	12
rank value of 14.7s =	0	1	13
rank value of 16.3s =	0	1	14
	0	0	0

	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**5**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 45$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 22.5$

Adjustment for tie values:

$SD(W) = 6.435$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.419$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.419$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **1,2-Dichloroethane**
NC MCL (µg/l): 0.4
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	**5**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/06	NP	ND	ND	**5**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/13/07	NP	**1.1**	ND	Dry	**1.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/11/08	NP	ND	ND	**3.2**	**1.5**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/25/08	NP	ND	ND	Dry	**1.5**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/23/09	NP	ND	ND	**4.1**	**1.6**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/24/09	NP	ND	ND	**5.1**	**1.6**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/10	NP	**1.2**	ND	**2.5**	**1.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/30/10	NP	**1**	ND	**6.2**	**1.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/11	ND	ND	ND	**2.8**	**2**	ND	ND	**3**	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/22/11	ND	ND	ND	**2.1**	**2**	ND	ND	**3.2**	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/12	ND	ND	ND	ND	**1.7**	ND	ND	**2.2**	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	**3.2**	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
08/29/12	ND	ND	ND	**2.1**	**1.4**	ND	ND	**1.7**	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	**3.9**	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	ND	ND	ND	**1.6**	ND	ND	**2.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3**	**3.7**	ND	ND	ND	ND	ND	NP	ND	ND	**1**
08/26/13	ND	**1.2**	ND	ND	**1.5**	ND	ND	**1.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.5**	**3**	ND	ND	ND	ND	ND	NP	ND	ND	**1**
02/20/14	ND	ND	ND	ND	**1.7**	ND	ND	**1.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3**	**2.6**	ND	ND	ND	ND	ND	ND	ND	ND	**1**
08/28/14	ND	ND	ND	**1**	**2**	ND	ND	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3**	**3**	ND	ND	ND	ND	ND	ND	ND	ND	**1**
03/20/15	ND	ND	ND	ND	**1.2**	ND	ND	**1.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.6**	**3**	ND	ND	ND	ND	ND	ND	ND	ND	**1**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	1.2	0.5	0.5	1.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.6	3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **1,1-Dichloroethene**
NC MCL (µg/l): 7
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	ND	ND	ND	ND	11	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **cis-1,2-Dichloroethene**
NC MCL (µg/l): 70
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	**13**	**50**	**5.6**	**16**	**21**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/09/04	NP	**11**	**7.6**	ND	**24**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/16/04	NP	**9.7**	**12**	ND	**29**	**15**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/14/05	NP	**10**	**26**	**6**	**48**	**20**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
09/01/05	NP	**11**	**27**	**9.4**	**31**	**13**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/16/06	NP	ND	**17**	ND	ND	**7.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/06	NP	**6.8**	**16**	**5.8**	**34**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/26/07	NP	ND	**12**	ND	**30**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/13/07	NP	**5.1**	**9.7**	Dry	**31.6**	**4.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/11/08	NP	**3.8**	ND	**1.6**	**33.4**	**4.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/25/08	NP	**2.8**	**7.6**	Dry	**34.5**	**5.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/23/09	NP	**2.2**	**9.2**	ND	**27.7**	**5.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/24/09	NP	**2.1**	**11.2**	**2.2**	**31.8**	**7.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/10	NP	**1.2**	**5.8**	**2**	**36.5**	**7.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/30/10	NP	**1.5**	**6.2**	**3.4**	**33.6**	**6.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/11	ND	**1**	**5.6**	**1.6**	**34.6**	**14.4**	ND	**2.7**	ND	ND	**2.3**	**10.9**	**17.3**	**32.5**	NP	**8.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/22/11	ND	ND	**4**	**2.4**	**36.7**	**11.5**	ND	**3.6**	ND	**2.3**	**2.1**	**10.1**	**15.8**	**31.1**	NP	**7.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/12	ND	ND	**4.6**	ND	**33.1**	**10.2**	ND	**2.4**	ND	ND	**1.7**	**10.6**	**18.4**	**20.7**	NP	**9**	**1.5**	NP	ND	ND	**1.3**	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
08/29/12	ND	ND	**2.8**	**2.6**	**30.5**	**8**	ND	**2.2**	ND	**1.6**	**1.3**	**15.1**	**13.9**	**22.8**	NP	**5.3**	**1.2**	NP	ND	ND	**1.3**	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	ND	**1.6**	ND	**31.4**	**10.4**	ND	**2.6**	ND	ND	**1.6**	**17.3**	**14.2**	**20.6**	**1.5**	**10.6**	ND	ND	ND	ND	**1.1**	ND	ND	ND	ND	ND	ND	NP	ND	**2**	**1**
08/26/13	ND	ND	**5.1**	**2**	**25.8**	**8.6**	ND	**1.8**	ND	**1.1**	**1.4**	**17.2**	**11.3**	**18.1**	ND	**4.5**	ND	ND	ND	ND	**1.1**	ND	ND	ND	ND	ND	ND	NP	ND	**23.2**	**1**
02/20/14	ND	ND	**2.8**	ND	**27.6**	**10.2**	ND	**1.6**	ND	**1**	**1.2**	**14.8**	**10.9**	**15.1**	ND	**3.7**	ND	ND	ND	ND	**1.9**	ND	ND	ND	ND	ND	ND	ND	ND	**14.1**	**1**
08/28/14	ND	ND	**4.4**	**1.4**	**32.7**	**7.9**	ND	**2.4**	ND	**1.5**	**1.6**	**17.4**	**12.1**	**16.5**	ND	**3**	ND	**1**	ND	ND	**1.7**	ND	ND	**1.1**	ND	ND	ND	ND	ND	**14.8**	**1**
03/20/15	ND	ND	**2.7**	ND	**18.9**	**2.9**	ND	**1.8**	ND	ND	**1.4**	**12.2**	**8**	**12**	ND	**1.8**	ND	ND	ND	ND	**1.3**	ND	ND	ND	ND	ND	ND	ND	ND	**9.2**	**1**
N_i	9	24	24	22	24	24	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	558.0	3233.5	4963.0	2803.0	6473.5	4732.5	558.0	1486.0	558.0	958.5	1322.0	2175.5	2157.5	2348.5	390.5	1755.0	584.5	373.0	434.0	434.0	973.0	310.0	434.0	376.5	434.0	310.0	310.0	186.0	310.0	1129.0	
avg rank value (Rbar)	62.0	134.7	206.8	127.4	269.7	197.2	62.0	165.1	62.0	106.5	146.9	241.7	239.7	260.9	78.1	195.0	83.5	74.6	62.0	62.0	139.0	62.0	62.0	75.3	62.0	62.0	62.0	62.0	62.0	225.8	

	Number of each rank value																													Rank Value
rank value of NDs =	9	10	1	9	1	3	9	0	9	4	0	0	0	0	4	0	5	4	7	7	0	5	7	4	7	5	5	3	5	0	62
rank value of 1s =	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	125
rank value of 1.1s =	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	128.5
rank value of 1.2s =	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	132
rank value of 1.3s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	135.5
rank value of 1.4s =	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139
rank value of 1.5s =	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	142.5
rank value of 1.6s =	0	0	1	2	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	148
rank value of 1.7s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	152.5
rank value of 1.8s =	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	155
rank value of 1.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	157
rank value of 2s =	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	159
rank value of 2.1s =	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	161.5
rank value of 2.2s =	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164
rank value of 2.3s =	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	166.5
rank value of 2.4s =	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169
rank value of 2.6s =	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	171.5
rank value of 2.7s =	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173.5
rank value of 2.8s =	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176
rank value of 2.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178
rank value of 3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	179
rank value of 3.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180
rank value of 3.6s =	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	181
rank value of 3.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	182
rank value of 3.8s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	183
rank value of 4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	184
rank value of 4.3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	185
rank value of 4.4s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186
rank value of 4.5s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	187.5
rank value of 4.6s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189

