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BUNNELL-LAMMONS ENGINEERING, INC.

GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

REPORT OF GROUNDWATER QUALITY RESULTS & STATISTICAL ANALYSIS

SECOND SEMI-ANNUAL SAMPLING EVENT OF 2014

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

December 16, 2014

BLE Project Number J14-1957-43

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GEOTECHNICAL, ENVIRONMENTAL AND CONSTRUCTION MATERIALS CONSULTANTS

December 16, 2014

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

Attention: Mr. Stephen King
Solid Waste Director

Subject: **Report of Groundwater Quality Results & Statistical Analysis**
Second Semi-Annual Sampling Event of 2014
Permit Number: 44-03
Haywood County, North Carolina
BLE Project Number J14-1957-43

Dear Mr. King:

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

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

Sincerely,
BUNNELL-LAMMONS ENGINEERING, INC.

Trevor J. Benton, 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

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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 2014. Historical data from multiple sources and in multiple formats has been gathered and synthesized into this report.

This report presents data from the second semi-annual sampling event in 2014 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 sampling events for wells MW-1A, MW-2A, MW-3A, MW-4 and MW-5 between February 1999 and August 2014. Additionally, this is the eighth (N8) sampling event for newly installed (2010) wells MW-6 through MW-15 and the sixth baseline sampling event (N6) for newly installed (2011) wells MW-16 through MW-21, the fourth baseline sampling event (N4) for newly installed (2012) wells MW-14D through MW-25, and the second (N2) for MW-23D.

FIELD ACTIVITIES, SAMPLING, AND ANALYSIS

Groundwater and surface water samples were collected for the Second semi-annual sampling event of 2014 by personnel from Pace Analytical Services, Inc. (Pace) of Asheville, North Carolina on August 26-28, 2014. 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 (4 wells);
- total cobalt (6 wells);
- total copper (3 wells);
- total lead (1 well);
- total nickel (7 wells);
- total selenium (3 wells);
- total vanadium (6 wells); and
- total zinc (7 wells).

VOC detections in groundwater included:

- benzene (6 wells);
- chlorobenzene (4 wells);
- chloroethane (7 wells);
- 1,2-dichlorobenzene (8 wells);
- 1,4-dichlorobenzene (8 wells);
- 1,1-dichloroethane (14 wells);
- 1,2-dichloroethane (5 wells);
- cis-1,2-dichloroethene (15 wells);
- dichloromethane (2 wells);
- tetrachloroethene (4 wells);
- trichloroethene (4 wells);
- total vinyl chloride (1 well); and
- total xylenes (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-12 and MW-20D);
- benzene (MW-2A, MW-4, MW-5, MW-13, and MW-14);
- 1,2-dichlorobenzene (MW-14);
- 1,4-dichlorobenzene (MW-2A, MW-13, and MW-14);
- 1,1-dichloroethane (MW-3A, MW-4, MW-5, and MW-25);
- 1,2-dichloroethane (MW-3A, MW-4, MW-7, MW-19, and MW-19D);
- dichloromethane (MW-25);

[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, MW-13, and MW-25);
- trichloroethene (MW-4 and MW-5); and
- vinyl chloride (MW-2A).

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 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 cadmium, total chromium, total cobalt, total copper, total lead, total nickel, total vanadium, total zinc, and tetrachloroethene did not calculate SSIs. However, the Kruskal-Wallis and Wilcoxon tests calculated SSIs for 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, and MW-19), cis-1,2-dichloroethene (MW-2A, MW-4, MW-5, MW-7, MW-11, MW-13, MW-14, and MW-15), dichloromethane (MW-4), 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 eighth (N8) sampling event for wells MW-6 through MW-15, the sixth (N6) sampling event for wells MW-16 through MW-21, and fourth (N4) sampling event for new wells MW-14D through MW-25, and the second (N2) 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, trichloroethene, and vinyl chloride 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 February 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 No. J14-1957-43

August 22, 2014															
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	NM	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	45.41	48.32	2,642.56	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	24.58	27.38	2,616.40	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	38.95	41.65	2,632.64	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	65.37	67.96	2,721.51	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	70.83	70.54	2,726.54	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	7.88	7.48	2,605.15	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	9.40	9.25	2,612.08	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	6.72	6.52	2,613.53	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	3.46	2.94	2,615.73	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	2.50	2.14	2,621.46	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	77.06	76.82	2,679.40	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	65.02	67.85	2,735.26	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	81.02	80.65	2,718.49	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	85.80	85.50	2,684.84	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	146.24	145.82	2,625.81	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	80.71	83.39	2,636.18	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	51.25	51.12	2,665.04	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	72.37	72.08	2,644.20	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	48.02	47.72	2,617.05	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	25.85	25.83	2,595.08	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	7.57	7.36	2,607.72	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	7.80	7.51	2,607.82	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	2.55	2.36	2,619.58	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	1.92	1.74	2,620.20	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	23.58	23.23	2,635.14	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	2.58	2.45	2,597.41	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	2.70	2.51	2,608.92	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	2.82	2.59	2,608.93	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	5.31	5.07	2,620.73	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	161.72	161.36	2,594.95	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 8/22-28/14 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
NM = Well Not Measured

Prepared by: IAI
Checked by: RAD

TABLE 2

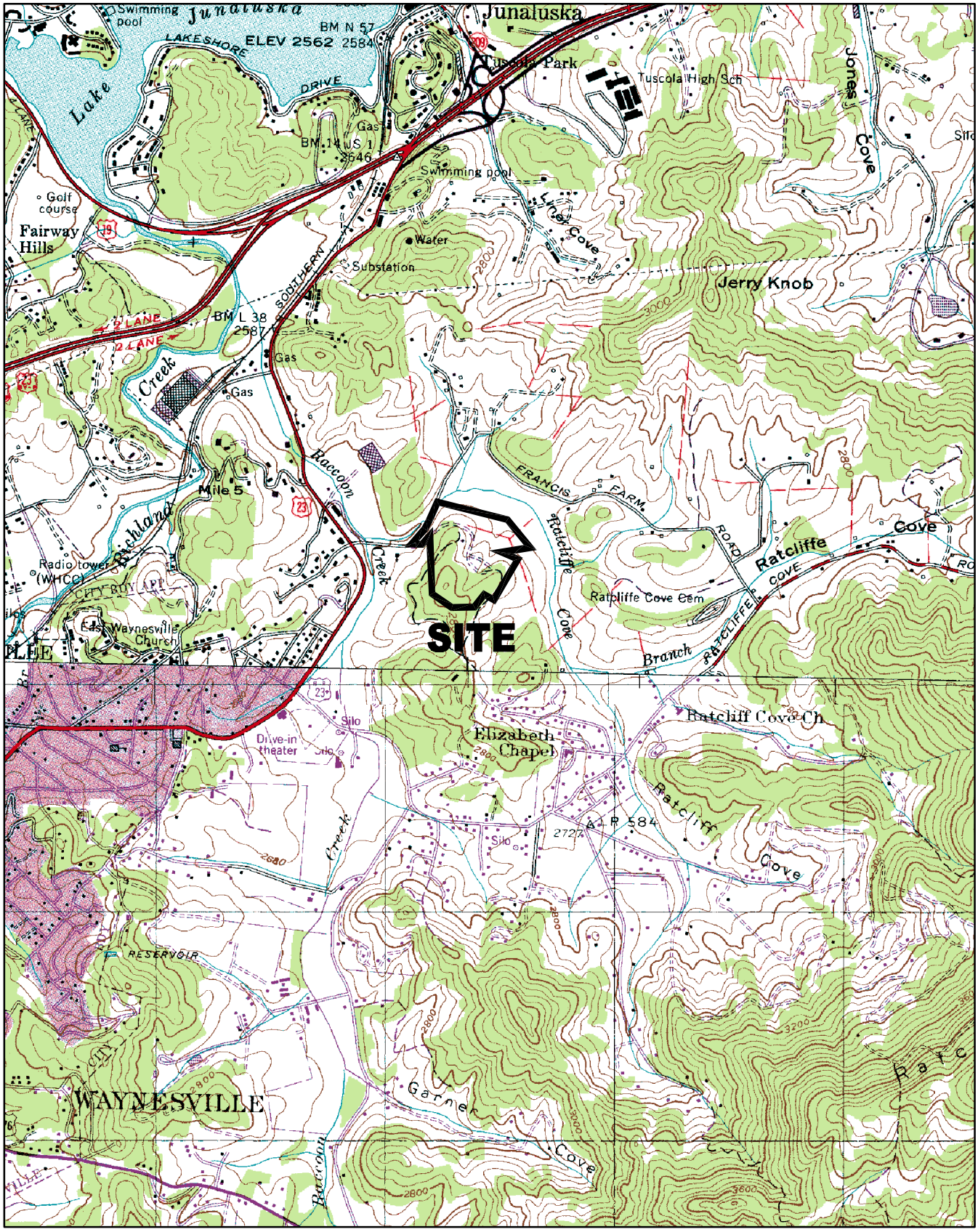
SUMMARY OF STATISTICAL ANALYSIS RESULTS
Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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	98%	Poisson Prediction Limits	Fail	Shewhart-CUSUM/Wilcoxon	Pass	No	-
Total Arsenic	93%	Poisson Prediction Limits	Pass	-	-	No	-
Total Barium	2%	ANOVA	Fail	Shewhart-CUSUM/Trend Test	Insufficient data[3]	MW-13[3]	-
Total Beryllium	97%	Poisson Prediction Limits	Pass	-	-	No	-
Total Cadmium	91%	Kruskal-Wallis	Pass	-	-	No	-
Total Chromium	69%	Kruskal-Wallis	Pass	-	-	No	-
Total Cobalt	63%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Insufficient data[3]	MW-2A[3], MW-3A[3]	-
Total Copper	79%	Kruskal-Wallis	Pass	-	-	No	-
Total Lead	88%	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	Fail	Shewhart-CUSUM/Wilcoxon	Pass	No	-
Total Silver	95%	Poisson Prediction Limits	Pass	-	-	No	-
Total Thallium	99%	Poisson Prediction Limits	Pass	-	-	No	-
Total Vanadium	71%	Kruskal-Wallis	Pass	-	-	No	-
Total Zinc	52%	Kruskal-Wallis	Pass	-	-	No	-
Acetone	99%	Poisson Prediction Limits	Pass	-	-	No	-
Benzene	76%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-4, -5, -13, -14)	Yes (MW-4, -13, -14)
Carbon Disulfide	98%	Poisson Prediction Limits	Pass	-	-	No	-
Chlorobenzene	87%	Poisson Prediction Limits	Pass	-	-	No	-
Chloroethane	68%	Poisson Prediction Limits	Fail	Shewhart-CUSUM/Wilcoxon	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	65%	Poisson Prediction Limits	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-2A, -4, -13, -14)	Yes (MW-2A, -13, -14)
1,1-Dichloroethane	42%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail [3]	Yes (MW-3A, -4, -5, -7, -10, -11, -13, -19, -25[3])	Yes (MW-3A, -5, -25)
1,2-Dichloroethane	82%	Poisson Prediction Limits	Pass	-	-	No	-
1,1-Dichloroethene	100%	Poisson Prediction Limits	Pass	-	-	No	-
cis-1,2-Dichloroethene	40%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail[3]	Yes (MW-2A, -4, -5, -7, -11, -13, -14, -15, -25[3])	No
cis-1,3-Dichloropropene	100%	Poisson Prediction Limits	Pass	-	-	No	-
Ethylbenzene	98%	Poisson Prediction Limits	Pass	-	-	No	-
Dichloromethane	88%	Kruskal-Wallis	Fail	Shewhart-CUSUM/Wilcoxon	Fail	Yes (MW-4)	No
Tetrachloroethene	79%	Kruskal-Wallis	Pass	-	-	No	-
Toluene	95%	Poisson Prediction Limits	Pass	-	-	No	-
Trichloroethene	80%	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	93%	Poisson Prediction Limits	Pass	-	-	No	-

Notes:

1. SSI = *Statistically Significant Increase*
2. MCL = *Maximum Contaminant Level*
3. New monitoring wells do not have sufficient background databases for intrawell analyses.

FIGURES

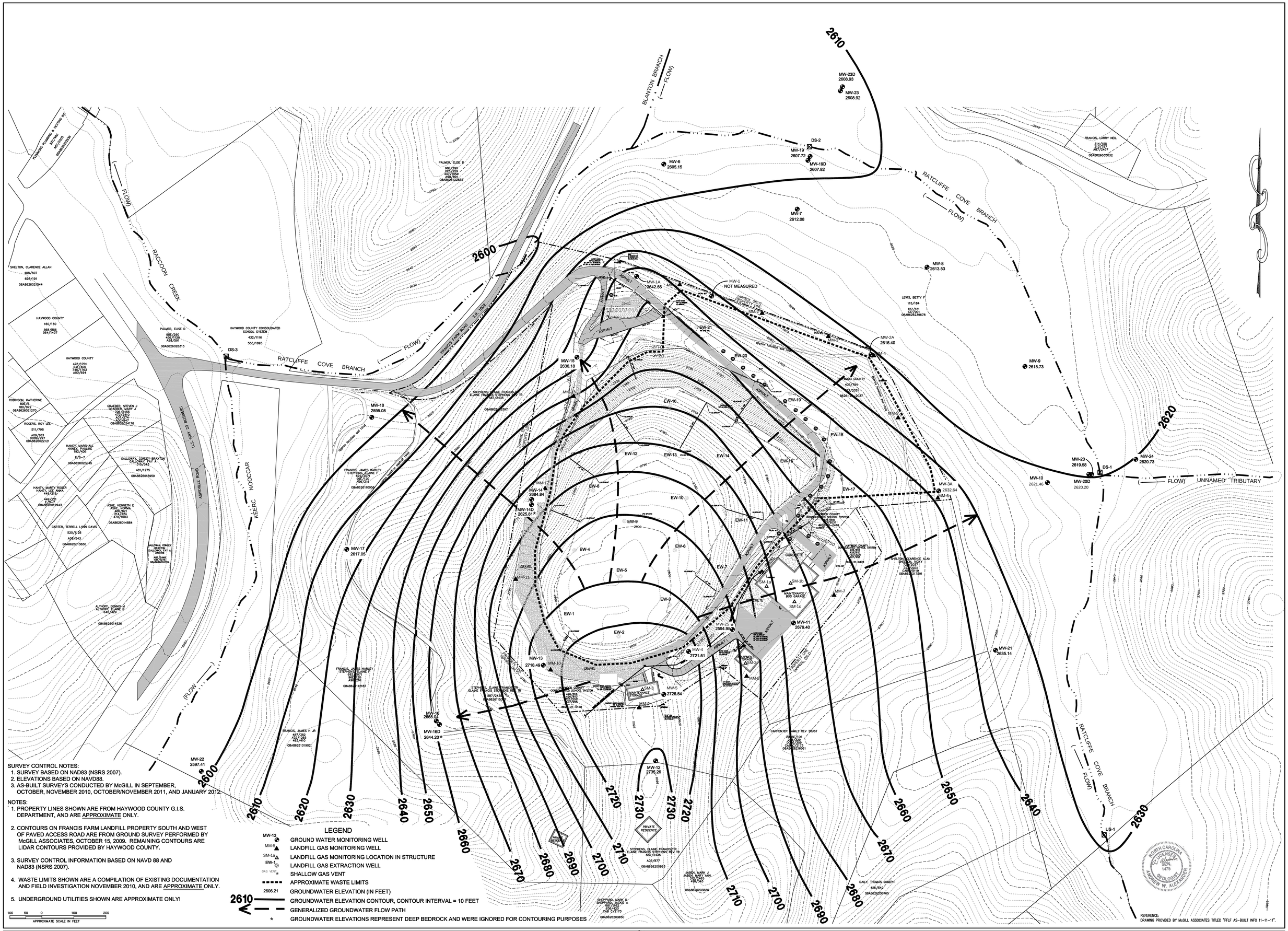


2000 1000 0 2000 4000

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: 12-17-14	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-43 SLM			1
APPROVED:	JOB NO: J14-1957-43			



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-1	LANDFILL GAS MONITORING LOCATION IN STRUCTURE
EW-1	LANDFILL GAS EXTRACTION WELL
GAS VENT	SHALLOW GAS VENT
	APPROXIMATE WASTE LIMITS
2608.21	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 "FTLF AS-BUILT INFO 11-11-11".

REVISIONS		
No.	DESCRIPTION	BY

DRAWN:	ACE
CHECKED:	IAI
APPROVED:	
DATE:	10-06-14
CAD FILE:	HCFTLF-43 POTMAP 082214
JOB NO:	J14-1957-43

BLE INC.
BUNNELL-LAMMONS ENGINEERING, INC.
6004 PONDERS COURT
GREENVILLE, SOUTH CAROLINA 29615
PHONE: (864)288-0380 FAX: (864)288-4480

GROUNDWATER ELEVATION CONTOUR MAP – AUGUST 22, 2014
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.
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 (8-16-1999)

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:

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 (2-14-2000)

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.
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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 (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:

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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 (8-27-2002)

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:

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 (2-24-2003)

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:

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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 (8-16-2004)

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:

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 (2-14-2005)

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.
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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 (2-16-2006)

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:

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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 (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:

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 (2-26-2007)

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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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 (8-25-2008)

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

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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:

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 (8-30-2010)

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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6. NT = Not Tested
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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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
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 (2-18-2013)

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	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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2. NE = Not Established; North Carolina has not established a MCL
3. MRL = Laboratory Method Reporting Limit
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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

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

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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 (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:

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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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MRL = Laboratory *Method Reporting Limit*

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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 (8-11-2003)

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:

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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:

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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:

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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:

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 (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.

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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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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

Notes:

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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:

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 2-11-2008

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.

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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 8-25-2008

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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NT = *Not Tested*

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

Notes:

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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 (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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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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NT = *Not Tested*

NP = *Not Present* during sampling event

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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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:

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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

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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.

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NS = *Not Sampled*

NT = *Not Tested*

NP = *Not Present* during sampling event

APPENDIX C

LABORATORY ANALYTICAL RESULTS

1A

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

Client: HAYWOOD CO FFLF **Date:** 8.26.14

~~**Time on Site:**~~ _____ ~~to~~ MW-1A

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	INITIAL MW-1A	6.4	16.7	493	1.43	0
	MID	6.3	16.0	409	4.37	1.5
1405	FINAL	6.4	17.5	456	1.23	3.0

2A

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-2A

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-2A INITIAL	6.3	15.0	352	18.0	0
	MID	6.4	14.1	342	> 1000	1.5
1530	FINAL	6.5	14.2	642	9.35	3.0

3A

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-3A

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-3A INITIAL	6.2	14.8	187	6.55	0
	MID	6.4	13.9	321	7.95	1.5
1510	FINAL	6.5	14.1	363	5.71	3.0

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	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

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Client: HAYWOOD CO FFLF **Date:** 8-27-14

~~**Time on Site:**~~ _____ ~~to~~ MW-4

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-4 INITIAL	5.6	16.6	152	3.06	0
	MID	5.9	15.9	267	10.31	1.5
1130	FINAL	5.6	16.5	228	9.17	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

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Client: HAYWOOD CO FFLF **Date:** 8-27-14

~~**Time on Site:**~~ _____ ~~to~~ MW-5

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-5 INITIAL	5.9	15.3	227	5.69	0
	MID	5.8	14.6	234	13.9	1.5
1110	FINAL	5.9	15.9	217	10.05	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

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Client: HAYWOOD CO FFLF **Date:** 7-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-6

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-6 INITIAL	5.8	17.2	64	9.73	0
	MID	5.9	16.4	66	>1000	1.5
1020	FINAL	5.9	16.9	65	5.79	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

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Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-7

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-7 INITIAL	6.2	17.5	273	10.0	0
	MID	6.4	15.6	298	>1000	1.5
1210	FINAL	6.2	15.8	340	4.36	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-8

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-8 INITIAL	6.6	18.7	215	20	0
	MID	6.6	16.6	248	>1000	1.5
1230	FINAL	6.5	18.3	249	4.88	3.0

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Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-9

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-9 INITIAL	6.4	18.4	110	>1000	0
	MID	6.1	17.5	128	16.2	1.5
1125	FINAL	6.0	17.9	107	1.61	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

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Client: HAYWOOD CO FFLF **Date:** 8.27.14

~~**Time on Site:**~~ _____ ~~to~~ MW-10

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-10 INITIAL	6.0	19.7	59	2.44	0
	MID	5.7	18.8	57	>1000	1.5
	FINAL	6.0	18.9	59	5.97	3.00

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Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

Client: HAYWOOD CO FFLF **Date:** 8-22-14

~~Time on Site:~~ _____ ~~to~~ MW-11

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-11 INITIAL	6.4	16.4	452	4.1	.0
	MID	6.4	15.1	510	670	1.5
1155	FINAL	6.6	15.7	600	3.15	3.0

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Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

Client: HAYWOOD CO FFLF **Date:** 8.28.14

~~**Time on Site:**~~ _____ ~~to~~ MW-12

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-12 INITIAL	6.8	14.1	153	8.>>	0
	MID	6.8	13.0	151	>1000	1.5
1100	FINAL	6.6	13.6	113	10.00	3.00

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

13

Client: HAYWOOD CO FFLF **Date:** 8-20-14

~~Time on Site:~~ _____ ~~to~~ MW-13

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-13 INITIAL	6.6	16.9	460	3.84	0
	MID	6.4	16.1	472	55	1.5
1400	FINAL	6.4	16.7	448	4.16	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
	Document No.: F-AVL-F-007-rev.00	Issuing Authorities: Pace Asheville Quality Office	Phone:828.254.7176

14

Client: HAYWOOD CO FFLF **Date:** 8-28-14

~~Time on Site:~~ _____ ~~to~~ MW-14

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-14 INITIAL	7.0	18.8	674	12.5	0
	MID	6.5	17.5	630	>1000	1.5
1320	FINAL	6.4	16.1	732	2.87	DRY @ 2.3

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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14D

Client: HAYWOOD CO FFLF **Date:** 8-22-14

~~**Time on Site:**~~ _____ ~~to~~ MW-14D

Time	Site	pH	Tmp	SECOND	TURBIDITY	VOLUME
	MW-14D INITIAL	12.3	19.6	2440	9.54	0
	MID	11.7	16.0	1390	12.5	1.5
1345	FINAL	9.3	17.2	204	4.37	DRY @ 1.9

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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Client: HAYWOOD CO FFLF **Date:** 8-28-14

~~**Time on Site:**~~ _____ ~~to~~ MW-15

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-15 INITIAL	7.5	16.0	665	5.86	0
	MID	7.6	13.9	703	60	1.5
14L	FINAL	7.5	15.4	672	4.73	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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Client: HAYWOOD CO FFLF **Date:** 8-

~~**Time on Site:**~~ _____ ~~to~~ MW-16

Time	Site	pH	Tmp	SECOND	TURBIDITY	VOLUME
	MW-16 INITIAL	6.7	14.9	80	3.38	0
	MID	6.7	15.8	90	>1000	1.5
1455	FINAL	6.5	15.6	93	14.2	3.0

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MW-16?

Client: HAYWOOD CO FFLF **Date:** 8-28-14

~~**Time on Site:**~~ _____ ~~to~~ MW-16D

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-16D INITIAL	7.6	17.3	123	2.31	0
	MID	7.6	16.5	209	15.7	1.5
1120	FINAL	7.4	14.5	182	3.31	DAS @ 1.55

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17

Client: HAYWOOD CO FFLF **Date:** 8-12-14

~~**Time on Site:**~~ _____ ~~to~~ MW-17

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-17 INITIAL	6.4	15.9	66	1.58	0
	MIA	6.5	13.8	82	>1000	1.5
1440	FINAL	6.6	14.9	81	7.15	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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18

Client: HAYWOOD CO FFLF **Date:** 8-28-14

~~**Time on Site:**~~ _____ ~~to~~ MW-18

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-18 INITIAL	6.3	14.0	59	1.87	0
	MID	6.5	13.5	57	>1000	1.5
1510	FINAL	6.5	16.2	58	8.18	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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19

Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-19

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-19 INITIAL	6.1	19.1	234	20.0	0
	MID	6.1	18.3	236	>1000	1.5
1145	FINAL	5.2	19.4	238	1.95	3.00

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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19D

Client: HAYWOOD CO FFLF **Date:** 8-26

~~**Time on Site:**~~ _____ ~~to~~ MW-19D

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-19D INITIAL	6.6	17.8	618	10.1	0
	MID	6.2	15.6	626	12.4	1.5
1200	FINAL	6.3	17.5	632	2.09	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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20

Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-20

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-20 INITIAL	6.5	19.8	63	231	0
	MID	6.7	16.9	62	50	1.5
1100	FINAL	6.4	17.1	64	248	3.0

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20D

Client: HAYWOOD CO FFLF **Date:** 8.26.14

~~**Time on Site:**~~ _____ ~~to~~ MW-20D

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-20D INITIAL	6.7	18.1	75	5.08	0
	MID	6.9	15.4	89	>1000	1.5
1110	FINAL	7.0	17.5	94	50	3.0

21

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-21

Time	Site	pH	Tmp	SECOND	TURBIDITY	VOLUME
	MW-21 INITIAL	6.0	14.1	18	3.02	0
	MID	6.0	13.7	16	>1000	1.5
1000	FINAL	5.8	14.5	17	2.01	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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22

Client: HAYWOOD CO FFLF **Date:** 8-22-14

Time on Site: _____ to MW-2L

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-2L INITIAL	6.0	16.4	76	>1000	0
	MID	6.2	16.3	66	>1000	1.5
1430	FINAL	5.9	16.0	68	10.00	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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23

Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-23

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-23 INITIAL	5.9	21.7	92	2.44	0
	MID	6.1	18.2	90	24.2	1.5
1330	FINAL	6.1	21.1	99	6.39	3.0

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230

Client: HAYWOOD CO FFLF **Date:** 8-26-14

~~**Time on Site:**~~ _____ ~~to~~ MW-230

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-230 INITIAL	7.3	21.5	146	5.49	0
	MID	7.2	16.2	122	3.75	1.5
1340	FINAL	7.2	15.9	120	~~2.49~~ 2.43	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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24

Client: HAYWOOD CO FFLF **Date:** 8.26.14

~~**Time on Site:**~~ _____ ~~to~~ MW-24

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-24 INITIAL	6.2	19.8	39	9.50	0
	MID	6.4	16.4	37	>1000	1.5
1305	FINAL	6.3	17.7	40	2.04	3.0

Pace Analytical	Document Name: AVL Field Blank Cal Form	Document Revised: June 20, 2013 Page 1 of 1	Pace Analytical Services, Inc. 2225 Riverside Drive Asheville NC
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25

Client: HAYWOOD CO FFLF **Date:** 8-28-14

~~**Time on Site:**~~ _____ ~~to~~ MW-25

Time	Site	pH	Tmp	SPCOND	TURBIDITY	VOLUME
	MW-25 INITIAL	7.8	19.8	611	8.15	0
	MID	8.6	17.9	605	12.5	0.5
1220	FINAL	8.3	15.7	540	65	DRY @ 1.0

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

September 18, 2014

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

RE: Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Dear Mr. King:
Enclosed are the analytical results for sample(s) received by the laboratory on August 22, 2014. 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,

Jon Bradley

Jon D Bradley
jon.bradley@pacelabs.com
Project Manager

Enclosures

cc: Andy Alexander, BLE
Mr. Stephen King, Haywood Co. Solid Waste

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Asheville, NC 28804
(828)254-7176

CERTIFICATIONS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

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 Dr., 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: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92214654001	**US-1**	Water	08/22/14 11:30	08/22/14 16:45
92214654002	**DS-1**	Water	08/22/14 12:20	08/22/14 16:45
92214654003	**DS-2**	Water	08/22/14 13:10	08/22/14 16:45
92214654004	**DS-3**	Water	08/22/14 14:10	08/22/14 16:45

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SAMPLE ANALYTE COUNT

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92214654001	**US-1**	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214654002	**DS-1**	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214654003	**DS-2**	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214654004	**DS-3**	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: US-1 **Lab ID: 92214654001** Collected: 08/22/14 11:30 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MPS**				1		08/22/14 11:30		
Field pH	**7.6**	Std. Units	0.10	0.10	1		08/22/14 11:30		
Field Temperature	**21.1**	deg C	0.50	0.50	1		08/22/14 11:30		
Field Specific Conductance	**91**	umhos/cm	1.0	1.0	1		08/22/14 11:30		
Turbidity	**6.79**	NTU	1.0	1.0	1		08/22/14 11:30		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	08/27/14 12:15	08/28/14 20:18	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:18	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	08/27/14 12:15	08/28/14 20:18	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	08/27/14 12:15	08/28/14 20:18	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	08/27/14 12:15	08/28/14 20:18	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	81	%	20-130		1	08/27/14 12:15	08/28/14 20:18	877-09-8	
Decachlorobiphenyl (S)	65	%	20-130		1	08/27/14 12:15	08/28/14 20:18	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/26/14 15:20	08/28/14 22:54	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/26/14 15:20	08/28/14 22:54	7440-38-2	
Barium	**47.4**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 22:54	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/26/14 15:20	08/28/14 22:54	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/26/14 15:20	08/28/14 22:54	7440-43-9	
Chromium	**1.7J**	ug/L	5.0	0.40	1	08/26/14 15:20	08/28/14 22:54	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/26/14 15:20	08/28/14 22:54	7440-48-4	
Copper	**1.8J**	ug/L	5.0	0.30	1	08/26/14 15:20	08/28/14 22:54	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	08/26/14 15:20	08/28/14 22:54	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/26/14 15:20	08/28/14 22:54	7440-02-0	
Selenium	**0.87J**	ug/L	10.0	0.10	1	08/26/14 15:20	08/28/14 22:54	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	08/26/14 15:20	08/28/14 22:54	7440-22-4	

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: US-1 **Lab ID: 92214654001** Collected: 08/22/14 11:30 Received: 08/22/14 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								
Thallium	ND	ug/L	5.4	3.0	1	08/26/14 15:20	08/28/14 22:54	7440-28-0	
Vanadium	**4.0J**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 22:54	7440-62-2	
Zinc	**2.5J**	ug/L	10.0	0.40	1	08/26/14 15:20	08/28/14 22:54	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/27/14 17:33	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/27/14 17:33	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/27/14 17:33	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/27/14 17:33	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/27/14 17:33	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/27/14 17:33	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/27/14 17:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/27/14 17:33	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/27/14 17:33	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/27/14 17:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/27/14 17:33	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/27/14 17:33	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/27/14 17:33	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/27/14 17:33	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/27/14 17:33	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/27/14 17:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/27/14 17:33	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/27/14 17:33	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/27/14 17:33	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/27/14 17:33	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/27/14 17:33	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/27/14 17:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/27/14 17:33	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/27/14 17:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/27/14 17:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/27/14 17:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/27/14 17:33	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/27/14 17:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/27/14 17:33	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/27/14 17:33	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/27/14 17:33	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/27/14 17:33	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/27/14 17:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/27/14 17:33	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/27/14 17:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/27/14 17:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/27/14 17:33	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/27/14 17:33	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/27/14 17:33	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/27/14 17:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/27/14 17:33	79-00-5	

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: US-1 **Lab ID: 92214654001** Collected: 08/22/14 11:30 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		08/27/14 17:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/27/14 17:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/27/14 17:33	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/27/14 17:33	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/27/14 17:33	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/27/14 17:33	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/27/14 17:33	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/27/14 17:33	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		08/27/14 17:33	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		08/27/14 17:33	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		08/27/14 17:33	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0029J**	mg/L	0.0050	0.0025	1		09/02/14 16:21	57-12-5	B

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: DS-1 **Lab ID: 92214654002** Collected: 08/22/14 12:20 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MPS**				1		08/22/12 12:20		
Field pH	**7.5**	Std. Units	0.10	0.10	1		08/22/12 12:20		
Field Temperature	**22.3**	deg C	0.50	0.50	1		08/22/12 12:20		
Field Specific Conductance	**88**	umhos/cm	1.0	1.0	1		08/22/12 12:20		
Turbidity	**10.04**	NTU	1.0	1.0	1		08/22/12 12:20		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	08/27/14 12:15	08/28/14 20:36	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:36	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	08/27/14 12:15	08/28/14 20:36	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	08/27/14 12:15	08/28/14 20:36	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	08/27/14 12:15	08/28/14 20:36	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	41	%	20-130		1	08/27/14 12:15	08/28/14 20:36	877-09-8	
Decachlorobiphenyl (S)	57	%	20-130		1	08/27/14 12:15	08/28/14 20:36	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/26/14 15:20	08/28/14 23:07	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/26/14 15:20	08/28/14 23:07	7440-38-2	
Barium	**46.2**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 23:07	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/26/14 15:20	08/28/14 23:07	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/26/14 15:20	08/28/14 23:07	7440-43-9	
Chromium	**1.5J**	ug/L	5.0	0.40	1	08/26/14 15:20	08/28/14 23:07	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/26/14 15:20	08/28/14 23:07	7440-48-4	
Copper	**1.3J**	ug/L	5.0	0.30	1	08/26/14 15:20	08/28/14 23:07	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	08/26/14 15:20	08/28/14 23:07	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/26/14 15:20	08/28/14 23:07	7440-02-0	
Selenium	**2.3J**	ug/L	10.0	0.10	1	08/26/14 15:20	08/28/14 23:07	7782-49-2	B
Silver	**1.4J**	ug/L	5.0	0.10	1	08/26/14 15:20	08/28/14 23:07	7440-22-4	B

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: DS-1 **Lab ID: 92214654002** Collected: 08/22/14 12:20 Received: 08/22/14 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								
Thallium	ND	ug/L	5.4	3.0	1	08/26/14 15:20	08/28/14 23:07	7440-28-0	
Vanadium	**2.9J**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 23:07	7440-62-2	
Zinc	**2.1J**	ug/L	10.0	0.40	1	08/26/14 15:20	08/28/14 23:07	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/27/14 17:49	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/27/14 17:49	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/27/14 17:49	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/27/14 17:49	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/27/14 17:49	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/27/14 17:49	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/27/14 17:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/27/14 17:49	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/27/14 17:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/27/14 17:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/27/14 17:49	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/27/14 17:49	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/27/14 17:49	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/27/14 17:49	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/27/14 17:49	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/27/14 17:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/27/14 17:49	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/27/14 17:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/27/14 17:49	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/27/14 17:49	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/27/14 17:49	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/27/14 17:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/27/14 17:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/27/14 17:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/27/14 17:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/27/14 17:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/27/14 17:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/27/14 17:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/27/14 17:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/27/14 17:49	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/27/14 17:49	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/27/14 17:49	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/27/14 17:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/27/14 17:49	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/27/14 17:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/27/14 17:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/27/14 17:49	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/27/14 17:49	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/27/14 17:49	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/27/14 17:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/27/14 17:49	79-00-5	

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: DS-1 **Lab ID: 92214654002** Collected: 08/22/14 12:20 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		08/27/14 17:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/27/14 17:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/27/14 17:49	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/27/14 17:49	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/27/14 17:49	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/27/14 17:49	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/27/14 17:49	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/27/14 17:49	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		08/27/14 17:49	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		08/27/14 17:49	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		08/27/14 17:49	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0033J**	mg/L	0.0050	0.0025	1		09/02/14 16:22	57-12-5	B

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: DS-2 **Lab ID: 92214654003** Collected: 08/22/14 13:10 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MPS**				1		08/22/14 13:10		
Field pH	**7.2**	Std. Units	0.10	0.10	1		08/22/14 13:10		
Field Temperature	**22.3**	deg C	0.50	0.50	1		08/22/14 13:10		
Field Specific Conductance	**94**	umhos/cm	1.0	1.0	1		08/22/14 13:10		
Turbidity	**4.11**	NTU	1.0	1.0	1		08/22/14 13:10		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	08/27/14 12:15	08/28/14 20:53	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 20:53	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	08/27/14 12:15	08/28/14 20:53	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	08/27/14 12:15	08/28/14 20:53	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	08/27/14 12:15	08/28/14 20:53	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	78	%	20-130		1	08/27/14 12:15	08/28/14 20:53	877-09-8	
Decachlorobiphenyl (S)	67	%	20-130		1	08/27/14 12:15	08/28/14 20:53	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/26/14 15:20	08/28/14 23:10	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/26/14 15:20	08/28/14 23:10	7440-38-2	
Barium	**45.4**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 23:10	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/26/14 15:20	08/28/14 23:10	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/26/14 15:20	08/28/14 23:10	7440-43-9	
Chromium	**1.4J**	ug/L	5.0	0.40	1	08/26/14 15:20	08/28/14 23:10	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/26/14 15:20	08/28/14 23:10	7440-48-4	
Copper	**0.90J**	ug/L	5.0	0.30	1	08/26/14 15:20	08/28/14 23:10	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	08/26/14 15:20	08/28/14 23:10	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/26/14 15:20	08/28/14 23:10	7440-02-0	
Selenium	**0.49J**	ug/L	10.0	0.10	1	08/26/14 15:20	08/28/14 23:10	7782-49-2	B
Silver	**0.48J**	ug/L	5.0	0.10	1	08/26/14 15:20	08/28/14 23:10	7440-22-4	B

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: DS-2 **Lab ID: 92214654003** Collected: 08/22/14 13:10 Received: 08/22/14 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								
Thallium	ND	ug/L	5.4	3.0	1	08/26/14 15:20	08/28/14 23:10	7440-28-0	
Vanadium	**2.5J**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 23:10	7440-62-2	
Zinc	**3.4J**	ug/L	10.0	0.40	1	08/26/14 15:20	08/28/14 23:10	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/27/14 18:04	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/27/14 18:04	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/27/14 18:04	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/27/14 18:04	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/27/14 18:04	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/27/14 18:04	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/27/14 18:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/27/14 18:04	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/27/14 18:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/27/14 18:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/27/14 18:04	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/27/14 18:04	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/27/14 18:04	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/27/14 18:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/27/14 18:04	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/27/14 18:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/27/14 18:04	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/27/14 18:04	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/27/14 18:04	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/27/14 18:04	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/27/14 18:04	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/27/14 18:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/27/14 18:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/27/14 18:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/27/14 18:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/27/14 18:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/27/14 18:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/27/14 18:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/27/14 18:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/27/14 18:04	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/27/14 18:04	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/27/14 18:04	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/27/14 18:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/27/14 18:04	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/27/14 18:04	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/27/14 18:04	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/27/14 18:04	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/27/14 18:04	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/27/14 18:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/27/14 18:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/27/14 18:04	79-00-5	

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: DS-2 **Lab ID: 92214654003** Collected: 08/22/14 13:10 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		08/27/14 18:04	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/27/14 18:04	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/27/14 18:04	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/27/14 18:04	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/27/14 18:04	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/27/14 18:04	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/27/14 18:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/27/14 18:04	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		08/27/14 18:04	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		08/27/14 18:04	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		08/27/14 18:04	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0029J**	mg/L	0.0050	0.0025	1		09/02/14 16:23	57-12-5	B

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: DS-3 **Lab ID: 92214654004** Collected: 08/22/14 14:10 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MPS**				1		08/22/14 14:10		
Field pH	**7.5**	Std. Units	0.10	0.10	1		08/22/14 14:10		
Field Temperature	**22.6**	deg C	0.50	0.50	1		08/22/14 14:10		
Field Specific Conductance	**105**	umhos/cm	1.0	1.0	1		08/22/14 14:10		
Turbidity	**5.44**	NTU	1.0	1.0	1		08/22/14 14:10		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	08/27/14 12:15	08/28/14 21:11	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	08/27/14 12:15	08/28/14 21:11	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	08/27/14 12:15	08/28/14 21:11	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	08/27/14 12:15	08/28/14 21:11	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	08/27/14 12:15	08/28/14 21:11	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	77	%	20-130		1	08/27/14 12:15	08/28/14 21:11	877-09-8	
Decachlorobiphenyl (S)	73	%	20-130		1	08/27/14 12:15	08/28/14 21:11	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/26/14 15:20	08/28/14 23:13	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/26/14 15:20	08/28/14 23:13	7440-38-2	
Barium	**54.7**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 23:13	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/26/14 15:20	08/28/14 23:13	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/26/14 15:20	08/28/14 23:13	7440-43-9	
Chromium	**0.90J**	ug/L	5.0	0.40	1	08/26/14 15:20	08/28/14 23:13	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/26/14 15:20	08/28/14 23:13	7440-48-4	
Copper	**0.78J**	ug/L	5.0	0.30	1	08/26/14 15:20	08/28/14 23:13	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	08/26/14 15:20	08/28/14 23:13	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/26/14 15:20	08/28/14 23:13	7440-02-0	
Selenium	**0.63J**	ug/L	10.0	0.10	1	08/26/14 15:20	08/28/14 23:13	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	08/26/14 15:20	08/28/14 23:13	7440-22-4	

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: DS-3 **Lab ID: 92214654004** Collected: 08/22/14 14:10 Received: 08/22/14 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								
Thallium	ND	ug/L	5.4	3.0	1	08/26/14 15:20	08/28/14 23:13	7440-28-0	
Vanadium	**3.0J**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 23:13	7440-62-2	
Zinc	**1.4J**	ug/L	10.0	0.40	1	08/26/14 15:20	08/28/14 23:13	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/27/14 18:20	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/27/14 18:20	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/27/14 18:20	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/27/14 18:20	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/27/14 18:20	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/27/14 18:20	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/27/14 18:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/27/14 18:20	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/27/14 18:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/27/14 18:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/27/14 18:20	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/27/14 18:20	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/27/14 18:20	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/27/14 18:20	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/27/14 18:20	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/27/14 18:20	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/27/14 18:20	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/27/14 18:20	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/27/14 18:20	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/27/14 18:20	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/27/14 18:20	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/27/14 18:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/27/14 18:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/27/14 18:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/27/14 18:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/27/14 18:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/27/14 18:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/27/14 18:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/27/14 18:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/27/14 18:20	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/27/14 18:20	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/27/14 18:20	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/27/14 18:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/27/14 18:20	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/27/14 18:20	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/27/14 18:20	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/27/14 18:20	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/27/14 18:20	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/27/14 18:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/27/14 18:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/27/14 18:20	79-00-5	