rank value of 5.1s =	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	190.5
rank value of 5.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	192
rank value of 5.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193
rank value of 5.6s =	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194.5
rank value of 5.8s =	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197
rank value of 6s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199
rank value of 6.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	200
rank value of 6.2s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	201
rank value of 6.8s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	202
rank value of 7.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203
rank value of 7.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204
rank value of 7.6s =	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205.5
rank value of 7.7s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	207
rank value of 7.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208
rank value of 7.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	209
rank value of 8s =	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210.5
rank value of 8.6s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
rank value of 8.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	213
rank value of 9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	214
rank value of 9.2s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	215.5
rank value of 9.4s =	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217
rank value of 9.7s =	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	218.5
rank value of 10s =	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	220
rank value of 10.1s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	221
rank value of 10.2s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	222.5
rank value of 10.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	224
rank value of 10.6s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225.5
rank value of 10.9s =	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	227.5
rank value of 11s =	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229.5
rank value of 11.2s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	231
rank value of 11.3s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	232
rank value of 11.5s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233
rank value of 12s =	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	235
rank value of 12.1s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	237
rank value of 12.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	238
rank value of 13s =	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	239.5
rank value of 13.9s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	241
rank value of 14.1s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	242
rank value of 14.2s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	243
rank value of 14.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244
rank value of 14.8s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	245.5
rank value of 15s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	247
rank value of 15.1s =	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	248.5
rank value of 15.8s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250
rank value of 16s =	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	251.5
rank value of 16.5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	253
rank value of 17s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254
rank value of 17.2s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	255
rank value of 17.3s =	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	256.5
rank value of 17.4s =	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	258
rank value of 18.1s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	259
rank value of 18.4s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	260
rank value of 18.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261
rank value of 20s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	262
rank value of 20.6s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263
rank value of 20.7s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	264
rank value of 21s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	265
rank value of 22.8s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	266
rank value of 23.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	267
rank value of 24s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	268
rank value of 25.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	269
rank value of 26s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	270
rank value of 27s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	271
rank value of 27.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272
rank value of 27.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	273
rank value of 29s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	274
rank value of 30s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	275
rank value of 30.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276
rank value of 31s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277
rank value of 31.1s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	278
rank value of 31.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	279
rank value of 31.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	280
rank value of 31.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	281
rank value of 32.5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	282
rank value of 32.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283
rank value of 33.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	284
rank value of 33.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285
rank value of 33.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	286
rank value of 34s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287

rank value of 34.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	288
rank value of 34.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	289
rank value of 36.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290
rank value of 36.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291
rank value of 48s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	292
rank value of 50s =	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	293
n =	**9**	**24**	**24**	**22**	**24**	**24**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**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**	**MW-4**	**MW-3A**	**MW-6**	**MW-7**	**MW-8**	**MW-9**	**MW-10**	**MW-11**	**MW-13**	**MW-14**	**MW-14D**	**MW-15**	**MW-16**	**MW-16D**	**MW-17**	**MW-18**	**MW-19**	**MW-19D**	**MW-20**	**MW-20D**	**MW-21**	**MW-22**	**MW-23**	**MW-23D**	**MW-24**	**MW-25**
R_i^2/N_i =	34596.0	435647	1026307	357128	1746092	357128	34596	245355	34596	102080	194187	525867	517201	612828	30498.1	342225	48805.8	27825.8	26908	26908	135247	19220	26908	28350.5	26908	19220	19220	11532	19220	254928

N_{bkg} = 9
N = 293
H = 133.19

Adjust H for ties:

T_i = 1861626 sum of T1..T36

$H' = H/(1-(T_i/(N^3-N)))$
H' = 143.83
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IFG. The value is 42.56 which is less than H' =143.83
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) = $P(N(N+1)/12)^{0.5} * (1/N_{bkg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution from Table 4 of IFG
N = total sample size
N_{bkg} = 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	**MW-4**	**MW-5**	MW-6	**MW-7**	MW-8	MW-9	MW-10	**MW-11**	**MW-13**	**MW-14**	MW-14D	**MW-15**	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	**MW-25**
Rbar (well x) =	134.729	206.792	127.409	269.7	197.2	62	165.111	62	106.5	146.889	241.722	239.722	260.944	78.1	195	83.5	74.6	62	62	139	62	62	75.3	62	62	62	62	62	225.8
avg Rbar (background) =	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
Dx =	72.7292	144.792	65.4091	207.729	135.188	0	103.111	0	44.5	84.8889	179.722	177.722	198.944	16.1	133	21.5	12.6	0	0	77	0	0	13.3	0	0	0	0	0	163.8
Cx =	77.1619	77.1619	78.1126	77.1619	78.1126	93.0607	93.0607	93.0607	93.0607	93.0607	93.0607	93.0607	93.0607	110.111	93.0607	99.4861	110.111	99.4861	99.4861	99.4861	110.111	99.4861	110.111	99.4861	110.111	110.111	131.608	110.111	110.111
Statistical Significance ?	-	**Yes**	-	**Yes**	**Yes**	-	**Yes**	-	-	-	**Yes**	**Yes**	**Yes**	-	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	**Yes**
If SSI, is current event above MCL?	-	No	-	No	No	-	No	-	-	-	No	No	No	-	No	-	-	-	-	-	-	-	-	-	-	-	-	-	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 cis-1,2-Dichloroethene averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts or Wilcoxon Rank Sum Tests 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 J15-1957-44

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-2A	MDL
02/18/99	NP	NS	NT
08/16/99	NP	NS	NT
02/14/00	NP	NS	NT
08/14/00	NP	NS	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**50**	**5**
02/09/04	NP	**7.6**	**5**
08/16/04	NP	**12**	**5**
02/14/05	NP	**26**	**5**
09/01/05	NP	**27**	**5**
02/16/06	NP	**17**	**5**
08/30/06	NP	**16**	**5**
02/26/07	NP	**12**	**5**
08/13/07	NP	**9.7**	**1**
02/11/08	NP	ND	**1**
08/25/08	NP	**7.6**	**1**
02/23/09	NP	**9.2**	**1**
08/24/09	NP	**11.2**	**1**
02/22/10	NP	**5.8**	**1**
08/30/10	NP	**6.2**	**1**
02/22/11	ND	**5.6**	**1**
08/22/11	ND	**4**	**1**
02/22/12	ND	**4.6**	**1**
08/29/12	ND	**2.8**	**1**
02/18/13	ND	**1.6**	**1**
08/26/13	ND	**5.1**	**1**
02/20/14	ND	**2.8**	**1**
08/28/14	ND	**4.4**	**1**
03/20/15	ND	**2.7**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-2A.

n =	24
m =	9
N =	33
Ci (MW-2A) =	511.5

# samples =	9	24
sum of rank values (Ri) =	49.5	511.5
avg rank value (Rbar) =	5.5	21.3

	Number of each rank value		Rank Value
rank value of NDs =	9	1	5.5
rank value of 1.6s =	0	1	11
rank value of 2.7s =	0	1	12
rank value of 2.8s =	0	2	13.5
rank value of 4s =	0	1	15
rank value of 4.4s =	0	1	16
rank value of 4.6s =	0	1	17

rank value of 5.1s =	0	1	18
rank value of 5.6s =	0	1	19
rank value of 5.8s =	0	1	20
rank value of 6.2s =	0	1	21
rank value of 7.6s =	0	2	22.5
rank value of 9.2s =	0	1	24
rank value of 9.7s =	0	1	25
rank value of 11.2s =	0	1	26
rank value of 12s =	0	2	27.5
rank value of 16s =	0	1	29
rank value of 17s =	0	1	30
rank value of 26s =	0	1	31
rank value of 27s =	0	1	32
rank value of 50s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 211.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.389$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.223$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.223$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-4	MDL
02/18/99	NP	NT	NT
08/16/99	NP	NT	NT
02/14/00	NP	NT	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**16**	**5**
02/09/04	NP	**24**	**5**
08/16/04	NP	**29**	**5**
02/14/05	NP	**48**	**5**
09/01/05	NP	**31**	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	**34**	**5**
02/26/07	NP	**30**	**5**
08/13/07	NP	**31.6**	**1**
02/11/08	NP	**33.4**	**1**
08/25/08	NP	**34.5**	**1**
02/23/09	NP	**27.7**	**1**
08/24/09	NP	**31.8**	**1**
02/22/10	NP	**36.5**	**1**
08/30/10	NP	**33.6**	**1**
02/22/11	ND	**34.6**	**1**
08/22/11	ND	**36.7**	**1**
02/22/12	ND	**33.1**	**1**
08/29/12	ND	**30.5**	**1**
02/18/13	ND	**31.4**	**1**
08/26/13	ND	**25.8**	**1**
02/20/14	ND	**27.6**	**1**
08/28/14	ND	**32.7**	**1**
03/20/15	ND	**18.9**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	24
m =	9
N =	33
Ci (MW-4) =	511.5

# samples =	9	24
sum of rank values (Ri) =	49.5	511.5
avg rank value (Rbar) =	5.5	21.3

	Number of each rank value		Rank Value
rank value of NDs =	9	1	5.5
rank value of 16s =	0	1	11
rank value of 18.9s =	0	1	12
rank value of 24s =	0	1	13
rank value of 25.8s =	0	1	14
rank value of 27.6s =	0	1	15
rank value of 27.7s =	0	1	16

rank value of 29s =	0	1	17
rank value of 30s =	0	1	18
rank value of 30.5s =	0	1	19
rank value of 31s =	0	1	20
rank value of 31.4s =	0	1	21
rank value of 31.6s =	0	1	22
rank value of 31.8s =	0	1	23
rank value of 32.7s =	0	1	24
rank value of 33.1s =	0	1	25
rank value of 33.4s =	0	1	26
rank value of 33.6s =	0	1	27
rank value of 34s =	0	1	28
rank value of 34.5s =	0	1	29
rank value of 34.6s =	0	1	30
rank value of 36.5s =	0	1	31
rank value of 36.7s =	0	1	32
rank value of 48s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 211.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.395$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.222$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.222$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-5	MDL
02/18/99	NP	NS	NT
08/16/99	NP	NS	NT
02/14/00	NP	NS	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**21**	**5**
02/09/04	NP	ND	**5**
08/16/04	NP	**15**	**5**
02/14/05	NP	**20**	**5**
09/01/05	NP	**13**	**5**
02/16/06	NP	**7.4**	**5**
08/30/06	NP	ND	**5**
02/26/07	NP	ND	**5**
08/13/07	NP	**4.3**	**1**
02/11/08	NP	**4.5**	**1**
08/25/08	NP	**5.8**	**1**
02/23/09	NP	**5.4**	**1**
08/24/09	NP	**7.1**	**1**
02/22/10	NP	**7.8**	**1**
08/30/10	NP	**6.1**	**1**
02/22/11	ND	**14.4**	**1**
08/22/11	ND	**11.5**	**1**
02/22/12	ND	**10.2**	**1**
08/29/12	ND	**8**	**1**
02/18/13	ND	**10.4**	**1**
08/26/13	ND	**8.6**	**1**
02/20/14	ND	**10.2**	**1**
08/28/14	ND	**7.9**	**1**
03/20/15	ND	**2.9**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-5.

n =	24
m =	9
N =	33
Ci (MW-5) =	502.5

# samples =	9	24
sum of rank values (Ri) =	58.5	502.5
avg rank value (Rbar) =	6.5	20.9

	Number of each rank value		Rank Value
rank value of NDs =	9	3	6.5
rank value of 2.9s =	0	1	13
rank value of 4.3s =	0	1	14
rank value of 4.5s =	0	1	15
rank value of 5.4s =	0	1	16
rank value of 5.8s =	0	1	17
rank value of 6.1s =	0	1	18

rank value of 7.1s =	0	1	19
rank value of 7.4s =	0	1	20
rank value of 7.8s =	0	1	21
rank value of 7.9s =	0	1	22
rank value of 8s =	0	1	23
rank value of 8.6s =	0	1	24
rank value of 10.2s =	0	2	25.5
rank value of 10.4s =	0	1	27
rank value of 11.5s =	0	1	28
rank value of 13s =	0	1	29
rank value of 14.4s =	0	1	30
rank value of 15s =	0	1	31
rank value of 20s =	0	1	32
rank value of 21s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 202.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.138$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.894$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.894$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-7	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**2.7**	**1**
08/22/11	ND	**3.6**	**1**
02/22/12	ND	**2.4**	**1**
08/29/12	ND	**2.2**	**1**
02/18/13	ND	**2.6**	**1**
08/26/13	ND	**1.8**	**1**
02/20/14	ND	**1.6**	**1**
08/28/14	ND	**2.4**	**1**
03/20/15	ND	**1.8**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-7.

n =	9
m =	9
N =	18
Ci (MW-7) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 1.6s =	0	1	10
rank value of 1.8s =	0	2	11.5
rank value of 2.2s =	0	1	13
rank value of 2.4s =	0	2	14.5
rank value of 2.6s =	0	1	16
rank value of 2.7s =	0	1	17

rank value of 3.6s =	0	1	18
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.588$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.778$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.778$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-11	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**10.9**	**1**
08/22/11	ND	**10.1**	**1**
02/22/12	ND	**10.6**	**1**
08/29/12	ND	**15.1**	**1**
02/18/13	ND	**17.3**	**1**
08/26/13	ND	**17.2**	**1**
02/20/14	ND	**14.8**	**1**
08/28/14	ND	**17.4**	**1**
03/20/15	ND	**12.2**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-11.

n =	9
m =	9
N =	18
Ci (MW-11) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 10.1s =	0	1	10
rank value of 10.6s =	0	1	11
rank value of 10.9s =	0	1	12
rank value of 12.2s =	0	1	13
rank value of 14.8s =	0	1	14
rank value of 15.1s =	0	1	15

rank value of 17.2s =	0	1	16
rank value of 17.3s =	0	1	17
rank value of 17.4s =	0	1	18
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.600$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.773$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.773$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-13	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**17.3**	**1**
08/22/11	ND	**15.8**	**1**
02/22/12	ND	**18.4**	**1**
08/29/12	ND	**13.9**	**1**
02/18/13	ND	**14.2**	**1**
08/26/13	ND	**11.3**	**1**
02/20/14	ND	**10.9**	**1**
08/28/14	ND	**12.1**	**1**
03/20/15	ND	**8**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-13.

n =	9
m =	9
N =	18
Ci (MW-13) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 8s =	0	1	10
rank value of 10.9s =	0	1	11
rank value of 11.3s =	0	1	12
rank value of 12.1s =	0	1	13
rank value of 13.9s =	0	1	14
rank value of 14.2s =	0	1	15

rank value of 15.8s =	0	1	16
rank value of 17.3s =	0	1	17
rank value of 18.4s =	0	1	18
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.600$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.773$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.773$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-14	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**32.5**	**1**
08/22/11	ND	**31.1**	**1**
02/22/12	ND	**20.7**	**1**
08/29/12	ND	**22.8**	**1**
02/18/13	ND	**20.6**	**1**
08/26/13	ND	**18.1**	**1**
02/20/14	ND	**15.1**	**1**
08/28/14	ND	**16.5**	**1**
03/20/15	ND	**12**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-14.