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ANALYTICAL RESULTS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Sample: DS-3 **Lab ID: 92214654004** Collected: 08/22/14 14:10 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Trichloroethene	ND	ug/L	1.0	0.47	1		08/27/14 18:20	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/27/14 18:20	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/27/14 18:20	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/27/14 18:20	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/27/14 18:20	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/27/14 18:20	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/27/14 18:20	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/27/14 18:20	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		08/27/14 18:20	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		08/27/14 18:20	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		08/27/14 18:20	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0028J**	mg/L	0.0050	0.0025	1		09/02/14 16:26	57-12-5	B

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QUALITY CONTROL DATA

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

QC Batch: MPRP/16763 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92214654001, 92214654002, 92214654003, 92214654004

METHOD BLANK: 1272044 Matrix: Water
Associated Lab Samples: 92214654001, 92214654002, 92214654003, 92214654004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	08/28/14 22:07	
Arsenic	ug/L	ND	10.0	08/28/14 22:07	
Barium	ug/L	ND	5.0	08/28/14 22:07	
Beryllium	ug/L	ND	1.0	08/28/14 22:07	
Cadmium	ug/L	ND	1.0	08/28/14 22:07	
Chromium	ug/L	ND	5.0	08/28/14 22:07	
Cobalt	ug/L	ND	5.0	08/28/14 22:07	
Copper	ug/L	0.34J	5.0	08/28/14 22:07	
Lead	ug/L	ND	5.0	08/28/14 22:07	
Nickel	ug/L	ND	5.0	08/28/14 22:07	
Selenium	ug/L	1.3J	10.0	08/28/14 22:07	
Silver	ug/L	0.15J	5.0	08/28/14 22:07	
Thallium	ug/L	ND	5.4	08/28/14 22:07	
Vanadium	ug/L	ND	5.0	08/28/14 22:07	
Zinc	ug/L	ND	10.0	08/28/14 22:07	

LABORATORY CONTROL SAMPLE: 1272045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	506	101	80-120	
Arsenic	ug/L	500	486	97	80-120	
Barium	ug/L	500	483	97	80-120	
Beryllium	ug/L	500	488	98	80-120	
Cadmium	ug/L	500	495	99	80-120	
Chromium	ug/L	500	485	97	80-120	
Cobalt	ug/L	500	494	99	80-120	
Copper	ug/L	500	505	101	80-120	
Lead	ug/L	500	491	98	80-120	
Nickel	ug/L	500	493	99	80-120	
Selenium	ug/L	500	492	98	80-120	
Silver	ug/L	250	242	97	80-120	
Thallium	ug/L	500	483	97	80-120	
Vanadium	ug/L	500	490	98	80-120	
Zinc	ug/L	500	474	95	80-120	

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QUALITY CONTROL DATA

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1272046 1272047

Parameter	Units	92214449001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	5.02	500	500	506	505	101	101	75-125	0	25	
Arsenic	ug/L	10.02	500	500	495	493	99	99	75-125	0	25	
Barium	ug/L	502	500	500	1000	992	100	98	75-125	1	25	
Beryllium	ug/L	1.02	500	500	502	498	100	99	75-125	1	25	
Cadmium	ug/L	1.02	500	500	499	495	100	99	75-125	1	25	
Chromium	ug/L	5.02	500	500	483	494	96	99	75-125	2	25	
Cobalt	ug/L	5.02	500	500	494	494	98	98	75-125	0	25	
Copper	ug/L	5.02	500	500	504	506	101	101	75-125	0	25	
Lead	ug/L	5.02	500	500	489	486	98	97	75-125	1	25	
Nickel	ug/L	5.02	500	500	489	489	98	98	75-125	0	25	
Selenium	ug/L	10.02	500	500	498	494	99	98	75-125	1	25	
Silver	ug/L	5.02	250	250	240	242	96	97	75-125	1	25	
Thallium	ug/L	5.42	500	500	471	468	94	94	75-125	1	25	
Vanadium	ug/L	5.02	500	500	493	501	99	100	75-125	2	25	
Zinc	ug/L	13.2	500	500	500	502	97	98	75-125	0	25	

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QUALITY CONTROL DATA

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

QC Batch: MSV/28098 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92214654001, 92214654002, 92214654003, 92214654004

METHOD BLANK: 1273085 Matrix: Water
Associated Lab Samples: 92214654001, 92214654002, 92214654003, 92214654004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1,1-Trichloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1-Dichloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1-Dichloroethene	ug/L	ND	1.0	08/27/14 14:08	
1,2,3-Trichloropropane	ug/L	ND	1.0	08/27/14 14:08	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	08/27/14 14:08	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	08/27/14 14:08	
1,2-Dichlorobenzene	ug/L	ND	1.0	08/27/14 14:08	
1,2-Dichloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,2-Dichloropropane	ug/L	ND	1.0	08/27/14 14:08	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/27/14 14:08	
2-Butanone (MEK)	ug/L	ND	5.0	08/27/14 14:08	
2-Hexanone	ug/L	ND	5.0	08/27/14 14:08	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	08/27/14 14:08	
Acetone	ug/L	ND	25.0	08/27/14 14:08	
Acrylonitrile	ug/L	ND	10.0	08/27/14 14:08	
Benzene	ug/L	ND	1.0	08/27/14 14:08	
Bromochloromethane	ug/L	ND	1.0	08/27/14 14:08	
Bromodichloromethane	ug/L	ND	1.0	08/27/14 14:08	
Bromoform	ug/L	ND	1.0	08/27/14 14:08	
Bromomethane	ug/L	ND	2.0	08/27/14 14:08	
Carbon disulfide	ug/L	ND	2.0	08/27/14 14:08	
Carbon tetrachloride	ug/L	ND	1.0	08/27/14 14:08	
Chlorobenzene	ug/L	ND	1.0	08/27/14 14:08	
Chloroethane	ug/L	ND	1.0	08/27/14 14:08	
Chloroform	ug/L	ND	1.0	08/27/14 14:08	
Chloromethane	ug/L	ND	1.0	08/27/14 14:08	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/27/14 14:08	
cis-1,3-Dichloropropene	ug/L	ND	1.0	08/27/14 14:08	
Dibromochloromethane	ug/L	ND	1.0	08/27/14 14:08	
Dibromomethane	ug/L	ND	1.0	08/27/14 14:08	
Ethylbenzene	ug/L	ND	1.0	08/27/14 14:08	
Iodomethane	ug/L	ND	5.0	08/27/14 14:08	
m&p-Xylene	ug/L	ND	2.0	08/27/14 14:08	
Methylene Chloride	ug/L	ND	2.0	08/27/14 14:08	
o-Xylene	ug/L	ND	1.0	08/27/14 14:08	
Styrene	ug/L	ND	1.0	08/27/14 14:08	
Tetrachloroethene	ug/L	ND	1.0	08/27/14 14:08	
Toluene	ug/L	ND	1.0	08/27/14 14:08	

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QUALITY CONTROL DATA

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

METHOD BLANK: 1273085 Matrix: Water
Associated Lab Samples: 92214654001, 92214654002, 92214654003, 92214654004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/27/14 14:08	
trans-1,3-Dichloropropene	ug/L	ND	1.0	08/27/14 14:08	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	08/27/14 14:08	
Trichloroethene	ug/L	ND	1.0	08/27/14 14:08	
Trichlorofluoromethane	ug/L	ND	1.0	08/27/14 14:08	
Vinyl acetate	ug/L	ND	2.0	08/27/14 14:08	
Vinyl chloride	ug/L	ND	1.0	08/27/14 14:08	
Xylene (Total)	ug/L	ND	2.0	08/27/14 14:08	
1,2-Dichloroethane-d4 (S)	%	102	70-130	08/27/14 14:08	
4-Bromofluorobenzene (S)	%	99	70-130	08/27/14 14:08	
Toluene-d8 (S)	%	99	70-130	08/27/14 14:08	

LABORATORY CONTROL SAMPLE: 1273086

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	52.1	104	70-130	
1,1,1-Trichloroethane	ug/L	50	52.3	105	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	49.3	99	70-130	
1,1,2-Trichloroethane	ug/L	50	52.0	104	70-130	
1,1-Dichloroethane	ug/L	50	53.6	107	70-130	
1,1-Dichloroethene	ug/L	50	53.8	108	70-132	
1,2,3-Trichloropropane	ug/L	50	51.5	103	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	48.8	98	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	51.6	103	70-130	
1,2-Dichlorobenzene	ug/L	50	50.6	101	70-130	
1,2-Dichloroethane	ug/L	50	49.2	98	70-130	
1,2-Dichloropropane	ug/L	50	50.5	101	70-130	
1,4-Dichlorobenzene	ug/L	50	50.7	101	70-130	
2-Butanone (MEK)	ug/L	100	102	102	70-145	
2-Hexanone	ug/L	100	102	102	70-144	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	70-140	
Acetone	ug/L	100	102	102	50-175	
Acrylonitrile	ug/L	250	251	100	70-143	
Benzene	ug/L	50	49.9	100	70-130	
Bromochloromethane	ug/L	50	51.3	103	70-130	
Bromodichloromethane	ug/L	50	56.7	113	70-130	
Bromoform	ug/L	50	56.3	113	70-130	
Bromomethane	ug/L	50	55.9	112	54-130	
Carbon disulfide	ug/L	50	49.8	100	70-131	
Carbon tetrachloride	ug/L	50	53.4	107	70-132	
Chlorobenzene	ug/L	50	50.2	100	70-130	
Chloroethane	ug/L	50	54.6	109	64-134	
Chloroform	ug/L	50	55.0	110	70-130	
Chloromethane	ug/L	50	58.9	118	64-130	

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QUALITY CONTROL DATA

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

LABORATORY CONTROL SAMPLE: 1273086

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	50	53.7	107	70-131	
cis-1,3-Dichloropropene	ug/L	50	52.8	106	70-130	
Dibromochloromethane	ug/L	50	58.8	118	70-130	
Dibromomethane	ug/L	50	51.6	103	70-131	
Ethylbenzene	ug/L	50	50.7	101	70-130	
Iodomethane	ug/L	100	90.1	90	49-180	
m&p-Xylene	ug/L	100	102	102	70-130	
Methylene Chloride	ug/L	50	50.9	102	63-130	
o-Xylene	ug/L	50	49.3	99	70-130	
Styrene	ug/L	50	52.1	104	70-130	
Tetrachloroethene	ug/L	50	55.2	110	70-130	
Toluene	ug/L	50	50.1	100	70-130	
trans-1,2-Dichloroethene	ug/L	50	54.4	109	70-130	
trans-1,3-Dichloropropene	ug/L	50	52.5	105	70-132	
trans-1,4-Dichloro-2-butene	ug/L	50	55.3	111	70-141	
Trichloroethene	ug/L	50	52.3	105	70-130	
Trichlorofluoromethane	ug/L	50	52.8	106	62-133	
Vinyl acetate	ug/L	100	126	126	66-157	
Vinyl chloride	ug/L	50	58.8	118	50-150	
Xylene (Total)	ug/L	150	151	101	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1273087 1273088

Parameter	Units	92214653001 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	17.9	17.7	90	89	70-130	1	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	19.3	19.6	96	98	70-130	2	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	17.5	17.0	87	85	70-130	2	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	18.0	18.0	90	90	70-130	0	30	
1,1-Dichloroethane	ug/L	ND	20	20	19.4	19.7	97	98	70-130	2	30	
1,1-Dichloroethene	ug/L	ND	20	20	19.9	19.8	99	99	70-166	0	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	17.5	18.1	87	91	70-130	4	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	16.7	15.5	84	78	70-130	7	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.3	17.8	91	89	70-130	3	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	17.8	17.6	89	88	70-130	1	30	
1,2-Dichloroethane	ug/L	ND	20	20	18.3	18.5	92	92	70-130	1	30	
1,2-Dichloropropane	ug/L	ND	20	20	17.4	18.2	87	91	70-130	4	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	17.9	17.5	89	88	70-130	2	30	
2-Butanone (MEK)	ug/L	ND	40	40	32.5	32.8	81	82	70-130	1	30	
2-Hexanone	ug/L	ND	40	40	35.7	32.3	89	81	70-130	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	35.7	34.5	89	86	70-130	3	30	

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QUALITY CONTROL DATA

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1273087 1273088

Parameter	Units	92214653001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acetone	ug/L	ND	40	40	35.4	33.7	88	84	70-130	5	30	
Acrylonitrile	ug/L	ND	100	100	90.1	85.7	90	86	70-130	5	30	
Benzene	ug/L	ND	20	20	17.9	18.0	90	90	70-148	1	30	
Bromochloromethane	ug/L	ND	20	20	17.9	17.7	89	88	70-130	1	30	
Bromodichloromethane	ug/L	ND	20	20	19.4	19.9	97	99	70-130	2	30	
Bromoform	ug/L	ND	20	20	18.0	17.9	90	89	70-130	1	30	
Bromomethane	ug/L	ND	20	20	19.8	20.9	99	104	70-130	5	30	
Carbon disulfide	ug/L	ND	20	20	17.7	17.9	89	89	70-130	1	30	
Carbon tetrachloride	ug/L	ND	20	20	19.8	19.8	99	99	70-130	0	30	
Chlorobenzene	ug/L	ND	20	20	17.9	18.0	90	90	70-146	1	30	
Chloroethane	ug/L	ND	20	20	20.1	20.3	101	102	70-130	1	30	
Chloroform	ug/L	ND	20	20	19.3	20.5	97	103	70-130	6	30	
Chloromethane	ug/L	ND	20	20	19.0	20.3	95	101	70-130	7	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.5	19.8	98	99	70-130	1	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.8	18.0	89	90	70-130	1	30	
Dibromochloromethane	ug/L	ND	20	20	19.7	19.7	99	98	70-130	0	30	
Dibromomethane	ug/L	ND	20	20	18.2	18.2	91	91	70-130	0	30	
Ethylbenzene	ug/L	ND	20	20	18.2	18.4	91	92	70-130	1	30	
Iodomethane	ug/L	ND	40	40	31.9	32.9	80	82	70-130	3	30	
m&p-Xylene	ug/L	ND	40	40	36.5	36.9	91	92	70-130	1	30	
Methylene Chloride	ug/L	ND	20	20	16.1	16.5	81	83	70-130	2	30	
o-Xylene	ug/L	ND	20	20	17.4	17.5	87	88	70-130	0	30	
Styrene	ug/L	ND	20	20	18.1	18.1	91	91	70-130	0	30	
Tetrachloroethene	ug/L	ND	20	20	19.8	20.3	99	101	70-130	2	30	
Toluene	ug/L	ND	20	20	17.9	18.1	89	91	70-155	1	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.8	20.0	99	100	70-130	1	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	17.8	17.9	89	89	70-130	0	30	
trans-1,4-Dichloro-2-butene	ug/L	ND	20	20	15.3	15.0	76	75	70-130	2	30	
Trichloroethene	ug/L	ND	20	20	19.0	18.9	95	94	69-151	0	30	
Trichlorofluoromethane	ug/L	ND	20	20	19.9	20.2	100	101	70-130	2	30	
Vinyl acetate	ug/L	ND	40	40	44.2	44.2	110	110	70-130	0	30	
Vinyl chloride	ug/L	ND	20	20	20.9	21.3	105	107	70-130	2	30	
1,2-Dichloroethane-d4 (S)	%						100	104	70-130			
4-Bromofluorobenzene (S)	%						101	102	70-130			
Toluene-d8 (S)	%						100	100	70-130			

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QUALITY CONTROL DATA

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

QC Batch: OEXT/29623 Analysis Method: EPA 8081
QC Batch Method: EPA 3510 Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92214654001, 92214654002, 92214654003, 92214654004

METHOD BLANK: 1272970 Matrix: Water
Associated Lab Samples: 92214654001, 92214654002, 92214654003, 92214654004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	08/28/14 17:57	
4,4'-DDE	ug/L	ND	0.050	08/28/14 17:57	
4,4'-DDT	ug/L	ND	0.050	08/28/14 17:57	
Aldrin	ug/L	ND	0.050	08/28/14 17:57	
alpha-BHC	ug/L	ND	0.050	08/28/14 17:57	
beta-BHC	ug/L	ND	0.050	08/28/14 17:57	
Chlordane (Technical)	ug/L	ND	0.20	08/28/14 17:57	
delta-BHC	ug/L	ND	0.050	08/28/14 17:57	
Dieldrin	ug/L	ND	0.050	08/28/14 17:57	
Endosulfan I	ug/L	ND	0.050	08/28/14 17:57	
Endosulfan II	ug/L	ND	0.050	08/28/14 17:57	
Endosulfan sulfate	ug/L	ND	0.050	08/28/14 17:57	
Endrin	ug/L	ND	0.050	08/28/14 17:57	
Endrin aldehyde	ug/L	ND	0.050	08/28/14 17:57	
Endrin ketone	ug/L	ND	0.050	08/28/14 17:57	
gamma-BHC (Lindane)	ug/L	ND	0.050	08/28/14 17:57	
Heptachlor	ug/L	ND	0.050	08/28/14 17:57	
Heptachlor epoxide	ug/L	ND	0.050	08/28/14 17:57	
Hexachlorobenzene	ug/L	ND	0.050	08/28/14 17:57	
Methoxychlor	ug/L	ND	0.15	08/28/14 17:57	
Mirex	ug/L	ND	0.15	08/28/14 17:57	
Toxaphene	ug/L	ND	0.20	08/28/14 17:57	
Decachlorobiphenyl (S)	%	80	20-130	08/28/14 17:57	
Tetrachloro-m-xylene (S)	%	93	20-130	08/28/14 17:57	

LABORATORY CONTROL SAMPLE: 1272971

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	0.22	89	20-150	
4,4'-DDT	ug/L	.25	0.24	99	20-150	
Aldrin	ug/L	.25	0.19	77	20-150	
alpha-BHC	ug/L	.25	0.23	95	20-150	
beta-BHC	ug/L	.25	0.26	104	20-150	
delta-BHC	ug/L	.25	0.28	112	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	0.27	108	20-150	
Endosulfan sulfate	ug/L	.25	0.28	112	20-150	
Endrin	ug/L	.25	0.26	106	20-150	

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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Asheville, NC 28804
(828)254-7176

QUALITY CONTROL DATA

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

LABORATORY CONTROL SAMPLE: 1272971

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/L	.25	0.22	88	20-150	
Endrin ketone	ug/L	.25	0.27	110	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.24	97	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	0.19	76	20-150	
Methoxychlor	ug/L	.74	0.74	100	20-150	
Mirex	ug/L	.74	0.69	93	20-150	
Decachlorobiphenyl (S)	%			87	20-130	
Tetrachloro-m-xylene (S)	%			88	20-130	

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QUALITY CONTROL DATA

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

QC Batch: WETA/20106 Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92214654001, 92214654002, 92214654003, 92214654004

METHOD BLANK: 1276116 Matrix: Water
Associated Lab Samples: 92214654001, 92214654002, 92214654003, 92214654004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	0.0030J	0.0050	09/02/14 16:10	

LABORATORY CONTROL SAMPLE: 1276117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.11	115	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1276120 1276121

Parameter	Units	92214654003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	0.0029J	.1	.1	0.11	0.11	108	107	75-125	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1276443 1276444

Parameter	Units	92214412001 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	0.079	0.078	76	74	75-125	2	10	M1

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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QUALIFIERS

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: SURFACE WATERS FRANCIS FARM
Pace Project No.: 92214654

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92214654001	**US-1**		FLD/		
92214654002	**DS-1**		FLD/		
92214654003	**DS-2**		FLD/		
92214654004	**DS-3**		FLD/		
92214654001	**US-1**	EPA 3510	OEXT/29623	EPA 8081	GCSV/18704
92214654002	**DS-1**	EPA 3510	OEXT/29623	EPA 8081	GCSV/18704
92214654003	**DS-2**	EPA 3510	OEXT/29623	EPA 8081	GCSV/18704
92214654004	**DS-3**	EPA 3510	OEXT/29623	EPA 8081	GCSV/18704
92214654001	**US-1**	EPA 3010	MPRP/16763	EPA 6010	ICP/15132
92214654002	**DS-1**	EPA 3010	MPRP/16763	EPA 6010	ICP/15132
92214654003	**DS-2**	EPA 3010	MPRP/16763	EPA 6010	ICP/15132
92214654004	**DS-3**	EPA 3010	MPRP/16763	EPA 6010	ICP/15132
92214654001	**US-1**	EPA 8260	MSV/28098		
92214654002	**DS-1**	EPA 8260	MSV/28098		
92214654003	**DS-2**	EPA 8260	MSV/28098		
92214654004	**DS-3**	EPA 8260	MSV/28098		
92214654001	**US-1**	SM 4500-CN-E	WETA/20106		
92214654002	**DS-1**	SM 4500-CN-E	WETA/20106		
92214654003	**DS-2**	SM 4500-CN-E	WETA/20106		
92214654004	**DS-3**	SM 4500-CN-E	WETA/20106		

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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

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 0.1 C

Corrected Cooler Temp.: 4.1 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 8/22/14 4 C

		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: JDB **Date:** 8/25/14

SRF Review: JDB **Date:** 8/25/14

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# : 92214654

92214654

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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.

Section A Required Client Information:
Company: Haywood Co FF
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:
Report To: Stephen Kirby
Copy To:
Purchase Order No.:
Project Name: Surface Waters Francis Farm
Project Number:

Section C Invoice Information:
Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 1428-1

Page: 1 of 1
1788083

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: NH3 Analysis	Phosphorus	CN-	VOC	Metals	Static H2O	TURBIDITY	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	US-1																									92214654
2	DS-1					8-22-14	1130		7	2		1	3	1				X	X	X	X	X	X	X		001
3	DS-2					8-22	1220		7	2		1	3	1				X	X	X	X	X	X	X		002
4	DS-3					8-22	1310		7	2		1	3	1				X	X	X	X	X	X	X		003
5						8-22	1410		7	2		1	3	1				X	X	X	X	X	X	X		004
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		8-22-14	1600		8-22-14	1600				
		8-22-14	1645		8/22/14	1645	4.1	Y	N	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: MARK PIERANNI
SIGNATURE of SAMPLER: DATE Signed

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

ORIGINAL

*Important Note: By signing this form

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2225 Riverside Dr.
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(828)254-7176

September 17, 2014

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

RE: Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Dear Mr. King:
Enclosed are the analytical results for sample(s) received by the laboratory between August 22, 2014 and August 28, 2014. 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,

Jon Bradley

Jon D Bradley
jon.bradley@pacelabs.com
Project Manager

Enclosures

cc: Andy Alexander, BLE
Mr. Stephen King, Haywood Co. Solid Waste

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CERTIFICATIONS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

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 Dr., 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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SAMPLE SUMMARY

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92214653001	MW-22	Water	08/22/14 14:30	08/22/14 16:45
92214653002	MW-1A	Water	08/26/14 14:05	08/26/14 17:10
92214653003	MW-2A	Water	08/26/14 15:30	08/26/14 17:10
92214653004	MW-3A	Water	08/26/14 15:10	08/26/14 17:10
92214653005	MW-6	Water	08/26/14 10:20	08/26/14 17:10
92214653006	MW-7	Water	08/26/14 12:10	08/26/14 17:10
92214653007	MW-8	Water	08/26/14 12:30	08/26/14 17:10
92214653008	MW-9	Water	08/26/14 11:29	08/26/14 17:10
92214653009	MW-10	Water	08/26/14 10:50	08/26/14 17:10
92214653010	MW-19	Water	08/26/14 11:45	08/26/14 17:10
92214653011	MW-19D	Water	08/26/14 12:00	08/26/14 17:10
92214653012	MW-20	Water	08/26/14 11:00	08/26/14 17:10
92214653013	MW-20D	Water	08/26/14 11:10	08/26/14 17:10
92214653014	MW-21	Water	08/26/14 10:00	08/26/14 17:10
92214653015	MW-23	Water	08/26/14 13:30	08/26/14 17:10
92214653016	MW-23D	Water	08/26/14 13:40	08/26/14 17:10
92214653017	MW-24	Water	08/26/14 13:05	08/26/14 17:10
92214653018	MW-4	Water	08/27/14 11:30	08/27/14 17:05
92214653019	MW-5	Water	08/27/14 11:10	08/27/14 17:05
92214653020	MW-12	Water	08/27/14 11:00	08/27/14 17:05
92214653021	MW-11	Water	08/28/14 11:55	08/28/14 16:25
92214653022	MW-13	Water	08/28/14 14:00	08/28/14 16:25
92214653023	MW-14	Water	08/28/14 13:20	08/28/14 16:25
92214653024	MW-14D	Water	08/28/14 13:45	08/28/14 16:25
92214653025	MW-15	Water	08/28/14 14:20	08/28/14 16:25
92214653026	MW-16	Water	08/28/14 14:55	08/28/14 16:25
92214653027	MW-16D	Water	08/28/14 11:20	08/28/14 16:25
92214653028	MW-17	Water	08/28/14 14:40	08/28/14 16:25
92214653029	MW-18	Water	08/28/14 15:10	08/28/14 16:25
92214653030	MW-25	Water	08/28/14 12:20	08/28/14 16:25
92214653031	TRIP BLANK	Water	08/28/14 00:00	08/28/14 16:25
92214653032	EQUIP BLANK	Water	08/25/14 00:00	08/28/14 16:25

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SAMPLE ANALYTE COUNT

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92214653001	MW-22	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
92214653002	MW-1A	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653003	MW-2A	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653004	MW-3A	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653005	MW-6	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653006	MW-7	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653007	MW-8	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653008	MW-9	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
92214653009	MW-10	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
92214653010	MW-19	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
92214653011	MW-19D	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
92214653012	MW-20	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
92214653013	MW-20D	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C

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SAMPLE ANALYTE COUNT

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92214653014	MW-21	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
92214653015	MW-23	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
92214653016	MW-23D	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
92214653017	MW-24	EPA 6010	SH1	15	PASI-A
		EPA 8260	GAW	52	PASI-C
92214653018	MW-4	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
92214653019	MW-5	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653020	MW-12	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
92214653021	MW-11	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653022	MW-13	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653023	MW-14	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653024	MW-14D	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
92214653025	MW-15	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
		SM 4500-CN-E	JDA	1	PASI-A
92214653026	MW-16	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
92214653027	MW-16D	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C

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SAMPLE ANALYTE COUNT

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92214653028	**MW-17**	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
92214653029	**MW-18**	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
92214653030	**MW-25**	EPA 8081	RES	24	PASI-C
		EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C
92214653031	**TRIP BLANK**	EPA 8260	MCK	52	PASI-C
92214653032	**EQUIP BLANK**	EPA 6010	SH1	15	PASI-A
		EPA 8260	MCK	52	PASI-C