n =	9
m =	9
N =	18
Ci (MW-14) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 12s =	0	1	10
rank value of 15.1s =	0	1	11
rank value of 16.5s =	0	1	12
rank value of 18.1s =	0	1	13
rank value of 20.6s =	0	1	14
rank value of 20.7s =	0	1	15

rank value of 22.8s =	0	1	16
rank value of 31.1s =	0	1	17
rank value of 32.5s =	0	1	18
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.600$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.773$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.773$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-15	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	**8.9**	**1**
08/22/11	ND	**7.7**	**1**
02/22/12	ND	**9**	**1**
08/29/12	ND	**5.3**	**1**
02/18/13	ND	**10.6**	**1**
08/26/13	ND	**4.5**	**1**
02/20/14	ND	**3.7**	**1**
08/28/14	ND	**3**	**1**
03/20/15	ND	**1.8**	**1**

1) Rank the N = 18 observations from the smallest to the largest from background wells and compliance well MW-15.

n =	9
m =	9
N =	18
Ci (MW-15) =	126.0

# samples =	9	9
sum of rank values (Ri) =	45.0	126.0
avg rank value (Rbar) =	5.0	14.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 1.8s =	0	1	10
rank value of 3s =	0	1	11
rank value of 3.7s =	0	1	12
rank value of 4.5s =	0	1	13
rank value of 5.3s =	0	1	14
rank value of 7.7s =	0	1	15

rank value of 8.9s =	0	1	16
rank value of 9s =	0	1	17
rank value of 10.6s =	0	1	18
	0	0	0
	0	0	0
# samples =	**9**	**9**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 81$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 40.5$

Adjustment for tie values:

$SD(W) = 10.600$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.773$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.773$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**cis-1,2-Dichloroethene**
NC MCL (µg/l):	70
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-25	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**5**
02/14/05	NP	NP	**5**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**1**
02/11/08	NP	NP	**1**
08/25/08	NP	NP	**1**
02/23/09	NP	NP	**1**
08/24/09	NP	NP	**1**
02/22/10	NP	NP	**1**
08/30/10	NP	NP	**1**
02/22/11	ND	NP	**1**
08/22/11	ND	NP	**1**
02/22/12	ND	NP	**1**
08/29/12	ND	NP	**1**
02/18/13	ND	**2**	**1**
08/26/13	ND	**23.2**	**1**
02/20/14	ND	**14.1**	**1**
08/28/14	ND	**14.8**	**1**
03/20/15	ND	**9.2**	**1**

1) Rank the N = 14 observations from the smallest to the largest from background wells and compliance well MW-25.

n =	5
m =	9
N =	14
Ci (MW-25) =	60.0

# samples =	9	5
sum of rank values (Ri) =	45.0	60.0
avg rank value (Rbar) =	5.0	12.0

	Number of each rank value		Rank Value
rank value of NDs =	9	0	5
rank value of 2s =	0	1	10
rank value of 9.2s =	0	1	11
rank value of 14.1s =	0	1	12
rank value of 14.8s =	0	1	13
rank value of 23.2s =	0	1	14
	0	0	0

	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**5**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 45$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 22.5$

Adjustment for tie values:

$SD(W) = 6.435$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.419$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.419$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **cis-1,3-Dichloropropene**
NC MCL (µg/l): 0.4
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/09/04	NP	ND	ND	ND	ND	**8.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**1**
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**1**
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **Ethylbenzene**
NC MCL (µg/l): 600
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14E	MW-15	MW-16	MW-16E	MW-17	MW-18	MW-19	MW-19E	MW-20	MW-20E	MW-21	MW-22	MW-23	MW-23E	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	ND	ND	Dry	**1.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	ND	ND	ND	**2.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	ND	ND	Dry	**2.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	ND	ND	ND	**1.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	ND	ND	ND	**1.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	ND	ND	ND	**1.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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

$$T^*_k = cT_{n1} + ct^2/2 + ct[T_{n1}(1+1/c) + t^2/4]^{.5}$$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **Dichloromethane**
NC MCL (µg/l): 5
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	**21**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/09/04	NP	ND	ND	ND	ND	**8.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/16/04	NP	ND	ND	ND	**6.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/14/05	NP	ND	ND	ND	**12**	**12**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
09/01/05	NP	ND	ND	ND	**7.3**	**7.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/06	NP	ND	ND	ND	**17**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/26/07	NP	ND	ND	ND	**15**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/13/07	NP	ND	ND	Dry	**38.8**	**2.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/11/08	NP	ND	ND	ND	**31.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/25/08	NP	ND	ND	Dry	**43.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/23/09	NP	ND	ND	ND	**29.2**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/24/09	NP	ND	ND	ND	**40.8**	**2.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/22/10	NP	ND	ND	ND	**42.8**	**2.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/30/10	NP	ND	ND	ND	**41**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/22/11	ND	ND	ND	ND	**46.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/22/11	ND	ND	ND	ND	**48.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/22/12	ND	ND	ND	ND	**32.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**2**
08/29/12	ND	ND	ND	ND	**16.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	ND	ND	ND	**21.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	**2.4**	**1**
08/26/13	ND	ND	ND	ND	**40.6**	**2.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	**28.3**	**1**
02/20/14	ND	ND	ND	ND	**34.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
08/28/14	ND	ND	ND	ND	**4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.5**	**2**
03/20/15	ND	ND	ND	ND	**12.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.9**	**1**
N_i	9	24	24	22	24	24	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	1174.5	3132.0	3132.0	2871.0	6306.0	4237.0	1174.5	1174.5	1174.5	1174.5	1174.5	1174.5	1174.5	1174.5	652.5	1174.5	913.5	652.5	913.5	913.5	913.5	652.5	913.5	652.5	913.5	652.5	652.5	391.5	652.5	1208.0	
avg rank value (Rbar)	130.5	130.5	130.5	130.5	262.8	176.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	241.6	

	Number of each rank value																													Rank Value
rank value of NDs =	9	24	24	22	3	16	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	1	130.5
rank value of 2.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	261.5
rank value of 2.9s =	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	264
rank value of 4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	266
rank value of 4.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	267
rank value of 5.5s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	268
rank value of 6.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	269
rank value of 7.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	270
rank value of 7.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	271
rank value of 8.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272
rank value of 12s =	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	273.5
rank value of 12.2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	275
rank value of 15s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276
rank value of 16.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277
rank value of 17s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	278
rank value of 21s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	279
rank value of 21.4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	280
rank value of 28.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	281
rank value of 29.2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	282
rank value of 31.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283
rank value of 32.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	284
rank value of 34.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285
rank value of 38.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	286
rank value of 40.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287
rank value of 40.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	288
rank value of 41s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	289
rank value of 42.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290
rank value of 43.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291
rank value of 46.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	292
rank value of 48.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	293

n =	9	24	24	22	24	24	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Ri^2/N_i =	153272.3	408726	408726	374666	1656902	748007	153272	153272	153272	153272	153272	153272	153272	153272	85151.3	153272	119212	85151.3	119212	119212	119212	85151.3	119212	85151.3	119212	85151.3	85151.3	51090.8	85151.3	291853

N_{bg} = 9
N = 293
H = 63.05

Adjust H for ties:

T_i = 1.8E+07 sum of T1 :T4

$H' = H/(1-(T_i/(N^3-N)))$
H' = 209.28
Chi-square = 42.56

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 42.56 which is less than H'=209.28.
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 $(C_x) = P(N(N+1)/12)^{0.5} * (1/N_{bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution from Table 4 of IFG
N = total sample size
N_{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	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	130.5	130.5	130.5	262.8	176.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	241.6
avg Rbar (background) =	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5	130.5
Dx =	0.0	0.0	0.0	132.3	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	111.1
Cx =	77.2	77.2	78.1	77.2	78.1	93.1	93.1	93.1	93.1	93.1	93.1	93.1	93.1	110.1	93.1	99.5	110.1	99.5	99.5	99.5	110.1	99.5	110.1	99.5	110.1	110.1	131.6	110.1	110.1
Statistical Significance ?	-	-	-	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Yes**
If SSL is current event above MCL?	-	-	-	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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 Dichloromethane averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts or Wilcoxon Rank Sum Tests 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 J15-1957-44

Compound:	**Dichloromethane**
NC MCL (µg/l):	5
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-4	MDL
02/18/99	NP	NT	NT
08/16/99	NP	NT	NT
02/14/00	NP	NT	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	ND	**5**
02/09/04	NP	ND	**5**
08/16/04	NP	**6.1**	**10**
02/14/05	NP	**12**	**10**
09/01/05	NP	**7.3**	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	**17**	**5**
02/26/07	NP	**15**	**5**
08/13/07	NP	**38.8**	**2**
02/11/08	NP	**31.8**	**2**
08/25/08	NP	**43.7**	**2**
02/23/09	NP	**29.2**	**2**
08/24/09	NP	**40.8**	**2**
02/22/10	NP	**42.8**	**2**
08/30/10	NP	**41**	**2**
02/22/11	ND	**46.6**	**2**
08/22/11	ND	**48.5**	**2**
02/22/12	ND	**32.6**	**2**
08/29/12	ND	**16.8**	**1**
02/18/13	ND	**21.4**	**1**
08/26/13	ND	**40.6**	**1**
02/20/14	ND	**34.1**	**1**
08/28/14	ND	**4**	**2**
03/20/15	ND	**12.2**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	24
m =	9
N =	33
Ci (MW-4) =	502.5

# samples =	9	24
sum of rank values (Ri) =	58.5	502.5
avg rank value (Rbar) =	6.5	20.9

	Number of each rank value		Rank Value
rank value of NDs =	9	3	6.5
rank value of 4s =	0	1	13
rank value of 6.1s =	0	1	14
rank value of 7.3s =	0	1	15
rank value of 12s =	0	1	16
rank value of 12.2s =	0	1	17
rank value of 15s =	0	1	18

rank value of 16.8s =	0	1	19
rank value of 17s =	0	1	20
rank value of 21.4s =	0	1	21
rank value of 29.2s =	0	1	22
rank value of 31.8s =	0	1	23
rank value of 32.6s =	0	1	24
rank value of 34.1s =	0	1	25
rank value of 38.8s =	0	1	26
rank value of 40.6s =	0	1	27
rank value of 40.8s =	0	1	28
rank value of 41s =	0	1	29
rank value of 42.8s =	0	1	30
rank value of 43.7s =	0	1	31
rank value of 46.6s =	0	1	32
rank value of 48.5s =	0	1	33
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 202.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.140$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.894$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.894$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**Dichloromethane**
NC MCL (µg/l):	5
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-25	MDL
02/18/99	NP	NP	NT
08/16/99	NP	NP	NT
02/14/00	NP	NP	NT
08/14/00	NP	NP	NT
03/19/01	NP	NP	NT
08/27/02	NP	NP	NT
02/24/03	NP	NP	NT
08/11/03	NP	NP	**5**
02/09/04	NP	NP	**5**
08/16/04	NP	NP	**10**
02/14/05	NP	NP	**10**
09/01/05	NP	NP	**5**
02/16/06	NP	NP	**5**
08/30/06	NP	NP	**5**
02/26/07	NP	NP	**5**
08/13/07	NP	NP	**2**
02/11/08	NP	NP	**2**
08/25/08	NP	NP	**2**
02/23/09	NP	NP	**2**
08/24/09	NP	NP	**2**
02/22/10	NP	NP	**2**
08/30/10	NP	NP	**2**
02/22/11	ND	NP	**2**
08/22/11	ND	NP	**2**
02/22/12	ND	NP	**2**
08/29/12	ND	NP	**1**
02/18/13	ND	**2.4**	**1**
08/26/13	ND	**28.3**	**1**
02/20/14	ND	ND	**1**
08/28/14	ND	**5.5**	**2**
03/20/15	ND	**4.9**	**1**

1) Rank the N = 14 observations from the smallest to the largest from background wells and compliance well MW-25.

n =	5
m =	9
N =	14
Ci (MW-25) =	55.5

# samples =	9	5
sum of rank values (Ri) =	49.5	55.5
avg rank value (Rbar) =	5.5	11.1

	Number of each rank value		Rank Value
rank value of NDs =	9	1	5.5
rank value of 2.4s =	0	1	11
rank value of 4.9s =	0	1	12
rank value of 5.5s =	0	1	13
rank value of 28.3s =	0	1	14
	0	0	0
	0	0	0

	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**5**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 40.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 22.5$

Adjustment for tie values:

$SD(W) = 5.988$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 2.923$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 2.923$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **Tetrachloroethene**
NC MCL (µg/l): 0.7
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-24	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	**8.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	ND	ND	ND	**9.6**	**6.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	ND	ND	**7.9**	**5.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	ND	ND	ND	**15**	**6.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	ND	ND	ND	**9**	**5.4**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	**8.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	ND	**8.5**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	ND	ND	Dry	**8.1**	**3.6**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	ND	ND	ND	**8.2**	**3.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	ND	ND	Dry	**7.9**	**3.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	ND	ND	ND	**6.6**	**3.9**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	ND	ND	ND	**6.6**	**4.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	ND	ND	ND	**7.8**	**5.1**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	ND	ND	ND	**8**	**6.3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	ND	ND	ND	**6.7**	**5.6**	ND	ND	ND	ND	ND	ND	**2.2**	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	ND	ND	ND	**7.5**	**4.6**	ND	ND	ND	**1.2**	ND	**1**	**1.7**	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	ND	ND	ND	**5.9**	**3.7**	ND	ND	ND	ND	ND	ND	**1.6**	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	ND	ND	ND	**5.8**	**3.7**	ND	ND	ND	ND	ND	ND	**1.5**	ND	NP	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	ND	ND	ND	**5.8**	**4.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
08/26/13	ND	ND	ND	ND	**5.9**	**4.4**	ND	ND	ND	ND	ND	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	**3.3**	1
02/20/14	ND	ND	ND	ND	**6**	**5.1**	ND	ND	ND	ND	ND	**1.1**	**1.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.3**	1
08/28/14	ND	ND	ND	ND	**5.8**	**4.2**	ND	ND	ND	ND	ND	ND	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.6**	1
03/20/15	ND	ND	ND	ND	**4.2**	**3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**	1
N_i	9	24	24	22	24	24	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	1066.5	2844.0	2844.0	2607.0	6401.5	5886.0	1066.5	1066.5	1066.5	1190.5	1066.5	1429.0	1825.0	1066.5	592.5	1066.5	829.5	592.5	829.5	829.5	829.5	592.5	829.5	592.5	829.5	592.5	592.5	355.5	592.5	1098.5	
avg rank value (Rbar)	118.5	118.5	118.5	118.5	266.7	245.3	118.5	118.5	118.5	132.3	118.5	158.8	202.8	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	219.7	

	Number of each rank value																												Rank Value
rank value of NDs =	9	24	24	22	2	3	9	9	9	8	9	6	3	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	1	118.5
rank value of 1s =	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	238.5
rank value of 1.1s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	241
rank value of 1.2s =	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	242.5
rank value of 1.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	244
rank value of 1.5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	245
rank value of 1.6s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	246.5
rank value of 1.7s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	248
rank value of 2.2s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249
rank value of 3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250
rank value of 3.3s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	251
rank value of 3.5s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252
rank value of 3.6s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	253
rank value of 3.7s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	254.5
rank value of 3.9s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	256.5
rank value of 4.2s =	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	259
rank value of 4.4s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261.5
rank value of 4.6s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263
rank value of 5.1s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	264.5
rank value of 5.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	266
rank value of 5.6s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	267
rank value of 5.8s =	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	269.5
rank value of 5.9s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272.5
rank value of 6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	274
rank value of 6.2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	275
rank value of 6.3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276
rank value of 6.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277
rank value of 6.6s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	278.5
rank value of 6.7s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	280
rank value of 7.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	281

rank value of 7.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	282
rank value of 7.9s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283.5
rank value of 8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	285
rank value of 8.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	286
rank value of 8.2s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287
rank value of 8.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	288
rank value of 8.5s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	289
rank value of 8.9s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290
rank value of 9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291
rank value of 9.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	292
rank value of 15s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	293
n =	**9**	**24**	**24**	**22**	**24**	**24**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**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**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-8**	**MW-9**	**MW-10**	**MW-11**	**MW-13**	**MW-14**	**MW-14D**	**MW-15**	**MW-16**	**MW-16D**	**MW-17**	**MW-18**	**MW-19**	**MW-19D**	**MW-20**	**MW-20D**	**MW-21**	**MW-22**	**MW-23**	**MW-24**	**MW-24**	**MW-25**
R_i^2/N_i =	126380.3	337014	337014	308930	1707467	1443542	126380	126380	126380	157477	126380	226893	370069	126380	70211.3	126380	98295.8	70211.3	98295.8	98295.8	98295.8	70211.3	98295.8	70211.3	98295.8	70211.3	70211.3	42126.8	70211.3	241340