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-22 **Lab ID: 92214653001** Collected: 08/22/14 14:30 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/22/14 14:30		
Collected Date	**08/22/14**				1		08/22/14 14:30		
Collected Time	**14:30**				1		08/22/14 14:30		
Field pH	**5.9**	Std. Units	0.10	0.10	1		08/22/14 14:30		
Field Temperature	**16.0**	deg C	0.50	0.50	1		08/22/14 14:30		
Static Water Level	**2.45**	feet			1		08/22/14 14:30		
Field Specific Conductance	**68**	umhos/cm	1.0	1.0	1		08/22/14 14:30		
Turbidity	**10.00**	NTU	1.0	1.0	1		08/22/14 14:30		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/26/14 15:20	08/28/14 22:51	7440-36-0	
Arsenic	**3.6J**	ug/L	10.0	2.7	1	08/26/14 15:20	08/28/14 22:51	7440-38-2	
Barium	**80.0**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 22:51	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/26/14 15:20	08/28/14 22:51	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/26/14 15:20	08/28/14 22:51	7440-43-9	
Chromium	**1.7J**	ug/L	5.0	0.40	1	08/26/14 15:20	08/28/14 22:51	7440-47-3	
Cobalt	**2.3J**	ug/L	5.0	0.60	1	08/26/14 15:20	08/28/14 22:51	7440-48-4	
Copper	**0.87J**	ug/L	5.0	0.30	1	08/26/14 15:20	08/28/14 22:51	7440-50-8	B
Lead	ND	ug/L	5.0	4.0	1	08/26/14 15:20	08/28/14 22:51	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/26/14 15:20	08/28/14 22:51	7440-02-0	
Selenium	**2.9J**	ug/L	10.0	0.10	1	08/26/14 15:20	08/28/14 22:51	7782-49-2	B
Silver	**1.5J**	ug/L	5.0	0.10	1	08/26/14 15:20	08/28/14 22:51	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/26/14 15:20	08/28/14 22:51	7440-28-0	
Vanadium	**2.3J**	ug/L	5.0	0.20	1	08/26/14 15:20	08/28/14 22:51	7440-62-2	
Zinc	**1.8J**	ug/L	10.0	0.40	1	08/26/14 15:20	08/28/14 22:51	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/27/14 17:17	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/27/14 17:17	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/27/14 17:17	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/27/14 17:17	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/27/14 17:17	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/27/14 17:17	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/27/14 17:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/27/14 17:17	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/27/14 17:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/27/14 17:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/27/14 17:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/27/14 17:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/27/14 17:17	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/27/14 17:17	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/27/14 17:17	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/27/14 17:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/27/14 17:17	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/27/14 17:17	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/27/14 17:17	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-22 **Lab ID: 92214653001** Collected: 08/22/14 14:30 Received: 08/22/14 16:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/27/14 17:17	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/27/14 17:17	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/27/14 17:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/27/14 17:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/27/14 17:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/27/14 17:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/27/14 17:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/27/14 17:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/27/14 17:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/27/14 17:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/27/14 17:17	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/27/14 17:17	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/27/14 17:17	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/27/14 17:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/27/14 17:17	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/27/14 17:17	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/27/14 17:17	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/27/14 17:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/27/14 17:17	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/27/14 17:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/27/14 17:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/27/14 17:17	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/27/14 17:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/27/14 17:17	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/27/14 17:17	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/27/14 17:17	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/27/14 17:17	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/27/14 17:17	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/27/14 17:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/27/14 17:17	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		08/27/14 17:17	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		08/27/14 17:17	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		08/27/14 17:17	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-1A **Lab ID: 92214653002** Collected: 08/26/14 14:05 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 14:05		
Collected Date	**08/26/14**				1		08/26/14 14:05		
Collected Time	**14:05**				1		08/26/14 14:05		
Field pH	**6.4**	Std. Units	0.10	0.10	1		08/26/14 14:05		
Field Temperature	**17.5**	deg C	0.50	0.50	1		08/26/14 14:05		
Static Water Level	**48.32**	feet			1		08/26/14 14:05		
Field Specific Conductance	**456**	umhos/cm	1.0	1.0	1		08/26/14 14:05		
Turbidity	**1.23**	NTU	1.0	1.0	1		08/26/14 14:05		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	**8.6**	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 01:21	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 01:21	7440-38-2	
Barium	**224**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:21	7440-39-3	
Beryllium	**0.22J**	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 01:21	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 01:21	7440-43-9	
Chromium	**5.5**	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 01:21	7440-47-3	
Cobalt	**18.6**	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 01:21	7440-48-4	
Copper	**1.8J**	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 01:21	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 01:21	7439-92-1	
Nickel	**3.1J**	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 01:21	7440-02-0	
Selenium	**0.65J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 01:21	7782-49-2	
Silver	**0.75J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 01:21	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 01:21	7440-28-0	
Vanadium	**2.6J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:21	7440-62-2	
Zinc	**5.3J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 01:21	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 12:58	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 12:58	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 12:58	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 12:58	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 12:58	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 12:58	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 12:58	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 12:58	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 12:58	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 12:58	56-23-5	
Chlorobenzene	**1.8**	ug/L	1.0	0.23	1		08/29/14 12:58	108-90-7	
Chloroethane	**1.5**	ug/L	1.0	0.54	1		08/29/14 12:58	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 12:58	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 12:58	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 12:58	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 12:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 12:58	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 12:58	74-95-3	
1,2-Dichlorobenzene	**0.78J**	ug/L	1.0	0.30	1		08/29/14 12:58	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-1A **Lab ID: 92214653002** Collected: 08/26/14 14:05 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	**0.39J**	ug/L	1.0	0.33	1		08/29/14 12:58	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 12:58	110-57-6	
1,1-Dichloroethane	**0.99J**	ug/L	1.0	0.32	1		08/29/14 12:58	75-34-3	
1,2-Dichloroethane	**0.82J**	ug/L	1.0	0.12	1		08/29/14 12:58	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 12:58	75-35-4	
cis-1,2-Dichloroethene	**0.73J**	ug/L	1.0	0.19	1		08/29/14 12:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 12:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 12:58	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 12:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 12:58	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 12:58	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 12:58	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 12:58	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 12:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 12:58	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 12:58	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 12:58	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 12:58	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 12:58	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 12:58	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 12:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 12:58	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 12:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 12:58	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 12:58	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 12:58	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 12:58	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 12:58	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 12:58	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 12:58	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		08/29/14 12:58	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		08/29/14 12:58	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		08/29/14 12:58	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0041J**	mg/L	0.0050	0.0025	1		09/08/14 13:39	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-2A **Lab ID: 92214653003** Collected: 08/26/14 15:30 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 15:30		
Collected Date	**08/26/14**				1		08/26/14 15:30		
Collected Time	**15:30**				1		08/26/14 15:30		
Field pH	**6.5**	Std. Units	0.10	0.10	1		08/26/14 15:30		
Field Temperature	**14.2**	deg C	0.50	0.50	1		08/26/14 15:30		
Static Water Level	**27.38**	feet			1		08/26/14 15:30		
Field Specific Conductance	**642**	umhos/cm	1.0	1.0	1		08/26/14 15:30		
Turbidity	**9.35**	NTU	1.0	1.0	1		08/26/14 15:30		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 11:48	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 11:48	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 11:48	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 11:48	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 11:48	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	60	%	20-130		1	08/28/14 14:00	09/05/14 11:48	877-09-8	
Decachlorobiphenyl (S)	69	%	20-130		1	08/28/14 14:00	09/05/14 11:48	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 01:30	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 01:30	7440-38-2	
Barium	**145**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:30	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 01:30	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 01:30	7440-43-9	
Chromium	**3.5J**	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 01:30	7440-47-3	
Cobalt	**47.4**	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 01:30	7440-48-4	
Copper	**12.4**	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 01:30	7440-50-8	
Lead	**6.1**	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 01:30	7439-92-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-2A **Lab ID: 92214653003** Collected: 08/26/14 15:30 Received: 08/26/14 17:10 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								
Nickel	**7.4**	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 01:30	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 01:30	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 01:30	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 01:30	7440-28-0	
Vanadium	**2.9J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:30	7440-62-2	
Zinc	**8.2J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 01:30	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 13:14	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 13:14	107-13-1	
Benzene	**1.2**	ug/L	1.0	0.25	1		08/29/14 13:14	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 13:14	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 13:14	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 13:14	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 13:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 13:14	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 13:14	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 13:14	56-23-5	
Chlorobenzene	**0.87J**	ug/L	1.0	0.23	1		08/29/14 13:14	108-90-7	
Chloroethane	**3.9**	ug/L	1.0	0.54	1		08/29/14 13:14	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 13:14	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 13:14	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 13:14	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 13:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 13:14	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 13:14	74-95-3	
1,2-Dichlorobenzene	**2.0**	ug/L	1.0	0.30	1		08/29/14 13:14	95-50-1	
1,4-Dichlorobenzene	**11.5**	ug/L	1.0	0.33	1		08/29/14 13:14	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 13:14	110-57-6	
1,1-Dichloroethane	**1.4**	ug/L	1.0	0.32	1		08/29/14 13:14	75-34-3	
1,2-Dichloroethane	**0.39J**	ug/L	1.0	0.12	1		08/29/14 13:14	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 13:14	75-35-4	
cis-1,2-Dichloroethene	**4.4**	ug/L	1.0	0.19	1		08/29/14 13:14	156-59-2	
trans-1,2-Dichloroethene	**0.54J**	ug/L	1.0	0.49	1		08/29/14 13:14	156-60-5	
1,2-Dichloropropane	**0.36J**	ug/L	1.0	0.27	1		08/29/14 13:14	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 13:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 13:14	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 13:14	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 13:14	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 13:14	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 13:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 13:14	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 13:14	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 13:14	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 13:14	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 13:14	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-2A **Lab ID: 92214653003** Collected: 08/26/14 15:30 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 13:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 13:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 13:14	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 13:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 13:14	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 13:14	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 13:14	108-05-4	
Vinyl chloride	**1.3**	ug/L	1.0	0.62	1		08/29/14 13:14	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 13:14	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 13:14	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 13:14	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		08/29/14 13:14	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		08/29/14 13:14	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		08/29/14 13:14	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0028J**	mg/L	0.0050	0.0025	1		09/08/14 13:42	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-3A **Lab ID: 92214653004** Collected: 08/26/14 15:10 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 15:10		
Collected Date	**08/26/14**				1		08/26/14 15:10		
Collected Time	**15:10**				1		08/26/14 15:10		
Field pH	**6.5**	Std. Units	0.10	0.10	1		08/26/14 15:10		
Field Temperature	**14.1**	deg C	0.50	0.50	1		08/26/14 15:10		
Static Water Level	**41.65**	feet			1		08/26/14 15:10		
Field Specific Conductance	**363**	umhos/cm	1.0	1.0	1		08/26/14 15:10		
Turbidity	**5.71**	NTU	1.0	1.0	1		08/26/14 15:10		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	**5.5**	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 01:34	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 01:34	7440-38-2	
Barium	**185**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:34	7440-39-3	
Beryllium	**0.30J**	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 01:34	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 01:34	7440-43-9	
Chromium	**2.6J**	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 01:34	7440-47-3	
Cobalt	**48.0**	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 01:34	7440-48-4	
Copper	**4.8J**	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 01:34	7440-50-8	
Lead	**4.5J**	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 01:34	7439-92-1	
Nickel	**5.6**	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 01:34	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 01:34	7782-49-2	
Silver	**0.70J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 01:34	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 01:34	7440-28-0	
Vanadium	**0.70J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:34	7440-62-2	
Zinc	**27.2**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 01:34	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 13:30	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 13:30	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 13:30	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 13:30	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 13:30	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 13:30	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 13:30	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 13:30	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 13:30	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 13:30	56-23-5	
Chlorobenzene	**0.53J**	ug/L	1.0	0.23	1		08/29/14 13:30	108-90-7	
Chloroethane	**3.0**	ug/L	1.0	0.54	1		08/29/14 13:30	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 13:30	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 13:30	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 13:30	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 13:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 13:30	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 13:30	74-95-3	
1,2-Dichlorobenzene	**0.58J**	ug/L	1.0	0.30	1		08/29/14 13:30	95-50-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-3A **Lab ID: 92214653004** Collected: 08/26/14 15:10 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	**0.99J**	ug/L	1.0	0.33	1		08/29/14 13:30	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 13:30	110-57-6	
1,1-Dichloroethane	**9.7**	ug/L	1.0	0.32	1		08/29/14 13:30	75-34-3	
1,2-Dichloroethane	**1.0**	ug/L	1.0	0.12	1		08/29/14 13:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 13:30	75-35-4	
cis-1,2-Dichloroethene	**1.4**	ug/L	1.0	0.19	1		08/29/14 13:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 13:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 13:30	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 13:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 13:30	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 13:30	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 13:30	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 13:30	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 13:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 13:30	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 13:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 13:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 13:30	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 13:30	127-18-4	
Toluene	**0.28J**	ug/L	1.0	0.26	1		08/29/14 13:30	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 13:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 13:30	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 13:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 13:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 13:30	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 13:30	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 13:30	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 13:30	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 13:30	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 13:30	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		08/29/14 13:30	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		08/29/14 13:30	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		08/29/14 13:30	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0046J**	mg/L	0.0050	0.0025	1		09/08/14 13:43	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-6 **Lab ID: 92214653005** Collected: 08/26/14 10:20 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 10:20		
Collected Date	**08/26/14**				1		08/26/14 10:20		
Collected Time	**10:20**				1		08/26/14 10:20		
Field pH	**5.9**	Std. Units	0.10	0.10	1		08/26/14 10:20		
Field Temperature	**16.9**	deg C	0.50	0.50	1		08/26/14 10:20		
Static Water Level	**7.48**	feet			1		08/26/14 10:20		
Field Specific Conductance	**65**	umhos/cm	1.0	1.0	1		08/26/14 10:20		
Turbidity	**5.79**	NTU	1.0	1.0	1		08/26/14 10:20		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 01:37	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 01:37	7440-38-2	
Barium	**39.2**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:37	7440-39-3	
Beryllium	**0.14J**	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 01:37	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 01:37	7440-43-9	
Chromium	**2.3J**	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 01:37	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 01:37	7440-48-4	
Copper	**0.52J**	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 01:37	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 01:37	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 01:37	7440-02-0	
Selenium	**1.9J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 01:37	7782-49-2	
Silver	**1.9J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 01:37	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 01:37	7440-28-0	
Vanadium	**1.4J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:37	7440-62-2	
Zinc	**83.0**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 01:37	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 13:46	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 13:46	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 13:46	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 13:46	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 13:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 13:46	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 13:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 13:46	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 13:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 13:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 13:46	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 13:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 13:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 13:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 13:46	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 13:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 13:46	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 13:46	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/29/14 13:46	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-6 **Lab ID: 92214653005** Collected: 08/26/14 10:20 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 13:46	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 13:46	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/29/14 13:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 13:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 13:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/29/14 13:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 13:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 13:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 13:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 13:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 13:46	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 13:46	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 13:46	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 13:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 13:46	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 13:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 13:46	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 13:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 13:46	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 13:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 13:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 13:46	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 13:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 13:46	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 13:46	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 13:46	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 13:46	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 13:46	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 13:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 13:46	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		08/29/14 13:46	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		08/29/14 13:46	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		08/29/14 13:46	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0025	1		09/08/14 13:43	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-7 **Lab ID: 92214653006** Collected: 08/26/14 12:10 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 12:10		
Collected Date	**08/26/14**				1		08/26/14 12:10		
Collected Time	**12:10**				1		08/26/14 12:10		
Field pH	**6.2**	Std. Units	0.10	0.10	1		08/26/14 12:10		
Field Temperature	**15.8**	deg C	0.50	0.50	1		08/26/14 12:10		
Static Water Level	**9.25**	feet			1		08/26/14 12:10		
Field Specific Conductance	**340**	umhos/cm	1.0	1.0	1		08/26/14 12:10		
Turbidity	**4.36**	NTU	1.0	1.0	1		08/26/14 12:10		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 12:06	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	72-54-8	
4,4'-DDE	**0.13**	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:06	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 12:06	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 12:06	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 12:06	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	82	%	20-130		1	08/28/14 14:00	09/05/14 12:06	877-09-8	
Decachlorobiphenyl (S)	97	%	20-130		1	08/28/14 14:00	09/05/14 12:06	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 01:49	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 01:49	7440-38-2	
Barium	**183**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:49	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 01:49	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 01:49	7440-43-9	
Chromium	**1.6J**	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 01:49	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 01:49	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 01:49	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 01:49	7439-92-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-7 **Lab ID: 92214653006** Collected: 08/26/14 12:10 Received: 08/26/14 17:10 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								
Nickel	ND	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 01:49	7440-02-0	
Selenium	**1.4J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 01:49	7782-49-2	
Silver	**1.2J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 01:49	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 01:49	7440-28-0	
Vanadium	**1.4J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:49	7440-62-2	
Zinc	ND	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 01:49	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 14:03	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 14:03	107-13-1	
Benzene	**0.81J**	ug/L	1.0	0.25	1		08/29/14 14:03	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 14:03	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 14:03	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 14:03	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 14:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 14:03	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 14:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 14:03	56-23-5	
Chlorobenzene	**1.3**	ug/L	1.0	0.23	1		08/29/14 14:03	108-90-7	
Chloroethane	**1.8**	ug/L	1.0	0.54	1		08/29/14 14:03	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 14:03	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 14:03	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 14:03	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 14:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 14:03	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 14:03	74-95-3	
1,2-Dichlorobenzene	**2.6**	ug/L	1.0	0.30	1		08/29/14 14:03	95-50-1	
1,4-Dichlorobenzene	**2.3**	ug/L	1.0	0.33	1		08/29/14 14:03	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 14:03	110-57-6	
1,1-Dichloroethane	**3.0**	ug/L	1.0	0.32	1		08/29/14 14:03	75-34-3	
1,2-Dichloroethane	**2.0**	ug/L	1.0	0.12	1		08/29/14 14:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 14:03	75-35-4	
cis-1,2-Dichloroethene	**2.4**	ug/L	1.0	0.19	1		08/29/14 14:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 14:03	156-60-5	
1,2-Dichloropropane	**0.43J**	ug/L	1.0	0.27	1		08/29/14 14:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 14:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 14:03	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 14:03	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 14:03	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 14:03	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 14:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 14:03	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 14:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 14:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 14:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 14:03	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-7 **Lab ID: 92214653006** Collected: 08/26/14 12:10 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 14:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 14:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 14:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 14:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 14:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 14:03	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 14:03	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 14:03	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 14:03	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 14:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 14:03	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		08/29/14 14:03	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		08/29/14 14:03	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		08/29/14 14:03	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0025	1		09/08/14 13:44	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-8 **Lab ID: 92214653007** Collected: 08/26/14 12:30 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 12:30		
Collected Date	**08/26/14**				1		08/26/14 12:30		
Collected Time	**12:30**				1		08/26/14 12:30		
Field pH	**6.5**	Std. Units	0.10	0.10	1		08/26/14 12:30		
Field Temperature	**18.3**	deg C	0.50	0.50	1		08/26/14 12:30		
Static Water Level	**6.52**	feet			1		08/26/14 12:30		
Field Specific Conductance	**249**	umhos/cm	1.0	1.0	1		08/26/14 12:30		
Turbidity	**4.88**	NTU	1.0	1.0	1		08/26/14 12:30		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 01:53	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 01:53	7440-38-2	
Barium	**34.2**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:53	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 01:53	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 01:53	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 01:53	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 01:53	7440-48-4	
Copper	**0.76J**	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 01:53	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 01:53	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 01:53	7440-02-0	
Selenium	**1.5J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 01:53	7782-49-2	
Silver	**0.72J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 01:53	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 01:53	7440-28-0	
Vanadium	**1.1J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:53	7440-62-2	
Zinc	**5.1J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 01:53	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 14:19	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 14:19	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 14:19	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 14:19	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 14:19	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 14:19	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 14:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 14:19	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 14:19	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 14:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 14:19	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 14:19	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 14:19	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 14:19	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 14:19	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 14:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 14:19	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 14:19	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/29/14 14:19	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-8 **Lab ID: 92214653007** Collected: 08/26/14 12:30 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 14:19	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 14:19	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/29/14 14:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 14:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 14:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/29/14 14:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 14:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 14:19	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 14:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 14:19	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 14:19	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 14:19	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 14:19	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 14:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 14:19	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 14:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 14:19	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 14:19	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 14:19	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 14:19	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 14:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 14:19	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 14:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 14:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 14:19	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 14:19	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 14:19	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 14:19	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 14:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 14:19	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		08/29/14 14:19	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		08/29/14 14:19	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		08/29/14 14:19	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0025	1		09/08/14 13:45	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-9 **Lab ID: 92214653008** Collected: 08/26/14 11:29 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 11:25		
Collected Date	**08/26/14**				1		08/26/14 11:25		
Collected Time	**11:25**				1		08/26/14 11:25		
Field pH	**6.0**	Std. Units	0.10	0.10	1		08/26/14 11:25		
Field Temperature	**17.9**	deg C	0.50	0.50	1		08/26/14 11:25		
Static Water Level	**2.94**	feet			1		08/26/14 11:25		
Field Specific Conductance	**107**	umhos/cm	1.0	1.0	1		08/26/14 11:25		
Turbidity	**1.61**	NTU	1.0	1.0	1		08/26/14 11:25		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 12:23	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:23	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 12:23	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 12:23	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 12:23	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	67	%	20-130		1	08/28/14 14:00	09/05/14 12:23	877-09-8	
Decachlorobiphenyl (S)	87	%	20-130		1	08/28/14 14:00	09/05/14 12:23	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 01:56	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 01:56	7440-38-2	
Barium	**54.4**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:56	7440-39-3	
Beryllium	**0.12J**	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 01:56	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 01:56	7440-43-9	
Chromium	**0.79J**	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 01:56	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 01:56	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 01:56	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 01:56	7439-92-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-9 **Lab ID: 92214653008** Collected: 08/26/14 11:29 Received: 08/26/14 17:10 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								
Nickel	ND	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 01:56	7440-02-0	
Selenium	**2.2J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 01:56	7782-49-2	
Silver	**0.64J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 01:56	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 01:56	7440-28-0	
Vanadium	ND	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:56	7440-62-2	
Zinc	**5.4J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 01:56	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 14:35	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 14:35	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 14:35	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 14:35	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 14:35	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 14:35	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 14:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 14:35	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 14:35	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 14:35	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 14:35	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 14:35	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 14:35	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 14:35	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 14:35	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 14:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 14:35	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 14:35	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/29/14 14:35	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 14:35	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 14:35	110-57-6	
1,1-Dichloroethane	**1.1**	ug/L	1.0	0.32	1		08/29/14 14:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 14:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 14:35	75-35-4	
cis-1,2-Dichloroethene	**1.5**	ug/L	1.0	0.19	1		08/29/14 14:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 14:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 14:35	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 14:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 14:35	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 14:35	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 14:35	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 14:35	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 14:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 14:35	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 14:35	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 14:35	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 14:35	79-34-5	
Tetrachloroethene	**0.82J**	ug/L	1.0	0.46	1		08/29/14 14:35	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-9 **Lab ID: 92214653008** Collected: 08/26/14 11:29 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 14:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 14:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 14:35	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 14:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 14:35	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 14:35	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 14:35	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 14:35	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 14:35	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 14:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 14:35	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		08/29/14 14:35	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		08/29/14 14:35	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		08/29/14 14:35	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-10 **Lab ID: 92214653009** Collected: 08/26/14 10:50 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 10:50		
Collected Date	**08/26/14**				1		08/26/14 10:50		
Collected Time	**10:50**				1		08/26/14 10:50		
Field pH	**6.0**	Std. Units	0.10	0.10	1		08/26/14 10:50		
Field Temperature	**18.9**	deg C	0.50	0.50	1		08/26/14 10:50		
Static Water Level	**2.14**	feet			1		08/26/14 10:50		
Field Specific Conductance	**59**	umhos/cm	1.0	1.0	1		08/26/14 10:50		
Turbidity	**5.97**	NTU	1.0	1.0	1		08/26/14 10:50		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 01:59	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 01:59	7440-38-2	
Barium	**67.6**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:59	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 01:59	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 01:59	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 01:59	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 01:59	7440-48-4	
Copper	**0.43J**	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 01:59	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 01:59	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 01:59	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 01:59	7782-49-2	
Silver	**1.2J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 01:59	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 01:59	7440-28-0	
Vanadium	ND	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 01:59	7440-62-2	
Zinc	**5.8J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 01:59	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 14:52	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 14:52	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 14:52	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 14:52	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 14:52	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 14:52	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 14:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 14:52	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 14:52	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 14:52	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 14:52	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 14:52	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 14:52	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 14:52	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 14:52	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 14:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 14:52	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 14:52	74-95-3	
1,2-Dichlorobenzene	**0.34J**	ug/L	1.0	0.30	1		08/29/14 14:52	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-10 **Lab ID: 92214653009** Collected: 08/26/14 10:50 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 14:52	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 14:52	110-57-6	
1,1-Dichloroethane	**1.6**	ug/L	1.0	0.32	1		08/29/14 14:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 14:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 14:52	75-35-4	
cis-1,2-Dichloroethene	**1.6**	ug/L	1.0	0.19	1		08/29/14 14:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 14:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 14:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 14:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 14:52	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 14:52	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 14:52	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 14:52	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 14:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 14:52	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 14:52	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 14:52	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 14:52	79-34-5	
Tetrachloroethene	**0.55J**	ug/L	1.0	0.46	1		08/29/14 14:52	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 14:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 14:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 14:52	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 14:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 14:52	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 14:52	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 14:52	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 14:52	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 14:52	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 14:52	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 14:52	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		08/29/14 14:52	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		08/29/14 14:52	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		08/29/14 14:52	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-19 **Lab ID: 92214653010** Collected: 08/26/14 11:45 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 11:45		
Collected Date	**08/26/14**				1		08/26/14 11:45		
Collected Time	**11:45**				1		08/26/14 11:45		
Field pH	**5.8**	Std. Units	0.10	0.10	1		08/26/14 11:45		
Field Temperature	**19.4**	deg C	0.50	0.50	1		08/26/14 11:45		
Static Water Level	**7.36**	feet			1		08/26/14 11:45		
Field Specific Conductance	**238**	umhos/cm	1.0	1.0	1		08/26/14 11:45		
Turbidity	**1.95**	NTU	1.0	1.0	1		08/26/14 11:45		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 12:41	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:41	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 12:41	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 12:41	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 12:41	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	95	%	20-130		1	08/28/14 14:00	09/05/14 12:41	877-09-8	
Decachlorobiphenyl (S)	104	%	20-130		1	08/28/14 14:00	09/05/14 12:41	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 02:02	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 02:02	7440-38-2	
Barium	**136**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:02	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 02:02	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 02:02	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 02:02	7440-47-3	
Cobalt	**0.77J**	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 02:02	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 02:02	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 02:02	7439-92-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-19 **Lab ID: 92214653010** Collected: 08/26/14 11:45 Received: 08/26/14 17:10 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								
Nickel	ND	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 02:02	7440-02-0	
Selenium	**0.22J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 02:02	7782-49-2	
Silver	**0.79J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 02:02	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 02:02	7440-28-0	
Vanadium	**1.0J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:02	7440-62-2	
Zinc	ND	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 02:02	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 15:08	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 15:08	107-13-1	
Benzene	**0.40J**	ug/L	1.0	0.25	1		08/29/14 15:08	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 15:08	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 15:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 15:08	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 15:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 15:08	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 15:08	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 15:08	56-23-5	
Chlorobenzene	**0.85J**	ug/L	1.0	0.23	1		08/29/14 15:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 15:08	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 15:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 15:08	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 15:08	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 15:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 15:08	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 15:08	74-95-3	
1,2-Dichlorobenzene	**1.5**	ug/L	1.0	0.30	1		08/29/14 15:08	95-50-1	
1,4-Dichlorobenzene	**1.8**	ug/L	1.0	0.33	1		08/29/14 15:08	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 15:08	110-57-6	
1,1-Dichloroethane	**3.9**	ug/L	1.0	0.32	1		08/29/14 15:08	75-34-3	
1,2-Dichloroethane	**3.0**	ug/L	1.0	0.12	1		08/29/14 15:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 15:08	75-35-4	
cis-1,2-Dichloroethene	**1.7**	ug/L	1.0	0.19	1		08/29/14 15:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 15:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 15:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 15:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 15:08	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 15:08	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 15:08	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 15:08	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 15:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 15:08	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 15:08	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 15:08	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 15:08	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 15:08	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-19 **Lab ID: 92214653010** Collected: 08/26/14 11:45 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 15:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 15:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 15:08	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 15:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 15:08	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 15:08	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 15:08	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 15:08	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 15:08	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 15:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 15:08	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		08/29/14 15:08	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		08/29/14 15:08	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		08/29/14 15:08	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-19D **Lab ID: 92214653011** Collected: 08/26/14 12:00 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 12:00		
Collected Date	**08/26/14**				1		08/26/14 12:00		
Collected Time	**12:00**				1		08/26/14 12:00		
Field pH	**6.3**	Std. Units	0.10	0.10	1		08/26/14 12:00		
Field Temperature	**17.5**	deg C	0.50	0.50	1		08/26/14 12:00		
Static Water Level	**7.51**	feet			1		08/26/14 12:00		
Field Specific Conductance	**632**	umhos/cm	1.0	1.0	1		08/26/14 12:00		
Turbidity	**2.09**	NTU	1.0	1.0	1		08/26/14 12:00		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 12:58	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	72-54-8	
4,4'-DDE	**0.17**	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	08/28/14 14:00	09/05/14 12:58	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 12:58	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	08/28/14 14:00	09/05/14 12:58	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	08/28/14 14:00	09/05/14 12:58	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	83	%	20-130		1	08/28/14 14:00	09/05/14 12:58	877-09-8	
Decachlorobiphenyl (S)	104	%	20-130		1	08/28/14 14:00	09/05/14 12:58	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	**4.0J**	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 02:05	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 02:05	7440-38-2	
Barium	**272**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:05	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 02:05	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 02:05	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 02:05	7440-47-3	
Cobalt	**11.6**	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 02:05	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 02:05	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 02:05	7439-92-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-19D **Lab ID: 92214653011** Collected: 08/26/14 12:00 Received: 08/26/14 17:10 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								
Nickel	**11.2**	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 02:05	7440-02-0	
Selenium	**0.46J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 02:05	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 02:05	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 02:05	7440-28-0	
Vanadium	**0.72J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:05	7440-62-2	
Zinc	**1.0J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 02:05	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 15:25	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 15:25	107-13-1	
Benzene	**0.61J**	ug/L	1.0	0.25	1		08/29/14 15:25	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 15:25	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 15:25	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 15:25	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 15:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 15:25	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 15:25	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 15:25	56-23-5	
Chlorobenzene	**2.3**	ug/L	1.0	0.23	1		08/29/14 15:25	108-90-7	
Chloroethane	**2.6**	ug/L	1.0	0.54	1		08/29/14 15:25	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 15:25	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 15:25	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 15:25	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 15:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 15:25	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 15:25	74-95-3	
1,2-Dichlorobenzene	**3.4**	ug/L	1.0	0.30	1		08/29/14 15:25	95-50-1	
1,4-Dichlorobenzene	**3.0**	ug/L	1.0	0.33	1		08/29/14 15:25	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 15:25	110-57-6	
1,1-Dichloroethane	**2.9**	ug/L	1.0	0.32	1		08/29/14 15:25	75-34-3	
1,2-Dichloroethane	**3.0**	ug/L	1.0	0.12	1		08/29/14 15:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 15:25	75-35-4	
cis-1,2-Dichloroethene	**0.67J**	ug/L	1.0	0.19	1		08/29/14 15:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 15:25	156-60-5	
1,2-Dichloropropane	**0.73J**	ug/L	1.0	0.27	1		08/29/14 15:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 15:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 15:25	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 15:25	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 15:25	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 15:25	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 15:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 15:25	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 15:25	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 15:25	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 15:25	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 15:25	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-19D **Lab ID: 92214653011** Collected: 08/26/14 12:00 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 15:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 15:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 15:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 15:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 15:25	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 15:25	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 15:25	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 15:25	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 15:25	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 15:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 15:25	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		08/29/14 15:25	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		08/29/14 15:25	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		08/29/14 15:25	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-20 **Lab ID: 92214653012** Collected: 08/26/14 11:00 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 11:00		
Collected Date	**08/26/14**				1		08/26/14 11:00		
Collected Time	**11:00**				1		08/26/14 11:00		
Field pH	**6.4**	Std. Units	0.10	0.10	1		08/26/14 11:00		
Field Temperature	**17.1**	deg C	0.50	0.50	1		08/26/14 11:00		
Static Water Level	**2.36**	feet			1		08/26/14 11:00		
Field Specific Conductance	**64**	umhos/cm	1.0	1.0	1		08/26/14 11:00		
Turbidity	**24.8**	NTU	1.0	1.0	1		08/26/14 11:00		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 02:08	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 02:08	7440-38-2	
Barium	**46.3**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:08	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 02:08	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 02:08	7440-43-9	
Chromium	**3.3J**	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 02:08	7440-47-3	
Cobalt	**0.86J**	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 02:08	7440-48-4	
Copper	**3.3J**	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 02:08	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 02:08	7439-92-1	
Nickel	**2.1J**	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 02:08	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 02:08	7782-49-2	
Silver	**0.91J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 02:08	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 02:08	7440-28-0	
Vanadium	**4.7J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:08	7440-62-2	
Zinc	**7.9J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 02:08	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 15:41	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 15:41	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 15:41	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 15:41	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 15:41	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 15:41	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 15:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 15:41	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 15:41	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 15:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 15:41	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 15:41	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 15:41	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 15:41	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 15:41	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 15:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 15:41	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 15:41	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/29/14 15:41	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-20 **Lab ID: 92214653012** Collected: 08/26/14 11:00 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 15:41	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 15:41	110-57-6	
1,1-Dichloroethane	**0.77J**	ug/L	1.0	0.32	1		08/29/14 15:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 15:41	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 15:41	75-35-4	
cis-1,2-Dichloroethene	**0.41J**	ug/L	1.0	0.19	1		08/29/14 15:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 15:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 15:41	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 15:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 15:41	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 15:41	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 15:41	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 15:41	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 15:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 15:41	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 15:41	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 15:41	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 15:41	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 15:41	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 15:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 15:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 15:41	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 15:41	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 15:41	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 15:41	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 15:41	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 15:41	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 15:41	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 15:41	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 15:41	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		08/29/14 15:41	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		08/29/14 15:41	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		08/29/14 15:41	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-20D **Lab ID: 92214653013** Collected: 08/26/14 11:10 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 11:10		
Collected Date	**08/26/14**				1		08/26/14 11:10		
Collected Time	**11:10**				1		08/26/14 11:10		
Field pH	**7.0**	Std. Units	0.10	0.10	1		08/26/14 11:10		
Field Temperature	**17.5**	deg C	0.50	0.50	1		08/26/14 11:10		
Static Water Level	**1.74**	feet			1		08/26/14 11:10		
Field Specific Conductance	**94**	umhos/cm	1.0	1.0	1		08/26/14 11:10		
Turbidity	**50**	NTU	1.0	1.0	1		08/26/14 11:10		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 02:11	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 02:11	7440-38-2	
Barium	**119**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:11	7440-39-3	
Beryllium	**0.41J**	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 02:11	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 02:11	7440-43-9	
Chromium	**11.6**	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 02:11	7440-47-3	
Cobalt	**2.2J**	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 02:11	7440-48-4	
Copper	**13.1**	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 02:11	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 02:11	7439-92-1	
Nickel	**6.9**	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 02:11	7440-02-0	
Selenium	**2.1J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 02:11	7782-49-2	
Silver	**0.59J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 02:11	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 02:11	7440-28-0	
Vanadium	**17.3**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:11	7440-62-2	
Zinc	**27.7**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 02:11	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 15:57	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 15:57	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 15:57	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 15:57	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 15:57	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 15:57	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 15:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 15:57	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 15:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 15:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 15:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 15:57	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 15:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 15:57	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 15:57	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 15:57	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 15:57	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 15:57	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/29/14 15:57	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-20D **Lab ID: 92214653013** Collected: 08/26/14 11:10 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 15:57	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 15:57	110-57-6	
1,1-Dichloroethane	**1.2**	ug/L	1.0	0.32	1		08/29/14 15:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 15:57	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 15:57	75-35-4	
cis-1,2-Dichloroethene	**1.1**	ug/L	1.0	0.19	1		08/29/14 15:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 15:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 15:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 15:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 15:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 15:57	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 15:57	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 15:57	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 15:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 15:57	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 15:57	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 15:57	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 15:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 15:57	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 15:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 15:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 15:57	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 15:57	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 15:57	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 15:57	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 15:57	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 15:57	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 15:57	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 15:57	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 15:57	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		08/29/14 15:57	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		08/29/14 15:57	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		08/29/14 15:57	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-21 **Lab ID: 92214653014** Collected: 08/26/14 10:00 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 10:00		
Collected Date	**08/26/14**				1		08/26/14 10:00		
Collected Time	**10:00**				1		08/26/14 10:00		
Field pH	**5.8**	Std. Units	0.10	0.10	1		08/26/14 10:00		
Field Temperature	**14.5**	deg C	0.50	0.50	1		08/26/14 10:00		
Static Water Level	**23.23**	feet			1		08/26/14 10:00		
Field Specific Conductance	**17**	umhos/cm	1.0	1.0	1		08/26/14 10:00		
Turbidity	**2.01**	NTU	1.0	1.0	1		08/26/14 10:00		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 02:14	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 02:14	7440-38-2	
Barium	**28.5**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:14	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 02:14	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 02:14	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 02:14	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 02:14	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 02:14	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 02:14	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 02:14	7440-02-0	
Selenium	**0.90J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 02:14	7782-49-2	
Silver	**0.84J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 02:14	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 02:14	7440-28-0	
Vanadium	**0.59J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:14	7440-62-2	
Zinc	**0.62J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 02:14	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 16:13	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 16:13	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 16:13	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 16:13	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 16:13	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 16:13	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 16:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 16:13	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 16:13	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 16:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 16:13	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 16:13	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 16:13	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 16:13	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 16:13	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 16:13	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 16:13	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 16:13	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/29/14 16:13	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-21 **Lab ID: 92214653014** Collected: 08/26/14 10:00 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 16:13	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 16:13	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/29/14 16:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 16:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 16:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/29/14 16:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 16:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 16:13	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 16:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 16:13	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 16:13	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 16:13	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 16:13	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 16:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 16:13	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 16:13	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 16:13	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 16:13	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 16:13	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 16:13	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 16:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 16:13	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 16:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 16:13	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 16:13	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 16:13	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 16:13	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 16:13	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 16:13	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 16:13	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		08/29/14 16:13	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		08/29/14 16:13	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		08/29/14 16:13	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-23 **Lab ID: 92214653015** Collected: 08/26/14 13:30 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 13:30		
Collected Date	**08/26/14**				1		08/26/14 13:30		
Collected Time	**13:30**				1		08/26/14 13:30		
Field pH	**6.1**	Std. Units	0.10	0.10	1		08/26/14 13:30		
Field Temperature	**21.1**	deg C	0.50	0.50	1		08/26/14 13:30		
Static Water Level	**2.51**	feet			1		08/26/14 13:30		
Field Specific Conductance	**99**	umhos/cm	1.0	1.0	1		08/26/14 13:30		
Turbidity	**6.39**	NTU	1.0	1.0	1		08/26/14 13:30		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 02:18	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 02:18	7440-38-2	
Barium	**107**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:18	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 02:18	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 02:18	7440-43-9	
Chromium	**3.8J**	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 02:18	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 02:18	7440-48-4	
Copper	**1.9J**	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 02:18	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 02:18	7439-92-1	
Nickel	**1.7J**	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 02:18	7440-02-0	
Selenium	**1.9J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 02:18	7782-49-2	
Silver	**1.5J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 02:18	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 02:18	7440-28-0	
Vanadium	**15.4**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:18	7440-62-2	
Zinc	**5.1J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 02:18	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 16:30	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 16:30	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 16:30	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 16:30	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 16:30	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 16:30	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 16:30	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 16:30	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 16:30	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 16:30	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 16:30	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 16:30	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 16:30	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 16:30	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 16:30	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 16:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 16:30	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 16:30	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/29/14 16:30	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-23 **Lab ID: 92214653015** Collected: 08/26/14 13:30 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 16:30	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 16:30	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/29/14 16:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 16:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 16:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/29/14 16:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 16:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 16:30	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 16:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 16:30	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 16:30	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 16:30	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 16:30	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 16:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 16:30	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 16:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 16:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 16:30	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 16:30	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 16:30	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 16:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 16:30	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 16:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 16:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 16:30	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 16:30	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 16:30	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 16:30	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 16:30	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 16:30	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		08/29/14 16:30	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		08/29/14 16:30	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		08/29/14 16:30	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-23D **Lab ID: 92214653016** Collected: 08/26/14 13:40 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 13:40		
Collected Date	**08/26/14**				1		08/26/14 13:40		
Collected Time	**13:40**				1		08/26/14 13:40		
Field pH	**7.2**	Std. Units	0.10	0.10	1		08/26/14 13:40		
Field Temperature	**15.9**	deg C	0.50	0.50	1		08/26/14 13:40		
Static Water Level	**2.59**	feet			1		08/26/14 13:40		
Field Specific Conductance	**120**	umhos/cm	1.0	1.0	1		08/26/14 13:40		
Turbidity	**2.43**	NTU	1.0	1.0	1		08/26/14 13:40		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 02:30	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 02:30	7440-38-2	
Barium	**69.2**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:30	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 02:30	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 02:30	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 02:30	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 02:30	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 02:30	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 02:30	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 02:30	7440-02-0	
Selenium	**0.59J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 02:30	7782-49-2	
Silver	**0.50J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 02:30	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 02:30	7440-28-0	
Vanadium	**1.9J**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:30	7440-62-2	
Zinc	**7.1J**	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 02:30	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 16:46	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 16:46	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 16:46	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 16:46	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 16:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 16:46	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 16:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 16:46	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 16:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 16:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 16:46	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 16:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 16:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 16:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 16:46	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 16:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 16:46	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 16:46	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/29/14 16:46	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-23D **Lab ID: 92214653016** Collected: 08/26/14 13:40 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 16:46	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 16:46	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/29/14 16:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 16:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 16:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/29/14 16:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 16:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 16:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 16:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 16:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 16:46	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 16:46	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 16:46	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 16:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 16:46	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 16:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 16:46	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 16:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 16:46	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 16:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 16:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 16:46	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 16:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 16:46	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 16:46	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 16:46	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 16:46	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 16:46	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 16:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 16:46	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		08/29/14 16:46	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		08/29/14 16:46	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		08/29/14 16:46	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-24 **Lab ID: 92214653017** Collected: 08/26/14 13:05 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/26/14 13:05		
Collected Date	**08/26/14**				1		08/26/14 13:05		
Collected Time	**13:05**				1		08/26/14 13:05		
Field pH	**6.3**	Std. Units	0.10	0.10	1		08/26/14 13:05		
Field Temperature	**17.7**	deg C	0.50	0.50	1		08/26/14 13:05		
Static Water Level	**5.07**	feet			1		08/26/14 13:05		
Field Specific Conductance	**40**	umhos/cm	1.0	1.0	1		08/26/14 13:05		
Turbidity	**2.04**	NTU	1.0	1.0	1		08/26/14 13:05		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/27/14 22:20	08/29/14 02:33	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/27/14 22:20	08/29/14 02:33	7440-38-2	
Barium	**22.7**	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:33	7440-39-3	
Beryllium	ND	ug/L	1.0	0.10	1	08/27/14 22:20	08/29/14 02:33	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	08/27/14 22:20	08/29/14 02:33	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	08/27/14 22:20	08/29/14 02:33	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	08/27/14 22:20	08/29/14 02:33	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	08/27/14 22:20	08/29/14 02:33	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/27/14 22:20	08/29/14 02:33	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	08/27/14 22:20	08/29/14 02:33	7440-02-0	
Selenium	**1.1J**	ug/L	10.0	0.10	1	08/27/14 22:20	08/29/14 02:33	7782-49-2	
Silver	**1.3J**	ug/L	5.0	0.10	1	08/27/14 22:20	08/29/14 02:33	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/27/14 22:20	08/29/14 02:33	7440-28-0	
Vanadium	ND	ug/L	5.0	0.20	1	08/27/14 22:20	08/29/14 02:33	7440-62-2	
Zinc	ND	ug/L	10.0	0.40	1	08/27/14 22:20	08/29/14 02:33	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		08/29/14 17:02	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		08/29/14 17:02	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		08/29/14 17:02	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		08/29/14 17:02	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		08/29/14 17:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		08/29/14 17:02	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		08/29/14 17:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		08/29/14 17:02	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		08/29/14 17:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		08/29/14 17:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		08/29/14 17:02	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		08/29/14 17:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		08/29/14 17:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		08/29/14 17:02	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		08/29/14 17:02	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		08/29/14 17:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		08/29/14 17:02	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		08/29/14 17:02	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		08/29/14 17:02	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-24 **Lab ID: 92214653017** Collected: 08/26/14 13:05 Received: 08/26/14 17:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		08/29/14 17:02	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		08/29/14 17:02	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		08/29/14 17:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		08/29/14 17:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		08/29/14 17:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		08/29/14 17:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		08/29/14 17:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		08/29/14 17:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		08/29/14 17:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		08/29/14 17:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		08/29/14 17:02	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		08/29/14 17:02	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		08/29/14 17:02	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		08/29/14 17:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		08/29/14 17:02	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		08/29/14 17:02	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		08/29/14 17:02	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		08/29/14 17:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		08/29/14 17:02	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		08/29/14 17:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		08/29/14 17:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		08/29/14 17:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		08/29/14 17:02	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		08/29/14 17:02	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		08/29/14 17:02	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		08/29/14 17:02	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		08/29/14 17:02	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		08/29/14 17:02	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		08/29/14 17:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		08/29/14 17:02	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		08/29/14 17:02	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		08/29/14 17:02	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		08/29/14 17:02	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-4 **Lab ID: 92214653018** Collected: 08/27/14 11:30 Received: 08/27/14 17:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/27/14 11:30		
Collected Date	**08/27/14**				1		08/27/14 11:30		
Collected Time	**11:30**				1		08/27/14 11:30		
Field pH	**5.6**	Std. Units	0.10	0.10	1		08/27/14 11:30		
Field Temperature	**16.5**	deg C	0.50	0.50	1		08/27/14 11:30		
Static Water Level	**67.96**	feet			1		08/27/14 11:30		
Field Specific Conductance	**228**	umhos/cm	1.0	1.0	1		08/27/14 11:30		
Turbidity	**9.17**	NTU	1.0	1.0	1		08/27/14 11:30		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 17:27	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:27	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 17:27	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 17:27	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 17:27	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	68	%	20-130		1	09/03/14 11:30	09/05/14 17:27	877-09-8	
Decachlorobiphenyl (S)	72	%	20-130		1	09/03/14 11:30	09/05/14 17:27	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/29/14 15:40	09/06/14 00:45	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/29/14 15:40	09/06/14 00:45	7440-38-2	
Barium	**160**	ug/L	5.0	0.20	1	08/29/14 15:40	09/06/14 00:45	7440-39-3	
Beryllium	**0.54J**	ug/L	1.0	0.10	1	08/29/14 15:40	09/06/14 00:45	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	08/29/14 15:40	09/06/14 00:45	7440-43-9	
Chromium	**0.85J**	ug/L	5.0	0.40	1	08/29/14 15:40	09/06/14 00:45	7440-47-3	
Cobalt	**5.0J**	ug/L	5.0	0.60	1	08/29/14 15:40	09/06/14 00:45	7440-48-4	
Copper	**1.3J**	ug/L	5.0	0.30	1	08/29/14 15:40	09/06/14 00:45	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/29/14 15:40	09/06/14 00:45	7439-92-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-4 **Lab ID: 92214653018** Collected: 08/27/14 11:30 Received: 08/27/14 17:05 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								
Nickel	**2.8J**	ug/L	5.0	1.7	1	08/29/14 15:40	09/06/14 00:45	7440-02-0	
Selenium	**5.8J**	ug/L	10.0	0.10	1	08/29/14 15:40	09/06/14 00:45	7782-49-2	B
Silver	**0.31J**	ug/L	5.0	0.10	1	08/29/14 15:40	09/06/14 00:45	7440-22-4	B
Thallium	**5.2J**	ug/L	5.4	3.0	1	08/29/14 15:40	09/06/14 00:45	7440-28-0	
Vanadium	**3.4J**	ug/L	5.0	0.20	1	08/29/14 15:40	09/06/14 00:45	7440-62-2	
Zinc	**5.7J**	ug/L	10.0	0.40	1	08/29/14 15:40	09/06/14 00:45	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 20:27	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 20:27	107-13-1	
Benzene	**15.9**	ug/L	1.0	0.25	1		09/03/14 20:27	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 20:27	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 20:27	75-27-4	M1
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 20:27	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 20:27	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 20:27	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 20:27	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 20:27	56-23-5	M1
Chlorobenzene	**0.72J**	ug/L	1.0	0.23	1		09/03/14 20:27	108-90-7	
Chloroethane	**0.76J**	ug/L	1.0	0.54	1		09/03/14 20:27	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 20:27	67-66-3	M1
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 20:27	74-87-3	M1
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 20:27	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 20:27	124-48-1	M1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 20:27	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 20:27	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/03/14 20:27	95-50-1	
1,4-Dichlorobenzene	**6.0**	ug/L	1.0	0.33	1		09/03/14 20:27	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 20:27	110-57-6	M1
1,1-Dichloroethane	**21.8**	ug/L	1.0	0.32	1		09/03/14 20:27	75-34-3	M1
1,2-Dichloroethane	**2.0**	ug/L	1.0	0.12	1		09/03/14 20:27	107-06-2	M1
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 20:27	75-35-4	
cis-1,2-Dichloroethene	**32.7**	ug/L	1.0	0.19	1		09/03/14 20:27	156-59-2	M1
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 20:27	156-60-5	M1
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 20:27	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 20:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 20:27	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 20:27	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 20:27	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 20:27	74-88-4	
Methylene Chloride	**4.0**	ug/L	2.0	0.97	1		09/03/14 20:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 20:27	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 20:27	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 20:27	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 20:27	79-34-5	
Tetrachloroethene	**5.8**	ug/L	1.0	0.46	1		09/03/14 20:27	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-4 **Lab ID: 92214653018** Collected: 08/27/14 11:30 Received: 08/27/14 17:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 20:27	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 20:27	71-55-6	M1
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 20:27	79-00-5	
Trichloroethene	**6.0**	ug/L	1.0	0.47	1		09/03/14 20:27	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 20:27	75-69-4	M1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 20:27	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 20:27	108-05-4	M1
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 20:27	75-01-4	M1
Xylene (Total)	**1.1J**	ug/L	2.0	0.66	1		09/03/14 20:27	1330-20-7	
m&p-Xylene	**1.7J**	ug/L	2.0	0.66	1		09/03/14 20:27	179601-23-1	
o-Xylene	**1.1**	ug/L	1.0	0.23	1		09/03/14 20:27	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		09/03/14 20:27	460-00-4	
1,2-Dichloroethane-d4 (S)	122	%	70-130		1		09/03/14 20:27	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		09/03/14 20:27	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-5 **Lab ID: 92214653019** Collected: 08/27/14 11:10 Received: 08/27/14 17:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/27/14 11:10		
Collected Date	**08/27/14**				1		08/27/14 11:10		
Collected Time	**11:10**				1		08/27/14 11:10		
Field pH	**5.9**	Std. Units	0.10	0.10	1		08/27/14 11:10		
Field Temperature	**13.9**	deg C	0.50	0.50	1		08/27/14 11:10		
Static Water Level	**70.54**	feet			1		08/27/14 11:10		
Field Specific Conductance	**217**	umhos/cm	1.0	1.0	1		08/27/14 11:10		
Turbidity	**10.05**	NTU	1.0	1.0	1		08/27/14 11:10		
6010 ICP Groundwater	Analytical Method: EPA 6010	Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	2.6	1	08/29/14 15:40	09/06/14 01:04	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/29/14 15:40	09/06/14 01:04	7440-38-2	
Barium	**199**	ug/L	5.0	0.20	1	08/29/14 15:40	09/06/14 01:04	7440-39-3	
Beryllium	**0.34J**	ug/L	1.0	0.10	1	08/29/14 15:40	09/06/14 01:04	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	08/29/14 15:40	09/06/14 01:04	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	08/29/14 15:40	09/06/14 01:04	7440-47-3	
Cobalt	**8.1**	ug/L	5.0	0.60	1	08/29/14 15:40	09/06/14 01:04	7440-48-4	
Copper	**1.9J**	ug/L	5.0	0.30	1	08/29/14 15:40	09/06/14 01:04	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/29/14 15:40	09/06/14 01:04	7439-92-1	
Nickel	**5.5**	ug/L	5.0	1.7	1	08/29/14 15:40	09/06/14 01:04	7440-02-0	
Selenium	**4.7J**	ug/L	10.0	0.10	1	08/29/14 15:40	09/06/14 01:04	7782-49-2	B
Silver	**0.24J**	ug/L	5.0	0.10	1	08/29/14 15:40	09/06/14 01:04	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	08/29/14 15:40	09/06/14 01:04	7440-28-0	
Vanadium	**2.5J**	ug/L	5.0	0.20	1	08/29/14 15:40	09/06/14 01:04	7440-62-2	B
Zinc	**8.1J**	ug/L	10.0	0.40	1	08/29/14 15:40	09/06/14 01:04	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 20:43	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 20:43	107-13-1	
Benzene	**3.2**	ug/L	1.0	0.25	1		09/03/14 20:43	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 20:43	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 20:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 20:43	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 20:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 20:43	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 20:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 20:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 20:43	108-90-7	
Chloroethane	**1.8**	ug/L	1.0	0.54	1		09/03/14 20:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 20:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 20:43	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 20:43	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 20:43	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 20:43	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 20:43	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/03/14 20:43	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-5 **Lab ID: 92214653019** Collected: 08/27/14 11:10 Received: 08/27/14 17:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	**0.84J**	ug/L	1.0	0.33	1		09/03/14 20:43	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 20:43	110-57-6	
1,1-Dichloroethane	**8.1**	ug/L	1.0	0.32	1		09/03/14 20:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/03/14 20:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 20:43	75-35-4	
cis-1,2-Dichloroethene	**7.9**	ug/L	1.0	0.19	1		09/03/14 20:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 20:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 20:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 20:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 20:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 20:43	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 20:43	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 20:43	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 20:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 20:43	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 20:43	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 20:43	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 20:43	79-34-5	
Tetrachloroethene	**4.2**	ug/L	1.0	0.46	1		09/03/14 20:43	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 20:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 20:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 20:43	79-00-5	
Trichloroethene	**3.6**	ug/L	1.0	0.47	1		09/03/14 20:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 20:43	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 20:43	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 20:43	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 20:43	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 20:43	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 20:43	179601-23-1	
o-Xylene	**0.54J**	ug/L	1.0	0.23	1		09/03/14 20:43	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		09/03/14 20:43	460-00-4	
1,2-Dichloroethane-d4 (S)	119	%	70-130		1		09/03/14 20:43	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/03/14 20:43	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0025J**	mg/L	0.0050	0.0025	1		09/08/14 13:57	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-12 **Lab ID: 92214653020** Collected: 08/27/14 11:00 Received: 08/27/14 17:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/27/14 11:00		
Collected Date	**08/27/14**				1		08/27/14 11:00		
Collected Time	**11:00**				1		08/27/14 11:00		
Field pH	**6.6**	Std. Units	0.10	0.10	1		08/27/14 11:00		
Field Temperature	**13.6**	deg C	0.50	0.50	1		08/27/14 11:00		
Static Water Level	**67.85**	feet			1		08/27/14 11:00		
Field Specific Conductance	**113**	umhos/cm	1.0	1.0	1		08/27/14 11:00		
Turbidity	**10.0**	NTU	1.0	1.0	1		08/27/14 11:00		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	08/29/14 15:40	09/06/14 01:07	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	08/29/14 15:40	09/06/14 01:07	7440-38-2	
Barium	**339**	ug/L	5.0	0.20	1	08/29/14 15:40	09/06/14 01:07	7440-39-3	
Beryllium	**0.53J**	ug/L	1.0	0.10	1	08/29/14 15:40	09/06/14 01:07	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	08/29/14 15:40	09/06/14 01:07	7440-43-9	
Chromium	**20.4**	ug/L	5.0	0.40	1	08/29/14 15:40	09/06/14 01:07	7440-47-3	
Cobalt	**3.2J**	ug/L	5.0	0.60	1	08/29/14 15:40	09/06/14 01:07	7440-48-4	
Copper	**7.6**	ug/L	5.0	0.30	1	08/29/14 15:40	09/06/14 01:07	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	08/29/14 15:40	09/06/14 01:07	7439-92-1	
Nickel	**17.3**	ug/L	5.0	1.7	1	08/29/14 15:40	09/06/14 01:07	7440-02-0	
Selenium	**2.1J**	ug/L	10.0	0.10	1	08/29/14 15:40	09/06/14 01:07	7782-49-2	B
Silver	ND	ug/L	5.0	0.10	1	08/29/14 15:40	09/06/14 01:07	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	08/29/14 15:40	09/06/14 01:07	7440-28-0	
Vanadium	**24.8**	ug/L	5.0	0.20	1	08/29/14 15:40	09/06/14 01:07	7440-62-2	
Zinc	**20.7**	ug/L	10.0	0.40	1	08/29/14 15:40	09/06/14 01:07	7440-66-6	
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 21:15	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 21:15	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		09/03/14 21:15	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 21:15	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 21:15	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 21:15	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 21:15	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 21:15	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 21:15	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 21:15	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 21:15	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/03/14 21:15	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 21:15	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 21:15	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 21:15	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 21:15	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 21:15	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 21:15	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/03/14 21:15	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-12 **Lab ID: 92214653020** Collected: 08/27/14 11:00 Received: 08/27/14 17:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		09/03/14 21:15	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 21:15	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		09/03/14 21:15	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/03/14 21:15	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 21:15	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		09/03/14 21:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 21:15	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 21:15	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 21:15	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 21:15	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 21:15	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 21:15	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 21:15	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 21:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 21:15	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 21:15	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 21:15	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 21:15	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		09/03/14 21:15	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 21:15	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 21:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 21:15	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/03/14 21:15	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 21:15	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 21:15	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 21:15	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 21:15	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 21:15	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 21:15	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 21:15	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		09/03/14 21:15	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70-130		1		09/03/14 21:15	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		09/03/14 21:15	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-11 **Lab ID: 92214653021** Collected: 08/28/14 11:55 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 11:55		
Collected Date	**08/28/14**				1		08/28/14 11:55		
Collected Time	**11:55**				1		08/28/14 11:55		
Field pH	**6.6**	Std. Units	0.10	0.10	1		08/28/14 11:55		
Field Temperature	**15.7**	deg C	0.50	0.50	1		08/28/14 11:55		
Static Water Level	**76.82**	feet			1		08/28/14 11:55		
Field Specific Conductance	**600**	umhos/cm	1.0	1.0	1		08/28/14 11:55		
Turbidity	**315**	NTU	1.0	1.0	1		08/28/14 11:55		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 17:44	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 17:44	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 17:44	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 17:44	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 17:44	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	84	%	20-130		1	09/03/14 11:30	09/05/14 17:44	877-09-8	
Decachlorobiphenyl (S)	91	%	20-130		1	09/03/14 11:30	09/05/14 17:44	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	**4.7J**	ug/L	5.0	2.6	1	09/02/14 15:25	09/05/14 23:52	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/05/14 23:52	7440-38-2	
Barium	**82.3**	ug/L	5.0	0.20	1	09/02/14 15:25	09/05/14 23:52	7440-39-3	
Beryllium	**0.60J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/05/14 23:52	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/05/14 23:52	7440-43-9	
Chromium	**0.88J**	ug/L	5.0	0.40	1	09/02/14 15:25	09/05/14 23:52	7440-47-3	
Cobalt	**0.68J**	ug/L	5.0	0.60	1	09/02/14 15:25	09/05/14 23:52	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	09/02/14 15:25	09/05/14 23:52	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/05/14 23:52	7439-92-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-11 **Lab ID: 92214653021** Collected: 08/28/14 11:55 Received: 08/28/14 16:25 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	**2.1J**	ug/L	5.0	1.7	1	09/02/14 15:25	09/05/14 23:52	7440-02-0	
Selenium	**10.3**	ug/L	10.0	0.10	1	09/02/14 15:25	09/05/14 23:52	7782-49-2	
Silver	**0.43J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/05/14 23:52	7440-22-4	B
Thallium	**4.6J**	ug/L	5.4	3.0	1	09/02/14 15:25	09/05/14 23:52	7440-28-0	
Vanadium	**1.8J**	ug/L	5.0	0.20	1	09/02/14 15:25	09/05/14 23:52	7440-62-2	B
Zinc	**5.8J**	ug/L	10.0	0.40	1	09/02/14 15:25	09/05/14 23:52	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 21:30	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 21:30	107-13-1	
Benzene	**0.30J**	ug/L	1.0	0.25	1		09/03/14 21:30	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 21:30	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 21:30	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 21:30	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 21:30	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 21:30	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 21:30	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 21:30	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 21:30	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/03/14 21:30	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 21:30	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 21:30	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 21:30	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 21:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 21:30	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 21:30	74-95-3	
1,2-Dichlorobenzene	**2.5**	ug/L	1.0	0.30	1		09/03/14 21:30	95-50-1	
1,4-Dichlorobenzene	**0.81J**	ug/L	1.0	0.33	1		09/03/14 21:30	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 21:30	110-57-6	
1,1-Dichloroethane	**6.0**	ug/L	1.0	0.32	1		09/03/14 21:30	75-34-3	
1,2-Dichloroethane	**0.38J**	ug/L	1.0	0.12	1		09/03/14 21:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 21:30	75-35-4	
cis-1,2-Dichloroethene	**17.4**	ug/L	1.0	0.19	1		09/03/14 21:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 21:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 21:30	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 21:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 21:30	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 21:30	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 21:30	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 21:30	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 21:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 21:30	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 21:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 21:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 21:30	79-34-5	
Tetrachloroethene	**0.83J**	ug/L	1.0	0.46	1		09/03/14 21:30	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-11 **Lab ID: 92214653021** Collected: 08/28/14 11:55 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 21:30	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 21:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 21:30	79-00-5	
Trichloroethene	**1.1**	ug/L	1.0	0.47	1		09/03/14 21:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 21:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 21:30	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 21:30	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 21:30	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 21:30	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 21:30	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 21:30	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		09/03/14 21:30	460-00-4	
1,2-Dichloroethane-d4 (S)	119	%	70-130		1		09/03/14 21:30	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/03/14 21:30	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0030J**	mg/L	0.0050	0.0025	1		09/08/14 14:05	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-13 **Lab ID: 92214653022** Collected: 08/28/14 14:00 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 14:00		
Collected Date	**08/28/14**				1		08/28/14 14:00		
Collected Time	**14:00**				1		08/28/14 14:00		
Field pH	**6.4**	Std. Units	0.10	0.10	1		08/28/14 14:00		
Field Temperature	**16.7**	deg C	0.50	0.50	1		08/28/14 14:00		
Static Water Level	**80.65**	feet			1		08/28/14 14:00		
Field Specific Conductance	**448**	umhos/cm	1.0	1.0	1		08/28/14 14:00		
Turbidity	**4.16**	NTU	1.0	1.0	1		08/28/14 14:00		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 18:02	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:02	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 18:02	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 18:02	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 18:02	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	84	%	20-130		1	09/03/14 11:30	09/05/14 18:02	877-09-8	
Decachlorobiphenyl (S)	99	%	20-130		1	09/03/14 11:30	09/05/14 18:02	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	**3.0J**	ug/L	5.0	2.6	1	09/02/14 15:25	09/05/14 23:55	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/05/14 23:55	7440-38-2	
Barium	**906**	ug/L	5.0	0.20	1	09/02/14 15:25	09/05/14 23:55	7440-39-3	
Beryllium	**0.43J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/05/14 23:55	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/05/14 23:55	7440-43-9	
Chromium	**4.5J**	ug/L	5.0	0.40	1	09/02/14 15:25	09/05/14 23:55	7440-47-3	
Cobalt	**9.0**	ug/L	5.0	0.60	1	09/02/14 15:25	09/05/14 23:55	7440-48-4	
Copper	**1.6J**	ug/L	5.0	0.30	1	09/02/14 15:25	09/05/14 23:55	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/05/14 23:55	7439-92-1	