N_{bg} = 9
N = 293
H = 112.33

Adjust H for ties:

T_j = 1.3E+07 sum of T1 :T13

$H' = H/(1-(T_j/(N^3-N)))$
H' = 235.27
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IFG. The value is 42.56 which is less than H' =235.27
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) = $P(N(N+1)/12)^{0.5} * (1/N_{bg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution from Table 4 of IFG
N = total sample size
N_{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	**MW-4**	**MW-5**	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-24	MW-24	MW-25
Rbar (well x) =	118.5	118.5	118.5	266.7	245.3	118.5	118.5	118.5	132.3	118.5	158.8	202.8	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	219.7
avg Rbar (background) =	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5	118.5
Dx =	0.0	0.0	0.0	148.2	126.8	0.0	0.0	0.0	13.8	0.0	40.3	84.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	101.2
Cx =	77.2	77.2	78.1	77.2	77.2	93.1	93.1	93.1	93.1	93.1	93.1	93.1	93.1	110.1	93.1	99.5	110.1	99.5	99.5	99.5	110.1	99.5	110.1	99.5	110.1	110.1	110.1	131.6	110.1	110.1
Statistical Significance ?	-	-	-	**Yes**	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSL is current event above MCL?	-	-	-	**Yes**	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 Tetrachloroethene averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts or Wilcoxon Rank Sum Tests 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 J15-1957-44

Compound:	**Tetrachloroethene**
NC MCL (µg/l):	0.7
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-4	MDL
02/18/99	NP	NT	NT
08/16/99	NP	NT	NT
02/14/00	NP	NT	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	ND	**5**
02/09/04	NP	**9.6**	**5**
08/16/04	NP	**7.9**	**5**
02/14/05	NP	**15**	**5**
09/01/05	NP	**9**	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	**8.3**	**5**
02/26/07	NP	**8.5**	**5**
08/13/07	NP	**8.1**	**1**
02/11/08	NP	**8.2**	**1**
08/25/08	NP	**7.9**	**1**
02/23/09	NP	**6.6**	**1**
08/24/09	NP	**6.6**	**1**
02/22/10	NP	**7.8**	**1**
08/30/10	NP	**8**	**1**
02/22/11	ND	**6.7**	**1**
08/22/11	ND	**7.5**	**1**
02/22/12	ND	**5.9**	**1**
08/29/12	ND	**5.8**	**1**
02/18/13	ND	**5.8**	**1**
08/26/13	ND	**5.9**	**1**
02/20/14	ND	**6**	**1**
08/28/14	ND	**5.8**	**1**
03/20/15	ND	**4.2**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	24
m =	9
N =	33
Ci (MW-4) =	507.0

# samples =	9	24
sum of rank values (Ri) =	54.0	507.0
avg rank value (Rbar) =	6.0	21.1

	Number of each rank value		Rank Value
rank value of NDs =	9	2	6
rank value of 4.2s =	0	1	12
rank value of 5.8s =	0	3	14
rank value of 5.9s =	0	2	16.5
rank value of 6s =	0	1	18
rank value of 6.6s =	0	2	19.5
rank value of 6.7s =	0	1	21

rank value of 7.5s =	0	1	22
rank value of 7.8s =	0	1	23
rank value of 7.9s =	0	2	24.5
rank value of 8s =	0	1	26
rank value of 8.1s =	0	1	27
rank value of 8.2s =	0	1	28
rank value of 8.3s =	0	1	29
rank value of 8.5s =	0	1	30
rank value of 9s =	0	1	31
rank value of 9.6s =	0	1	32
rank value of 15s =	0	1	33
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 207$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.265$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.059$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.059$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**Tetrachloroethene**
NC MCL (µg/l):	0.7
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-5	MDL
02/18/99	NP	NS	NT
08/16/99	NP	NS	NT
02/14/00	NP	NS	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**8.9**	**5**
02/09/04	NP	**6.2**	**5**
08/16/04	NP	**5.8**	**5**
02/14/05	NP	**6.4**	**5**
09/01/05	NP	**5.4**	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	ND	**5**
02/26/07	NP	ND	**5**
08/13/07	NP	**3.6**	**1**
02/11/08	NP	**3.5**	**1**
08/25/08	NP	**3.9**	**1**
02/23/09	NP	**3.9**	**1**
08/24/09	NP	**4.2**	**1**
02/22/10	NP	**5.1**	**1**
08/30/10	NP	**6.3**	**1**
02/22/11	ND	**5.6**	**1**
08/22/11	ND	**4.6**	**1**
02/22/12	ND	**3.7**	**1**
08/29/12	ND	**3.7**	**1**
02/18/13	ND	**4.4**	**1**
08/26/13	ND	**4.4**	**1**
02/20/14	ND	**5.1**	**1**
08/28/14	ND	**4.2**	**1**
03/20/15	ND	**3**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-5.

n =	24
m =	9
N =	33
Ci (MW-5) =	502.5

# samples =	9	24
sum of rank values (Ri) =	58.5	502.5
avg rank value (Rbar) =	6.5	20.9

	Number of each rank value		Rank Value
rank value of NDs =	9	3	6.5
rank value of 3s =	0	1	13
rank value of 3.5s =	0	1	14
rank value of 3.6s =	0	1	15
rank value of 3.7s =	0	2	16.5
rank value of 3.9s =	0	2	18.5
rank value of 4.2s =	0	2	20.5