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

ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-13 **Lab ID: 92214653022** Collected: 08/28/14 14:00 Received: 08/28/14 16:25 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	**30.2**	ug/L	5.0	1.7	1	09/02/14 15:25	09/05/14 23:55	7440-02-0	
Selenium	**6.6J**	ug/L	10.0	0.10	1	09/02/14 15:25	09/05/14 23:55	7782-49-2	
Silver	**0.45J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/05/14 23:55	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/05/14 23:55	7440-28-0	
Vanadium	**13.3**	ug/L	5.0	0.20	1	09/02/14 15:25	09/05/14 23:55	7440-62-2	
Zinc	**12.0**	ug/L	10.0	0.40	1	09/02/14 15:25	09/05/14 23:55	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 21:46	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 21:46	107-13-1	
Benzene	**1.9**	ug/L	1.0	0.25	1		09/03/14 21:46	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 21:46	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 21:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 21:46	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 21:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 21:46	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 21:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 21:46	56-23-5	
Chlorobenzene	**0.32J**	ug/L	1.0	0.23	1		09/03/14 21:46	108-90-7	
Chloroethane	**0.62J**	ug/L	1.0	0.54	1		09/03/14 21:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 21:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 21:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 21:46	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 21:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 21:46	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 21:46	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/03/14 21:46	95-50-1	
1,4-Dichlorobenzene	**6.6**	ug/L	1.0	0.33	1		09/03/14 21:46	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 21:46	110-57-6	
1,1-Dichloroethane	**1.8**	ug/L	1.0	0.32	1		09/03/14 21:46	75-34-3	
1,2-Dichloroethane	**0.27J**	ug/L	1.0	0.12	1		09/03/14 21:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 21:46	75-35-4	
cis-1,2-Dichloroethene	**12.1**	ug/L	1.0	0.19	1		09/03/14 21:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 21:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 21:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 21:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 21:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 21:46	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 21:46	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 21:46	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 21:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 21:46	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 21:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 21:46	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 21:46	79-34-5	
Tetrachloroethene	**1.0**	ug/L	1.0	0.46	1		09/03/14 21:46	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-13 **Lab ID: 92214653022** Collected: 08/28/14 14:00 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 21:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 21:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 21:46	79-00-5	
Trichloroethene	**0.83J**	ug/L	1.0	0.47	1		09/03/14 21:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 21:46	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 21:46	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 21:46	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 21:46	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 21:46	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 21:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 21:46	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		09/03/14 21:46	460-00-4	
1,2-Dichloroethane-d4 (S)	119	%	70-130		1		09/03/14 21:46	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		09/03/14 21:46	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	**0.0029J**	mg/L	0.0050	0.0025	1		09/08/14 14:05	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-14 **Lab ID: 92214653023** Collected: 08/28/14 13:20 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 13:20		
Collected Date	**08/28/14**				1		08/28/14 13:20		
Collected Time	**13:20**				1		08/28/14 13:20		
Field pH	**6.4**	Std. Units	0.10	0.10	1		08/28/14 13:20		
Field Temperature	**16.1**	deg C	0.50	0.50	1		08/28/14 13:20		
Static Water Level	**85.5**	feet			1		08/28/14 13:20		
Field Specific Conductance	**732**	umhos/cm	1.0	1.0	1		08/28/14 13:20		
Turbidity	**2.87**	NTU	1.0	1.0	1		08/28/14 13:20		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 18:20	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:20	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 18:20	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 18:20	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 18:20	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	87	%	20-130		1	09/03/14 11:30	09/05/14 18:20	877-09-8	
Decachlorobiphenyl (S)	127	%	20-130		1	09/03/14 11:30	09/05/14 18:20	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	**3.0J**	ug/L	5.0	2.6	1	09/02/14 15:25	09/05/14 23:58	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/05/14 23:58	7440-38-2	
Barium	**223**	ug/L	5.0	0.20	1	09/02/14 15:25	09/05/14 23:58	7440-39-3	
Beryllium	**0.51J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/05/14 23:58	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/05/14 23:58	7440-43-9	
Chromium	**0.63J**	ug/L	5.0	0.40	1	09/02/14 15:25	09/05/14 23:58	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	09/02/14 15:25	09/05/14 23:58	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	09/02/14 15:25	09/05/14 23:58	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/05/14 23:58	7439-92-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-14 **Lab ID: 92214653023** Collected: 08/28/14 13:20 Received: 08/28/14 16:25 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	**4.2J**	ug/L	5.0	1.7	1	09/02/14 15:25	09/05/14 23:58	7440-02-0	
Selenium	**15.0**	ug/L	10.0	0.10	1	09/02/14 15:25	09/05/14 23:58	7782-49-2	
Silver	**0.14J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/05/14 23:58	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/05/14 23:58	7440-28-0	
Vanadium	**1.5J**	ug/L	5.0	0.20	1	09/02/14 15:25	09/05/14 23:58	7440-62-2	B
Zinc	**7.4J**	ug/L	10.0	0.40	1	09/02/14 15:25	09/05/14 23:58	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 22:02	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 22:02	107-13-1	
Benzene	**1.6**	ug/L	1.0	0.25	1		09/03/14 22:02	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 22:02	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 22:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 22:02	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 22:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 22:02	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 22:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 22:02	56-23-5	
Chlorobenzene	**1.5**	ug/L	1.0	0.23	1		09/03/14 22:02	108-90-7	
Chloroethane	**1.2**	ug/L	1.0	0.54	1		09/03/14 22:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 22:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 22:02	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 22:02	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 22:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 22:02	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 22:02	74-95-3	
1,2-Dichlorobenzene	**60.5**	ug/L	1.0	0.30	1		09/03/14 22:02	95-50-1	
1,4-Dichlorobenzene	**16.0**	ug/L	1.0	0.33	1		09/03/14 22:02	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 22:02	110-57-6	
1,1-Dichloroethane	**0.72J**	ug/L	1.0	0.32	1		09/03/14 22:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/03/14 22:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 22:02	75-35-4	
cis-1,2-Dichloroethene	**16.5**	ug/L	1.0	0.19	1		09/03/14 22:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 22:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 22:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 22:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 22:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 22:02	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 22:02	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 22:02	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 22:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 22:02	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 22:02	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 22:02	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 22:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		09/03/14 22:02	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-14 **Lab ID: 92214653023** Collected: 08/28/14 13:20 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 22:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 22:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 22:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/03/14 22:02	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 22:02	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 22:02	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 22:02	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 22:02	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 22:02	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 22:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 22:02	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		09/03/14 22:02	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70-130		1		09/03/14 22:02	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		09/03/14 22:02	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0025	1		09/08/14 14:06	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-14D **Lab ID: 92214653024** Collected: 08/28/14 13:45 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 13:45		
Collected Date	**08/28/14**				1		08/28/14 13:45		
Collected Time	**13:45**				1		08/28/14 13:45		
Field pH	**9.3**	Std. Units	0.10	0.10	1		08/28/14 13:45		
Field Temperature	**17.2**	deg C	0.50	0.50	1		08/28/14 13:45		
Static Water Level	**145.82**	feet			1		08/28/14 13:45		
Field Specific Conductance	**204**	umhos/cm	1.0	1.0	1		08/28/14 13:45		
Turbidity	**4.37**	NTU	1.0	1.0	1		08/28/14 13:45		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	09/02/14 15:25	09/06/14 00:01	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/06/14 00:01	7440-38-2	
Barium	**53.6**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:01	7440-39-3	
Beryllium	**0.25J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/06/14 00:01	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/06/14 00:01	7440-43-9	
Chromium	**1.2J**	ug/L	5.0	0.40	1	09/02/14 15:25	09/06/14 00:01	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	09/02/14 15:25	09/06/14 00:01	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	09/02/14 15:25	09/06/14 00:01	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/06/14 00:01	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	09/02/14 15:25	09/06/14 00:01	7440-02-0	
Selenium	**3.6J**	ug/L	10.0	0.10	1	09/02/14 15:25	09/06/14 00:01	7782-49-2	
Silver	**0.85J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/06/14 00:01	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/06/14 00:01	7440-28-0	
Vanadium	**2.2J**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:01	7440-62-2	B
Zinc	**6.7J**	ug/L	10.0	0.40	1	09/02/14 15:25	09/06/14 00:01	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 22:17	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 22:17	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		09/03/14 22:17	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 22:17	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 22:17	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 22:17	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 22:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 22:17	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 22:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 22:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 22:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/03/14 22:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 22:17	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 22:17	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 22:17	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 22:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 22:17	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 22:17	74-95-3	
1,2-Dichlorobenzene	**1.4**	ug/L	1.0	0.30	1		09/03/14 22:17	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-14D **Lab ID: 92214653024** Collected: 08/28/14 13:45 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		09/03/14 22:17	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 22:17	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		09/03/14 22:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/03/14 22:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 22:17	75-35-4	
cis-1,2-Dichloroethene	**0.73J**	ug/L	1.0	0.19	1		09/03/14 22:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 22:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 22:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 22:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 22:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 22:17	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 22:17	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 22:17	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 22:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 22:17	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 22:17	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 22:17	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 22:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		09/03/14 22:17	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 22:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 22:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 22:17	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/03/14 22:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 22:17	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 22:17	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 22:17	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 22:17	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 22:17	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 22:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 22:17	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		09/03/14 22:17	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70-130		1		09/03/14 22:17	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/03/14 22:17	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-15 **Lab ID: 92214653025** Collected: 08/28/14 14:20 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 14:20		
Collected Date	**08/28/14**				1		08/28/14 14:20		
Collected Time	**14:20**				1		08/28/14 14:20		
Field pH	**7.5**	Std. Units	0.10	0.10	1		08/28/14 14:20		
Field Temperature	**15.4**	deg C	0.50	0.50	1		08/28/14 14:20		
Static Water Level	**83.39**	feet			1		08/28/14 14:20		
Field Specific Conductance	**672**	umhos/cm	1.0	1.0	1		08/28/14 14:20		
Turbidity	**4.73**	NTU	1.0	1.0	1		08/28/14 14:20		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	09/02/14 15:25	09/06/14 00:05	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/06/14 00:05	7440-38-2	
Barium	**38.0**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:05	7440-39-3	
Beryllium	**0.41J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/06/14 00:05	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/06/14 00:05	7440-43-9	
Chromium	**1.7J**	ug/L	5.0	0.40	1	09/02/14 15:25	09/06/14 00:05	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	09/02/14 15:25	09/06/14 00:05	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	09/02/14 15:25	09/06/14 00:05	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/06/14 00:05	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	09/02/14 15:25	09/06/14 00:05	7440-02-0	
Selenium	**15.0**	ug/L	10.0	0.10	1	09/02/14 15:25	09/06/14 00:05	7782-49-2	
Silver	**0.47J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/06/14 00:05	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/06/14 00:05	7440-28-0	
Vanadium	**2.1J**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:05	7440-62-2	B
Zinc	**2.9J**	ug/L	10.0	0.40	1	09/02/14 15:25	09/06/14 00:05	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 22:33	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 22:33	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		09/03/14 22:33	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 22:33	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 22:33	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 22:33	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 22:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 22:33	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 22:33	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 22:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 22:33	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/03/14 22:33	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 22:33	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 22:33	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 22:33	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 22:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 22:33	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 22:33	74-95-3	
1,2-Dichlorobenzene	**6.3**	ug/L	1.0	0.30	1		09/03/14 22:33	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-15 **Lab ID: 92214653025** Collected: 08/28/14 14:20 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	**0.51J**	ug/L	1.0	0.33	1		09/03/14 22:33	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 22:33	110-57-6	
1,1-Dichloroethane	**0.59J**	ug/L	1.0	0.32	1		09/03/14 22:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/03/14 22:33	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 22:33	75-35-4	
cis-1,2-Dichloroethene	**3.0**	ug/L	1.0	0.19	1		09/03/14 22:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 22:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 22:33	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 22:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 22:33	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 22:33	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 22:33	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 22:33	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 22:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 22:33	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 22:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 22:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 22:33	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		09/03/14 22:33	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 22:33	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 22:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 22:33	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/03/14 22:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 22:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 22:33	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 22:33	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 22:33	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 22:33	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 22:33	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 22:33	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		09/03/14 22:33	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70-130		1		09/03/14 22:33	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		09/03/14 22:33	2037-26-5	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	mg/L	0.0050	0.0025	1		09/08/14 14:07	57-12-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-16 **Lab ID: 92214653026** Collected: 08/28/14 14:55 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 14:55		
Collected Date	**08/28/14**				1		08/28/14 14:55		
Collected Time	**14:55**				1		08/28/14 14:55		
Field pH	**6.5**	Std. Units	0.10	0.10	1		08/28/14 14:55		
Field Temperature	**15.6**	deg C	0.50	0.50	1		08/28/14 14:55		
Static Water Level	**51.12**	feet			1		08/28/14 14:55		
Field Specific Conductance	**93**	umhos/cm	1.0	1.0	1		08/28/14 14:55		
Turbidity	**14.2**	NTU	1.0	1.0	1		08/28/14 14:55		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	09/02/14 15:25	09/06/14 00:08	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/06/14 00:08	7440-38-2	
Barium	**134**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:08	7440-39-3	
Beryllium	**0.28J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/06/14 00:08	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/06/14 00:08	7440-43-9	
Chromium	**1.3J**	ug/L	5.0	0.40	1	09/02/14 15:25	09/06/14 00:08	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	09/02/14 15:25	09/06/14 00:08	7440-48-4	
Copper	**1.5J**	ug/L	5.0	0.30	1	09/02/14 15:25	09/06/14 00:08	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/06/14 00:08	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	09/02/14 15:25	09/06/14 00:08	7440-02-0	
Selenium	**3.9J**	ug/L	10.0	0.10	1	09/02/14 15:25	09/06/14 00:08	7782-49-2	
Silver	**0.18J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/06/14 00:08	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/06/14 00:08	7440-28-0	
Vanadium	**7.3**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:08	7440-62-2	
Zinc	**11.8**	ug/L	10.0	0.40	1	09/02/14 15:25	09/06/14 00:08	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 22:49	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 22:49	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		09/03/14 22:49	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 22:49	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 22:49	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 22:49	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 22:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 22:49	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 22:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 22:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 22:49	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/03/14 22:49	75-00-3	
Chloroform	**0.94J**	ug/L	1.0	0.14	1		09/03/14 22:49	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 22:49	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 22:49	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 22:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 22:49	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 22:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/03/14 22:49	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-16 **Lab ID: 92214653026** Collected: 08/28/14 14:55 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		09/03/14 22:49	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 22:49	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		09/03/14 22:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/03/14 22:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 22:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		09/03/14 22:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 22:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 22:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 22:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 22:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 22:49	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 22:49	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 22:49	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 22:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 22:49	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 22:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 22:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 22:49	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		09/03/14 22:49	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 22:49	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 22:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 22:49	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/03/14 22:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 22:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 22:49	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 22:49	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 22:49	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 22:49	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 22:49	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 22:49	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		09/03/14 22:49	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		09/03/14 22:49	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/03/14 22:49	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-16D **Lab ID: 92214653027** Collected: 08/28/14 11:20 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 11:20		
Collected Date	**08/28/14**				1		08/28/14 11:20		
Collected Time	**11:20**				1		08/28/14 11:20		
Field pH	**7.4**	Std. Units	0.10	0.10	1		08/28/14 11:20		
Field Temperature	**14.5**	deg C	0.50	0.50	1		08/28/14 11:20		
Static Water Level	**72.08**	feet			1		08/28/14 11:20		
Field Specific Conductance	**182**	umhos/cm	1.0	1.0	1		08/28/14 11:20		
Turbidity	**3.31**	NTU	1.0	1.0	1		08/28/14 11:20		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	09/02/14 15:25	09/06/14 00:11	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/06/14 00:11	7440-38-2	
Barium	**32.5**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:11	7440-39-3	
Beryllium	**0.19J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/06/14 00:11	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/06/14 00:11	7440-43-9	
Chromium	**0.71J**	ug/L	5.0	0.40	1	09/02/14 15:25	09/06/14 00:11	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	09/02/14 15:25	09/06/14 00:11	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	09/02/14 15:25	09/06/14 00:11	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/06/14 00:11	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	09/02/14 15:25	09/06/14 00:11	7440-02-0	
Selenium	**2.0J**	ug/L	10.0	0.10	1	09/02/14 15:25	09/06/14 00:11	7782-49-2	
Silver	**0.21J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/06/14 00:11	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/06/14 00:11	7440-28-0	
Vanadium	**1.5J**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:11	7440-62-2	B
Zinc	**3.8J**	ug/L	10.0	0.40	1	09/02/14 15:25	09/06/14 00:11	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 23:04	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 23:04	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		09/03/14 23:04	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 23:04	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 23:04	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 23:04	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 23:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 23:04	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 23:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 23:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 23:04	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/03/14 23:04	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 23:04	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 23:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 23:04	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 23:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 23:04	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 23:04	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/03/14 23:04	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-16D **Lab ID: 92214653027** Collected: 08/28/14 11:20 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		09/03/14 23:04	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 23:04	110-57-6	
1,1-Dichloroethane	**1.4**	ug/L	1.0	0.32	1		09/03/14 23:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/03/14 23:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 23:04	75-35-4	
cis-1,2-Dichloroethene	**1.0**	ug/L	1.0	0.19	1		09/03/14 23:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 23:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 23:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 23:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 23:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 23:04	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 23:04	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 23:04	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 23:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 23:04	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 23:04	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 23:04	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 23:04	79-34-5	
Tetrachloroethene	**0.52J**	ug/L	1.0	0.46	1		09/03/14 23:04	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 23:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 23:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 23:04	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/03/14 23:04	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 23:04	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 23:04	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 23:04	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 23:04	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 23:04	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 23:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 23:04	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		09/03/14 23:04	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	70-130		1		09/03/14 23:04	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/03/14 23:04	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-17 **Lab ID: 92214653028** Collected: 08/28/14 14:40 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 14:40		
Collected Date	**08/28/14**				1		08/28/14 14:40		
Collected Time	**14:40**				1		08/28/14 14:40		
Field pH	**6.6**	Std. Units	0.10	0.10	1		08/28/14 14:40		
Field Temperature	**14.9**	deg C	0.50	0.50	1		08/28/14 14:40		
Static Water Level	**47.72**	feet			1		08/28/14 14:40		
Field Specific Conductance	**81**	umhos/cm	1.0	1.0	1		08/28/14 14:40		
Turbidity	**7.15**	NTU	1.0	1.0	1		08/28/14 14:40		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	**2.9J**	ug/L	5.0	2.6	1	09/02/14 15:25	09/06/14 00:23	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/06/14 00:23	7440-38-2	
Barium	**60.0**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:23	7440-39-3	
Beryllium	**0.19J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/06/14 00:23	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/06/14 00:23	7440-43-9	
Chromium	**3.0J**	ug/L	5.0	0.40	1	09/02/14 15:25	09/06/14 00:23	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	09/02/14 15:25	09/06/14 00:23	7440-48-4	
Copper	**0.69J**	ug/L	5.0	0.30	1	09/02/14 15:25	09/06/14 00:23	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/06/14 00:23	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	09/02/14 15:25	09/06/14 00:23	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	09/02/14 15:25	09/06/14 00:23	7782-49-2	
Silver	**0.24J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/06/14 00:23	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/06/14 00:23	7440-28-0	
Vanadium	**3.5J**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:23	7440-62-2	B
Zinc	**4.5J**	ug/L	10.0	0.40	1	09/02/14 15:25	09/06/14 00:23	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 23:20	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 23:20	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		09/03/14 23:20	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 23:20	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 23:20	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 23:20	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 23:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 23:20	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 23:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 23:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 23:20	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/03/14 23:20	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 23:20	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 23:20	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 23:20	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 23:20	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 23:20	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 23:20	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/03/14 23:20	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-17 **Lab ID: 92214653028** Collected: 08/28/14 14:40 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		09/03/14 23:20	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 23:20	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		09/03/14 23:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/03/14 23:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 23:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		09/03/14 23:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 23:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 23:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 23:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 23:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 23:20	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 23:20	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 23:20	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 23:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 23:20	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 23:20	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 23:20	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 23:20	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		09/03/14 23:20	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 23:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 23:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 23:20	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/03/14 23:20	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 23:20	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 23:20	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 23:20	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 23:20	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 23:20	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 23:20	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 23:20	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		09/03/14 23:20	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	70-130		1		09/03/14 23:20	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		09/03/14 23:20	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-18 **Lab ID: 92214653029** Collected: 08/28/14 15:10 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 15:10		
Collected Date	**08/28/14**				1		08/28/14 15:10		
Collected Time	**15:10**				1		08/28/14 15:10		
Field pH	**6.5**	Std. Units	0.10	0.10	1		08/28/14 15:10		
Field Temperature	**16.2**	deg C	0.50	0.50	1		08/28/14 15:10		
Static Water Level	**25.83**	feet			1		08/28/14 15:10		
Field Specific Conductance	**58**	umhos/cm	1.0	1.0	1		08/28/14 15:10		
Turbidity	**8.18**	NTU	1.0	1.0	1		08/28/14 15:10		
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	ND	ug/L	5.0	2.6	1	09/02/14 15:25	09/06/14 00:27	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/06/14 00:27	7440-38-2	
Barium	**92.8**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:27	7440-39-3	
Beryllium	**0.26J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/06/14 00:27	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/06/14 00:27	7440-43-9	
Chromium	**2.7J**	ug/L	5.0	0.40	1	09/02/14 15:25	09/06/14 00:27	7440-47-3	
Cobalt	**1.3J**	ug/L	5.0	0.60	1	09/02/14 15:25	09/06/14 00:27	7440-48-4	
Copper	**2.4J**	ug/L	5.0	0.30	1	09/02/14 15:25	09/06/14 00:27	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/06/14 00:27	7439-92-1	
Nickel	**1.9J**	ug/L	5.0	1.7	1	09/02/14 15:25	09/06/14 00:27	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	09/02/14 15:25	09/06/14 00:27	7782-49-2	
Silver	**0.21J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/06/14 00:27	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/06/14 00:27	7440-28-0	
Vanadium	**4.8J**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:27	7440-62-2	
Zinc	**10.4**	ug/L	10.0	0.40	1	09/02/14 15:25	09/06/14 00:27	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 23:36	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 23:36	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		09/03/14 23:36	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 23:36	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 23:36	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 23:36	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 23:36	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 23:36	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/03/14 23:36	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 23:36	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 23:36	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/03/14 23:36	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 23:36	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 23:36	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 23:36	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 23:36	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 23:36	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 23:36	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/03/14 23:36	95-50-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-18 **Lab ID: 92214653029** Collected: 08/28/14 15:10 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		09/03/14 23:36	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 23:36	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		09/03/14 23:36	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/03/14 23:36	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 23:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		09/03/14 23:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 23:36	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 23:36	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 23:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 23:36	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 23:36	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 23:36	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 23:36	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/03/14 23:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 23:36	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 23:36	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 23:36	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 23:36	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		09/03/14 23:36	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 23:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 23:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 23:36	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/03/14 23:36	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 23:36	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 23:36	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 23:36	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 23:36	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 23:36	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 23:36	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 23:36	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		09/03/14 23:36	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70-130		1		09/03/14 23:36	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/03/14 23:36	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-25 **Lab ID: 92214653030** Collected: 08/28/14 12:20 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Monitoring Well Data	Analytical Method:								
Collected By	**MES**				1		08/28/14 12:20		
Collected Date	**08/28/14**				1		08/28/14 12:20		
Collected Time	**12:20**				1		08/28/14 12:20		
Field pH	**8.3**	Std. Units	0.10	0.10	1		08/28/14 12:20		
Field Temperature	**15.7**	deg C	0.50	0.50	1		08/28/14 12:20		
Static Water Level	**161.36**	feet			1		08/28/14 12:20		
Field Specific Conductance	**540**	umhos/cm	1.0	1.0	1		08/28/14 12:20		
Turbidity	**65**	NTU	1.0	1.0	1		08/28/14 12:20		
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	58-89-9	
Chlordane (Technical)	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 18:37	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	7421-93-4	
Endrin ketone	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	53494-70-5	
Heptachlor	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	1024-57-3	
Hexachlorobenzene	ND	ug/L	0.050	0.050	1	09/03/14 11:30	09/05/14 18:37	118-74-1	
Methoxychlor	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 18:37	72-43-5	
Mirex	ND	ug/L	0.15	0.15	1	09/03/14 11:30	09/05/14 18:37	2385-85-5	
Toxaphene	ND	ug/L	0.20	0.20	1	09/03/14 11:30	09/05/14 18:37	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	93	%	20-130		1	09/03/14 11:30	09/05/14 18:37	877-09-8	
Decachlorobiphenyl (S)	73	%	20-130		1	09/03/14 11:30	09/05/14 18:37	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Antimony	**3.6J**	ug/L	5.0	2.6	1	09/02/14 15:25	09/06/14 00:30	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/06/14 00:30	7440-38-2	
Barium	**30.8**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:30	7440-39-3	
Beryllium	**0.39J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/06/14 00:30	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/06/14 00:30	7440-43-9	
Chromium	**8.8**	ug/L	5.0	0.40	1	09/02/14 15:25	09/06/14 00:30	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	09/02/14 15:25	09/06/14 00:30	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	09/02/14 15:25	09/06/14 00:30	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/06/14 00:30	7439-92-1	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-25 **Lab ID: 92214653030** Collected: 08/28/14 12:20 Received: 08/28/14 16:25 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	**2.8J**	ug/L	5.0	1.7	1	09/02/14 15:25	09/06/14 00:30	7440-02-0	
Selenium	**12.0**	ug/L	10.0	0.10	1	09/02/14 15:25	09/06/14 00:30	7782-49-2	
Silver	**0.38J**	ug/L	5.0	0.10	1	09/02/14 15:25	09/06/14 00:30	7440-22-4	B
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/06/14 00:30	7440-28-0	
Vanadium	**5.3**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:30	7440-62-2	
Zinc	**6.9J**	ug/L	10.0	0.40	1	09/02/14 15:25	09/06/14 00:30	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/03/14 23:51	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/03/14 23:51	107-13-1	
Benzene	**1.0**	ug/L	1.0	0.25	1		09/03/14 23:51	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/03/14 23:51	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/03/14 23:51	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/03/14 23:51	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/03/14 23:51	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/03/14 23:51	78-93-3	
Carbon disulfide	**1.8J**	ug/L	2.0	1.2	1		09/03/14 23:51	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/03/14 23:51	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/03/14 23:51	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/03/14 23:51	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/03/14 23:51	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/03/14 23:51	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/03/14 23:51	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/03/14 23:51	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/03/14 23:51	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/03/14 23:51	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/03/14 23:51	95-50-1	
1,4-Dichlorobenzene	**1.4**	ug/L	1.0	0.33	1		09/03/14 23:51	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/03/14 23:51	110-57-6	
1,1-Dichloroethane	**14.7**	ug/L	1.0	0.32	1		09/03/14 23:51	75-34-3	
1,2-Dichloroethane	**0.88J**	ug/L	1.0	0.12	1		09/03/14 23:51	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/03/14 23:51	75-35-4	
cis-1,2-Dichloroethene	**14.8**	ug/L	1.0	0.19	1		09/03/14 23:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/03/14 23:51	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/03/14 23:51	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/03/14 23:51	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/03/14 23:51	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/03/14 23:51	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/03/14 23:51	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/03/14 23:51	74-88-4	
Methylene Chloride	**5.5**	ug/L	2.0	0.97	1		09/03/14 23:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/03/14 23:51	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/03/14 23:51	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/03/14 23:51	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/03/14 23:51	79-34-5	
Tetrachloroethene	**1.6**	ug/L	1.0	0.46	1		09/03/14 23:51	127-18-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: MW-25 **Lab ID: 92214653030** Collected: 08/28/14 12:20 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Toluene	ND	ug/L	1.0	0.26	1		09/03/14 23:51	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/03/14 23:51	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/03/14 23:51	79-00-5	
Trichloroethene	**2.2**	ug/L	1.0	0.47	1		09/03/14 23:51	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/03/14 23:51	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/03/14 23:51	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/03/14 23:51	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/03/14 23:51	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/03/14 23:51	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/03/14 23:51	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/03/14 23:51	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		09/03/14 23:51	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	70-130		1		09/03/14 23:51	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		09/03/14 23:51	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: TRIP BLANK **Lab ID: 92214653031** Collected: 08/28/14 00:00 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	**27.4**	ug/L	25.0	10.0	1		09/04/14 00:07	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/04/14 00:07	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		09/04/14 00:07	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/04/14 00:07	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/04/14 00:07	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/04/14 00:07	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/04/14 00:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/04/14 00:07	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/04/14 00:07	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/04/14 00:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/04/14 00:07	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/04/14 00:07	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/04/14 00:07	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/04/14 00:07	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/04/14 00:07	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/04/14 00:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/04/14 00:07	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/04/14 00:07	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/04/14 00:07	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		09/04/14 00:07	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/04/14 00:07	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		09/04/14 00:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/04/14 00:07	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/04/14 00:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		09/04/14 00:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/04/14 00:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/04/14 00:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/04/14 00:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/04/14 00:07	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/04/14 00:07	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/04/14 00:07	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/04/14 00:07	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/04/14 00:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/04/14 00:07	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/04/14 00:07	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/04/14 00:07	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/04/14 00:07	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		09/04/14 00:07	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/04/14 00:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/04/14 00:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/04/14 00:07	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/04/14 00:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/04/14 00:07	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/04/14 00:07	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/04/14 00:07	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/04/14 00:07	75-01-4	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: TRIP BLANK **Lab ID: 92214653031** Collected: 08/28/14 00:00 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/04/14 00:07	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/04/14 00:07	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/04/14 00:07	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		09/04/14 00:07	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70-130		1		09/04/14 00:07	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		09/04/14 00:07	2037-26-5	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: EQUIP BLANK **Lab ID: 92214653032** Collected: 08/25/14 00:00 Received: 08/28/14 16:25 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	09/02/14 15:25	09/06/14 00:33	7440-36-0	
Arsenic	ND	ug/L	10.0	2.7	1	09/02/14 15:25	09/06/14 00:33	7440-38-2	
Barium	ND	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:33	7440-39-3	
Beryllium	**0.13J**	ug/L	1.0	0.10	1	09/02/14 15:25	09/06/14 00:33	7440-41-7	B
Cadmium	ND	ug/L	1.0	0.50	1	09/02/14 15:25	09/06/14 00:33	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	09/02/14 15:25	09/06/14 00:33	7440-47-3	
Cobalt	ND	ug/L	5.0	0.60	1	09/02/14 15:25	09/06/14 00:33	7440-48-4	
Copper	ND	ug/L	5.0	0.30	1	09/02/14 15:25	09/06/14 00:33	7440-50-8	
Lead	ND	ug/L	5.0	4.0	1	09/02/14 15:25	09/06/14 00:33	7439-92-1	
Nickel	ND	ug/L	5.0	1.7	1	09/02/14 15:25	09/06/14 00:33	7440-02-0	
Selenium	ND	ug/L	10.0	0.10	1	09/02/14 15:25	09/06/14 00:33	7782-49-2	
Silver	ND	ug/L	5.0	0.10	1	09/02/14 15:25	09/06/14 00:33	7440-22-4	
Thallium	ND	ug/L	5.4	3.0	1	09/02/14 15:25	09/06/14 00:33	7440-28-0	
Vanadium	**0.40J**	ug/L	5.0	0.20	1	09/02/14 15:25	09/06/14 00:33	7440-62-2	B
Zinc	**3.2J**	ug/L	10.0	0.40	1	09/02/14 15:25	09/06/14 00:33	7440-66-6	B
8260 MSV Low Level	Analytical Method: EPA 8260								
Acetone	ND	ug/L	25.0	10.0	1		09/04/14 00:23	67-64-1	
Acrylonitrile	ND	ug/L	10.0	1.9	1		09/04/14 00:23	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		09/04/14 00:23	71-43-2	
Bromochloromethane	ND	ug/L	1.0	0.17	1		09/04/14 00:23	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		09/04/14 00:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.26	1		09/04/14 00:23	75-25-2	
Bromomethane	ND	ug/L	2.0	0.29	1		09/04/14 00:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	0.96	1		09/04/14 00:23	78-93-3	
Carbon disulfide	ND	ug/L	2.0	1.2	1		09/04/14 00:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		09/04/14 00:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		09/04/14 00:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.54	1		09/04/14 00:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.14	1		09/04/14 00:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		09/04/14 00:23	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	2.0	1		09/04/14 00:23	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.21	1		09/04/14 00:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		09/04/14 00:23	106-93-4	
Dibromomethane	ND	ug/L	1.0	0.21	1		09/04/14 00:23	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.30	1		09/04/14 00:23	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		09/04/14 00:23	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	1.0	1.0	1		09/04/14 00:23	110-57-6	
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		09/04/14 00:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.12	1		09/04/14 00:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		09/04/14 00:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		09/04/14 00:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		09/04/14 00:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		09/04/14 00:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		09/04/14 00:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		09/04/14 00:23	10061-02-6	

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ANALYTICAL RESULTS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Sample: EQUIP BLANK **Lab ID: 92214653032** Collected: 08/25/14 00:00 Received: 08/28/14 16:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
Ethylbenzene	ND	ug/L	1.0	0.30	1		09/04/14 00:23	100-41-4	
2-Hexanone	ND	ug/L	5.0	0.46	1		09/04/14 00:23	591-78-6	
Iodomethane	ND	ug/L	5.0	0.32	1		09/04/14 00:23	74-88-4	
Methylene Chloride	ND	ug/L	2.0	0.97	1		09/04/14 00:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	0.33	1		09/04/14 00:23	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		09/04/14 00:23	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.33	1		09/04/14 00:23	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.40	1		09/04/14 00:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		09/04/14 00:23	127-18-4	
Toluene	ND	ug/L	1.0	0.26	1		09/04/14 00:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		09/04/14 00:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		09/04/14 00:23	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		09/04/14 00:23	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		09/04/14 00:23	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		09/04/14 00:23	96-18-4	
Vinyl acetate	ND	ug/L	2.0	0.35	1		09/04/14 00:23	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		09/04/14 00:23	75-01-4	
Xylene (Total)	ND	ug/L	2.0	0.66	1		09/04/14 00:23	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.66	1		09/04/14 00:23	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.23	1		09/04/14 00:23	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		09/04/14 00:23	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	70-130		1		09/04/14 00:23	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		09/04/14 00:23	2037-26-5	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: MPRP/16763
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92214653001

METHOD BLANK: 1272044
Matrix: Water
Associated Lab Samples: 92214653001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	08/28/14 22:07	
Arsenic	ug/L	ND	10.0	08/28/14 22:07	
Barium	ug/L	ND	5.0	08/28/14 22:07	
Beryllium	ug/L	ND	1.0	08/28/14 22:07	
Cadmium	ug/L	ND	1.0	08/28/14 22:07	
Chromium	ug/L	ND	5.0	08/28/14 22:07	
Cobalt	ug/L	ND	5.0	08/28/14 22:07	
Copper	ug/L	0.34J	5.0	08/28/14 22:07	
Lead	ug/L	ND	5.0	08/28/14 22:07	
Nickel	ug/L	ND	5.0	08/28/14 22:07	
Selenium	ug/L	1.3J	10.0	08/28/14 22:07	
Silver	ug/L	0.15J	5.0	08/28/14 22:07	
Thallium	ug/L	ND	5.4	08/28/14 22:07	
Vanadium	ug/L	ND	5.0	08/28/14 22:07	
Zinc	ug/L	ND	10.0	08/28/14 22:07	

LABORATORY CONTROL SAMPLE: 1272045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	506	101	80-120	
Arsenic	ug/L	500	486	97	80-120	
Barium	ug/L	500	483	97	80-120	
Beryllium	ug/L	500	488	98	80-120	
Cadmium	ug/L	500	495	99	80-120	
Chromium	ug/L	500	485	97	80-120	
Cobalt	ug/L	500	494	99	80-120	
Copper	ug/L	500	505	101	80-120	
Lead	ug/L	500	491	98	80-120	
Nickel	ug/L	500	493	99	80-120	
Selenium	ug/L	500	492	98	80-120	
Silver	ug/L	250	242	97	80-120	
Thallium	ug/L	500	483	97	80-120	
Vanadium	ug/L	500	490	98	80-120	
Zinc	ug/L	500	474	95	80-120	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1272046 1272047

Parameter	Units	92214449001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	5.02	500	500	506	505	101	101	75-125	0	25	
Arsenic	ug/L	10.02	500	500	495	493	99	99	75-125	0	25	
Barium	ug/L	502	500	500	1000	992	100	98	75-125	1	25	
Beryllium	ug/L	1.02	500	500	502	498	100	99	75-125	1	25	
Cadmium	ug/L	1.02	500	500	499	495	100	99	75-125	1	25	
Chromium	ug/L	5.02	500	500	483	494	96	99	75-125	2	25	
Cobalt	ug/L	5.02	500	500	494	494	98	98	75-125	0	25	
Copper	ug/L	5.02	500	500	504	506	101	101	75-125	0	25	
Lead	ug/L	5.02	500	500	489	486	98	97	75-125	1	25	
Nickel	ug/L	5.02	500	500	489	489	98	98	75-125	0	25	
Selenium	ug/L	10.02	500	500	498	494	99	98	75-125	1	25	
Silver	ug/L	5.02	250	250	240	242	96	97	75-125	1	25	
Thallium	ug/L	5.42	500	500	471	468	94	94	75-125	1	25	
Vanadium	ug/L	5.02	500	500	493	501	99	100	75-125	2	25	
Zinc	ug/L	13.2	500	500	500	502	97	98	75-125	0	25	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: MPRP/16777 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92214653002, 92214653003, 92214653004, 92214653005, 92214653006, 92214653007, 92214653008, 92214653009, 92214653010, 92214653011, 92214653012, 92214653013, 92214653014, 92214653015, 92214653016, 92214653017

METHOD BLANK: 1273738 Matrix: Water
Associated Lab Samples: 92214653002, 92214653003, 92214653004, 92214653005, 92214653006, 92214653007, 92214653008, 92214653009, 92214653010, 92214653011, 92214653012, 92214653013, 92214653014, 92214653015, 92214653016, 92214653017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	08/29/14 01:15	
Arsenic	ug/L	ND	10.0	08/29/14 01:15	
Barium	ug/L	0.43J	5.0	08/29/14 01:15	
Beryllium	ug/L	ND	1.0	08/29/14 01:15	
Cadmium	ug/L	ND	1.0	08/29/14 01:15	
Chromium	ug/L	ND	5.0	08/29/14 01:15	
Cobalt	ug/L	ND	5.0	08/29/14 01:15	
Copper	ug/L	ND	5.0	08/29/14 01:15	
Lead	ug/L	ND	5.0	08/29/14 01:15	
Nickel	ug/L	ND	5.0	08/29/14 01:15	
Selenium	ug/L	ND	10.0	08/29/14 01:15	
Silver	ug/L	0.98J	5.0	08/29/14 01:15	
Thallium	ug/L	ND	5.4	08/29/14 01:15	
Vanadium	ug/L	ND	5.0	08/29/14 01:15	
Zinc	ug/L	ND	10.0	08/29/14 01:15	

LABORATORY CONTROL SAMPLE: 1273739

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	539	108	80-120	
Arsenic	ug/L	500	530	106	80-120	
Barium	ug/L	500	539	108	80-120	
Beryllium	ug/L	500	546	109	80-120	
Cadmium	ug/L	500	539	108	80-120	
Chromium	ug/L	500	538	108	80-120	
Cobalt	ug/L	500	547	109	80-120	
Copper	ug/L	500	545	109	80-120	
Lead	ug/L	500	546	109	80-120	
Nickel	ug/L	500	538	108	80-120	
Selenium	ug/L	500	543	109	80-120	
Silver	ug/L	250	261	104	80-120	
Thallium	ug/L	500	528	106	80-120	
Vanadium	ug/L	500	535	107	80-120	
Zinc	ug/L	500	528	106	80-120	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1273740 1273741

Parameter	Units	92214653002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	8.6	500	500	512	504	101	99	75-125	2	25	
Arsenic	ug/L	ND	500	500	509	497	102	99	75-125	2	25	
Barium	ug/L	224	500	500	733	733	102	102	75-125	0	25	
Beryllium	ug/L	0.22J	500	500	533	526	107	105	75-125	1	25	
Cadmium	ug/L	ND	500	500	509	501	102	100	75-125	2	25	
Chromium	ug/L	5.5	500	500	531	519	105	103	75-125	2	25	
Cobalt	ug/L	18.6	500	500	529	520	102	100	75-125	2	25	
Copper	ug/L	1.8J	500	500	520	514	104	102	75-125	1	25	
Lead	ug/L	ND	500	500	513	505	102	100	75-125	2	25	
Nickel	ug/L	3.1J	500	500	505	497	100	99	75-125	2	25	
Selenium	ug/L	0.65J	500	500	507	492	101	98	75-125	3	25	
Silver	ug/L	0.75J	250	250	247	245	99	98	75-125	1	25	
Thallium	ug/L	ND	500	500	494	482	98	96	75-125	2	25	
Vanadium	ug/L	2.6J	500	500	523	514	104	102	75-125	2	25	
Zinc	ug/L	5.3J	500	500	512	505	101	100	75-125	1	25	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: MPRP/16792 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92214653018, 92214653019, 92214653020

METHOD BLANK: 1275409 Matrix: Water
Associated Lab Samples: 92214653018, 92214653019, 92214653020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	09/06/14 00:39	
Arsenic	ug/L	ND	10.0	09/06/14 00:39	
Barium	ug/L	ND	5.0	09/06/14 00:39	
Beryllium	ug/L	0.14J	1.0	09/06/14 00:39	
Cadmium	ug/L	ND	1.0	09/06/14 00:39	
Chromium	ug/L	ND	5.0	09/06/14 00:39	
Cobalt	ug/L	ND	5.0	09/06/14 00:39	
Copper	ug/L	ND	5.0	09/06/14 00:39	
Lead	ug/L	ND	5.0	09/06/14 00:39	
Nickel	ug/L	ND	5.0	09/06/14 00:39	
Selenium	ug/L	1.1J	10.0	09/06/14 00:39	
Silver	ug/L	0.15J	5.0	09/06/14 00:39	
Thallium	ug/L	ND	5.4	09/06/14 00:39	
Vanadium	ug/L	0.25J	5.0	09/06/14 00:39	
Zinc	ug/L	2.0J	10.0	09/06/14 00:39	

LABORATORY CONTROL SAMPLE: 1275410

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	494	99	80-120	
Arsenic	ug/L	500	484	97	80-120	
Barium	ug/L	500	499	100	80-120	
Beryllium	ug/L	500	513	103	80-120	
Cadmium	ug/L	500	506	101	80-120	
Chromium	ug/L	500	512	102	80-120	
Cobalt	ug/L	500	501	100	80-120	
Copper	ug/L	500	501	100	80-120	
Lead	ug/L	500	497	99	80-120	
Nickel	ug/L	500	504	101	80-120	
Selenium	ug/L	500	494	99	80-120	
Silver	ug/L	250	242	97	80-120	
Thallium	ug/L	500	481	96	80-120	
Vanadium	ug/L	500	510	102	80-120	
Zinc	ug/L	500	498	100	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1275411 1275412

Parameter	Units	92214653018 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	486	496	97	99	75-125	2	25	
Arsenic	ug/L	ND	500	500	481	479	96	96	75-125	0	25	
Barium	ug/L	160	500	500	646	643	97	97	75-125	0	25	
Beryllium	ug/L	0.54J	500	500	500	502	100	100	75-125	0	25	
Cadmium	ug/L	ND	500	500	489	492	98	98	75-125	1	25	
Chromium	ug/L	0.85J	500	500	498	500	99	100	75-125	0	25	
Cobalt	ug/L	5.0J	500	500	489	490	97	97	75-125	0	25	
Copper	ug/L	1.3J	500	500	496	499	99	100	75-125	1	25	
Lead	ug/L	ND	500	500	481	482	96	96	75-125	0	25	
Nickel	ug/L	2.8J	500	500	487	489	97	97	75-125	0	25	
Selenium	ug/L	5.8J	500	500	486	491	96	97	75-125	1	25	
Silver	ug/L	0.31J	250	250	237	238	95	95	75-125	0	25	
Thallium	ug/L	5.2J	500	500	464	469	92	93	75-125	1	25	
Vanadium	ug/L	3.4J	500	500	506	506	101	101	75-125	0	25	
Zinc	ug/L	5.7J	500	500	490	490	97	97	75-125	0	25	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: MPRP/16803 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92214653021, 92214653022, 92214653023, 92214653024, 92214653025, 92214653026, 92214653027, 92214653028, 92214653029, 92214653030, 92214653032

METHOD BLANK: 1276476 Matrix: Water
Associated Lab Samples: 92214653021, 92214653022, 92214653023, 92214653024, 92214653025, 92214653026, 92214653027, 92214653028, 92214653029, 92214653030, 92214653032

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	09/05/14 23:27	
Arsenic	ug/L	ND	10.0	09/05/14 23:27	
Barium	ug/L	0.24J	5.0	09/05/14 23:27	
Beryllium	ug/L	0.12J	1.0	09/05/14 23:27	
Cadmium	ug/L	ND	1.0	09/05/14 23:27	
Chromium	ug/L	ND	5.0	09/05/14 23:27	
Cobalt	ug/L	ND	5.0	09/05/14 23:27	
Copper	ug/L	ND	5.0	09/05/14 23:27	
Lead	ug/L	ND	5.0	09/05/14 23:27	
Nickel	ug/L	ND	5.0	09/05/14 23:27	
Selenium	ug/L	ND	10.0	09/05/14 23:27	
Silver	ug/L	0.17J	5.0	09/05/14 23:27	
Thallium	ug/L	ND	5.4	09/05/14 23:27	
Vanadium	ug/L	0.36J	5.0	09/05/14 23:27	
Zinc	ug/L	1.5J	10.0	09/05/14 23:27	

LABORATORY CONTROL SAMPLE: 1276477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	470	94	80-120	
Arsenic	ug/L	500	465	93	80-120	
Barium	ug/L	500	476	95	80-120	
Beryllium	ug/L	500	487	97	80-120	
Cadmium	ug/L	500	484	97	80-120	
Chromium	ug/L	500	485	97	80-120	
Cobalt	ug/L	500	476	95	80-120	
Copper	ug/L	500	479	96	80-120	
Lead	ug/L	500	475	95	80-120	
Nickel	ug/L	500	479	96	80-120	
Selenium	ug/L	500	470	94	80-120	
Silver	ug/L	250	229	92	80-120	
Thallium	ug/L	500	456	91	80-120	
Vanadium	ug/L	500	488	98	80-120	
Zinc	ug/L	500	473	95	80-120	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1276478 1276479

Parameter	Units	92215327003 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	479	483	96	96	75-125	1	25	
Arsenic	ug/L	ND	500	500	471	469	94	94	75-125	0	25	
Barium	ug/L	76.6J	500	500	558	561	96	97	75-125	1	25	
Beryllium	ug/L	ND	500	500	498	499	100	100	75-125	0	25	
Cadmium	ug/L	ND	500	500	490	491	98	98	75-125	0	25	
Chromium	ug/L	ND	500	500	493	496	99	99	75-125	1	25	
Cobalt	ug/L	ND	500	500	483	485	97	97	75-125	0	25	
Copper	ug/L	ND	500	500	488	490	97	98	75-125	0	25	
Lead	ug/L	ND	500	500	481	478	96	96	75-125	1	25	
Nickel	ug/L	ND	500	500	487	487	97	97	75-125	0	25	
Selenium	ug/L	ND	500	500	478	480	95	95	75-125	0	25	
Silver	ug/L	ND	250	250	233	233	93	93	75-125	0	25	
Thallium	ug/L	ND	500	500	465	469	93	94	75-125	1	25	
Vanadium	ug/L	ND	500	500	497	496	99	99	75-125	0	25	
Zinc	ug/L	ND	500	500	484	485	96	96	75-125	0	25	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: MSV/28098 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92214653001

METHOD BLANK: 1273085 | Matrix: Water
Associated Lab Samples: 92214653001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1,1-Trichloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1-Dichloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,1-Dichloroethene	ug/L	ND	1.0	08/27/14 14:08	
1,2,3-Trichloropropane	ug/L	ND	1.0	08/27/14 14:08	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	08/27/14 14:08	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	08/27/14 14:08	
1,2-Dichlorobenzene	ug/L	ND	1.0	08/27/14 14:08	
1,2-Dichloroethane	ug/L	ND	1.0	08/27/14 14:08	
1,2-Dichloropropane	ug/L	ND	1.0	08/27/14 14:08	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/27/14 14:08	
2-Butanone (MEK)	ug/L	ND	5.0	08/27/14 14:08	
2-Hexanone	ug/L	ND	5.0	08/27/14 14:08	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	08/27/14 14:08	
Acetone	ug/L	ND	25.0	08/27/14 14:08	
Acrylonitrile	ug/L	ND	10.0	08/27/14 14:08	
Benzene	ug/L	ND	1.0	08/27/14 14:08	
Bromochloromethane	ug/L	ND	1.0	08/27/14 14:08	
Bromodichloromethane	ug/L	ND	1.0	08/27/14 14:08	
Bromoform	ug/L	ND	1.0	08/27/14 14:08	
Bromomethane	ug/L	ND	2.0	08/27/14 14:08	
Carbon disulfide	ug/L	ND	2.0	08/27/14 14:08	
Carbon tetrachloride	ug/L	ND	1.0	08/27/14 14:08	
Chlorobenzene	ug/L	ND	1.0	08/27/14 14:08	
Chloroethane	ug/L	ND	1.0	08/27/14 14:08	
Chloroform	ug/L	ND	1.0	08/27/14 14:08	
Chloromethane	ug/L	ND	1.0	08/27/14 14:08	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/27/14 14:08	
cis-1,3-Dichloropropene	ug/L	ND	1.0	08/27/14 14:08	
Dibromochloromethane	ug/L	ND	1.0	08/27/14 14:08	
Dibromomethane	ug/L	ND	1.0	08/27/14 14:08	
Ethylbenzene	ug/L	ND	1.0	08/27/14 14:08	
Iodomethane	ug/L	ND	5.0	08/27/14 14:08	
m&p-Xylene	ug/L	ND	2.0	08/27/14 14:08	
Methylene Chloride	ug/L	ND	2.0	08/27/14 14:08	
o-Xylene	ug/L	ND	1.0	08/27/14 14:08	
Styrene	ug/L	ND	1.0	08/27/14 14:08	
Tetrachloroethene	ug/L	ND	1.0	08/27/14 14:08	
Toluene	ug/L	ND	1.0	08/27/14 14:08	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

METHOD BLANK: 1273085 Matrix: Water
Associated Lab Samples: 92214653001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/27/14 14:08	
trans-1,3-Dichloropropene	ug/L	ND	1.0	08/27/14 14:08	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	08/27/14 14:08	
Trichloroethene	ug/L	ND	1.0	08/27/14 14:08	
Trichlorofluoromethane	ug/L	ND	1.0	08/27/14 14:08	
Vinyl acetate	ug/L	ND	2.0	08/27/14 14:08	
Vinyl chloride	ug/L	ND	1.0	08/27/14 14:08	
Xylene (Total)	ug/L	ND	2.0	08/27/14 14:08	
1,2-Dichloroethane-d4 (S)	%	102	70-130	08/27/14 14:08	
4-Bromofluorobenzene (S)	%	99	70-130	08/27/14 14:08	
Toluene-d8 (S)	%	99	70-130	08/27/14 14:08	

LABORATORY CONTROL SAMPLE: 1273086

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	52.1	104	70-130	
1,1,1-Trichloroethane	ug/L	50	52.3	105	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	49.3	99	70-130	
1,1,2-Trichloroethane	ug/L	50	52.0	104	70-130	
1,1-Dichloroethane	ug/L	50	53.6	107	70-130	
1,1-Dichloroethene	ug/L	50	53.8	108	70-132	
1,2,3-Trichloropropane	ug/L	50	51.5	103	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	48.8	98	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	51.6	103	70-130	
1,2-Dichlorobenzene	ug/L	50	50.6	101	70-130	
1,2-Dichloroethane	ug/L	50	49.2	98	70-130	
1,2-Dichloropropane	ug/L	50	50.5	101	70-130	
1,4-Dichlorobenzene	ug/L	50	50.7	101	70-130	
2-Butanone (MEK)	ug/L	100	102	102	70-145	
2-Hexanone	ug/L	100	102	102	70-144	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	70-140	
Acetone	ug/L	100	102	102	50-175	
Acrylonitrile	ug/L	250	251	100	70-143	
Benzene	ug/L	50	49.9	100	70-130	
Bromochloromethane	ug/L	50	51.3	103	70-130	
Bromodichloromethane	ug/L	50	56.7	113	70-130	
Bromoform	ug/L	50	56.3	113	70-130	
Bromomethane	ug/L	50	55.9	112	54-130	
Carbon disulfide	ug/L	50	49.8	100	70-131	
Carbon tetrachloride	ug/L	50	53.4	107	70-132	
Chlorobenzene	ug/L	50	50.2	100	70-130	
Chloroethane	ug/L	50	54.6	109	64-134	
Chloroform	ug/L	50	55.0	110	70-130	
Chloromethane	ug/L	50	58.9	118	64-130	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

LABORATORY CONTROL SAMPLE: 1273086

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	50	53.7	107	70-131	
cis-1,3-Dichloropropene	ug/L	50	52.8	106	70-130	
Dibromochloromethane	ug/L	50	58.8	118	70-130	
Dibromomethane	ug/L	50	51.6	103	70-131	
Ethylbenzene	ug/L	50	50.7	101	70-130	
Iodomethane	ug/L	100	90.1	90	49-180	
m&p-Xylene	ug/L	100	102	102	70-130	
Methylene Chloride	ug/L	50	50.9	102	63-130	
o-Xylene	ug/L	50	49.3	99	70-130	
Styrene	ug/L	50	52.1	104	70-130	
Tetrachloroethene	ug/L	50	55.2	110	70-130	
Toluene	ug/L	50	50.1	100	70-130	
trans-1,2-Dichloroethene	ug/L	50	54.4	109	70-130	
trans-1,3-Dichloropropene	ug/L	50	52.5	105	70-132	
trans-1,4-Dichloro-2-butene	ug/L	50	55.3	111	70-141	
Trichloroethene	ug/L	50	52.3	105	70-130	
Trichlorofluoromethane	ug/L	50	52.8	106	62-133	
Vinyl acetate	ug/L	100	126	126	66-157	
Vinyl chloride	ug/L	50	58.8	118	50-150	
Xylene (Total)	ug/L	150	151	101	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1273087 1273088

Parameter	Units	92214653001 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	17.9	17.7	90	89	70-130	1	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	19.3	19.6	96	98	70-130	2	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	17.5	17.0	87	85	70-130	2	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	18.0	18.0	90	90	70-130	0	30	
1,1-Dichloroethane	ug/L	ND	20	20	19.4	19.7	97	98	70-130	2	30	
1,1-Dichloroethene	ug/L	ND	20	20	19.9	19.8	99	99	70-166	0	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	17.5	18.1	87	91	70-130	4	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	16.7	15.5	84	78	70-130	7	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.3	17.8	91	89	70-130	3	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	17.8	17.6	89	88	70-130	1	30	
1,2-Dichloroethane	ug/L	ND	20	20	18.3	18.5	92	92	70-130	1	30	
1,2-Dichloropropane	ug/L	ND	20	20	17.4	18.2	87	91	70-130	4	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	17.9	17.5	89	88	70-130	2	30	
2-Butanone (MEK)	ug/L	ND	40	40	32.5	32.8	81	82	70-130	1	30	
2-Hexanone	ug/L	ND	40	40	35.7	32.3	89	81	70-130	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	35.7	34.5	89	86	70-130	3	30	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1273087 1273088

Parameter	Units	92214653001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acetone	ug/L	ND	40	40	35.4	33.7	88	84	70-130	5	30	
Acrylonitrile	ug/L	ND	100	100	90.1	85.7	90	86	70-130	5	30	
Benzene	ug/L	ND	20	20	17.9	18.0	90	90	70-148	1	30	
Bromochloromethane	ug/L	ND	20	20	17.9	17.7	89	88	70-130	1	30	
Bromodichloromethane	ug/L	ND	20	20	19.4	19.9	97	99	70-130	2	30	
Bromoform	ug/L	ND	20	20	18.0	17.9	90	89	70-130	1	30	
Bromomethane	ug/L	ND	20	20	19.8	20.9	99	104	70-130	5	30	
Carbon disulfide	ug/L	ND	20	20	17.7	17.9	89	89	70-130	1	30	
Carbon tetrachloride	ug/L	ND	20	20	19.8	19.8	99	99	70-130	0	30	
Chlorobenzene	ug/L	ND	20	20	17.9	18.0	90	90	70-146	1	30	
Chloroethane	ug/L	ND	20	20	20.1	20.3	101	102	70-130	1	30	
Chloroform	ug/L	ND	20	20	19.3	20.5	97	103	70-130	6	30	
Chloromethane	ug/L	ND	20	20	19.0	20.3	95	101	70-130	7	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.5	19.8	98	99	70-130	1	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	17.8	18.0	89	90	70-130	1	30	
Dibromochloromethane	ug/L	ND	20	20	19.7	19.7	99	98	70-130	0	30	
Dibromomethane	ug/L	ND	20	20	18.2	18.2	91	91	70-130	0	30	
Ethylbenzene	ug/L	ND	20	20	18.2	18.4	91	92	70-130	1	30	
Iodomethane	ug/L	ND	40	40	31.9	32.9	80	82	70-130	3	30	
m&p-Xylene	ug/L	ND	40	40	36.5	36.9	91	92	70-130	1	30	
Methylene Chloride	ug/L	ND	20	20	16.1	16.5	81	83	70-130	2	30	
o-Xylene	ug/L	ND	20	20	17.4	17.5	87	88	70-130	0	30	
Styrene	ug/L	ND	20	20	18.1	18.1	91	91	70-130	0	30	
Tetrachloroethene	ug/L	ND	20	20	19.8	20.3	99	101	70-130	2	30	
Toluene	ug/L	ND	20	20	17.9	18.1	89	91	70-155	1	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.8	20.0	99	100	70-130	1	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	17.8	17.9	89	89	70-130	0	30	
trans-1,4-Dichloro-2-butene	ug/L	ND	20	20	15.3	15.0	76	75	70-130	2	30	
Trichloroethene	ug/L	ND	20	20	19.0	18.9	95	94	69-151	0	30	
Trichlorofluoromethane	ug/L	ND	20	20	19.9	20.2	100	101	70-130	2	30	
Vinyl acetate	ug/L	ND	40	40	44.2	44.2	110	110	70-130	0	30	
Vinyl chloride	ug/L	ND	20	20	20.9	21.3	105	107	70-130	2	30	
1,2-Dichloroethane-d4 (S)	%						100	104	70-130			
4-Bromofluorobenzene (S)	%						101	102	70-130			
Toluene-d8 (S)	%						100	100	70-130			

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: MSV/28113 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92214653002, 92214653003, 92214653004, 92214653005, 92214653006, 92214653007, 92214653008, 92214653009, 92214653010, 92214653011, 92214653012, 92214653013, 92214653014, 92214653015, 92214653016, 92214653017

METHOD BLANK: 1273472 Matrix: Water
Associated Lab Samples: 92214653002, 92214653003, 92214653004, 92214653005, 92214653006, 92214653007, 92214653008, 92214653009, 92214653010, 92214653011, 92214653012, 92214653013, 92214653014, 92214653015, 92214653016, 92214653017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	08/29/14 10:48	
1,1,1-Trichloroethane	ug/L	ND	1.0	08/29/14 10:48	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	08/29/14 10:48	
1,1,2-Trichloroethane	ug/L	ND	1.0	08/29/14 10:48	
1,1-Dichloroethane	ug/L	ND	1.0	08/29/14 10:48	
1,1-Dichloroethene	ug/L	ND	1.0	08/29/14 10:48	
1,2,3-Trichloropropane	ug/L	ND	1.0	08/29/14 10:48	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	08/29/14 10:48	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	08/29/14 10:48	
1,2-Dichlorobenzene	ug/L	ND	1.0	08/29/14 10:48	
1,2-Dichloroethane	ug/L	ND	1.0	08/29/14 10:48	
1,2-Dichloropropane	ug/L	ND	1.0	08/29/14 10:48	
1,4-Dichlorobenzene	ug/L	ND	1.0	08/29/14 10:48	
2-Butanone (MEK)	ug/L	ND	5.0	08/29/14 10:48	
2-Hexanone	ug/L	ND	5.0	08/29/14 10:48	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	08/29/14 10:48	
Acetone	ug/L	ND	25.0	08/29/14 10:48	
Acrylonitrile	ug/L	ND	10.0	08/29/14 10:48	
Benzene	ug/L	ND	1.0	08/29/14 10:48	
Bromochloromethane	ug/L	ND	1.0	08/29/14 10:48	
Bromodichloromethane	ug/L	ND	1.0	08/29/14 10:48	
Bromoform	ug/L	ND	1.0	08/29/14 10:48	
Bromomethane	ug/L	ND	2.0	08/29/14 10:48	
Carbon disulfide	ug/L	ND	2.0	08/29/14 10:48	
Carbon tetrachloride	ug/L	ND	1.0	08/29/14 10:48	
Chlorobenzene	ug/L	ND	1.0	08/29/14 10:48	
Chloroethane	ug/L	ND	1.0	08/29/14 10:48	
Chloroform	ug/L	ND	1.0	08/29/14 10:48	
Chloromethane	ug/L	ND	1.0	08/29/14 10:48	
cis-1,2-Dichloroethene	ug/L	ND	1.0	08/29/14 10:48	
cis-1,3-Dichloropropene	ug/L	ND	1.0	08/29/14 10:48	
Dibromochloromethane	ug/L	ND	1.0	08/29/14 10:48	
Dibromomethane	ug/L	ND	1.0	08/29/14 10:48	
Ethylbenzene	ug/L	ND	1.0	08/29/14 10:48	
Iodomethane	ug/L	ND	5.0	08/29/14 10:48	
m&p-Xylene	ug/L	ND	2.0	08/29/14 10:48	
Methylene Chloride	ug/L	ND	2.0	08/29/14 10:48	
o-Xylene	ug/L	ND	1.0	08/29/14 10:48	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

METHOD BLANK: 1273472 Matrix: Water

Associated Lab Samples: 92214653002, 92214653003, 92214653004, 92214653005, 92214653006, 92214653007, 92214653008, 92214653009, 92214653010, 92214653011, 92214653012, 92214653013, 92214653014, 92214653015, 92214653016, 92214653017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Styrene	ug/L	ND	1.0	08/29/14 10:48	
Tetrachloroethene	ug/L	ND	1.0	08/29/14 10:48	
Toluene	ug/L	ND	1.0	08/29/14 10:48	
trans-1,2-Dichloroethene	ug/L	ND	1.0	08/29/14 10:48	
trans-1,3-Dichloropropene	ug/L	ND	1.0	08/29/14 10:48	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	08/29/14 10:48	
Trichloroethene	ug/L	ND	1.0	08/29/14 10:48	
Trichlorofluoromethane	ug/L	ND	1.0	08/29/14 10:48	
Vinyl acetate	ug/L	ND	2.0	08/29/14 10:48	
Vinyl chloride	ug/L	ND	1.0	08/29/14 10:48	
Xylene (Total)	ug/L	ND	2.0	08/29/14 10:48	
1,2-Dichloroethane-d4 (S)	%	97	70-130	08/29/14 10:48	
4-Bromofluorobenzene (S)	%	102	70-130	08/29/14 10:48	
Toluene-d8 (S)	%	98	70-130	08/29/14 10:48	

LABORATORY CONTROL SAMPLE: 1273473

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.5	107	70-130	
1,1,1-Trichloroethane	ug/L	50	53.4	107	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	50.3	101	70-130	
1,1,2-Trichloroethane	ug/L	50	51.9	104	70-130	
1,1-Dichloroethane	ug/L	50	53.0	106	70-130	
1,1-Dichloroethene	ug/L	50	52.1	104	70-132	
1,2,3-Trichloropropane	ug/L	50	49.9	100	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	45.9	92	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	54.2	108	70-130	
1,2-Dichlorobenzene	ug/L	50	51.4	103	70-130	
1,2-Dichloroethane	ug/L	50	49.6	99	70-130	
1,2-Dichloropropane	ug/L	50	51.4	103	70-130	
1,4-Dichlorobenzene	ug/L	50	50.1	100	70-130	
2-Butanone (MEK)	ug/L	100	100	100	70-145	
2-Hexanone	ug/L	100	105	105	70-144	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	70-140	
Acetone	ug/L	100	98.3	98	50-175	
Acrylonitrile	ug/L	250	245	98	70-143	
Benzene	ug/L	50	49.1	98	70-130	
Bromochloromethane	ug/L	50	53.7	107	70-130	
Bromodichloromethane	ug/L	50	60.1	120	70-130	
Bromoform	ug/L	50	50.5	101	70-130	
Bromomethane	ug/L	50	45.3	91	54-130	
Carbon disulfide	ug/L	50	48.6	97	70-131	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

LABORATORY CONTROL SAMPLE: 1273473

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	50	54.4	109	70-132	
Chlorobenzene	ug/L	50	48.7	97	70-130	
Chloroethane	ug/L	50	50.6	101	64-134	
Chloroform	ug/L	50	55.7	111	70-130	
Chloromethane	ug/L	50	49.8	100	64-130	
cis-1,2-Dichloroethene	ug/L	50	54.3	109	70-131	
cis-1,3-Dichloropropene	ug/L	50	49.4	99	70-130	
Dibromochloromethane	ug/L	50	54.9	110	70-130	
Dibromomethane	ug/L	50	54.1	108	70-131	
Ethylbenzene	ug/L	50	50.2	100	70-130	
Iodomethane	ug/L	100	91.0	91	49-180	
m&p-Xylene	ug/L	100	101	101	70-130	
Methylene Chloride	ug/L	50	49.6	99	63-130	
o-Xylene	ug/L	50	51.0	102	70-130	
Styrene	ug/L	50	53.9	108	70-130	
Tetrachloroethene	ug/L	50	52.7	105	70-130	
Toluene	ug/L	50	49.4	99	70-130	
trans-1,2-Dichloroethene	ug/L	50	53.2	106	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.8	98	70-132	
trans-1,4-Dichloro-2-butene	ug/L	50	54.2	108	70-141	
Trichloroethene	ug/L	50	51.6	103	70-130	
Trichlorofluoromethane	ug/L	50	49.7	99	62-133	
Vinyl acetate	ug/L	100	108	108	66-157	
Vinyl chloride	ug/L	50	54.4	109	50-150	
Xylene (Total)	ug/L	150	152	102	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE SAMPLE: 1275301

Parameter	Units	92214653003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	21.8	109	70-130	
1,1,1-Trichloroethane	ug/L	ND	20	23.4	117	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20.5	103	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	21.3	106	70-130	
1,1-Dichloroethane	ug/L	1.4	20	24.3	114	70-130	
1,1-Dichloroethene	ug/L	ND	20	22.6	113	70-166	
1,2,3-Trichloropropane	ug/L	ND	20	19.9	99	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	16.9	84	70-130	
1,2-Dibromoethane (EDB)	ug/L	ND	20	21.3	106	70-130	
1,2-Dichlorobenzene	ug/L	2.0	20	23.2	106	70-130	
1,2-Dichloroethane	ug/L	0.39J	20	21.8	107	70-130	
1,2-Dichloropropane	ug/L	0.36J	20	21.4	105	70-130	
1,4-Dichlorobenzene	ug/L	11.5	20	32.8	106	70-130	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

MATRIX SPIKE SAMPLE: 1275301

Parameter	Units	92214653003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
2-Butanone (MEK)	ug/L	ND	40	32.3	81	70-130	
2-Hexanone	ug/L	ND	40	38.2	95	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	38.3	96	70-130	
Acetone	ug/L	ND	40	32.9	73	70-130	
Acrylonitrile	ug/L	ND	100	79.6	80	70-130	
Benzene	ug/L	1.2	20	23.6	112	70-148	
Bromochloromethane	ug/L	ND	20	22.4	112	70-130	
Bromodichloromethane	ug/L	ND	20	23.9	120	70-130	
Bromoform	ug/L	ND	20	19.8	99	70-130	
Bromomethane	ug/L	ND	20	18.8	94	70-130	
Carbon disulfide	ug/L	ND	20	20.7	104	70-130	
Carbon tetrachloride	ug/L	ND	20	24.3	121	70-130	
Chlorobenzene	ug/L	0.87J	20	23.2	112	70-146	
Chloroethane	ug/L	3.9	20	27.9	120	70-130	
Chloroform	ug/L	ND	20	23.6	118	70-130	
Chloromethane	ug/L	ND	20	21.5	108	70-130	
cis-1,2-Dichloroethene	ug/L	4.4	20	27.5	115	70-130	
cis-1,3-Dichloropropene	ug/L	ND	20	18.2	91	70-130	
Dibromochloromethane	ug/L	ND	20	21.8	109	70-130	
Dibromomethane	ug/L	ND	20	22.0	110	70-130	
Ethylbenzene	ug/L	ND	20	23.2	116	70-130	
Iodomethane	ug/L	ND	40	36.3	91	70-130	
m&p-Xylene	ug/L	ND	40	46.8	117	70-130	
Methylene Chloride	ug/L	ND	20	20.5	102	70-130	
o-Xylene	ug/L	ND	20	22.1	111	70-130	
Styrene	ug/L	ND	20	23.2	116	70-130	
Tetrachloroethene	ug/L	ND	20	23.2	116	70-130	
Toluene	ug/L	ND	20	22.2	111	70-155	
trans-1,2-Dichloroethene	ug/L	0.54J	20	23.6	115	70-130	
trans-1,3-Dichloropropene	ug/L	ND	20	19.3	96	70-130	
trans-1,4-Dichloro-2-butene	ug/L	ND	20	18.8	94	70-130	
Trichloroethene	ug/L	ND	20	23.3	116	69-151	
Trichlorofluoromethane	ug/L	ND	20	26.9	134	70-130	M0
Vinyl acetate	ug/L	ND	40	35.8	90	70-130	
Vinyl chloride	ug/L	1.3	20	23.5	111	70-130	
1,2-Dichloroethane-d4 (S)	%				99	70-130	
4-Bromofluorobenzene (S)	%				101	70-130	
Toluene-d8 (S)	%				100	70-130	

SAMPLE DUPLICATE: 1275300

Parameter	Units	92214653002 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	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

SAMPLE DUPLICATE: 1275300

Parameter	Units	92214653002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	0.99J	1.0		30	
1,1-Dichloroethene	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	0.78J	0.75J		30	
1,2-Dichloroethane	ug/L	0.82J	0.88J		30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	0.39J	0.37J		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	
Acrylonitrile	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	1.8	1.9	4	30	
Chloroethane	ug/L	1.5	1.6	7	30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	0.73J	0.63J		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Iodomethane	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
o-Xylene	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)	%	101	105	4		

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

SAMPLE DUPLICATE: 1275300

Parameter	Units	92214653002 Result	Dup Result	RPD	Max RPD	Qualifiers
4-Bromofluorobenzene (S)	%	101	98	3		
Toluene-d8 (S)	%	99	100	1		

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: MSV/28182 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92214653018, 92214653019, 92214653020, 92214653021, 92214653022, 92214653023, 92214653024, 92214653025, 92214653026, 92214653027, 92214653028, 92214653029, 92214653030, 92214653031, 92214653032

METHOD BLANK: 1277420 Matrix: Water
Associated Lab Samples: 92214653018, 92214653019, 92214653020, 92214653021, 92214653022, 92214653023, 92214653024, 92214653025, 92214653026, 92214653027, 92214653028, 92214653029, 92214653030, 92214653031, 92214653032

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	09/03/14 16:14	
1,1,1-Trichloroethane	ug/L	ND	1.0	09/03/14 16:14	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/03/14 16:14	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/03/14 16:14	
1,1-Dichloroethane	ug/L	ND	1.0	09/03/14 16:14	
1,1-Dichloroethene	ug/L	ND	1.0	09/03/14 16:14	
1,2,3-Trichloropropane	ug/L	ND	1.0	09/03/14 16:14	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	09/03/14 16:14	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	09/03/14 16:14	
1,2-Dichlorobenzene	ug/L	ND	1.0	09/03/14 16:14	
1,2-Dichloroethane	ug/L	ND	1.0	09/03/14 16:14	
1,2-Dichloropropane	ug/L	ND	1.0	09/03/14 16:14	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/03/14 16:14	
2-Butanone (MEK)	ug/L	ND	5.0	09/03/14 16:14	
2-Hexanone	ug/L	ND	5.0	09/03/14 16:14	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	09/03/14 16:14	
Acetone	ug/L	ND	25.0	09/03/14 16:14	
Acrylonitrile	ug/L	ND	10.0	09/03/14 16:14	
Benzene	ug/L	ND	1.0	09/03/14 16:14	
Bromochloromethane	ug/L	ND	1.0	09/03/14 16:14	
Bromodichloromethane	ug/L	ND	1.0	09/03/14 16:14	
Bromoform	ug/L	ND	1.0	09/03/14 16:14	
Bromomethane	ug/L	ND	2.0	09/03/14 16:14	
Carbon disulfide	ug/L	ND	2.0	09/03/14 16:14	
Carbon tetrachloride	ug/L	ND	1.0	09/03/14 16:14	
Chlorobenzene	ug/L	ND	1.0	09/03/14 16:14	
Chloroethane	ug/L	ND	1.0	09/03/14 16:14	
Chloroform	ug/L	ND	1.0	09/03/14 16:14	
Chloromethane	ug/L	ND	1.0	09/03/14 16:14	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/03/14 16:14	
cis-1,3-Dichloropropene	ug/L	ND	1.0	09/03/14 16:14	
Dibromochloromethane	ug/L	ND	1.0	09/03/14 16:14	
Dibromomethane	ug/L	ND	1.0	09/03/14 16:14	
Ethylbenzene	ug/L	ND	1.0	09/03/14 16:14	
Iodomethane	ug/L	ND	5.0	09/03/14 16:14	
m&p-Xylene	ug/L	ND	2.0	09/03/14 16:14	
Methylene Chloride	ug/L	ND	2.0	09/03/14 16:14	
o-Xylene	ug/L	ND	1.0	09/03/14 16:14	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

METHOD BLANK: 1277420 Matrix: Water

Associated Lab Samples: 92214653018, 92214653019, 92214653020, 92214653021, 92214653022, 92214653023, 92214653024, 92214653025, 92214653026, 92214653027, 92214653028, 92214653029, 92214653030, 92214653031, 92214653032

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Styrene	ug/L	ND	1.0	09/03/14 16:14	
Tetrachloroethene	ug/L	ND	1.0	09/03/14 16:14	
Toluene	ug/L	ND	1.0	09/03/14 16:14	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/03/14 16:14	
trans-1,3-Dichloropropene	ug/L	ND	1.0	09/03/14 16:14	
trans-1,4-Dichloro-2-butene	ug/L	ND	1.0	09/03/14 16:14	
Trichloroethene	ug/L	ND	1.0	09/03/14 16:14	
Trichlorofluoromethane	ug/L	ND	1.0	09/03/14 16:14	
Vinyl acetate	ug/L	ND	2.0	09/03/14 16:14	
Vinyl chloride	ug/L	ND	1.0	09/03/14 16:14	
Xylene (Total)	ug/L	ND	2.0	09/03/14 16:14	
1,2-Dichloroethane-d4 (S)	%	121	70-130	09/03/14 16:14	
4-Bromofluorobenzene (S)	%	99	70-130	09/03/14 16:14	
Toluene-d8 (S)	%	102	70-130	09/03/14 16:14	

LABORATORY CONTROL SAMPLE: 1277421

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	52.5	105	70-130	
1,1,1-Trichloroethane	ug/L	50	56.0	112	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.4	103	70-130	
1,1,2-Trichloroethane	ug/L	50	52.1	104	70-130	
1,1-Dichloroethane	ug/L	50	55.6	111	70-130	
1,1-Dichloroethene	ug/L	50	54.1	108	70-132	
1,2,3-Trichloropropane	ug/L	50	53.4	107	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	57.0	114	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	53.3	107	70-130	
1,2-Dichlorobenzene	ug/L	50	50.8	102	70-130	
1,2-Dichloroethane	ug/L	50	57.5	115	70-130	
1,2-Dichloropropane	ug/L	50	49.9	100	70-130	
1,4-Dichlorobenzene	ug/L	50	50.8	102	70-130	
2-Butanone (MEK)	ug/L	100	114	114	70-145	
2-Hexanone	ug/L	100	112	112	70-144	
4-Methyl-2-pentanone (MIBK)	ug/L	100	111	111	70-140	
Acetone	ug/L	100	114	114	50-175	
Acrylonitrile	ug/L	250	270	108	70-143	
Benzene	ug/L	50	48.3	97	70-130	
Bromochloromethane	ug/L	50	52.3	105	70-130	
Bromodichloromethane	ug/L	50	59.4	119	70-130	
Bromoform	ug/L	50	59.1	118	70-130	
Bromomethane	ug/L	50	46.5	93	54-130	
Carbon disulfide	ug/L	50	47.4	95	70-131	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