rank value of 4.4s =	0	2	22.5
rank value of 4.6s =	0	1	24
rank value of 5.1s =	0	2	25.5
rank value of 5.4s =	0	1	27
rank value of 5.6s =	0	1	28
rank value of 5.8s =	0	1	29
rank value of 6.2s =	0	1	30
rank value of 6.3s =	0	1	31
rank value of 6.4s =	0	1	32
rank value of 8.9s =	0	1	33
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 202.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.130$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.896$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.896$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **Toluene**
NC MCL (µg/l): 600
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	**4500**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	ND	ND	**34**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/14/05	NP	ND	ND	**6.5**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
09/01/05	NP	ND	ND	**120**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	**6.5**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	ND	ND	Dry	**7.4**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	ND	ND	ND	**20.5**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	ND	ND	Dry	**11.9**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	ND	ND	ND	**4.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	ND	ND	**48.4**	**11.8**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	ND	ND	ND	**11.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	ND	ND	ND	**1.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_0).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **Trichloroethene**
NC MCL (µg/l): 3
Method: Kruskal-Wallis
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	**5.6**	**11**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/09/04	NP	ND	ND	ND	**13**	**6.2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/16/04	NP	ND	ND	ND	**10**	**5.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/14/05	NP	ND	ND	ND	**17**	**7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
09/01/05	NP	ND	ND	ND	**11**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/30/06	NP	ND	ND	ND	**11**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/26/07	NP	ND	ND	ND	**11**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/13/07	NP	ND	ND	Dry	**9.9**	**2.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/11/08	NP	ND	ND	ND	**9.9**	**2.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/25/08	NP	ND	ND	Dry	**10**	**3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/23/09	NP	ND	ND	ND	**8.1**	**3**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/24/09	NP	ND	ND	ND	**7.8**	**3.5**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/10	NP	ND	ND	ND	**9.1**	**4.7**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/30/10	NP	ND	ND	ND	**9.1**	**5.8**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/11	ND	ND	ND	ND	**7**	**4.8**	ND	ND	ND	ND	ND	ND	**1.7**	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/22/11	ND	ND	ND	ND	**7.9**	**3.7**	ND	ND	ND	ND	ND	ND	**1.5**	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/12	ND	ND	ND	ND	**7.3**	**3.6**	ND	ND	ND	ND	ND	ND	**1.6**	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
08/29/12	ND	ND	ND	ND	**7**	**3.4**	ND	ND	ND	ND	ND	**1.1**	**1.3**	ND	NP	ND	ND	NP	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	ND	ND	ND	**6.1**	**3.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	**1**
08/26/13	ND	ND	ND	ND	**6**	**3.8**	ND	ND	ND	ND	ND	**1.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	**3.7**	**1**
02/20/14	ND	ND	ND	ND	**6**	**4.1**	ND	ND	ND	ND	ND	**1.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.9**	**1**
08/28/14	ND	ND	ND	ND	**6**	**3.6**	ND	ND	ND	ND	ND	**1.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.2**	**1**
03/20/15	ND	ND	ND	ND	**4**	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.3**	**1**
N_i	9	24	24	22	24	24	9	9	9	9	9	9	9	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	5	
sum of rank values (R_i)	1075.5	2868.0	2868.0	2629.0	6567.0	5715.0	1075.5	1075.5	1075.5	1075.5	1075.5	1559.5	1579.0	1075.5	597.5	1075.5	836.5	597.5	836.5	836.5	836.5	597.5	836.5	597.5	836.5	597.5	597.5	358.5	597.5	1121.5	
avg rank value (Rbar)	119.5	119.5	119.5	119.5	273.6	238.1	119.5	119.5	119.5	119.5	119.5	173.3	175.4	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	224.3	

	Number of each rank value																													Rank Value
rank value of ND's =	9	24	24	22	1	4	9	9	9	9	9	5	5	9	5	9	7	5	7	7	7	5	7	5	7	5	5	3	5	1	119.5
rank value of 1.1s =	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	240
rank value of 1.2s =	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	242
rank value of 1.3s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	243.5
rank value of 1.5s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	245
rank value of 1.6s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	246
rank value of 1.7s =	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	247
rank value of 1.9s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	248
rank value of 2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249
rank value of 2.2s =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	250
rank value of 2.7s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	251.5
rank value of 3s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	253.5
rank value of 3.3s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	255
rank value of 3.4s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	256
rank value of 3.5s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257
rank value of 3.6s =	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	258.5
rank value of 3.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	260.5
rank value of 3.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	262
rank value of 4s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263
rank value of 4.1s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	264
rank value of 4.7s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	265
rank value of 4.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	266
rank value of 5.5s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	267
rank value of 5.6s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	268
rank value of 5.8s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	269
rank value of 6s =	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	271
rank value of 6.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	273
rank value of 6.2s =	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	274
rank value of 7s =	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276
rank value of 7.3s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	278

rank value of 7.8s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	279
rank value of 7.9s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	280
rank value of 8.1s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	281
rank value of 9.1s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	282.5
rank value of 9.9s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	284.5
rank value of 10s =	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	286.5
rank value of 11s =	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	289.5
rank value of 13s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	292
rank value of 17s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	293
n =	**9**	**24**	**24**	**22**	**24**	**24**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**5**	**9**	**7**	**5**	**7**	**7**	**7**	**5**	**7**	**5**	**7**	**5**	**5**	**3**	**5**	**5**

Compute the Kruskal-Wallis statistic:

$$H = \{[12/N(N+1)] * [\Sigma^{K}_{j=1} (R_j^2/N_j)]\} - 3(N+1)$$

Well =	Background	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
R_j^2/N_j =	128522.3	342726	342726	314166	1796895	1360884	128522	128522	128522	128522	128522	270227	277027	128522	71401.3	128522	99961.8	71401.3	99961.8	99961.8	99961.8	71401.3	99961.8	71401.3	99961.8	71401.3	71401.3	42840.8	71401.3	251552

N_{bkg} = 9
N = 293
H = 110.80

Adjust H for ties:

T_j = 1.3E+07 sum of T1 T13

$H' = H/(1-(T_j/(N^3-N)))$
H' = 238.77
Chi-square = 42.56

Compare the calculated value H' to the tabulated Chi-square value with K-1 = # groups -1 = 12df at the 5% significance level from Table 1 of the IPG. The value is 42.56 which is less than H' =238.77
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) = $P(N(N+1)/12)^{0.5} * (1/N_{bkg}+1/N_x)^{0.5}$
P = 2.33 Percentile of Standard Normal Distribution from Table 4 of IPG
N = total sample size
N_{bkg} = total samples (N_j) of background data
N_x = total samples (N_j) of well x

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

Well =	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
Rbar (well x) =	119.5	119.5	119.5	273.6	238.1	119.5	119.5	119.5	119.5	119.5	173.3	175.4	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	224.3
avg Rbar (background) =	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5	119.5
Dx =	0.0	0.0	0.0	154.1	118.6	0.0	0.0	0.0	0.0	0.0	53.8	55.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.8
Cx =	77.2	77.2	78.1	77.2	77.2	93.1	93.1	93.1	93.1	93.1	93.1	93.1	93.1	110.1	93.1	99.5	110.1	99.5	99.5	99.5	110.1	99.5	110.1	99.5	110.1	110.1	131.6	110.1	110.1
Statistical Significance ?	-	-	-	**Yes**	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSI, is current event above MCL?	-	-	-	**Yes**	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 Trichloromethene averaged over these compliance wells are significantly greater than that of the background wells.
Shewart-CUSUM Control Charts or Wilcoxon Rank Sum Tests 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 J15-1957-44

Compound:	**Trichloroethene**
NC MCL (µg/l):	3
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-4	MDL
02/18/99	NP	NT	NT
08/16/99	NP	NT	NT
02/14/00	NP	NT	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**5.6**	**5**
02/09/04	NP	**13**	**5**
08/16/04	NP	**10**	**5**
02/14/05	NP	**17**	**5**
09/01/05	NP	**11**	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	**11**	**5**
02/26/07	NP	**11**	**5**
08/13/07	NP	**9.9**	**1**
02/11/08	NP	**9.9**	**1**
08/25/08	NP	**10**	**1**
02/23/09	NP	**8.1**	**1**
08/24/09	NP	**7.8**	**1**
02/22/10	NP	**9.1**	**1**
08/30/10	NP	**9.1**	**1**
02/22/11	ND	**7**	**1**
08/22/11	ND	**7.9**	**1**
02/22/12	ND	**7.3**	**1**
08/29/12	ND	**7**	**1**
02/18/13	ND	**6.1**	**1**
08/26/13	ND	**6**	**1**
02/20/14	ND	**6**	**1**
08/28/14	ND	**6**	**1**
03/20/15	ND	**4**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	24
m =	9
N =	33
Ci (MW-4) =	511.5