LABORATORY CONTROL SAMPLE: 1277421

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	50	56.8	114	70-132	
Chlorobenzene	ug/L	50	50.2	100	70-130	
Chloroethane	ug/L	50	51.6	103	64-134	
Chloroform	ug/L	50	58.9	118	70-130	
Chloromethane	ug/L	50	55.7	111	64-130	
cis-1,2-Dichloroethene	ug/L	50	56.0	112	70-131	
cis-1,3-Dichloropropene	ug/L	50	54.1	108	70-130	
Dibromochloromethane	ug/L	50	61.7	123	70-130	
Dibromomethane	ug/L	50	51.5	103	70-131	
Ethylbenzene	ug/L	50	50.9	102	70-130	
Iodomethane	ug/L	100	78.1	78	49-180	
m&p-Xylene	ug/L	100	102	102	70-130	
Methylene Chloride	ug/L	50	55.2	110	63-130	
o-Xylene	ug/L	50	49.6	99	70-130	
Styrene	ug/L	50	52.1	104	70-130	
Tetrachloroethene	ug/L	50	53.1	106	70-130	
Toluene	ug/L	50	49.1	98	70-130	
trans-1,2-Dichloroethene	ug/L	50	55.4	111	70-130	
trans-1,3-Dichloropropene	ug/L	50	54.7	109	70-132	
trans-1,4-Dichloro-2-butene	ug/L	50	65.4	131	70-141	
Trichloroethene	ug/L	50	50.9	102	70-130	
Trichlorofluoromethane	ug/L	50	54.0	108	62-133	
Vinyl acetate	ug/L	100	144	144	66-157	
Vinyl chloride	ug/L	50	54.8	110	50-150	
Xylene (Total)	ug/L	150	152	101	70-130	
1,2-Dichloroethane-d4 (S)	%			111	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE SAMPLE: 1277422

Parameter	Units	92214653018 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	23.3	117	70-130	
1,1,1-Trichloroethane	ug/L	ND	20	27.6	138	70-130	M1
1,1,2,2-Tetrachloroethane	ug/L	ND	20	23.0	115	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	23.3	116	70-130	
1,1-Dichloroethane	ug/L	21.8	20	48.5	134	70-130	M1
1,1-Dichloroethene	ug/L	ND	20	26.5	130	70-166	
1,2,3-Trichloropropane	ug/L	ND	20	23.9	120	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	24.1	121	70-130	
1,2-Dibromoethane (EDB)	ug/L	ND	20	23.8	119	70-130	
1,2-Dichlorobenzene	ug/L	ND	20	22.8	113	70-130	
1,2-Dichloroethane	ug/L	2.0	20	28.8	134	70-130	M1
1,2-Dichloropropane	ug/L	ND	20	23.1	115	70-130	
1,4-Dichlorobenzene	ug/L	6.0	20	28.7	114	70-130	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

MATRIX SPIKE SAMPLE: 1277422

Parameter	Units	92214653018 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
2-Butanone (MEK)	ug/L	ND	40	45.6	114	70-130	
2-Hexanone	ug/L	ND	40	48.6	122	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	48.5	121	70-130	
Acetone	ug/L	ND	40	52.0	122	70-130	
Acrylonitrile	ug/L	ND	100	122	122	70-130	
Benzene	ug/L	15.9	20	38.7	114	70-148	
Bromochloromethane	ug/L	ND	20	24.0	120	70-130	
Bromodichloromethane	ug/L	ND	20	26.6	133	70-130	M1
Bromoform	ug/L	ND	20	25.2	126	70-130	
Bromomethane	ug/L	ND	20	20.6	103	70-130	
Carbon disulfide	ug/L	ND	20	23.2	116	70-130	
Carbon tetrachloride	ug/L	ND	20	27.2	136	70-130	M1
Chlorobenzene	ug/L	0.72J	20	23.7	115	70-146	
Chloroethane	ug/L	0.76J	20	26.8	130	70-130	
Chloroform	ug/L	ND	20	27.8	139	70-130	M1
Chloromethane	ug/L	ND	20	26.8	134	70-130	M1
cis-1,2-Dichloroethene	ug/L	32.7	20	59.0	131	70-130	M1
cis-1,3-Dichloropropene	ug/L	ND	20	24.0	120	70-130	
Dibromochloromethane	ug/L	ND	20	26.9	134	70-130	M1
Dibromomethane	ug/L	ND	20	22.8	114	70-130	
Ethylbenzene	ug/L	ND	20	23.7	118	70-130	
Iodomethane	ug/L	ND	40	36.5	91	70-130	
m&p-Xylene	ug/L	1.7J	40	49.3	119	70-130	
Methylene Chloride	ug/L	4.0	20	29.5	128	70-130	
o-Xylene	ug/L	1.1	20	23.7	113	70-130	
Styrene	ug/L	ND	20	23.3	117	70-130	
Tetrachloroethene	ug/L	5.8	20	30.7	124	70-130	
Toluene	ug/L	ND	20	23.0	115	70-155	
trans-1,2-Dichloroethene	ug/L	ND	20	27.0	135	70-130	M1
trans-1,3-Dichloropropene	ug/L	ND	20	24.6	123	70-130	
trans-1,4-Dichloro-2-butene	ug/L	ND	20	26.9	134	70-130	M1
Trichloroethene	ug/L	6.0	20	30.4	122	69-151	
Trichlorofluoromethane	ug/L	ND	20	26.9	135	70-130	M1
Vinyl acetate	ug/L	ND	40	65.6	164	70-130	M1
Vinyl chloride	ug/L	ND	20	27.4	134	70-130	M1
1,2-Dichloroethane-d4 (S)	%				114	70-130	
4-Bromofluorobenzene (S)	%				100	70-130	
Toluene-d8 (S)	%				101	70-130	

SAMPLE DUPLICATE: 1277423

Parameter	Units	92214653019 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	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

SAMPLE DUPLICATE: 1277423

Parameter	Units	92214653019 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	8.1	7.6	6	30	
1,1-Dichloroethene	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	
1,4-Dichlorobenzene	ug/L	0.84J	0.78J		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	
Acrylonitrile	ug/L	ND	ND		30	
Benzene	ug/L	3.2	3.0	6	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	1.8	1.6	13	30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	7.9	7.5	6	30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Iodomethane	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
o-Xylene	ug/L	0.54J	0.54J		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	4.2	4.2	1	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	3.6	3.5	3	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)	%	119	120	1		

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

SAMPLE DUPLICATE: 1277423

Parameter	Units	92214653019 Result	Dup Result	RPD	Max RPD	Qualifiers
4-Bromofluorobenzene (S)	%	97	99	2		
Toluene-d8 (S)	%	101	101	0		

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: OEXT/29653 Analysis Method: EPA 8081
QC Batch Method: EPA 3510 Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92214653003, 92214653006, 92214653008, 92214653010, 92214653011

METHOD BLANK: 1274214 Matrix: Water
Associated Lab Samples: 92214653003, 92214653006, 92214653008, 92214653010, 92214653011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	09/05/14 10:51	
4,4'-DDE	ug/L	ND	0.050	09/05/14 10:51	
4,4'-DDT	ug/L	ND	0.050	09/05/14 10:51	
Aldrin	ug/L	ND	0.050	09/05/14 10:51	
alpha-BHC	ug/L	ND	0.050	09/05/14 10:51	
beta-BHC	ug/L	ND	0.050	09/05/14 10:51	
Chlordane (Technical)	ug/L	ND	0.20	09/05/14 10:51	
delta-BHC	ug/L	ND	0.050	09/05/14 10:51	
Dieldrin	ug/L	ND	0.050	09/05/14 10:51	
Endosulfan I	ug/L	ND	0.050	09/05/14 10:51	
Endosulfan II	ug/L	ND	0.050	09/05/14 10:51	
Endosulfan sulfate	ug/L	ND	0.050	09/05/14 10:51	
Endrin	ug/L	ND	0.050	09/05/14 10:51	
Endrin aldehyde	ug/L	ND	0.050	09/05/14 10:51	
Endrin ketone	ug/L	ND	0.050	09/05/14 10:51	
gamma-BHC (Lindane)	ug/L	ND	0.050	09/05/14 10:51	
Heptachlor	ug/L	ND	0.050	09/05/14 10:51	
Heptachlor epoxide	ug/L	ND	0.050	09/05/14 10:51	
Hexachlorobenzene	ug/L	ND	0.050	09/05/14 10:51	
Methoxychlor	ug/L	ND	0.15	09/05/14 10:51	
Mirex	ug/L	ND	0.15	09/05/14 10:51	
Toxaphene	ug/L	ND	0.20	09/05/14 10:51	
Decachlorobiphenyl (S)	%	90	20-130	09/05/14 10:51	
Tetrachloro-m-xylene (S)	%	79	20-130	09/05/14 10:51	

LABORATORY CONTROL SAMPLE: 1274215

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.22	89	20-150	
4,4'-DDE	ug/L	.25	0.20	81	20-150	
4,4'-DDT	ug/L	.25	0.22	90	20-150	
Aldrin	ug/L	.25	0.16	66	20-150	
alpha-BHC	ug/L	.25	0.21	85	20-150	
beta-BHC	ug/L	.25	0.23	93	20-150	
delta-BHC	ug/L	.25	0.23	94	20-150	
Dieldrin	ug/L	.25	0.23	91	20-150	
Endosulfan I	ug/L	.25	0.22	89	20-150	
Endosulfan II	ug/L	.25	0.24	96	20-150	
Endosulfan sulfate	ug/L	.25	0.24	97	20-150	
Endrin	ug/L	.25	0.24	96	20-150	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

LABORATORY CONTROL SAMPLE: 1274215

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/L	.25	0.18	75	20-150	
Endrin ketone	ug/L	.25	0.24	98	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.21	86	20-150	
Heptachlor	ug/L	.25	0.18	73	20-150	
Heptachlor epoxide	ug/L	.25	0.22	88	20-150	
Hexachlorobenzene	ug/L	.25	0.18	73	20-150	
Methoxychlor	ug/L	.74	0.67	90	20-150	
Mirex	ug/L	.74	0.68	92	20-150	
Decachlorobiphenyl (S)	%			85	20-130	
Tetrachloro-m-xylene (S)	%			85	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1274216 1274217

Parameter	Units	92214970002 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	0.35	0.45	70	91	20-150	27	30	
4,4'-DDE	ug/L	ND	.5	.5	0.34	0.46	68	93	20-150	31	30	
4,4'-DDT	ug/L	ND	.5	.5	0.37	0.50	75	101	20-150	29	30	
Aldrin	ug/L	ND	.5	.5	0.25	0.43	51	86	20-150	52	30	
alpha-BHC	ug/L	ND	.5	.5	0.28	0.48	56	98	20-150	54	30	1g,R1
beta-BHC	ug/L	ND	.5	.5	0.36	0.51	73	103	20-150	33	30	
delta-BHC	ug/L	ND	.5	.5	0.36	0.50	72	102	20-150	34	30	
Dieldrin	ug/L	ND	.5	.5	0.34	0.45	68	90	20-150	28	30	
Endosulfan I	ug/L	ND	.5	.5	0.31	0.45	63	91	20-150	35	30	
Endosulfan II	ug/L	ND	.5	.5	0.35	0.45	70	91	20-150	26	30	
Endosulfan sulfate	ug/L	ND	.5	.5	0.37	0.47	74	95	20-150	24	30	
Endrin	ug/L	ND	.5	.5	0.37	0.51	74	103	20-150	33	30	
Endrin aldehyde	ug/L	ND	.5	.5	0.31	0.45	64	92	20-150	36	30	
Endrin ketone	ug/L	ND	.5	.5	0.38	0.48	77	96	20-150	22	30	
gamma-BHC (Lindane)	ug/L	ND	.5	.5	0.30	0.49	61	99	20-150	47	30	
Heptachlor	ug/L	ND	.5	.5	0.26	0.43	53	86	20-150	48	30	
Heptachlor epoxide	ug/L	ND	.5	.5	0.32	0.43	64	86	20-150	30	30	
Hexachlorobenzene	ug/L	ND	.5	.5	0.23	0.37	45	75	20-150	49	30	
Methoxychlor	ug/L	ND	1.5	1.5	1.1	1.5	77	99	20-150	25	30	
Mirex	ug/L	ND	1.5	1.5	1.1	1.4	74	97	20-150	27	30	
Decachlorobiphenyl (S)	%						71	91	20-130			
Tetrachloro-m-xylene (S)	%						50	90	20-130			

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: OEXT/29733 Analysis Method: EPA 8081
QC Batch Method: EPA 3510 Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92214653018, 92214653021, 92214653022, 92214653023, 92214653030

METHOD BLANK: 1276999 Matrix: Water
Associated Lab Samples: 92214653018, 92214653021, 92214653022, 92214653023, 92214653030

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.050	09/05/14 16:29	
4,4'-DDE	ug/L	ND	0.050	09/05/14 16:29	
4,4'-DDT	ug/L	ND	0.050	09/05/14 16:29	
Aldrin	ug/L	ND	0.050	09/05/14 16:29	
alpha-BHC	ug/L	ND	0.050	09/05/14 16:29	
beta-BHC	ug/L	ND	0.050	09/05/14 16:29	
Chlordane (Technical)	ug/L	ND	0.20	09/05/14 16:29	
delta-BHC	ug/L	ND	0.050	09/05/14 16:29	
Dieldrin	ug/L	ND	0.050	09/05/14 16:29	
Endosulfan I	ug/L	ND	0.050	09/05/14 16:29	
Endosulfan II	ug/L	ND	0.050	09/05/14 16:29	
Endosulfan sulfate	ug/L	ND	0.050	09/05/14 16:29	
Endrin	ug/L	ND	0.050	09/05/14 16:29	
Endrin aldehyde	ug/L	ND	0.050	09/05/14 16:29	
Endrin ketone	ug/L	ND	0.050	09/05/14 16:29	
gamma-BHC (Lindane)	ug/L	ND	0.050	09/05/14 16:29	
Heptachlor	ug/L	ND	0.050	09/05/14 16:29	
Heptachlor epoxide	ug/L	ND	0.050	09/05/14 16:29	
Hexachlorobenzene	ug/L	ND	0.050	09/05/14 16:29	
Methoxychlor	ug/L	ND	0.15	09/05/14 16:29	
Mirex	ug/L	ND	0.15	09/05/14 16:29	
Toxaphene	ug/L	ND	0.20	09/05/14 16:29	
Decachlorobiphenyl (S)	%	92	20-130	09/05/14 16:29	
Tetrachloro-m-xylene (S)	%	88	20-130	09/05/14 16:29	

LABORATORY CONTROL SAMPLE: 1277000

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.22	88	20-150	
4,4'-DDE	ug/L	.25	0.19	78	20-150	
4,4'-DDT	ug/L	.25	0.23	92	20-150	
Aldrin	ug/L	.25	0.16	63	20-150	
alpha-BHC	ug/L	.25	0.20	82	20-150	
beta-BHC	ug/L	.25	0.23	91	20-150	
delta-BHC	ug/L	.25	0.23	91	20-150	
Dieldrin	ug/L	.25	0.23	92	20-150	
Endosulfan I	ug/L	.25	0.22	88	20-150	
Endosulfan II	ug/L	.25	0.24	96	20-150	
Endosulfan sulfate	ug/L	.25	0.24	98	20-150	
Endrin	ug/L	.25	0.26	103	20-150	

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

LABORATORY CONTROL SAMPLE: 1277000

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/L	.25	0.19	76	20-150	
Endrin ketone	ug/L	.25	0.24	96	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.21	86	20-150	
Heptachlor	ug/L	.25	0.18	72	20-150	
Heptachlor epoxide	ug/L	.25	0.21	86	20-150	
Hexachlorobenzene	ug/L	.25	0.17	69	20-150	
Methoxychlor	ug/L	.74	0.70	94	20-150	
Mirex	ug/L	.74	0.69	92	20-150	
Decachlorobiphenyl (S)	%			86	20-130	
Tetrachloro-m-xylene (S)	%			79	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1277001 1277002

Parameter	Units	92214653030 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	0.43	0.48	87	98	20-150	12	30	
4,4'-DDE	ug/L	ND	.5	.5	0.39	0.45	79	92	20-150	15	30	
4,4'-DDT	ug/L	ND	.5	.5	0.47	0.52	95	106	20-150	11	30	
Aldrin	ug/L	ND	.5	.5	0.31	0.40	63	80	20-150	24	30	
alpha-BHC	ug/L	ND	.5	.5	0.39	0.49	78	98	20-150	23	30	
beta-BHC	ug/L	ND	.5	.5	0.56	0.58	113	117	20-150	4	30	
delta-BHC	ug/L	ND	.5	.5	0.43	0.48	87	96	20-150	10	30	
Dieldrin	ug/L	ND	.5	.5	0.42	0.48	85	96	20-150	12	30	
Endosulfan I	ug/L	ND	.5	.5	0.42	0.45	85	92	20-150	8	30	
Endosulfan II	ug/L	ND	.5	.5	0.47	0.50	94	100	20-150	6	30	
Endosulfan sulfate	ug/L	ND	.5	.5	0.51	0.51	103	103	20-150	0	30	
Endrin	ug/L	ND	.5	.5	0.52	0.56	105	113	20-150	7	30	
Endrin aldehyde	ug/L	ND	.5	.5	0.39	0.42	80	84	20-150	6	30	
Endrin ketone	ug/L	ND	.5	.5	0.51	0.55	103	111	20-150	7	30	
gamma-BHC (Lindane)	ug/L	ND	.5	.5	0.49	0.51	99	103	20-150	4	30	
Heptachlor	ug/L	ND	.5	.5	0.36	0.43	74	87	20-150	17	30	
Heptachlor epoxide	ug/L	ND	.5	.5	0.39	0.44	78	88	20-150	13	30	
Hexachlorobenzene	ug/L	ND	.5	.5	0.46	0.53	93	106	20-150	13	30	
Methoxychlor	ug/L	ND	1.5	1.5	1.5	1.6	100	106	20-150	6	30	
Mirex	ug/L	ND	1.5	1.5	1.4	1.5	97	101	20-150	4	30	
Decachlorobiphenyl (S)	%						79	87	20-130			
Tetrachloro-m-xylene (S)	%						67	87	20-130			

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QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: WETA/20163 Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92214653002, 92214653003, 92214653004, 92214653005, 92214653006, 92214653007, 92214653019

METHOD BLANK: 1280165 Matrix: Water
Associated Lab Samples: 92214653002, 92214653003, 92214653004, 92214653005, 92214653006, 92214653007, 92214653019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	09/08/14 13:31	

LABORATORY CONTROL SAMPLE: 1280166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1280167 1280168

Parameter	Units	92215349002 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	99	97	75-125	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1280169 1280170

Parameter	Units	92214653007 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	0.097	99	95	75-125	5	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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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

QUALITY CONTROL DATA

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

QC Batch: WETA/20164 Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92214653021, 92214653022, 92214653023, 92214653025

METHOD BLANK: 1280171 Matrix: Water
Associated Lab Samples: 92214653021, 92214653022, 92214653023, 92214653025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	09/08/14 13:58	

LABORATORY CONTROL SAMPLE: 1280172

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.081	81	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1280173 1280174

Parameter	Units	92215272001 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	0.11	0.10	105	101	75-125	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1280175 1280176

Parameter	Units	92215353004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	0.026	.1	.1	0.12	0.13	95	100	75-125	4	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.

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Asheville, NC 28804
(828)254-7176

QUALIFIERS

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.
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

1g	Footnote applies to all RPD greater than 30%.
B	Analyte was detected in the associated method blank.
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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Asheville, NC 28804
(828)254-7176

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92214653001	MW-22		FLD/		
92214653002	MW-1A		FLD/		
92214653003	MW-2A		FLD/		
92214653004	MW-3A		FLD/		
92214653005	MW-6		FLD/		
92214653006	MW-7		FLD/		
92214653007	MW-8		FLD/		
92214653008	MW-9		FLD/		
92214653009	MW-10		FLD/		
92214653010	MW-19		FLD/		
92214653011	MW-19D		FLD/		
92214653012	MW-20		FLD/		
92214653013	MW-20D		FLD/		
92214653014	MW-21		FLD/		
92214653015	MW-23		FLD/		
92214653016	MW-23D		FLD/		
92214653017	MW-24		FLD/		
92214653018	MW-4		FLD/		
92214653019	MW-5		FLD/		
92214653020	MW-12		FLD/		
92214653021	MW-11		FLD/		
92214653022	MW-13		FLD/		
92214653023	MW-14		FLD/		
92214653024	MW-14D		FLD/		
92214653025	MW-15		FLD/		
92214653026	MW-16		FLD/		
92214653027	MW-16D		FLD/		
92214653028	MW-17		FLD/		
92214653029	MW-18		FLD/		
92214653030	MW-25		FLD/		
92214653003	MW-2A	EPA 3510	OEXT/29653	EPA 8081	GCSV/18766
92214653006	MW-7	EPA 3510	OEXT/29653	EPA 8081	GCSV/18766
92214653008	MW-9	EPA 3510	OEXT/29653	EPA 8081	GCSV/18766
92214653010	MW-19	EPA 3510	OEXT/29653	EPA 8081	GCSV/18766
92214653011	MW-19D	EPA 3510	OEXT/29653	EPA 8081	GCSV/18766
92214653018	MW-4	EPA 3510	OEXT/29733	EPA 8081	GCSV/18767
92214653021	MW-11	EPA 3510	OEXT/29733	EPA 8081	GCSV/18767
92214653022	MW-13	EPA 3510	OEXT/29733	EPA 8081	GCSV/18767
92214653023	MW-14	EPA 3510	OEXT/29733	EPA 8081	GCSV/18767
92214653030	MW-25	EPA 3510	OEXT/29733	EPA 8081	GCSV/18767
92214653001	MW-22	EPA 3010	MPRP/16763	EPA 6010	ICP/15132
92214653002	MW-1A	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653003	MW-2A	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653004	MW-3A	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653005	MW-6	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653006	MW-7	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653007	MW-8	EPA 3010	MPRP/16777	EPA 6010	ICP/15144

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(828)254-7176

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92214653008	MW-9	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653009	MW-10	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653010	MW-19	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653011	MW-19D	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653012	MW-20	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653013	MW-20D	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653014	MW-21	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653015	MW-23	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653016	MW-23D	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653017	MW-24	EPA 3010	MPRP/16777	EPA 6010	ICP/15144
92214653018	MW-4	EPA 3010	MPRP/16792	EPA 6010	ICP/15158
92214653019	MW-5	EPA 3010	MPRP/16792	EPA 6010	ICP/15158
92214653020	MW-12	EPA 3010	MPRP/16792	EPA 6010	ICP/15158
92214653021	MW-11	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653022	MW-13	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653023	MW-14	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653024	MW-14D	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653025	MW-15	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653026	MW-16	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653027	MW-16D	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653028	MW-17	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653029	MW-18	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653030	MW-25	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653032	EQUIP BLANK	EPA 3010	MPRP/16803	EPA 6010	ICP/15167
92214653001	MW-22	EPA 8260	MSV/28098		
92214653002	MW-1A	EPA 8260	MSV/28113		
92214653003	MW-2A	EPA 8260	MSV/28113		
92214653004	MW-3A	EPA 8260	MSV/28113		
92214653005	MW-6	EPA 8260	MSV/28113		
92214653006	MW-7	EPA 8260	MSV/28113		
92214653007	MW-8	EPA 8260	MSV/28113		
92214653008	MW-9	EPA 8260	MSV/28113		
92214653009	MW-10	EPA 8260	MSV/28113		
92214653010	MW-19	EPA 8260	MSV/28113		
92214653011	MW-19D	EPA 8260	MSV/28113		
92214653012	MW-20	EPA 8260	MSV/28113		
92214653013	MW-20D	EPA 8260	MSV/28113		
92214653014	MW-21	EPA 8260	MSV/28113		
92214653015	MW-23	EPA 8260	MSV/28113		
92214653016	MW-23D	EPA 8260	MSV/28113		
92214653017	MW-24	EPA 8260	MSV/28113		
92214653018	MW-4	EPA 8260	MSV/28182		
92214653019	MW-5	EPA 8260	MSV/28182		
92214653020	MW-12	EPA 8260	MSV/28182		
92214653021	MW-11	EPA 8260	MSV/28182		
92214653022	MW-13	EPA 8260	MSV/28182		

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Asheville, NC 28804
(828)254-7176

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FRANCIS FARM MW'S
Pace Project No.: 92214653

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92214653023	**MW-14**	EPA 8260	MSV/28182		
92214653024	**MW-14D**	EPA 8260	MSV/28182		
92214653025	**MW-15**	EPA 8260	MSV/28182		
92214653026	**MW-16**	EPA 8260	MSV/28182		
92214653027	**MW-16D**	EPA 8260	MSV/28182		
92214653028	**MW-17**	EPA 8260	MSV/28182		
92214653029	**MW-18**	EPA 8260	MSV/28182		
92214653030	**MW-25**	EPA 8260	MSV/28182		
92214653031	**TRIP BLANK**	EPA 8260	MSV/28182		
92214653032	**EQUIP BLANK**	EPA 8260	MSV/28182		
92214653002	**MW-1A**	SM 4500-CN-E	WETA/20163		
92214653003	**MW-2A**	SM 4500-CN-E	WETA/20163		
92214653004	**MW-3A**	SM 4500-CN-E	WETA/20163		
92214653005	**MW-6**	SM 4500-CN-E	WETA/20163		
92214653006	**MW-7**	SM 4500-CN-E	WETA/20163		
92214653007	**MW-8**	SM 4500-CN-E	WETA/20163		
92214653019	**MW-5**	SM 4500-CN-E	WETA/20163		
92214653021	**MW-11**	SM 4500-CN-E	WETA/20164		
92214653022	**MW-13**	SM 4500-CN-E	WETA/20164		
92214653023	**MW-14**	SM 4500-CN-E	WETA/20164		
92214653025	**MW-15**	SM 4500-CN-E	WETA/20164		

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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

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 0.1 C

Corrected Cooler Temp.: 4.1 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: 8/22/14 AC

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: -Includes date/time/ID/Analysis Matrix:	☑Yes ☐No ☐N/A	12.
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: JB **Date:** 8/25/14

SRF Review: JB **Date:** 8/25/14

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# : 92214653

92214653

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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

1788084

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 MW-5
Project Number:

Section C Invoice Information:
Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 14251

REGULATORY AGENCY
NPDES | GROUND WATER | DRINKING WATER
UST | ✓ RCRA | OTHER

Site Location STATE: NV

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): Analysis Test: DRTEX, Sulfate, Nitrate, VOC, Methane

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)	DRTEX	Sulfate	Nitrate	VOC	Methane	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-22					8/22/14	1430		4			1	3						X	X	X	X			922146053
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		8-22-14	1600	[signature]	8-22-14	1600				
	[signature]	8-22-14	1645	[signature]	8/22/14	1645	4.1	7	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: MARK C. SIMMONS
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 8-22-14

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	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 0.1 C

Corrected Cooler Temp.: 6.0 C Biological Tissue is Frozen: Yes No N/A

Date and Initials of person examining contents: 8/26/14 AC

Temp should be above freezing to 6°C

		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):		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: JDS Date: 8/27/14

SRF Review: JDS Date: 8/27/14

Place label here

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)

92214653

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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

1788087

Section A Required Client Information:
Company: [illegible] 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: Haywood FF MW's
Project Number:

Section C Invoice Information:
Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 1428-1

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): Analysis Test: All Trip Spikes, Hg, Tuna, VOC, Metals, Cr+, 8081

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	TIME	DATE	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 Trip Spikes	Hg	Tuna	VOC	Metals	Cr+	8081	Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.
1	MW-1A					8-26-14	~~1545~~		5			1	3	1					Y	X	X	X	Y				001
2	MW-2A					8-26	1530		7	2		1	3	1					Y	X	X	Y	X	Y			002
3	MW-3A					8-26	1510		5			1	3	1					X	X	X	X	Y				003
4	MW-6					8-26	1020		5			1	3	1					Y	X	X	X	X				005
5	MW-7					8-26	1210		7	2		1	3	1					Y	X	X	X	X	X			006
6	MW-8					8-26	1230		5			1	3	1					Y	X	X	X	X				007
7	MW-9					8-26	1125		6	2		1	3						Y	X	X	X		X			008
8	MW-10					8-26	1050		4			1	3						X	X	X	X					009
9	MW-16					8-26	1145		6	2		1	3						Y	X	X	X		X			010
10	MW-19D					8-26	1200		6	2		1	3						Y	X	X	X		X			011
11	MW-20					8-26	1100		4			1	3						Y	X	X	X					012
12	MW-20D					8-26	1110		4			1	3						Y	X	X	X					013

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		8-26-14	1630		8-26-14	1630				
		8-26-14	1710		8/26/14	1710	C.O	Y	N	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 8-26-14

Pace Analytical	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 10.1 C

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

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 8/26/14 TC

		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:	JDS	Date:	8/27/14
SRF Review:	JDB	Date:	8/27/14

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)

Place label here

OR

Handwrite project number (if no label available)

92214653

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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: 3 of

1788085

Section A Required Client Information

Company: [illegible] Co
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Shelton King
Copy To:
Purchase Order No.:
Project Name: Pagues Farm MW 1
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Jon Bradley
Pace Profile #: 1428-1

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	TIME	COMPOSITE END/GRAB DATE	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)	Pb Total Metals	Pagues Sk. 1, Flow	VOC	Metals	Pb Diss	Cd Diss	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-21					8-26-14	1000		4				1	3					Y	Y	Y	X				92214653 014
2	MW-23					8-26-14	1330		4				1	3					Y	Y	Y	X				015
3	MW-230					8-26	1340		4				1	3					X	X	X	X				016
4	MW-24					8-26	1305		4				1	3					Y	Y	Y	Y				017
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		8-26-14	1630	[illegible]	8-26-14	1630				
	[illegible]	8-26-14	1710	[illegible]	8/26/14	1710	6.0	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: [illegible]

SIGNATURE of SAMPLER: [illegible] DATE Signed (MM/DD/YY): 8-26-14

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

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

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 _____C

Corrected Cooler Temp.: 5.0 C Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 8/27/14 AC

		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: -includes date/time/ID/Analysis Matrix: WT	☑Yes ☐No ☐N/A	12.
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. exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No ☐N/A ☑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: JJB Date: 8/27/14

SRF Review: JJB Date: 8/27/14

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)

Place label here

OR

Handwrite project number (if no label available)

92214653

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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: 4 of

Section A Required Client Information:
Company: [illegible]
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B Required Project Information:
Report To: Stephen King
Copy To: BLE AND [illegible]
Purchase Order No.:
Project Name: Fernley Farm [illegible]
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

ITEM #	SAMPLE ID	MATRIX CODE (use #4 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): Nitrate Nitrite	SM4500 NH3	VOC	8260	SOC	Cl-	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92214653
1	MW-4					8-20-14	1130					1	3					X	X	X	X	X			018
2	MW-5					8-20	1110					1	3					X	X	X	X		X		019
3	MW-11					8-20	1100					1	3					X	X	X	X				020
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	8/21/14	1705	5.0 Y N Y

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

Pace Analytical	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

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.: 5.7/8.0 C Biological Tissue is Frozen: Yes No N/A

Date and Initials of person examining contents: 8/28/14 AC

Temp should be above freezing to 6°C

		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):		

Field Data Required? Y / N

Client Notification/ Resolution:

Person Contacted _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: JDB Date: 8/28/14

SRF Review: JDB HMB Date: 8/28/14 8-28-14

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)

Place label here

OR

Handwrite project number (if no label available)

92214653

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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: 5 of 5

1788027

Section A Required Client Information:

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

Section B Required Project Information:

Report To: Stephen Kirk
Copy To: BLK
Purchase Order No.:
Project Name: Francis Farm Mw
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 1428-1

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: pH	Temp	Turb	VOC	Metals	BOD	Cl-	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92214653
1	MW-11			8-28-14	1155	8-28-14			7	2		1	3	1				X	X	X	X	X	X			021
2	MW-13			8-28	1400	8-28			7	2		1	3	1				X	X	X	X	X	X			022
3	MW-14			8-28	1320	8-28			7	2		1	3	1				X	X	X	X	X	X			023
4	MW-14D			8-28	1345	8-28			4			1	3					X	X	X	X					024
5	MW-15			8-28	1420	8-28			5			1	3	1				X	X	X	X		X			025
6	MW-16			8-28	1455	8-28			4			1	3					X	X	X	X					026
7	MW-16D			8-28	1120	8-28			4			1	3					X	X	X	X					027
8	MW-17			8-28	1440	8-28			4			1	3					X	X	X	X					028
9	MW-18			8-28	1510	8-28			4			1	3					X	X	X	X					029
10	MW-25			8-28	1220	8-28			6	2			3					X	X	X	X	X				030
11	Trip Blk					8-28			2				2								X					031
12	Eqp. Blk					8-28	12		3			1	2								X	X				032

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		8-28-14	1540	[illegible]	8-28-14	1540	
	[illegible]	8-28-14	1625	[illegible]	8/28/14	1625	7 Y N Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: [illegible]
SIGNATURE of SAMPLER: [illegible] DATE Signed: [illegible]

APPENDIX D

STATISTICAL CALCULATIONS

APPENDIX D

STATISTICAL CALCULATIONS

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

COMPOUND	TOTAL	ND	DETECTED	%ND	STATISTICAL TEST
Total Antimony	190	187	3	98.4%	Poisson Prediction Limits
Total Arsenic	259	241	18	93.1%	Poisson Prediction Limits
Total Barium	289	5	284	1.7%	ANOVA
Total Beryllium	190	185	5	97.4%	Poisson Prediction Limits
Total Cadmium	289	263	26	91.0%	Kruskal-Wallis
Total Chromium	289	200	89	69.2%	Kruskal-Wallis
Total Cobalt	190	120	70	63.2%	Kruskal-Wallis
Total Copper	190	151	39	79.5%	Kruskal-Wallis
Total Lead	289	255	34	88.2%	Kruskal-Wallis
Total Mercury	234	227	7	97.0%	Poisson Prediction Limits
Total Nickel	201	137	64	68.2%	Kruskal-Wallis
Total Selenium	280	259	21	92.5%	Poisson Prediction Limits
Total Silver	289	275	14	95.2%	Poisson Prediction Limits
Total Thallium	190	189	1	99.5%	Poisson Prediction Limits
Total Vanadium	190	135	55	71.1%	Kruskal-Wallis
Total Zinc	190	98	92	51.6%	Kruskal-Wallis
Acetone	263	261	2	99.2%	Poisson Prediction Limits
Benzene	263	200	63	76.0%	Kruskal-Wallis
Carbon Disulfide	263	258	5	98.1%	Poisson Prediction Limits
Chlorobenzene	263	229	34	87.1%	Poisson Prediction Limits
Chloroethane	263	180	83	68.4%	Poisson Prediction Limits
Chloroform	263	261	2	99.2%	Poisson Prediction Limits
1,2-Dichlorobenzene	263	209	54	79.5%	Poisson Prediction Limits
1,4-Dichlorobenzene	263	172	91	65.4%	Poisson Prediction Limits
1,1-Dichloroethane	263	110	153	41.8%	Kruskal-Wallis
1,2-Dichloroethane	263	215	48	81.7%	Poisson Prediction Limits
1,1-Dichloroethene	263	262	1	99.6%	Poisson Prediction Limits
cis-1,2-Dichloroethene	263	104	159	39.5%	Kruskal-Wallis
cis-1,3-Dichloropropene	263	262	1	99.6%	Poisson Prediction Limits
Ethylbenzene	263	257	6	97.7%	Poisson Prediction Limits
Dichloromethane	263	232	31	88.2%	Kruskal-Wallis
Tetrachloroethene	263	209	54	79.5%	Kruskal-Wallis
Toluene	263	250	13	95.1%	Poisson Prediction Limits
Trichloroethene	263	211	52	80.2%	Kruskal-Wallis
Trichlorofluoromethane	259	257	2	99.2%	Poisson Prediction Limits
Vinyl Chloride	263	258	5	98.1%	Poisson Prediction Limits
Total Xylenes	263	239	24	90.9%	Poisson Prediction Limits
Naphthalene	130	121	9	93.1%	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

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) =	1714
Total Detected Concentrations (per event) =	1714
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 J14-1957-43

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**

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)

$n = 7$
$T_{n1} = 17.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 17.5$
$t[6,.01] = 3.143$

$c = 0.143$

	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} =	8.6	2.5	5.5	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

$T^*_k = 8.6$

4) Compare the *Poisson Prediction Limit* (T^*_k) to the *Sum of the Concentrations Detected* (T_{n2}) in the wells during the most recent sampling event.
Since the Poisson Prediction Limit was 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 J14-1957-43

Compound:	**Total Antimony (Sb)**
NC MCL (µg/l):	Not Established
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-1A	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	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	ND	ND	**5**
08/22/11	ND	ND	**5**
02/22/12	ND	ND	**5**
08/29/12	ND	ND	**5**
02/18/13	ND	ND	**5**
08/26/13	ND	ND	**5**
02/20/14	ND	ND	**5**
08/28/14	ND	**8.6**	**5**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-1A.

n =	8		
m =	8		
N =	16		
Ci (MW-1A) =	72.0		
# samples =	8	8	
sum of rank values (Ri) =	64.0	72.0	
avg rank value (Rbar) =	8.0	9.0	
			Rank Value
rank value of NDs =	8	7	8
rank value of 8.6s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0

	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 =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 36$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 4.000$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 0.875$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 0.875$

$Z_{0.01} = 2.326$

Since Z is smaller, there is not 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 J14-1957-43

Compound: **Total Arsenic (As)**
NC MCL (µg/l): 10
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	**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

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).

$n = 6$
$T_{n1} = 20$

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).

$k = 1$
$n = 6$
$T_{n1} = 20$
$t[5, .01] = 3.365$

$c = 0.167$

	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} =	.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

$T^*_k = 11.0$

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

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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	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

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

n_i =	8	30	26	27	30	26	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
X_i =	43.3821	160.353	144.83	141.836	144.597	150.446	28.2734	44.7	30.7167	39.1196	36.4595	36.8623	54.4525	44.3169	14.7033	31.2436	30.1471	14.7562	25.1578	27.6679	29.5846	22.3891	26.8048	19.0021	23.8403	17.9008	22.0761	8.49686	14.0697	15.2141	1443.4 = X.
X_i bar =	5.42276	5.3451	5.5702	5.25317	4.8199	5.78638	3.53418	5.5875	3.83958	4.88995	4.55743	4.60779	6.80656	5.53961	3.67583	3.90545	5.02452	3.68905	4.19296	4.61131	4.93076	5.59728	4.46746	4.75052	3.97339	4.4752	5.51901	4.24843	3.51743	3.80352	4.99 = X. bar
std dev =	0.24973	0.8808	1.1811	0.96374	0.74681	1.29615	0.541	0.73574	0.58735	0.96664	0.33256	0.16711	0.07552	0.11652	0.24223	0.22115	0.3413	0.23643	0.30155	0.23421	0.15912	0.0242	1.03636	0.62801	0.47161	0.15208	1.28978	0.01616	0.29771	0.76026	
$m*(X_i\ bar-X\ bar)^2$ =	1.46761	3.68881	8.6199	1.80737	0.91397	16.3063	17.059	2.8137	10.6697	0.08736	1.52786	1.19604	26.2701	2.37761	6.95504	9.4873	0.00543	6.81626	3.85427	0.88077	0.02433	1.45361	1.66627	0.23801	6.25534	1.07846	1.10068	1.11308	8.72629	5.67324	
(X_i^2/n_i) =	235.251	857.104	806.72	745.088	696.944	870.538	99.9235	249.761	117.939	191.293	166.161	169.854	370.635	245.498	54.0468	122.02	151.475	54.4363	105.486	127.585	145.875	125.318	119.749	90.2696	94.727	80.1098	121.838	36.0983	49.4893	57.867	

	SS	df	MS	F	Fc
SSw	150.134	29	5.17702	7.7559	1.47
SS_error	172.882	259	0.6675		
SSt	323.015	288			

The calculated F statistic is 7.76. The tabulated Fc value with 29 and 259 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 =	5.3451	5.5702	5.25317	3.53418	5.5875	3.53418	5.5875	3.83958	4.88995	4.55743	4.60779	6.80656	5.53961	3.67583	3.90545	5.02452	3.68905	4.19296	4.61131	4.93076	5.59728	4.46746	4.75052	3.97339	4.4752	5.51901	4.24843	3.51743	3.80352
$D_w = Xbar_i - Xbar_{up}$ =	-0.0777	0.1475	-0.1696	-1.89	0.16	-1.8886	0.16474	-1.5832	-0.5328	-0.8653	-0.815	1.3838	0.11685	-1.7469	-1.5173	-0.3982	-1.7337	-1.2298	-0.8115	-0.492	0.17452	-0.9553	-0.6722	-1.4494	-0.9476	0.09625	-1.1743	-1.9053	-1.6192
= [MS-error*($1/n_{up}$ + $1/n_i$)]^0.5 =	0.2656	0.2699	0.26869	0.33375	0.33375	0.33375	0.33375	0.33375	0.33375	0.33375	0.33375	0.33375	0.33375	0.40876	0.33375	0.36049	0.40876	0.36049	0.36049	0.36049	0.40876	0.36049	0.40876	0.36049	0.40876	0.40876	0.5277	0.40876	0.40876
$D_i = SE_i * t_c$ =	0.61886	0.6288	0.62605	0.77763	0.77763	0.77763	0.77763	0.77763	0.77763	0.77763	0.77763	0.77763	0.77763	0.9524	0.77763	0.83994	0.9524	0.83994	0.83994	0.83994	0.9524	0.83994	0.9524	0.83994	0.9524	0.9524	1.22955	0.9524	0.9524
Statistical Significance ?	-	-	-	-	-	-	-	-	-	-	-	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSL is current event above MCL?	-	-	-	-	-	-	-	-	-	-	-	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

8 = n_{up}
5.42 = $Xbar_{up}$(average background)
0.6675 = MS_error
259 = 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_{ik} 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.

However, the databases for the new wells are too small for intrawell comparisons. As additional laboratory data becomes available during subsequent sampling events, other intrawell statistical methods, such at the Shewhart-CUSUM Control Charts, will be used to evaluate statistical significance

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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

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

	SS	df	MS	F Ratio	F critical
Between Well	1E+07	29	375769	1.65	1.47
Error	6E+07	259	227350		
Total	7E+07	288			

Since the F-ratio = 1.65 exceeds the tabulated value of F-critical = 1.47 (see Table 2 of IFG) with 29 and 259 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	25.874	29	0.89	0.61	1.47
Error	376.27	259	1.45		
Total	402.14	288			

Since the F-ratio = 0.61 does not exceed the tabulated value of F-critical = 1.47 (see Table 2 of IFG) with 29 and 259 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 J14-1957-43

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

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

X_{bar} = 250.66
SD = 364.95
N = 289
$1/N\Sigma_i(X_i-X_{bar})^3$ = 2E+08
γ_1 = 4.3611

Since the Coefficient of Skewness of 4.36 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} = 4.9944
SD = 1.059
N = 289
$1/N\Sigma_i(X_i-X_{bar})^3$ = -0.7967
γ_1 = 0.6743

Since the Coefficient of Skewness of 0.67 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 J14-1957-43

Compound: **Total Barium (Ba)**
NC MCL (µg/l): 700
Method: Kendall-Mann Non-Parametric Trend Test (Concentration vs. Time)
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	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
08/16/99	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
02/14/00	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
08/14/00	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
03/19/01	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
08/27/02	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
02/24/03	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
08/11/03	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
02/09/04	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
08/16/04	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
02/14/05	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
09/01/05	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
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	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
02/26/07	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
08/13/07	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
02/11/08	NP	165	229	42	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
08/25/08	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
02/23/09	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
08/24/09	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
02/22/10	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
08/30/10	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
02/22/11	197	171	191	241	163	237	54	213	73	1190	193	138	977	309	NP	69	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
08/22/11	191	189	189	214	133	280	67	1640	76	202	72	104	972	284	NP	58	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5
02/22/12	196	222	266	175	134	214	49	207	63	126	102	90	970	237	NP	50	249	NP	94	135	141	NP	80	NP	56	NP	NP	NP	NP	NP	5
08/29/12	335	174	283	232	151	289	43	224	67	106	110	106	931	237	NP	64	184	NP	96	84	137	NP	615	NP	51	NP	NP	NP	NP	NP	5
02/18/13	216	267	221	172	128	229	16	200	41	76	86	96	815	238	35	43	118	56	66	92	131	265	100	55	46	103	1470	NP	32	65	5
08/26/13	207	264	259	149	163	255	24	204	51	80	78	111	854	281	31	45	97	36	49	135	112	264	59	253	50	97	283	NP	42	106	5
02/20/14	185	215	253	159	149	210	17	214	13	93	97	85	823	240	42	40	176	39	49	80	183	278	33	109	122	75	87	71	43	19	5
08/28/14	339	224	145	185	160	199	39	183	34	54	68	82	906	223	54	38	134	33	60	93	136	272	46	119	29	80	107	69	23	31	5

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

Trendline Slope =	-	-	-	-	-	-	-	-	-	-	-	-0.1105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**FO**
Standard Deviation =	-	-	-	-	-	-	-	-	-	-	-	67.604	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
number of observations **n** =	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S =	-	-	-	-	-	-	-	-	-	-	-	-18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	τ =
uncorrected for ties τ =	-	-	-	-	-	-	-	-	-	-	-	-0.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
U =	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$\tau = S / ((0.5n$
corrected for ties τ =	-	-	-	-	-	-	-	-	-	-	-	**-0.64**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Concentration Trend	,	,	,	,	,	,	,	,	,	,	,	**decrease**	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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**

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6, .01] = 3.143$

$c = 0.143$

	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

$T^*_k = 3.7$

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 J14-1957-43

Compound: **Total Cadmium (Cd)**
NC MCL (µg/l): 2
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	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	ND	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
N_i	8	30	26	27	30	26	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	1056.0	5207.5	4187.0	4452.0	4225.0	3894.0	1056.0	1056.0	1056.0	1056.0	1056.0	1056.0	1056.0	1056.0	528.0	1056.0	792.0	528.0	792.0	792.0	792.0	528.0	792.0	528.0	792.0	528.0	667.5	264.0	528.0	528.0	
avg rank value (Rbar)	132.0	173.6	161.0	164.9	140.8	149.8	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	132.0	166.9	132.0	132.0	132.0	

Number of each rank value

																														Rank Value
rank value of NDs =	8	21	21	21	28	23	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	3	2	4	4	132
rank value of 1.3s =	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	264
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	265
rank value of 1.5s =	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	266
rank value of 2s =	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	0	267.5
rank value of 2.1s =	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	269
rank value of 2.2s =	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	270
rank value of 2.4s =	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	1	0	0	0	271.5
rank value of 2.5s =	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	273
rank value of 2.6s =	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	274
rank value of 3.1s =	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	275
rank value of 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	276
rank value of 4.9s =	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	277
rank value of 6.2s =	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	278
rank value of 6.9s =	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	279
rank value of 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	280
rank value of 7.4s =	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	281
rank value of 9.1s =	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	282
rank value of 12s =	0	0	1	0	0	0	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 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	0	284
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	285
rank value of 19s =	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	286
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	287
rank value of 22s =	0	0	1	0	0	0	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 25s =	0	0	1	0	0	0	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
n =	8	30	26	27	30	26	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	

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 =	139392 0	903935	674268	734085	595021	583201	139392	139392	139392	139392	139392	139392	139392	139392	69696	139392	104544	69696	104544	104544	104544	69696	104544	69696	104544	69696	111389	34848	69696	69696

N_{bg} = 8
N = 289
H = 9 96

Adjust H for ties:

T_i = 1.8E+07 sum of T1 T3

$H' = H/(1-(T_i/(N^3-N)))$
H' = 40 44
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 greater than H' =40 44
Therefore, the null hypothesis of no contamination at the 5% level holds true
and significant evidence of contamination does not exist.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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	ND	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	ND	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
N_i	8	30	26	27	30	26	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	1992.0	4259.0	3806.5	4051.0	4067.0	4684.0	925.5	1243.0	1061.5	1446.0	1218.0	804.0	804.0	951.5	402.0	804.0	838.5	522.0	703.5	974.5	603.0	402.0	1038.5	875.5	755.5	402.0	763.0	201.0	402.0	905.0		
avg rank value (Rbar)	249.0	142.0	146.4	150.0	135.6	180.2	115.7	155.4	132.7	180.8	152.3	100.5	100.5	118.9	100.5	100.5	139.8	130.5	117.3	162.4	100.5	100.5	173.1	218.9	125.9	100.5	190.8	100.5	100.5	226.3		
														Number of each rank value																	Rank Value
rank value of NDs =	0	21	18	17	22	13	7	5	6	4	5	8	8	7	4	8	4	3	5	3	6	4	3	1	5	4	2	2	4	1	100.5
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	201
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	202
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	203
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	204
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	205
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	206
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	207
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	208
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	209
rank value of 5.1s =	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	210
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	211.5
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	213.5
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	215.5
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	217.5
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	219
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	0	0	0	0	0	0	0	0	220.5
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	222
rank value of 6.2s =	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	0	0	223.5
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	225.5
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	227
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	229
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	231
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	232
rank value of 6.9s =	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	233
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	234
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	235
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	236.5
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	238
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	239
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	240

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	241
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	242
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	243
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	244
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	1	245.5
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	247
rank value of 9.9s =	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	248
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	249
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	250
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	1	0	0	0	0	0	0	251
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	1	0	0	0	0	0	253
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	255
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	1	0	0	0	0	0	0	256
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	257.5
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	259.5
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	261.5
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	263
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	264
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	265
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	266
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	267
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	1	0	0	0	0	0	0	268
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	269
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	270
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	271
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	272
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	1	0	0	0	273
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	1	274
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	275
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	1	0	0	0	0	0	0	0	276
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	277
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	278
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	279
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	280.5
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	282
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	283
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	284
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	1	285
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	286
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	287
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	288
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	1	0	0	0	289
n =	**8**	**30**	**26**	**27**	**30**	**26**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**

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 =	496008.0	604636	557286	607800	551350	843841	107069	193131	140848	261365	185441	80802	80802	113169	40401	80802	117180	68121	82485.4	158275	60601.5	40401	179747	191625	95130	40401	145542	20200.5	40401	204756

N_{bg} = 8
N = 289
H = 44.87

Adjust H for ties:

T_i = 7999926 sum of T1..T16

$$H' = H/(1-(T_i/(N^3-N)))$$

H' = 67.12
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' =67.12.
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:

$$\text{Critical Value } (C_x) = P(N(N+1)/12)^{0.5} * (1/N_{bg}+1/N_x)^{0.5}$$

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) =	142.0	146.4	150.0	135.6	180.2	115.7	155.4	132.7	180.8	152.3	100.5	100.5	118.9	100.5	100.5	139.8	130.5	117.3	162.4	100.5	100.5	173.1	218.9	125.9	100.5	190.8	100.5	100.5	226.3
avg Rbar (background) =	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0	249.0
Dx =	-107.0	-102.6	-99.0	-113.4	-68.8	-133.3	-93.6	-116.3	-68.3	-96.8	-148.5	-148.5	-130.1	-148.5	-148.5	-109.3	-118.5	-131.8	-86.6	-148.5	-148.5	-75.9	-30.1	-123.1	-148.5	-58.3	-148.5	-148.5	-22.8
Cx =	77.5	78.7	78.4	78.7	78.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	119.2	97.4	105.2	119.2	105.2	105.2	105.2	119.2	105.2	119.2	105.2	119.2	119.2	153.9	119.2	119.2
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 J14-1957-43

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	ND	ND	ND	ND	ND	ND	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
N_i	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	803.5	1252.5	1423.0	1471.0	1043.0	1193.5	484.0	723.0	484.0	597.5	545.5	629.0	1024.5	731.5	242.0	484.0	363.0	242.0	363.0	439.5	450.5	520.5	468.5	349.5	433.0	306.0	473.0	121.0	242.0	242.0	
avg rank value (Rbar)	100.4	156.6	177.9	183.9	130.4	149.2	60.5	90.4	60.5	74.7	68.2	78.6	128.1	91.4	60.5	60.5	60.5	60.5	60.5	73.3	75.1	130.1	78.1	87.4	72.2	76.5	118.3	60.5	60.5	60.5	

Number of each rank value

																															Rank Value
rank value of NDs =	4	0	0	0	1	0	8	5	8	7	7	6	2	5	4	8	6	4	6	5	5	1	5	3	5	3	2	2	4	4	60.5
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	121
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	122
rank value of 5.3s =	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	123
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	124.5
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	126
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	127
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	128.5
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	130.5
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	132
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	133
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	134
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	135
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	136
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	137
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	138
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	139.5
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	141
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	142
rank value of 9.4s =	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	0	143
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	0	144
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	145
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	146
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	147
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	148
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	149
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	150
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	151
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	152.5
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	1	0	0	0	0	0	0	0	0	154
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	155

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	1	0	0	0	0	0	0	0	0	156
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	157
rank value of 15.8s =	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	158
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	159
rank value of 16.9s =	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	160
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	161
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	162
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	163
rank value of 19.5s =	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	164
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	0	165
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	166
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	167
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	168
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	169
rank value of 26.6s =	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 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	171
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	172
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	173
rank value of 40.5s =	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	0	174
rank value of 43.1s =	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	175
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	176
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	177
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	178
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	179
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	180
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	181
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	182
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	183
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	184
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	185
rank value of 84.3s =	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	186
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	187
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	188
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	189
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	190
n =	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**	

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 =	80701.5	196095	253116	270480	135981	178055	29282	65341.1	29282	44625.8	37196.3	49455.1	131200	66886.5	14641	29282	21961.5	14641	21961.5	32193.4	33825	67730.1	36582	30537.6	31248.2	23409	55932.3	7320.5	14641	14641

N_{bkg} = 8
N = 190
H = 94.37

Adjust H for ties:

T_i = 1727910 sum of T1 T6

$H' = H/(1-(T_i/(N^3-N)))$
H' = 126.15
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' = 126.15
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_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) =	156.6	177.9	183.9	130.4	149.2	60.5	90.4	60.5	74.7	68.2	78.6	128.1	91.4	60.5	60.5	60.5	60.5	60.5	73.3	75.1	130.1	78.1	87.4	72.2	76.5	118.3	60.5	60.5	60.5
avg Rbar (background) =	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4
Dx =	56.1	77.4	83.4	29.9	-48.8	-39.9	-10.1	-39.9	-25.8	-32.3	-21.8	27.6	-9.0	-39.9	-39.9	-39.9	-39.9	-39.9	-27.2	-25.4	29.7	-22.4	-13.1	-28.3	-23.9	17.8	-39.9	-39.9	-39.9
Cx =	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	78.5	64.1	69.2	78.5	69.2	69.2	69.2	78.5	69.2	78.5	69.2	78.5	78.5	101.3	78.5	78.5
Statistical Significance ?	-	**Yes**	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSL 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 J14-1957-43

Compound: **Total Cobalt (Co)**
NC MCL (µg/l): NE
Method: Kendall-Mann Non-Parametric Trend Test (Concentration vs. Time)
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	**10**	**11**	**56**	**110**	**14**	**17**	ND	**5**	ND	**41**	**5**	**9**	ND	**6**	NP	ND	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	**5**
08/22/11	ND	**9**	**45**	**52**	**7**	**10**	ND	**43**	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**	**31**	**54**	**6**	**6**	ND	ND	ND	ND	ND	ND	**6**	ND	NP	ND	ND	NP	ND	ND	ND	NP	ND	NP	ND	NP	NP	NP	NP	NP	**5**
08/29/12	**12**	**9**	**40**	**104**	**10**	**17**	ND	**5**	ND	ND	ND	ND	**16**	ND	NP	ND	ND	NP	ND	ND	ND	NP	**21**	NP	ND	NP	NP	NP	NP	NP	**5**
02/18/13	**7**	**26**	**50**	**84**	**6**	**15**	ND	ND	ND	ND	ND	ND	**21**	**6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**73**	NP	ND	ND	**5**
08/26/13	**6**	**53**	**155**	**91**	**12**	**27**	ND	ND	ND	ND	ND	**5**	**17**	**20**	ND	ND	ND	ND	ND	**7**	ND	**13**	ND	**24**	ND	**5**	**22**	NP	ND	ND	**5**
02/20/14	ND	**18**	**37**	**49**	**9**	**7**	ND	ND	ND	ND	ND	ND	**12**	ND	ND	ND	ND	ND	ND	ND	**10**	**14**	ND	ND	**6**	ND	ND	ND	ND	ND	**5**
08/28/14	ND	**19**	**47**	**48**	ND	**8**	ND	ND	ND	ND	ND	ND	**9**	ND	ND	ND	ND	ND	ND	ND	ND	**12**	ND	ND	ND	ND	ND	ND	ND	ND	**5**

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

Trendline Slope =	-	0.01841	-0.0232	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Standard Deviation =	-	40.125	26.133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
number of observations **n** =	-	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S =	-	0	-12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
uncorrected for ties τ =	-	0.00	-0.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U =	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
corrected for ties τ =	-	**0.00**	**-0.43**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concentration Trend	,	**inconclusive**	**decrease**	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,

FORMULAS

$\tau = S/0.5n(n-1)$

$\tau = S \ / \ ((0.5n(n-1))(0.5n(n-1)-U))^{0.5}$

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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	ND	ND	ND	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	ND	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	ND	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
N_i	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	1080.5	608.0	791.0	979.5	608.0	1096.0	608.0	800.0	690.0	894.5	784.0	697.0	608.0	701.0	304.0	608.0	540.0	304.0	456.0	614.0	456.0	304.0	752.0	619.0	550.5	304.0	526.0	152.0	304.0	406.0	
avg rank value (Rbar)	135.1	76.0	98.9	122.4	76.0	137.0	76.0	100.0	86.3	111.8	98.0	87.1	76.0	87.6	76.0	76.0	90.0	76.0	76.0	102.3	76.0	76.0	125.3	154.8	91.8	76.0	131.5	76.0	76.0	101.5	

	Number of each rank value																														Rank Value
rank value of NDs =	3	8	6	4	8	3	8	6	7	5	6	7	8	7	4	8	5	4	6	4	6	4	3	1	5	4	2	2	4	3	76
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	152
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	153
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	154
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	156
rank value of 5.7s =	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	158
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	159
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	0	0	0	0	0	0	0	0	160
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	161
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	162.5
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	164
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	0	165
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	166
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	167.5
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	169
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	170.5
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	172
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	173
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	174
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	175
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	176
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	177
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	178
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	179
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	180
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	181
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	182
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	183
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	0	1	0	0	0	184
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	0	1	0	0	0	0	0	0	185
rank value of 64.3s =	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	186

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	187
rank value of 125s =	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	188
rank value of 155s =	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 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	190
n =	8	8	8	8	8	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	

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
Rt^2/N_t =	145935.0	46208	78210.1	119928	46208	150152	46208	80000	59512.5	100016	76832	60726.1	46208	61425.1	23104	46208	48600	23104	34656	62832.7	34656	23104	94250.7	95790.3	50508.4	23104	69169	11552	23104	41209

N_{bg} = 8
N = 190
H = 29.65

Adjust H for ties:

T_x = 3442842 sum of T1 T5

$$H' = H/(1-(T_x/(N^3-N)))$$

H' = 59.54
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' =59.54
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:

$$\text{Critical Value } (C_x) = P(N(N+1)/12)^{0.5} * (1/N_{bg}+1/N_x)^{0.5}$$

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) =	76.0	98.9	122.4	76.0	137.0	76.0	100.0	86.3	111.8	98.0	87.1	76.0	87.6	76.0	76.0	90.0	76.0	76.0	102.3	76.0	76.0	125.3	154.8	91.8	76.0	131.5	76.0	76.0	101.5
avg Rbar (background) =	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1	135.1
Dx =	-59.1	-36.2	-12.6	-59.1	1.9	-59.1	-35.1	-48.8	-23.3	-37.1	-47.9	-59.1	-47.4	-59.1	-59.1	-45.1	-59.1	-59.1	-32.7	-59.1	-59.1	-9.7	19.7	-43.3	-59.1	-3.6	-59.1	-59.1	-33.6
Cx =	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	78.5	64.1	69.2	78.5	69.2	69.2	69.2	78.5	69.2	78.5	69.2	78.5	78.5	101.3	78.5	78.5
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 J14-1957-43

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	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	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
N_i	8	30	26	27	30	26	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	1165.0	4112.0	4639.0	4153.0	4134.5	4677.5	1024.0	1182.0	1024.0	1173.0	1158.0	1024.0	1024.0	1024.0	512.0	1024.0	768.0	512.0	768.0	768.0	768.0	512.0	914.0	643.5	768.0	512.0	641.5	256.0	512.0	512.0	
avg rank value (Rbar)	145.6	137.1	178.4	153.8	137.8	179.9	128.0	147.8	128.0	146.6	144.8	128.0	128.0	128.0	128.0	128.0	128.0	128.0	128.0	128.0	128.0	128.0	152.3	160.9	128.0	128.0	160.4	128.0	128.0	128.0	
														Number of each rank value																	Rank Value
rank value of NDs =	7	28	17	22	28	17	8	7	8	7	7	8	8	8	4	8	6	4	6	6	6	4	5	3	6	4	3	2	4	4	128
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	256
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	257.5
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	259.5
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	261
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	0	0	0	0	0	0	0	262
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	263
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	264
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	265.5
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	267
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	268
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	269
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	270.5
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	272
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	273
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	274
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	275
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	276
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	277
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	278
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	279
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	280
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	281
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	282
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	283.5
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	285
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	286
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	287
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	288
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	289

	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
n =	8	30	26	27	30	26	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4
														Sum of rank value calculations																
	896	3584	2176	2816	3584	2176	1024	896	1024	896	896	1024	1024	1024	512	1024	768	512	768	768	768	512	640	384	768	512	384	256	512	512
	0	256	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	257.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257.5	0	0	0
	0	0	259.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	259.5	0	0	0	0	0	0
	0	0	261	0	0	0	0	0	0	0	0	0	0	0	0	0	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	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	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	531	0	0	0	0	0	0	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	0	0	0	0	0	0	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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	270.5	270.5	0	0	0	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	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0
	0	0	275	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	278	0	0	0	0	0	0	0	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	0	0	0	0	0	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	0	0	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	0	0	0	0	0	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	0	0	0	0	0	0	0	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	283.5	0	0	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	0	0	0	0	0	0	0	0	0	0	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	0	0	0	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	0	0	0	0	0	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	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
sum of rank values (R_i)	1165	4112	4639	4153	4134.5	4677.5	1024	1182	1024	1173	1158	1024	1024	1024	512	1024	768	512	768	768	768	512	914	643.5	768	512	641.5	256	512	512

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 =	169653.1	563618	827705	638793	569803	841500	131072	174641	131072	171991	167621	131072	131072	131072	65536	131072	98304	65536	98304	98304	98304	65536	139233	103523	98304	65536	102881	32768	65536	65536

N_{tbg} = 8
N = 289
H = 14.13

Adjust H for ties:

T_i = 1.7E+07 sum of T1..T6

$H' = H/(1-(T_i/(N^3-N)))$
H' = 45.13
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' = 45.13.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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	NP	ND	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

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).

$k = 1$
$n = 5$
$T_{n1} = 0.5$
$t[4,.01] = 3.747$

$c = 0.2$

$T_{n2} =$

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
,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,

$T^*_k = 3.4$

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 J14-1957-43

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	ND	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	ND	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
N_i	8	10	10	10	11	10	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	1354.5	690.0	972.5	1431.0	1338.5	1210.5	723.5	757.0	552.0	858.5	652.5	624.5	1338.0	809.5	276.0	552.0	414.0	276.0	414.0	582.0	414.0	641.0	722.5	476.0	414.0	276.0	522.0	138.0	276.0	394.0	
avg rank value (Rbar)	169.3	69.0	97.3	143.1	121.7	121.1	90.4	94.6	69.0	107.3	81.6	78.1	167.3	101.2	69.0	69.0	69.0	69.0	69.0	97.0	69.0	160.3	120.4	119.0	69.0	69.0	130.5	69.0	69.0	98.5	

	Number of each rank value																														Rank Value
rank value of NDs =	0	10	7	3	5	4	6	6	8	5	7	7	0	5	4	8	6	4	6	4	6	0	3	2	6	4	2	2	4	3	69
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	138.5
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	140
rank value of 5.2s =	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	0	141.5
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	143
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	145
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	147
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	148
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	149
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	150
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	152
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	154
rank value of 6.5s =	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	0	155
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	156
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	157
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	158.5
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	160
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	161
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	162
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	163
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	164.5
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	166.5
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	168
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	169.5
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	171.5
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	173
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	174
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	175
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	176
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	177
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	178

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	179
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	180
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	181
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	182
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	183
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	1	0	0	0	184
rank value of 15.9s =	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	185
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	186
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	1	187
rank value of 20.1s =	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	188
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	189
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	190
rank value of 24.6s =	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	191
rank value of 28.6s =	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	192
rank value of 32.2s =	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	193
rank value of 34.9s =	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	194
rank value of 36.5s =	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	195
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	196
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	1	0	0	0	0	0	0	0	197
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	198
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	199
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	1	0	0	0	200
n =	**8**	**10**	**10**	**10**	**11**	**10**	**8**	**8**	**8**	**8**	**8**	**8**	**7**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**

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 =	229333.8	47610	94575.6	204776	162871	146531	65431.5	71631.1	38088	92127.8	53219.5	48750	223781	81911.3	19044	38088	28566	19044	28566	56454	28566	102720	87001	56644	28566	19044	19044	68121	19044	38809

N_{bkg} = 8
N = 201
H = 49.52

Adjust H for ties:

T_i = 2571306 sum of T1 T10

$$H' = H/(1-(T_i/(N^3-N)))$$

H' = 72.47
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' = 72.47.
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:

$$\text{Critical Value } (C_x) = P(N(N+1)/12)^{0.5} * (1/N_{bkg} + 1/N_x)^{0.5}$$

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-22	MW-23	MW-24	MW-25
Rbar (well x) =	69.0	97.3	143.1	121.7	121.1	90.4	94.6	69.0	107.3	81.6	78.1	167.3	101.2	69.0	69.0	69.0	69.0	69.0	97.0	69.0	160.3	120.4	119.0	69.0	69.0	69.0	130.5	69.0	98.5
avg Rbar (background) =	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3	169.3
Dx =	-100.3	-72.1	-26.2	-47.6	-48.3	-78.9	-74.7	-100.3	-62.0	-87.8	-91.3	-2.1	-68.1	-100.3	-100.3	-100.3	-100.3	-100.3	-72.3	-100.3	-9.1	-48.9	-50.3	-100.3	-100.3	-100.3	-38.8	-100.3	-70.8
Cx =	64.3	64.3	64.3	64.3	64.3	67.8	67.8	67.8	67.8	67.8	67.8	67.8	67.8	83.0	67.8	73.2	83.0	73.2	73.2	73.2	83.0	73.2	83.0	73.2	83.0	83.0	83.0	83.0	83.0
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 J14-1957-43

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

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).

$n = 7$
$T_{n1} = 35$

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).

$k = 1$
$n = 7$
$T_{n1} = 35$
$t[6, .01] = 3.143$

$c = 0.143$
$T^*_k = 13.3$

	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} =	5	5	5	5	5	5	5	5	5	5	5	5	15	5	15	5	5	5	5	5	5	5	5	5	5	5	5	5	12

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 J14-1957-43

Compound:	**Total Selenium (Se)**
NC MCL (µg/l):	**20**
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-14	MDL
02/18/99	NP	NP	**5**
08/16/99	NP	NP	**5**
02/14/00	NP	NP	**5**
08/14/00	NP	NP	**5**
03/19/01	NP	NP	**5**
08/27/02	NP	NP	**5**
02/24/03	NP	NP	**5**
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	**10**
08/13/07	NP	NP	**10**
02/11/08	NP	NP	**10**
08/25/08	NP	NP	**10**
02/23/09	NP	NP	**10**
08/24/09	NP	NP	**10**
02/22/10	NP	NP	**10**
08/30/10	NP	NP	**10**
02/22/11	ND	ND	**10**
08/22/11	ND	ND	**10**
02/22/12	ND	ND	**10**
08/29/12	ND	ND	**10**
02/18/13	ND	ND	**10**
08/26/13	ND	ND	**10**
02/20/14	ND	ND	**10**
08/28/14	ND	**15**	**10**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-14.

n =	8		
m =	8		
N =	16		
Ci (MW-14) =	72.0		
# samples =	8	8	
sum of rank values (Ri) =	64.0	72.0	
avg rank value (Rbar) =	8.0	9.0	
			Rank Value
rank value of NDs =	8	7	8
rank value of 15s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0

	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 =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 36$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 4.000$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 0.875$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 0.875$

$Z_{0.01} = 2.326$

Since Z is smaller, there is not 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 J14-1957-43

Compound:	**Total Selenium (Se)**
NC MCL (µg/l):	**20**
Method:	Wilcoxon Rank Sum
Background:	MW-12

	MW-12	MW-15	MDL
02/18/99	NP	NP	**5**
08/16/99	NP	NP	**5**
02/14/00	NP	NP	**5**
08/14/00	NP	NP	**5**
03/19/01	NP	NP	**5**
08/27/02	NP	NP	**5**
02/24/03	NP	NP	**5**
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	**10**
08/13/07	NP	NP	**10**
02/11/08	NP	NP	**10**
08/25/08	NP	NP	**10**
02/23/09	NP	NP	**10**
08/24/09	NP	NP	**10**
02/22/10	NP	NP	**10**
08/30/10	NP	NP	**10**
02/22/11	ND	ND	**10**
08/22/11	ND	ND	**10**
02/22/12	ND	ND	**10**
08/29/12	ND	ND	**10**
02/18/13	ND	ND	**10**
08/26/13	ND	ND	**10**
02/20/14	ND	ND	**10**
08/28/14	ND	**15**	**10**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-15.

n =	8		
m =	8		
N =	16		
Ci (MW-15) =	72.0		
# samples =	8	8	
sum of rank values (Ri) =	64.0	72.0	
avg rank value (Rbar) =	8.0	9.0	
			Rank Value
rank value of NDs =	8	7	8
rank value of 15s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0

	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 =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 36$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 4.000$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 0.875$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 0.875$

$Z_{0.01} = 2.326$

Since Z is smaller, there is not 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 J14-1957-43

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**

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).

$n = 7$
$T_{n1} = 17.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 17.5$
$t[6, .01] = 3.143$

		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
$c = 0.143$	$T_{n2} =$	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
$T^*_k = 8.6$																														

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

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

Compound: **Total Thallium (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

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).

$n = 7$
$T_{n1} = 18.9$

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

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

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

$k = 1$
$n = 7$
$T_{n1} = 18.9$
$t[6,.01] = 3.143$

$c = 0.143$

$T^*_k = 9.0$

	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

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 J14-1957-43

Compound: **Total Vanadium (V)**
NC MCL (µg/l): Not Established
Method: Kruskal-Walls
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	**7.8**	ND	ND	ND	**6.1**	ND	ND	ND	**5.6**	**205**	**22.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
08/22/11	**8.1**	ND	ND	ND	ND	ND	ND	**185**	ND	**23.1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
02/22/12	**14.1**	ND	ND	ND	ND	ND	ND	ND	**8.8**	**12.5**	**8.6**	ND	**5**	ND	ND	ND	**11**	ND	ND	**9.8**	**6.1**	ND	**7.6**	ND	ND	ND	ND	ND	ND	ND	5
08/29/12	**49**	ND	**8.1**	**5.9**	ND	**14.7**	ND	**9.9**	ND	**10.6**	**10**	ND	ND	ND	ND	ND	**5.5**	ND	ND	ND	ND	ND	**86.2**	ND	ND	ND	ND	ND	ND	ND	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**	ND	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	ND	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
N_i	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	1341.5	544.0	634.5	620.0	622.5	650.0	544.0	760.0	782.5	1137.5	933.5	544.0	879.5	651.0	352.5	544.0	770.0	272.0	408.0	597.5	486.5	272.0	788.0	675.0	517.0	272.0	396.0	136.0	272.0	552.0	
avg rank value (Rbar)	167.7	68.0	79.3	77.5	77.8	81.3	68.0	95.0	97.8	142.2	116.7	68.0	109.9	81.4	88.1	68.0	128.3	68.0	68.0	99.6	81.1	68.0	131.3	168.8	86.2	68.0	99.0	68.0	68.0	138.0	

	Number of each rank value																														Rank Value
rank value of NDs =	0	8	7	7	7	7	8	6	5	2	4	8	4	7	3	8	2	4	6	4	5	4	2	0	5	4	1	2	4	1	68
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	136
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	137
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	139
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	141
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	142
rank value of 5.8s =	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	143
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	144
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	145
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	146.5
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	148.5
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	150
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	151
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	152
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	153
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	154
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	155.5
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	157
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	0	0	0	0	0	0	0	0	158.5
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	160
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	161.5
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	163
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	164
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	165
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	166
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	167.5
rank value of 11s =	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	169
rank value of 12.5s =	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 12.8s =	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	171
rank value of 13.3s =	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	172
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	0	173

rank value of 14.7s =	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	174
rank value of 14.8s =	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	175
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	0	1	0	0	0	0	0	176
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	0	1	0	0	0	0	177
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	178
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	179
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	180
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	181
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	182
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	183
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	0	1	0	0	0	0	0	184
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	185
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	0	1	0	0	0	0	0	0	186
rank value of 185s =	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	187
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	188
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	0	0	1	0	0	189
n =	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**3**	**2**	**4**	**4**

Compute the Kruskal-Wallis statistic:

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

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**
Ri^2/N_i =	224952.8	36992	50323.8	48050	-48438.3	52812.5	36992	72200	76538.3	161738	108928	36992	96690	52975.1	31064.1	36992	98816.7	18496	27744	59501	39447	18496	103491	113906	-44548.2	18496	39204	9248	18496	76176

N_{bkg} = 8

N = 190

H = 41.63

Adjust H for ties:

T_1 = 2460300 sum of T1 T8

$H' = H/(1-(T_1/(N^3-N)))$

H' = 64.92

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' = 64.92.
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) =	68.0	79.3	77.5	77.8	81.3	68.0	95.0	97.8	142.2	116.7	68.0	109.9	81.4	88.1	68.0	128.3	68.0	68.0	99.6	81.1	68.0	131.3	168.8	86.2	68.0	99.0	68.0	68.0	138.0
avg Rbar (background) =	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7	167.7
Dx =	-99.7	-88.4	-90.2	-89.9	-86.4	-99.7	-72.7	-69.9	-25.5	-51.0	-99.7	-57.8	-86.3	-79.6	-99.7	-39.4	-99.7	-99.7	-68.1	-86.6	-99.7	-36.4	1.1	-81.5	-99.7	-68.7	-99.7	-99.7	-29.7
Cx =	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	78.5	64.1	69.2	78.5	69.2	69.2	69.2	78.5	69.2	78.5	69.2	78.5	78.5	101.3	78.5	78.5
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 J14-1957-43

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**
N_i	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	888.5	695.0	620.0	998.0	618.0	861.5	912.0	994.0	734.0	832.5	815.5	573.0	645.0	977.5	198.0	396.0	537.0	198.0	364.5	607.0	648.5	330.5	782.0	671.5	604.0	427.0	336.5	99.0	393.0	388.0	
avg rank value (Rbar)	111.1	86.9	77.5	124.8	77.3	107.7	114.0	124.3	91.8	104.1	101.9	71.6	80.6	122.2	49.5	49.5	89.5	49.5	60.8	101.2	108.1	82.6	130.3	167.9	100.7	106.8	84.1	49.5	98.3	97.0	

	Number of each rank value																														Rank Value
rank value of NDs =	2	5	6	2	6	3	3	2	4	3	4	6	4	2	4	8	3	4	5	2	2	3	2	0	2	2	3	2	2	2	49.5
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	99
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	101
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	103
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	104.5
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	106
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	107.5
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	109
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	110
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	111
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	112
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	113
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	114
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	115
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	117
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	119
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	120
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	121
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	122.5
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	124
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	125
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	126
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	127
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	128
rank value of 14.5s =	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	0	129
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	130
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	131
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	132
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	133
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	0	0	0	0	0	134.5
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	136

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	137
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	138
rank value of 17.2s	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	139
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	140
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	141.5
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	143
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	144
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	145
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	146
rank value of 21s	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	147.5
rank value of 21.4s	0	0	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	0	149.5
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	151
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	152
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	1	0	0	0	0	0	0	153
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	0	154
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	155
rank value of 24.3s	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	156
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	0	0	1	0	0	0	0	0	0	0	157
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	158
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	159
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	160
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	0	1	0	0	0	0	0	0	0	161
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	162
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	0	1	0	0	0	0	0	0	163
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	164
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	165
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	166
rank value of 31.8s	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	0	0	167
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	168
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	1	0	0	169
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	0	1	0	0	0	0	170
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	171
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	172
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	173
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	1	0	174
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	0	1	0	0	0	0	0	0	175
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	0	1	0	0	0	0	0	0	0	176
rank value of 50.6s	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	177
rank value of 54s	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	178
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	179
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	180
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	181
rank value of 102s	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 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	183
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	0	1	0	0	0	0	0	0	184
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	185
rank value of 162s	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	186
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	187
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	0	1	0	0	0	188
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	0	1	0	0	0	0	0	0	0	189
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	190
n	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**		

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**
Ri^2/N_i =	98679.0	60378.1	48050	124501	47740.5	92772.8	103968	123505	67344.5	86632	83130	41041.1	52003.1	119438	9801	19602	48061.5	9801	22143.4	61408.2	70092	27307.6	101921	112728	60802.7	45582.3	28308.1	49001.5	38612.3	37636

N_{Ho} = 8
N = 190
H = 38.04

Adjust H for ties:

T_i = 941184 sum of T1 T10

$H' = H/(1-(T_i/(N^3-N)))$
H' = 44.09
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' = 44.09.
Therefore, there is evidence of significant differences between the well groups.
Post-hoc pairwise comparisons are necessary (see below).

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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-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	**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**

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).

$n = 7$
$T_{n1} = 87.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 87.5$
$t[6,.01] = 3.143$

$c = 0.1429$
$T^*_k = 25.1$

	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

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 J14-1957-43

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	ND	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	ND	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
N_i	8	23	23	21	23	23	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	804.0	2311.5	2524.5	2330.5	5653.5	4576.5	804.0	804.0	804.0	804.0	804.0	804.0	1820.0	1654.5	402.0	804.0	603.0	402.0	603.0	603.0	603.0	402.0	603.0	402.0	603.0	402.0	402.0	201.0	402.0	780.0	
avg rank value (Rbar)	100.5	100.5	109.8	111.0	245.8	199.0	100.5	100.5	100.5	100.5	100.5	100.5	227.5	206.8	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	195.0	

	Number of each rank value																													Rank Value
rank value of NDs =	8	23	21	19	1	5	8	8	8	8	8	8	0	0	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	1	100.5
rank value of 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	1	201.5
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	203
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	205
rank value of 1.3s =	0	0	1	1	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	209
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	212
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	213
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	214
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	215
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	216
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	217
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	218
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	219
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	220
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	221
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	222
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	223
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	224
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	225
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	226
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	227
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	228
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	229
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	231
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	233
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	234
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	235
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	236
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	237
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	0	238
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	239

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	240
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	241
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	242
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	243.5
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	245
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	246
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	247
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	248
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	249
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	250
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	251
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	252
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	253
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	254
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	255.5
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	257
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	258
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	259
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	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 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	262
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	263
n =	**8**	**23**	**23**	**21**	**23**	**23**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**

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 =	80802.0	232306	277091	258630	1389655	910624	80802	80802	80802	80802	80802	80802	414050	342171	40401	80802	60601.5	40401	60601.5	60601.5	60601.5	40401	60601.5	40401	60601.5	40401	40401	20200.5	40401	152100

N_{bg} = 8
N = 263
H = 122.22

Adjust H for ties:

T_t = 7999986 sum of T1 T7

$H' = H/(1-(T_t/(N^3-N)))$
H' = 218.16
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' =218.16.
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) =	100.5	109.8	111.0	245.8	199.0	100.5	100.5	100.5	100.5	100.5	100.5	227.5	206.8	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	195.0
avg Rbar (background) =	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5	100.5
Dx =	0.0	9.3	10.5	145.3	98.5	0.0	0.0	0.0	0.0	0.0	0.0	127.0	106.3	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	94.5
Cx =	72.7	72.7	73.6	72.7	73.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	108.5	88.6	95.7	108.5	95.7	95.7	95.7	108.5	95.7	108.5	95.7	108.5	108.5	140.1	108.5	108.5	
Statistical Significance ?	-	-	-	**Yes**	**Yes**	-	-	-	-	-	-	**Yes**	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
If SSL is current event above MCL?	-	-	-	**Yes**	No	-	-	-	-	-	-	**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 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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	23
m =	8
N =	31
Ci (MW-4) =	456.0

# samples =	8	23
sum of rank values (Ri) =	40.0	456.0
avg rank value (Rbar) =	5.0	19.8

	Number of each rank value		Rank Value
rank value of NDs =	8	1	5
rank value of 7.2s =	0	1	10
rank value of 13s =	0	2	11.5
rank value of 14s =	0	1	13
rank value of 14.3s =	0	1	14
rank value of 15s =	0	1	15
rank value of 15.5s =	0	1	16
rank value of 15.6s =	0	1	17

rank value of 15.7s =	0	1	18
rank value of 15.9s =	0	1	19
rank value of 16s =	0	1	20
rank value of 16.3s =	0	1	21
rank value of 16.5s =	0	1	22
rank value of 16.9s =	0	2	23.5
rank value of 17s =	0	1	25
rank value of 17.1s =	0	1	26
rank value of 17.6s =	0	1	27
rank value of 18.5s =	0	1	28
rank value of 18.9s =	0	1	29
rank value of 19.9s =	0	1	30
rank value of 20s =	0	1	31
# samples =	**8**	**23**	

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.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.877$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.000$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.000$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-5.

n =	23
m =	8
N =	31
Ci (MW-5) =	440.0

# samples =	8	23
sum of rank values (Ri) =	56.0	440.0
avg rank value (Rbar) =	7.0	19.1

	Number of each rank value		Rank Value
rank value of NDs =	8	5	7
rank value of 1.7s =	0	1	14
rank value of 2s =	0	1	15
rank value of 2.1s =	0	1	16
rank value of 2.3s =	0	1	17
rank value of 3s =	0	1	18
rank value of 3.2s =	0	1	19
rank value of 3.3s =	0	1	20

rank value of 3.4s =	0	1	21
rank value of 3.7s =	0	1	22
rank value of 3.9s =	0	1	23
rank value of 4.1s =	0	1	24
rank value of 4.2s =	0	1	25
rank value of 4.4s =	0	1	26
rank value of 4.8s =	0	1	27
rank value of 5.1s =	0	1	28
rank value of 6.1s =	0	1	29
rank value of 7.1s =	0	1	30
rank value of 9s =	0	1	31
# samples =	**8**	**23**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 164$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.323$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.353$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.353$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-13.

n =	8
m =	8
N =	16
Ci (MW-13) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 1.9s =	0	1	9
rank value of 3.5s =	0	1	10
rank value of 3.6s =	0	1	11
rank value of 3.8s =	0	1	12
rank value of 4.4s =	0	2	13.5
rank value of 5s =	0	1	15
rank value of 5.3s =	0	1	16

	0	0	0
	0	0	0
	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 =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.907$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.537$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.537$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-14.

n =	8
m =	8
N =	16
Ci (MW-14) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 1s =	0	1	9
rank value of 1.1s =	0	1	10
rank value of 1.2s =	0	2	11.5
rank value of 1.3s =	0	3	14
rank value of 1.6s =	0	1	16
	0	0	0
	0	0	0

	0	0	0
	0	0	0
	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 =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.877$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.549$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.549$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

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).

$n = 7$
$T_{n1} = 7$

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).