# samples =	9	24
sum of rank values (Ri) =	49.5	511.5
avg rank value (Rbar) =	5.5	21.3

	Number of each rank value		Rank Value
rank value of NDs =	9	1	5.5
rank value of 4s =	0	1	11
rank value of 5.6s =	0	1	12
rank value of 6s =	0	3	14
rank value of 6.1s =	0	1	16
rank value of 7s =	0	2	17.5
rank value of 7.3s =	0	1	19

rank value of 7.8s =	0	1	20
rank value of 7.9s =	0	1	21
rank value of 8.1s =	0	1	22
rank value of 9.1s =	0	2	23.5
rank value of 9.9s =	0	2	25.5
rank value of 10s =	0	2	27.5
rank value of 11s =	0	3	30
rank value of 13s =	0	1	32
rank value of 17s =	0	1	33
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 211.5$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 24.370$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.227$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.227$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound:	**Trichloroethene**
NC MCL (µg/l):	3
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-5	MDL
02/18/99	NP	NS	NT
08/16/99	NP	NS	NT
02/14/00	NP	NS	NT
08/14/00	NP	NT	NT
03/19/01	NP	NT	NT
08/27/02	NP	NT	NT
02/24/03	NP	NT	NT
08/11/03	NP	**11**	**5**
02/09/04	NP	**6.2**	**5**
08/16/04	NP	**5.5**	**5**
02/14/05	NP	**7**	**5**
09/01/05	NP	ND	**5**
02/16/06	NP	ND	**5**
08/30/06	NP	ND	**5**
02/26/07	NP	ND	**5**
08/13/07	NP	**2.7**	**1**
02/11/08	NP	**2.7**	**1**
08/25/08	NP	**3**	**1**
02/23/09	NP	**3**	**1**
08/24/09	NP	**3.5**	**1**
02/22/10	NP	**4.7**	**1**
08/30/10	NP	**5.8**	**1**
02/22/11	ND	**4.8**	**1**
08/22/11	ND	**3.7**	**1**
02/22/12	ND	**3.6**	**1**
08/29/12	ND	**3.4**	**1**
02/18/13	ND	**3.3**	**1**
08/26/13	ND	**3.8**	**1**
02/20/14	ND	**4.1**	**1**
08/28/14	ND	**3.6**	**1**
03/20/15	ND	**2**	**1**

1) Rank the N = 33 observations from the smallest to the largest from background wells and compliance well MW-5.

n =	24
m =	9
N =	33
Ci (MW-5) =	498.0

# samples =	9	24
sum of rank values (Ri) =	63.0	498.0
avg rank value (Rbar) =	7.0	20.8

	Number of each rank value		Rank Value
rank value of NDs =	9	4	7
rank value of 2s =	0	1	14
rank value of 2.7s =	0	2	15.5
rank value of 3s =	0	2	17.5
rank value of 3.3s =	0	1	19
rank value of 3.4s =	0	1	20
rank value of 3.5s =	0	1	21

rank value of 3.6s =	0	2	22.5
rank value of 3.7s =	0	1	24
rank value of 3.8s =	0	1	25
rank value of 4.1s =	0	1	26
rank value of 4.7s =	0	1	27
rank value of 4.8s =	0	1	28
rank value of 5.5s =	0	1	29
rank value of 5.8s =	0	1	30
rank value of 6.2s =	0	1	31
rank value of 7s =	0	1	32
rank value of 11s =	0	1	33
	0	0	0
	0	0	0
# samples =	**9**	**24**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 198$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 108$

Adjustment for tie values:

$SD(W) = 23.968$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.734$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.734$

$Z_{0.01} = 2.326$

Since Z is greater, there is significant evidence of contamination at the compliance well at the 1 percent significance level.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J15-1957-44

Compound: **Trichlorofluoromethane**
NC MCL (µg/l): 2000
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/13/07	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/25/08	NP	NT	NT	Dry	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/24/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/30/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**1**
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	**3.8**	NP	**3.8**	NP	NP	NP	NP	NP	**1**
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**1**
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**1**
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
08/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
$T_{n2} =$	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **Vinyl Chloride**
NC MCL (µg/l): 0.03
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14I	MW-15	MW-16	MW-16I	MW-17	MW-18	MW-19	MW-19I	MW-20	MW-20I	MW-21	MW-22	MW-23	MW-23I	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	10
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/13/07	NP	ND	**1.5**	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/11/08	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/25/08	NP	ND	ND	Dry	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/23/09	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/24/09	NP	ND	**1.1**	**1.1**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/10	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/30/10	NP	ND	ND	**1.5**	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
08/22/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	1
02/22/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
08/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	1
02/18/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
08/26/13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	1
02/20/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
08/28/14	ND	ND	**1.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
03/20/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 4$

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 IPG).

$k = 1$
$n = 8$
$T_{n1} = 4$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.4$

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 J15-1957-44

Compound: **Total Xylenes**
NC MCL (µg/l): 500
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NP	NT	NS	NT	NT	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NP	NT	NS	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NP	NT	NT	NT	NT	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/09/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/16/04	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
02/14/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
09/01/05	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/16/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/30/06	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
02/26/07	NP	ND	ND	ND	ND	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**10**
08/13/07	NP	ND	ND	Dry	**6.1**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/11/08	NP	ND	ND	ND	**11.3**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/25/08	NP	ND	ND	Dry	**7.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**3**
02/23/09	NP	ND	ND	ND	**3.7**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/24/09	NP	ND	ND	ND	**7.2**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/22/10	NP	ND	ND	ND	**13.6**	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/30/10	NP	ND	ND	ND	**6.4**	**2**	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/22/11	ND	ND	ND	ND	**12.6**	**2.5**	ND	ND	ND	ND	ND	ND	**8.8**	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
08/22/11	ND	ND	ND	ND	**7.7**	**2.1**	ND	ND	ND	ND	ND	ND	**7.7**	ND	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**2**
02/22/12	ND	ND	ND	ND	**6.6**	ND	ND	ND	ND	ND	ND	ND	**7.8**	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**2**
08/29/12	ND	ND	ND	ND	**5.3**	ND	ND	ND	ND	ND	ND	ND	**6.7**	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**2**
02/18/13	ND	ND	ND	ND	**7.5**	ND	ND	ND	ND	ND	ND	ND	**2.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**2**
08/26/13	ND	ND	ND	ND	**7.7**	ND	ND	ND	ND	ND	ND	ND	**4.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	**2**
02/20/14	ND	ND	ND	ND	**6.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**
08/28/14	ND	ND	ND	ND	**1.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**
03/20/15	ND	ND	ND	ND	**1.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2**

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 8$
$T_{n1} = 8$

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).

$k = 1$
$n = 8$
$T_{n1} = 8$
$t[7,.01] = 2.998$

$c = 0.125$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	1	1	1	1.1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

$T^*_k = 4.8$

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 J15-1957-44

Compound: **Napthalene**
NC MCL (µg/l): 6
Method: Poisson Prediction Limits
Background: MW-12

	MW-12	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25	MDL
02/18/99	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/99	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/00	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/14/00	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
03/19/01	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/27/02	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/24/03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/11/03	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/09/04	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/16/04	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/14/05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
09/01/05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/26/07	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/13/07	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/11/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/25/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/23/09	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/24/09	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/30/10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/11	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
08/22/11	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NP	NT	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NT
02/22/12	ND	ND	ND	ND	**5.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
08/29/12	ND	ND	ND	ND	**4.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**1**
02/18/13	ND	ND	ND	ND	**5.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NP	ND	**7.7**	**1**
08/26/13	ND	ND	ND	ND	**5.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.9**	**1**
02/20/14	ND	ND	ND	ND	**6.5**	ND	**1.6**	ND	ND	ND	ND	ND	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NT
08/28/14	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**1**
03/20/15	ND	ND	ND	ND	**2.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

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

2) Set the total number of data values for background wells (through the previous sampling event) equal to 'n' = 0.
Use 1/2 of the method detection limit to calculate the Total Poisson Count of the Sum (T_n).

$n = 5$
$T_{n1} = 2.5$

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).

$k = 1$
$n = 5$
$T_{n1} = 2.5$
$t[4,.01] = 3.747$

$c = 0.2$

	MW-1A	MW-2A	MW-3A	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-13	MW-14	MW-14D	MW-15	MW-16	MW-16D	MW-17	MW-18	MW-19	MW-19D	MW-20	MW-20D	MW-21	MW-22	MW-23	MW-23D	MW-24	MW-25
T_{n2} =	0.5	0.5	0.5	2.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 5.1$

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.