$k = 1$
$n = 7$
$T_{n1} = 7$
$t[6,.01] = 3.143$

$c = 0.143$

	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

$T^*_k = 5.1$

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.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6,.01] = 3.143$

$c = 0.143$

	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} =	1.8	0.5	0.5	0.5	0.5	0.5	1.3	0.5	0.5	0.5	0.5	0.5	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.7$

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 J14-1957-43

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	NP	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**

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6, .01] = 3.143$

$c = 0.143$
$T^*_k = 3.7$

	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} =	1.5	3.9	3	0.5	1.8	0.5	1.8	0.5	0.5	0.5	0.5	0.5	1.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

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 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 J14-1957-43

Compound:	**Chloroethane**
NC MCL (µg/l):	3000
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	**11**	**10**
02/09/04	NP	ND	**10**
08/16/04	NP	ND	**10**
02/14/05	NP	ND	**10**
09/01/05	NP	ND	**10**
02/16/06	NP	ND	**10**
08/30/06	NP	ND	**10**
02/26/07	NP	ND	**10**
08/13/07	NP	**4.8**	**1**
02/11/08	NP	**2.1**	**1**
08/25/08	NP	**4.2**	**1**
02/23/09	NP	ND	**1**
08/24/09	NP	**4.7**	**1**
02/22/10	NP	**1.3**	**1**
08/30/10	NP	**4.7**	**1**
02/22/11	ND	ND	**1**
08/22/11	ND	**2.5**	**1**
02/22/12	ND	ND	**1**
08/29/12	ND	ND	**1**
02/18/13	ND	ND	**1**
08/26/13	ND	ND	**1**
02/20/14	ND	ND	**1**
08/28/14	ND	**3.9**	**1**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-2A.

n =	23
m =	8
N =	31
Ci (MW-2A) =	404.0

# samples =	8	23
sum of rank values (Ri) =	92.0	404.0
avg rank value (Rbar) =	11.5	17.6

			Rank Value
rank value of NDs =	8	14	11.5
rank value of 1.3s =	0	1	23
rank value of 2.1s =	0	1	24
rank value of 2.5s =	0	1	25
rank value of 3.9s =	0	1	26
rank value of 4.2s =	0	1	27
rank value of 4.7s =	0	2	28.5
rank value of 4.8s =	0	1	30

rank value of 11s =	0	1	31
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**23**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 128$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 17.759$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 1.999$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 1.999$

$Z_{0.01} = 2.326$

Since Z is smaller, there is not 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 J14-1957-43

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

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6,.01] = 3.143$

$c = 0.143$

	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

$T^*_k = 3.7$

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 J14-1957-43

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-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	**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

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6, .01] = 3.143$

$c = 0.143$

$T^*_k = 3.7$

	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	2	0.5	0.5	0.5	0.5	2.6	0.5	0.5	0.5	2.5	0.5	60.5	1.4	6.3	0.5	0.5	0.5	0.5	1.5	3.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

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 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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-14.

n =	8
m =	8
N =	16
Ci (MW-14) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 60.5s =	0	1	9
rank value of 70.5s =	0	1	10
rank value of 70.7s =	0	1	11
rank value of 75.9s =	0	1	12
rank value of 76.7s =	0	1	13
rank value of 78.6s =	0	1	14
rank value of 97.1s =	0	1	15

rank value of 104s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.914$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.534$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.534$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-15.

n =	8		
m =	8		
N =	16		
Ci (MW-15) =	100.0		
# samples =	0	8	8
sum of rank values (Ri) =		36.0	100.0
avg rank value (Rbar) =		4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 2.8s =	0	1	9
rank value of 3.3s =	0	1	10
rank value of 4s =	0	1	11
rank value of 4.4s =	0	1	12
rank value of 6.3s =	0	1	13
rank value of 7.2s =	0	1	14
rank value of 8.2s =	0	1	15

rank value of 9.2s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.914$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.534$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.534$

$Z_{0.01} = 2.326$

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 J14-1957-43

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	4.90	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	5.00	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	5.60	1.10	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	6.20	1.10	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	6.10	1.40	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	6.00	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

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6,.01] = 3.143$

$c = 0.143$
$T^*_k = 3.7$

	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	11.5	0.5	6	0.5	0.5	2.3	0.5	0.5	0.5	0.5	6.6	16	0.5	0.5	0.5	0.5	0.5	0.5	1.8	3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.4

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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-2A.

n =	23		
m =	8		
N =	31		
Ci (MW-2A) =	448.0		
# samples =	0	8	23
sum of rank values (Ri) =		48.0	448.0
avg rank value (Rbar) =		6.0	19.5

	Number of each rank value		Rank Value
rank value of NDs =	8	3	6
rank value of 2.2s =	0	1	12
rank value of 2.4s =	0	1	13
rank value of 3.1s =	0	1	14
rank value of 4s =	0	1	15
rank value of 5.7s =	0	1	16
rank value of 5.9s =	0	1	17
rank value of 6s =	0	1	18

rank value of 7s =	0	1	19
rank value of 7.3s =	0	1	20
rank value of 8.6s =	0	2	21.5
rank value of 10s =	0	1	23
rank value of 10.3s =	0	1	24
rank value of 10.8s =	0	1	25
rank value of 11s =	0	1	26
rank value of 11.5s =	0	1	27
rank value of 12.1s =	0	1	28
rank value of 12.3s =	0	1	29
rank value of 13s =	0	1	30
rank value of 14s =	0	1	31
# samples =	**8**	**23**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 172$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.652$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.672$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.672$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	23
m =	8
N =	31
Ci (MW-4) =	428.0

# samples =	0	8	23
sum of rank values (Ri) =		68.0	428.0
avg rank value (Rbar) =		8.5	18.6

	Number of each rank value		Rank Value
rank value of NDs =	8	8	8.5
rank value of 3.7s =	0	1	17
rank value of 4.5s =	0	1	18
rank value of 4.7s =	0	2	19.5
rank value of 4.8s =	0	1	21
rank value of 4.9s =	0	1	22
rank value of 5s =	0	1	23
rank value of 5.1s =	0	2	24.5

rank value of 5.2s =	0	1	26
rank value of 5.3s =	0	1	27
rank value of 5.6s =	0	1	28
rank value of 6s =	0	1	29
rank value of 6.1s =	0	1	30
rank value of 6.2s =	0	1	31
# samples =	**8**	**23**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 152$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 20.572$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 2.892$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 2.892$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-13.

n =	8		
m =	8		
N =	16		
Ci (MW-13) =	100.0		
# samples =	0	8	8
sum of rank values (Ri) =		36.0	100.0
avg rank value (Rbar) =		4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 5.2s =	0	1	9
rank value of 5.6s =	0	2	10.5
rank value of 5.9s =	0	1	12
rank value of 6s =	0	1	13
rank value of 6.4s =	0	1	14
rank value of 6.6s =	0	1	15
rank value of 7.3s =	0	1	16

	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.907$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.537$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.537$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-14.

n =	8		
m =	8		
N =	16		
Ci (MW-14) =	100.0		
# samples =	0	8	8
sum of rank values (Ri) =		36.0	100.0
avg rank value (Rbar) =		4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 16s =	0	1	9
rank value of 17.5s =	0	1	10
rank value of 18s =	0	1	11
rank value of 18.1s =	0	1	12
rank value of 18.7s =	0	1	13
rank value of 20.7s =	0	1	14
rank value of 21.4s =	0	1	15

rank value of 21.7s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.914$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.534$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.534$

$Z_{0.01} = 2.326$

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 J14-1957-43

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	ND	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
N_i	8	23	23	21	23	23	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	444.0	2891.5	2437.0	4679.0	5596.5	4473.0	444.0	1328.5	444.0	584.5	1171.5	1596.5	1321.5	594.0	222.0	500.0	511.5	481.5	333.0	333.0	1040.5	651.5	333.0	347.5	333.0	222.0	222.0	111.0	222.0	847.0		
avg rank value (Rbar)	55.5	125.7	106.0	222.8	243.3	194.5	55.5	166.1	55.5	73.1	146.4	199.6	165.2	74.3	55.5	62.5	85.3	120.4	55.5	55.5	173.4	162.9	55.5	86.9	55.5	55.5	55.5	55.5	55.5	211.8	

Number of each rank value

	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	Rank Value
rank value of NDs =	8	5	11	0	1	2	8	0	8	6	0	0	0	6	4	7	4	0	6	6	0	0	6	2	6	4	4	2	4	0	55.5
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	0	0	0	0	0	0	0	111.5
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	115.5
rank value of 1.2s =	0	3	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	121
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	125
rank value of 1.4s =	0	3	2	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	129.5
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	136
rank value of 1.6s =	0	2	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	141.5
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	144.5
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	148
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	151.5
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	153.5
rank value of 2.4s =	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	155
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	156
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	158
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	160.5
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	162.5
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	164.5
rank value of 3s =	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	166.5
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	168.5
rank value of 3.2s =	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	170
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	171
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	173
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	175
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	176
rank value of 4.3s =	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	177.5
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	179.5
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	181
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	182
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	183.5
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	0	185

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	0	187
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	189
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	0	190
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	0	191.5
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	0	193
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	0	194
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	0	195
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	0	196
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	0	197.5
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	0	199.5
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	0	201
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	202
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	0	203
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	0	204
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	0	205
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	0	206.5
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	0	208.5
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	0	210
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	0	211
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	0	212
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	0	213
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	0	1	214
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	0	215
rank value of 9 6s =	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	216.5
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	0	218
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	0	219.5
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	0	221
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	222
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	0	223
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	0	224.5
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	0	226
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	0	227
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	0	228
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	0	1	229.5
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	0	231
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	0	232
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	233
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	0	234
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	0	1	235
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	236
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	0	237
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	0	238
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	0	239
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	0	240
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	0	241
rank value of 22s =	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	242
rank value of 23s =	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	0	243.5
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	0	245
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	0	246
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	0	247
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	0	248
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	0	249
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	0	250
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	0	251
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	0	252
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	0	253
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	0	254
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	0	255
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	0	256
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	0	257
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	0	258
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	0	259
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	0	260
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	0	261.5
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	0	263
n =	**8**	**23**	**23**	**21**	**23**	**23**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**	

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 =	24642.0	363512	258216	1042526	1361774	869901	24642	220614	24642	42705	171552	318602	218295	44104.5	12321	31250	43605.4	57960.6	18481.5	18481.5	180440	106113	18481.5	30189.1	18481.5	12321	12321	6160.5	12321	179352

N_{bg} = 8

N = 263

H = 200.74

Adjust H for ties:

T_t = 1332180 sum of T1 T34

$H' = H/(1-(T_t/(N^3-N)))$

H' = 216.60

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' = 216.60.
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 = 24642

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) =	125.7	106.0	222.8	243.3	194.5	55.5	166.1	55.5	73.1	146.4	199.6	165.2	74.3	55.5	62.5	85.3	120.4	55.5	55.5	173.4	162.9	55.5	86.9	55.5	55.5	55.5	55.5	55.5	211.8
avg Rbar (background) =	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5
Dx =	70.2	50.5	167.3	187.8	139.0	0.0	110.6	0.0	17.6	90.9	144.1	109.7	18.8	0.0	7.0	29.8	64.9	0.0	0.0	117.9	107.4	0.0	31.4	0.0	0.0	0.0	0.0	0.0	156.3
Cx =	72.7	72.7	73.6	72.7	73.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	108.5	88.6	95.7	108.5	95.7	95.7	95.7	108.5	95.7	108.5	95.7	108.5	108.5	140.1	108.5	108.5
Statistical Significance ?	-	-	**Yes**	**Yes**	**Yes**	-	**Yes**	-	-	**Yes**	**Yes**	**Yes**	-	-	-	-	-	-	-	**Yes**	-	-	-	-	-	-	-	-	**Yes**
If SSL is current event above MCL?	-	-	**Yes**	No	**Yes**	-	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.
MW-25 does not have a sufficient database for intrawell testing at this time.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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**

1) Rank the N = 29 observations from the smallest to the largest from background wells and compliance well MW-3A.

n =	21
m =	8
N =	29
Ci (MW-3A) =	399.0

# samples =	8	21
sum of rank values (Ri) =	36.0	399.0
avg rank value (Rbar) =	4.5	19.0

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 3.2s =	0	1	9
rank value of 7s =	0	1	10
rank value of 7.9s =	0	1	11
rank value of 8.2s =	0	1	12
rank value of 8.4s =	0	1	13
rank value of 8.6s =	0	1	14
rank value of 9.7s =	0	1	15

rank value of 10s =	0	1	16
rank value of 11s =	0	1	17
rank value of 12s =	0	1	18
rank value of 13s =	0	1	19
rank value of 14.4s =	0	1	20
rank value of 14.7s =	0	1	21
rank value of 15.2s =	0	1	22
rank value of 15.4s =	0	1	23
rank value of 15.5s =	0	1	24
rank value of 17s =	0	1	25
rank value of 17.5s =	0	1	26
rank value of 19.3s =	0	1	27
rank value of 23s =	0	1	28
rank value of 27.8s =	0	1	29
# samples =	**8**	**21**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 168$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 84$

Adjustment for tie values:

$SD(W) = 20.281$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.117$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.117$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	23
m =	8
N =	31
Ci (MW-4) =	456.0

# samples =	8	23
sum of rank values (Ri) =	40.0	456.0
avg rank value (Rbar) =	5.0	19.8

	Number of each rank value		Rank Value
rank value of NDs =	8	1	5
rank value of 20.8s =	0	1	10
rank value of 21.2s =	0	1	11
rank value of 21.8s =	0	1	12
rank value of 22s =	0	1	13
rank value of 26.5s =	0	1	14
rank value of 27.5s =	0	1	15
rank value of 29.9s =	0	1	16

rank value of 30.1s =	0	1	17
rank value of 30.5s =	0	1	18
rank value of 31.9s =	0	1	19
rank value of 32.1s =	0	1	20
rank value of 33.2s =	0	1	21
rank value of 34.5s =	0	1	22
rank value of 36s =	0	1	23
rank value of 38s =	0	1	24
rank value of 39s =	0	1	25
rank value of 39.3s =	0	1	26
rank value of 40s =	0	1	27
rank value of 40.3s =	0	1	28
rank value of 42s =	0	2	29.5
rank value of 70s =	0	1	31
# samples =	**8**	**23**	

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.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.879$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.999$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.999$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-5.

n =	23
m =	8
N =	31
Ci (MW-5) =	452.0

# samples =	8	23
sum of rank values (Ri) =	44.0	452.0
avg rank value (Rbar) =	5.5	19.7

	Number of each rank value		Rank Value
rank value of NDs =	8	2	5.5
rank value of 4.3s =	0	1	11
rank value of 4.7s =	0	1	12
rank value of 5.2s =	0	1	13
rank value of 5.4s =	0	1	14
rank value of 5.7s =	0	1	15
rank value of 6.8s =	0	1	16
rank value of 7s =	0	1	17

rank value of 7.1s =	0	1	18
rank value of 7.4s =	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	2	22.5
rank value of 9.6s =	0	1	24
rank value of 10s =	0	1	25
rank value of 10.1s =	0	1	26
rank value of 11.7s =	0	1	27
rank value of 12s =	0	1	28
rank value of 12.9s =	0	1	29
rank value of 15s =	0	1	30
rank value of 23s =	0	1	31
# samples =	**8**	**23**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 176$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.777$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.834$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.834$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-7.

n =	8
m =	8
N =	16
Ci (MW-7) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 2.3s =	0	1	9
rank value of 2.6s =	0	2	10.5
rank value of 2.9s =	0	1	12
rank value of 3s =	0	2	13.5
rank value of 4.4s =	0	1	15
rank value of 4.6s =	0	1	16
	0	0	0

	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.899$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.540$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.540$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-10.

n =	8
m =	8
N =	16
Ci (MW-10) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 1.1s =	0	1	9
rank value of 1.5s =	0	1	10
rank value of 1.6s =	0	1	11
rank value of 1.8s =	0	2	12.5
rank value of 2.1s =	0	1	14
rank value of 2.8s =	0	1	15
rank value of 3.1s =	0	1	16

	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.907$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.537$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.537$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-11.

n =	8
m =	8
N =	16
Ci (MW-11) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 5.2s =	0	1	9
rank value of 5.7s =	0	1	10
rank value of 6s =	0	1	11
rank value of 6.6s =	0	1	12
rank value of 6.8s =	0	1	13
rank value of 7.5s =	0	1	14
rank value of 8.5s =	0	1	15

rank value of 9.6s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.914$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.534$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.534$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-13.

n =	8
m =	8
N =	16
Ci (MW-13) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 1.7s =	0	1	9
rank value of 1.8s =	0	1	10
rank value of 2.1s =	0	1	11
rank value of 2.7s =	0	1	12
rank value of 3.3s =	0	1	13
rank value of 4.3s =	0	1	14
rank value of 4.7s =	0	1	15

rank value of 4.8s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.914$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.534$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.534$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 14 observations from the smallest to the largest from background wells and compliance well MW-19.

n =	6
m =	8
N =	14
Ci (MW-19) =	69.0

# samples =	8	6
sum of rank values (Ri) =	36.0	69.0
avg rank value (Rbar) =	4.5	11.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 2.8s =	0	1	9
rank value of 3.4s =	0	2	10.5
rank value of 3.6s =	0	1	12
rank value of 3.9s =	0	1	13
rank value of 4.5s =	0	1	14
	0	0	0
	0	0	0

	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**6**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 48$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 24$

Adjustment for tie values:

$SD(W) = 6.985$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.364$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.364$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 12 observations from the smallest to the largest from background wells and compliance well MW-25.

n =	4
m =	8
N =	12
Ci (MW-25) =	42.0

# samples =	8	4
sum of rank values (Ri) =	36.0	42.0
avg rank value (Rbar) =	4.5	10.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 3.1s =	0	1	9
rank value of 8.7s =	0	1	10
rank value of 14.7s =	0	1	11
rank value of 16.3s =	0	1	12
	0	0	0
	0	0	0
	0	0	0

	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**4**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 32$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 16$

Adjustment for tie values:

$SD(W) = 4.948$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.132$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.132$

$Z_{0.01} = 2.326$

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 J14-1957-43

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-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	**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**

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6,.01] = 3.143$

$c = 0.143$

	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	1	2	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	3	3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$T^*_k = 3.7$

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 J14-1957-43

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

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6, .01] = 3.143$

$c = 0.143$

	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

$T^*_k = 3.7$

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 J14-1957-43

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	ND	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	ND	NP	ND	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	ND	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
N_i	8	23	23	21	23	23	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	420.0	2745.0	4202.5	2360.5	5544.0	3994.5	420.0	1147.5	420.0	765.0	1015.0	1711.5	1720.0	1876.5	279.0	1396.0	444.5	263.5	315.0	315.0	716.5	210.0	315.0	267.0	315.0	210.0	210.0	105.0	210.0	802.5	
avg rank value (Rbar)	52.5	119.3	182.7	112.4	241.0	173.7	52.5	143.4	52.5	95.6	126.9	213.9	215.0	234.6	69.8	174.5	74.1	65.9	52.5	52.5	119.4	52.5	52.5	66.8	52.5	52.5	52.5	52.5	52.5	200.6	

	Number of each rank value																													Rank Value
rank value of NDs =	8	9	1	8	1	3	8	0	8	3	0	0	0	0	3	0	4	3	6	6	0	4	6	3	6	4	4	2	4	0	52.5
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	106
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	109.5
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	113
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	2	0	0	0	0	0	0	0	0	0	116
rank value of 1.4s =	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	0	0	118.5
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	121.5
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	127
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	131.5
rank value of 1.8s =	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	133
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	134
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	136
rank value of 2.1s =	0	1	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	138.5
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	141
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	143.5
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	146
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	148.5
rank value of 2.7s =	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	150
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	152
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	154
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	155
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	156
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	157
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	158
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	159
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	160
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	161
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	162.5
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	164
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	0	165.5
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	0	167

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	168
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	169.5
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	172
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	174
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	175
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	176
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	177
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	178
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	179
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	180.5
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	182
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	183
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	184
rank value of 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	185
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	186
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	187
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	188
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	0	189
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	190
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	191.5
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	193
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	194
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	195.5
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	197
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	198.5
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	200.5
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	202.5
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	204
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	205
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	206
rank value of 12s	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	207.5
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	209
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	210.5
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	212
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	213
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	214
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	215
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	216.5
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	218
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	219.5
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	221
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	222.5
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	224
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	225
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	226
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	227.5
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	229
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	230
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	231
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	232
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	233
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	234
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	235
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	236
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	237
rank value of 24s	0	0	0	1	0	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 25.8s	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	239
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	240
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	241
rank value of 27.6s	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	242
rank value of 27.7s	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	243
rank value of 29s	0	0	0	1	0	0	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 30s	0	0	0	1	0	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 30.5s	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	246
rank value of 31s	0	0	0	1	0	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 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	248
rank value of 31.4s	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	249
rank value of 31.6s	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	250
rank value of 31.8s	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	251
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	252
rank value of 32.7s	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	253
rank value of 33.1s	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	254
rank value of 33.4s	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	255
rank value of 33.6s	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	256
rank value of 34s	0	0	0	1	0	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 34.5s	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	258
rank value of 34.6s	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	259
rank value of 36.5s	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	260
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	0	261

	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	
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	0	0	262
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	0	0	263
n =	**8**	**23**	**23**	**21**	**23**	**23**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**	

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**
Ri^2/N_i =	22050.0	327610	767870	265331	1336345	265331	22050	164595	22050	73153.1	128778	366154	369800	440157	19460.3	243602	32930	17358.1	16537.5	16537.5	85562	11025	16537.5	17822.3	16537.5	11025	11025	5512.5	11025	161002

N_{bg} = 8
N = 263
H = 117.92

Adjust H for ties:

T_t = 1125528 sum of T1...T32

$H' = H/(1-(T_t/(N^3-N)))$
H' = 125.69
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' = 125.69.
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) =	119.348	182.717	112.405	241.0	173.7	52.5	143.438	52.5	95.625	126.875	213.938	215	234.563	69.75	174.5	74.0833	65.875	52.5	52.5	119.417	52.5	52.5	66.75	52.5	52.5	52.5	52.5	52.5	200.625
avg Rbar (background) =	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5
Dx =	66.8478	130.217	59.9048	188.543	121.174	0	90.9375	0	43.125	74.375	161.438	162.5	182.063	17.25	122	21.5833	13.375	0	0	66.9167	0	0	14.25	0	0	0	0	0	148.125
Cx =	72.7473	72.7473	73.6359	72.7473	73.6359	88.6166	88.6166	88.6166	88.6166	88.6166	88.6166	88.6166	88.6166	108.533	88.6166	95.7169	108.533	95.7169	95.7169	95.7169	108.533	95.7169	108.533	95.7169	108.533	108.533	140.115	108.533	108.533
Statistical Significance ?	-	**Yes**	-	**Yes**	**Yes**	-	**Yes**	-	-	-	**Yes**	**Yes**	**Yes**	-	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	**Yes**
If SSL 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.
MW-25 does not have a sufficient database for intrawell testing at this time.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-2A.

n =	23
m =	8
N =	31
Ci (MW-2A) =	456.0

# samples =	8	23
sum of rank values (Ri) =	40.0	456.0
avg rank value (Rbar) =	5.0	19.8

	Number of each rank value		Rank Value
rank value of NDs =	8	1	5
rank value of 1.6s =	0	1	10
rank value of 2.8s =	0	2	11.5
rank value of 4s =	0	1	13
rank value of 4.4s =	0	1	14
rank value of 4.6s =	0	1	15
rank value of 5.1s =	0	1	16
rank value of 5.6s =	0	1	17

rank value of 5.8s =	0	1	18
rank value of 6.2s =	0	1	19
rank value of 7.6s =	0	2	20.5
rank value of 9.2s =	0	1	22
rank value of 9.7s =	0	1	23
rank value of 11.2s =	0	1	24
rank value of 12s =	0	2	25.5
rank value of 16s =	0	1	27
rank value of 17s =	0	1	28
rank value of 26s =	0	1	29
rank value of 27s =	0	1	30
rank value of 50s =	0	1	31
	0	0	0
# samples =	**8**	**23**	

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.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.875$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.000$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.000$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	23
m =	8
N =	31
Ci (MW-4) =	456.0

# samples =	8	23
sum of rank values (Ri) =	40.0	456.0
avg rank value (Rbar) =	5.0	19.8

	Number of each rank value		Rank Value
rank value of NDs =	8	1	5
rank value of 16s =	0	1	10
rank value of 24s =	0	1	11
rank value of 25.8s =	0	1	12
rank value of 27.6s =	0	1	13
rank value of 27.7s =	0	1	14
rank value of 29s =	0	1	15
rank value of 30s =	0	1	16

rank value of 30.5s =	0	1	17
rank value of 31s =	0	1	18
rank value of 31.4s =	0	1	19
rank value of 31.6s =	0	1	20
rank value of 31.8s =	0	1	21
rank value of 32.7s =	0	1	22
rank value of 33.1s =	0	1	23
rank value of 33.4s =	0	1	24
rank value of 33.6s =	0	1	25
rank value of 34s =	0	1	26
rank value of 34.5s =	0	1	27
rank value of 34.6s =	0	1	28
rank value of 36.5s =	0	1	29
rank value of 36.7s =	0	1	30
rank value of 48s =	0	1	31
# samples =	**8**	**23**	

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.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.881$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.999$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.999$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-5.

n =	23
m =	8
N =	31
Ci (MW-5) =	448.0

# samples =	8	23
sum of rank values (Ri) =	48.0	448.0
avg rank value (Rbar) =	6.0	19.5

	Number of each rank value		Rank Value
rank value of NDs =	8	3	6
rank value of 4.3s =	0	1	12
rank value of 4.5s =	0	1	13
rank value of 5.4s =	0	1	14
rank value of 5.8s =	0	1	15
rank value of 6.1s =	0	1	16
rank value of 7.1s =	0	1	17
rank value of 7.4s =	0	1	18

rank value of 7.8s =	0	1	19
rank value of 7.9s =	0	1	20
rank value of 8s =	0	1	21
rank value of 8.6s =	0	1	22
rank value of 10.2s =	0	2	23.5
rank value of 10.4s =	0	1	25
rank value of 11.5s =	0	1	26
rank value of 13s =	0	1	27
rank value of 14.4s =	0	1	28
rank value of 15s =	0	1	29
rank value of 20s =	0	1	30
rank value of 21s =	0	1	31
	0	0	0
# samples =	**8**	**23**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 172$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.652$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.672$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.672$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-7.

n =	8
m =	8
N =	16
Ci (MW-7) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 1.6s =	0	1	9
rank value of 1.8s =	0	1	10
rank value of 2.2s =	0	1	11
rank value of 2.4s =	0	2	12.5
rank value of 2.6s =	0	1	14
rank value of 2.7s =	0	1	15
rank value of 3.6s =	0	1	16

	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	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 =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.907$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.537$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.537$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-11.

n =	8		
m =	8		
N =	16		
Ci (MW-11) =	100.0		
# samples =		8	8
sum of rank values (Ri) =		36.0	100.0
avg rank value (Rbar) =		4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 10.1s =	0	1	9
rank value of 10.6s =	0	1	10
rank value of 10.9s =	0	1	11
rank value of 14.8s =	0	1	12
rank value of 15.1s =	0	1	13
rank value of 17.2s =	0	1	14
rank value of 17.3s =	0	1	15

rank value of 17.4s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.914$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.534$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.534$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-13.

n =	8
m =	8
N =	16
Ci (MW-13) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 10.9s =	0	1	9
rank value of 11.3s =	0	1	10
rank value of 12.1s =	0	1	11
rank value of 13.9s =	0	1	12
rank value of 14.2s =	0	1	13
rank value of 15.8s =	0	1	14
rank value of 17.3s =	0	1	15

rank value of 18.4s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.914$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.534$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.534$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-14.

n =	8
m =	8
N =	16
Ci (MW-14) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 15.1s =	0	1	9
rank value of 16.5s =	0	1	10
rank value of 18.1s =	0	1	11
rank value of 20.6s =	0	1	12
rank value of 20.7s =	0	1	13
rank value of 22.8s =	0	1	14
rank value of 31.1s =	0	1	15

rank value of 32.5s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.914$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.534$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.534$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 16 observations from the smallest to the largest from background wells and compliance well MW-15.

n =	8
m =	8
N =	16
Ci (MW-15) =	100.0

# samples =	8	8
sum of rank values (Ri) =	36.0	100.0
avg rank value (Rbar) =	4.5	12.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 3s =	0	1	9
rank value of 3.7s =	0	1	10
rank value of 4.5s =	0	1	11
rank value of 5.3s =	0	1	12
rank value of 7.7s =	0	1	13
rank value of 8.9s =	0	1	14
rank value of 9s =	0	1	15

rank value of 10.6s =	0	1	16
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**8**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 64$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 32$

Adjustment for tie values:

$SD(W) = 8.914$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.534$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.534$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 12 observations from the smallest to the largest from background wells and compliance well MW-25.

n =	4
m =	8
N =	12
Ci (MW-25) =	42.0

# samples =	8	4
sum of rank values (Ri) =	36.0	42.0
avg rank value (Rbar) =	4.5	10.5

	Number of each rank value		Rank Value
rank value of NDs =	8	0	4.5
rank value of 2s =	0	1	9
rank value of 14.1s =	0	1	10
rank value of 14.8s =	0	1	11
rank value of 23.2s =	0	1	12
	0	0	0
	0	0	0
	0	0	0

	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**4**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 32$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 16$

Adjustment for tie values:

$SD(W) = 4.948$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.132$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.132$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6,.01] = 3.143$

$c = 0.143$

	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

$T^*_k = 3.7$

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 J14-1957-43

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-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	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

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6, .01] = 3.143$

		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
$c = 0.143$	$T_{n2} =$	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
$T^*_k = 3.7$																														

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 J14-1957-43

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	ND	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	NP	**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**
N_i	8	23	23	21	23	23	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_i)	932.0	2679.5	2679.5	2446.5	5394.0	3667.5	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	466.0	932.0	699.0	466.0	699.0	699.0	699.0	466.0	699.0	466.0	699.0	466.0	466.0	233.0	466.0	840.0	
avg rank value (Rbar)	116.5	116.5	116.5	116.5	234.5	159.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	210.0	
														Number of each rank value																	Rank Value
rank value of NDs =	8	23	23	21	3	15	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	1	116.5
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	233.5
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	236
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	238
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	239
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	240
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	241
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	242
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	243
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	244.5
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	246
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	247
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	248
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	249
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	250
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	251
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	252
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	253
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	254
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	255
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	256
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	257
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	258
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	259
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	260
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	261
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	262
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	263
n =	**8**	**23**	**23**	**21**	**23**	**23**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**	

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 =	108578.0	312162	312162	285017	1265010	584807	108578	108578	108578	108578	108578	108578	108578	108578	54289	108578	81433.5	54289	81433.5	81433.5	81433.5	54289	81433.5	54289	81433.5	54289	54289	27144.5	54289	176400

N_{bkg} = 8
N = 263
H = 57.83

Adjust H for ties:

T_x = 1.2E+07 sum of T1 T4

$$H' = H/(1-(T_x/(N^3-N)))$$

H' = 184.42
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' = 184.42.
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:

$$\text{Critical Value } (C_x) = P(N(N+1)/12)^{0.5} * (1/N_{bkg}+1/N_x)^{0.5}$$

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) =	116.5	116.5	116.5	234.5	159.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	210.0
avg Rbar (background) =	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5
Dx =	0.0	0.0	0.0	118.0	43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.5
Cx =	72.7	72.7	73.6	72.7	73.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	108.5	88.6	95.7	108.5	95.7	95.7	95.7	108.5	95.7	108.5	95.7	108.5	108.5	140.1	108.5	108.5
Statistical Significance ?	-	-	-	**Yes**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
If SSL is current event above MCL?	-	-	-	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Compare each difference (Dx) with the corresponding critical value (Cx).
The Dx value for the above indicated wells do exceed the corresponding Cx value.
Therefore, we conclude that the concentration of 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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	23
m =	8
N =	31
Ci (MW-4) =	448.0

# samples =	8	23
sum of rank values (Ri) =	48.0	448.0
avg rank value (Rbar) =	6.0	19.5

	Number of each rank value		Rank Value
rank value of NDs =	8	3	6
rank value of 4s =	0	1	12
rank value of 6.1s =	0	1	13
rank value of 7.3s =	0	1	14
rank value of 12s =	0	1	15
rank value of 15s =	0	1	16
rank value of 16.8s =	0	1	17
rank value of 17s =	0	1	18

rank value of 21.4s =	0	1	19
rank value of 29.2s =	0	1	20
rank value of 31.8s =	0	1	21
rank value of 32.6s =	0	1	22
rank value of 34.1s =	0	1	23
rank value of 38.8s =	0	1	24
rank value of 40.6s =	0	1	25
rank value of 40.8s =	0	1	26
rank value of 41s =	0	1	27
rank value of 42.8s =	0	1	28
rank value of 43.7s =	0	1	29
rank value of 46.6s =	0	1	30
rank value of 48.5s =	0	1	31
# samples =	**8**	**23**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 172$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.654$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.671$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.671$

$Z_{0.01} = 2.326$

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 J14-1957-43

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	NP	ND	ND	ND	NP	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
N_h	8	23	23	21	23	23	8	8	8	8	8	8	8	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	4	
sum of rank values (R_h)	840.0	2415.0	2415.0	2205.0	5485.5	5002.5	840.0	840.0	840.0	949.5	840.0	1160.0	1512.0	840.0	420.0	840.0	630.0	420.0	630.0	630.0	630.0	420.0	630.0	420.0	630.0	420.0	420.0	210.0	420.0	761.5	
avg rank value (Rbar)	105.0	105.0	105.0	105.0	238.5	217.5	105.0	105.0	105.0	118.7	105.0	145.0	189.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	190.4	

Number of each rank value

																														Rank Value
rank value of NDs =	8	23	23	21	2	3	8	8	8	7	8	5	2	8	4	8	6	4	6	6	6	4	6	4	6	4	4	2	4	1	105
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	0	211
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	213
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	214.5
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	216
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	217
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	218.5
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	220
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	221
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	222
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	223
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	224
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	225.5
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	227.5
rank value of 4.2s =	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	0	229.5
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	231.5
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	233
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	234.5
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	236
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	237
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	239.5
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	242.5
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	244
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	245
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	246
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	247
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	248.5
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	250
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	251
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	0	252
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	0	253.5

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	255
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	256
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	257
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	258
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	259
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	260
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	261
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	262
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	263
n =	**8**	**23**	**23**	**21**	**23**	**23**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**

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-24**	**MW-24**	**MW-25**
Ri^2/N_i =	88200.0	253575	253575	231525	1308292	1088044	88200	88200	88200	112694	88200	168200	285768	88200	44100	88200	66150	44100	66150	66150	66150	44100	66150	44100	66150	44100	44100	22050	44100	144971

N_{bg} = 8
N = 263
H = 105.29

Adjust H for ties:

T_i = 9129264 sum of T1 T13

$H' = H/(1-\{T_i/(N^3-N)\})$
H' = 211.35
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' =211.35
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_b) 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-2A	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-24	MW-24	MW-25
Rbar (well x) =	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	118.7	105.0	145.0	189.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	190.4
avg Rbar (background) =	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0
Dx =	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.7	0.0	40.0	84.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	85.4
Cx =	72.7	72.7	73.6	72.7	73.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	108.5	88.6	95.7	108.5	95.7	95.7	95.7	108.5	95.7	108.5	95.7	108.5	108.5	140.1	108.5	108.5
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 J14-1957-43

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

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6,.01] = 3.143$

		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
$c = 0.143$	$T_{n2} =$	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
$T^*_k = 3.7$																														

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 J14-1957-43

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	ND	ND	ND	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	NP	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	ND	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	NP	ND	**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
N_i	8	23	23	21	23	23	8	8	8	8	8	8	8	8	-4	8	6	-4	6	6	6	-4	6	-4	6	-4	-4	2	-4	-4	
sum of rank values (R_i)	848.0	2438.0	2438.0	2226.0	5630.5	4853.0	848.0	848.0	848.0	848.0	848.0	1278.0	1294.0	848.0	-424.0	848.0	636.0	-424.0	636.0	636.0	636.0	-424.0	636.0	-424.0	636.0	-424.0	-424.0	212.0	-424.0	778.5	
avg rank value (Rbar)	106.0	106.0	106.0	106.0	244.8	211.0	106.0	106.0	106.0	106.0	106.0	159.8	161.8	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	194.6	

	Number of each rank value																														Rank Value
rank value of NDs =	8	23	23	21	1	-4	8	8	8	8	8	-4	-4	8	-4	8	6	-4	6	6	6	-4	6	-4	6	-4	-4	2	-4	1	106
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	213
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	215
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	0	216
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	217
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	218
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	219
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	220
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	221
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	222.5
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	224.5
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	226
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	227
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	228
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	229.5
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	231.5
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	233
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	234
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	235
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	236
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	237
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	238
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	239
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	241
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	243
rank value of 6.2s =	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	244
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	246
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	248
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	0	249
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	0	250
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	0	251

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	252.5
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	254.5
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	256.5
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	259.5
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	262
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	263
n =	**8**	**23**	**23**	**21**	**23**	**23**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**4**	**8**	**6**	**4**	**6**	**6**	**6**	**4**	**6**	**4**	**6**	**4**	**4**	**2**	**4**	**4**

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 =	89888.0	258428	258428	235956	1378371	1023983	89888	89888	89888	89888	89888	204161	209305	89888	44944	89888	67416	44944	67416	67416	67416	44944	67416	44944	67416	44944	44944	22472	44944	151516

N_{bg} = 8
N = 263
H = 103.41

Adjust H for ties:

T_i = 9393894 sum of T1 T12

$H' = H/(1-(T_i/(N^3-N)))$
H' = 213.83
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' =213.83
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) = $P(N(N+1)/12)^{0.5} * (1/N_{bg}+1/N_x)^{0.5}$
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) =	106.0	106.0	106.0	244.8	211.0	106.0	106.0	106.0	106.0	106.0	159.8	161.8	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	194.6
avg Rbar (background) =	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0
Dx =	0.0	0.0	0.0	138.8	105.0	0.0	0.0	0.0	0.0	0.0	53.8	55.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	88.6
Cx =	72.7	72.7	73.6	72.7	72.7	88.6	88.6	88.6	88.6	88.6	88.6	88.6	88.6	108.5	88.6	95.7	108.5	95.7	95.7	95.7	108.5	95.7	108.5	95.7	108.5	108.5	140.1	108.5	108.5	
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 Trichloroethene 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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-4.

n =	23
m =	8
N =	31
Ci (MW-4) =	456.0

# samples =	8	23
sum of rank values (Ri) =	40.0	456.0
avg rank value (Rbar) =	5.0	19.8

	Number of each rank value		Rank Value
rank value of NDs =	8	1	5
rank value of 5.6s =	0	1	10
rank value of 6s =	0	3	12
rank value of 6.1s =	0	1	14
rank value of 7s =	0	2	15.5
rank value of 7.3s =	0	1	17
rank value of 7.8s =	0	1	18
rank value of 7.9s =	0	1	19

rank value of 8.1s =	0	1	20
rank value of 9.1s =	0	2	21.5
rank value of 9.9s =	0	2	23.5
rank value of 10s =	0	2	25.5
rank value of 11s =	0	3	28
rank value of 13s =	0	1	30
rank value of 17s =	0	1	31
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**23**	

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.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.854$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 4.004$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 4.004$

$Z_{0.01} = 2.326$

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 J14-1957-43

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**

1) Rank the N = 31 observations from the smallest to the largest from background wells and compliance well MW-5.

n =	23
m =	8
N =	31
Ci (MW-5) =	444.0

# samples =	8	23
sum of rank values (Ri) =	52.0	444.0
avg rank value (Rbar) =	6.5	19.3

	Number of each rank value		Rank Value
rank value of NDs =	8	4	6.5
rank value of 2.7s =	0	2	13.5
rank value of 3s =	0	2	15.5
rank value of 3.3s =	0	1	17
rank value of 3.4s =	0	1	18
rank value of 3.5s =	0	1	19
rank value of 3.6s =	0	2	20.5
rank value of 3.7s =	0	1	22

rank value of 3.8s =	0	1	23
rank value of 4.1s =	0	1	24
rank value of 4.7s =	0	1	25
rank value of 4.8s =	0	1	26
rank value of 5.5s =	0	1	27
rank value of 5.8s =	0	1	28
rank value of 6.2s =	0	1	29
rank value of 7s =	0	1	30
rank value of 11s =	0	1	31
	0	0	0
	0	0	0
	0	0	0
# samples =	**8**	**23**	

2) Compute the Wilcoxon statistic by adding up the compliance well ranks and subtracting n/(n+1)/2.

$W = Ci - 1/2(n(n+1))$

$W = 168$

3) Compute the expected value and standard deviation of W.

$E(W) = 1/2mn$

$SD(W) = ((mn(N+1)/12)*(1-\Sigma^{g}_{i=1} (t_i^3 - t_i)/(N^3 - N)))^{0.5}$

$E(W) = 92$

Adjustment for tie values:

$SD(W) = 21.496$

4) Form the appropriate Z-score.

$Z = (W - E(W) - 0.5)/SD(W)$

$Z = 3.512$

5) Compare the observed Z-score to the upper 0.01 percentile of the normal distribution.

$Z = 3.512$

$Z_{0.01} = 2.326$

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 J14-1957-43

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	ND	NP	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**

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t_{[6,.01]} = 3.143$

$c = 0.1429$

	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

$T^*_k = 3.7$

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 J14-1957-43

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**

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).

$n = 7$
$T_{n1} = 3.5$

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).

$k = 1$
$n = 7$
$T_{n1} = 3.5$
$t[6,.01] = 3.143$

$c = 0.143$

	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	1.3	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

$T^*_k = 3.7$

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 J14-1957-43

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-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	**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**

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).

$n = 7$
$T_{n1} = 7$

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).

$k = 1$
$n = 7$
$T_{n1} = 7$
$t[6, .01] = 3.143$

$c = 0.143$

	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

$T^*_k = 5.1$

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.

Haywood County Closed Landfill, Francis Farm
Haywood County, North Carolina
BLE Project Number J14-1957-43

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-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	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	ND	**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	**7.7**	**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	**8.9**	**1**
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

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).

$n = 4$
$T_{n1} = 2$

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

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

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

$k = 1$
$n = 4$
$T_{n1} = 2$
$t[3,.01] = 4.541$

$c = 0.25$

$T_{n2} =$

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
,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,	,

$T^*_k = 7.5$

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.