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

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

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

Instructions:

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

Solid Waste Monitoring Data Submittal Information

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

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

Name: Joan A. Smyth, P.G. Phone: 919-828-0577 x 122

E-mail: joan@rsgengineers.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Halifax County Closed MSW Landfill	S.R. 1417 Aurelian Springs, NC	42-04	.0500	August 19 - 20, 2009

Environmental Status: (Check all that apply)

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

Type of data submitted: (Check all that apply)

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

Notification attached?

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

Certification

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

Joan A. Smyth — Facility Representative Name (Print)
Senior Hydrogeologist — Title
919-828-0577 — (Area Code) Telephone Number

Joan A. Smyth — Signature
10/7/09 — Date

Affix NC Licensed Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

14 N. Boylan Avenue Raleigh, NC 27603
Facility Representative Address

C0828
NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

Halifax County Landfill

Ground Water Monitoring Report

August 2009 Semi-annual Monitoring Event

Halifax County Landfill
Halifax County, North Carolina
NC Solid Waste Permit # 42-04

Prepared for:
Halifax County Solid Waste Department
P. O. Box 327
Halifax, North Carolina 27839

October 2009

RICHARDSON SMITH GARDNER
& ASSOCIATES
ENGINEERING & GEOLOGICAL
SERVICES

PRINTED ON 100% RECYCLED PAPER

Ground Water Monitoring Report
Halifax County Landfill

August 2009 Semi - Annual Report

Prepared for:

Halifax County Solid Waste Department
P.O. Box 327
Halifax, North Carolina 27839

RSG Project No. **Halifax - 8**

Joan A. Smyth 10/7/09

Joan A. Smyth, P.G.
Senior Hydrogeologist

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

October 2009

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Halifax County Landfill

Semi-annual Ground Water Monitoring Report
August 2009 Monitoring Event

1.0 INTRODUCTION 1

2.0 SITE HYDROGEOLOGY.....1

3.0 SAMPLING PROCEDURES 1

4.0 FIELD AND LABORATORY RESULTS 2
4.1 Laboratory Analysis.....2
4.2 Field and Laboratory Results.....2

5.0 STATISTICAL ANALYSIS AND RESULTS.....3
5.1 Statistical Analysis.....3
5.2 Statistical Results.....3
5.3 2L/MCL Statistical Analysis 3

6.0 GROUND WATER CHARACTERIZATION.....4

7.0 CORRECTIVE ACTIONS 4

8.0 CONCLUSIONS.....4

FIGURES

Figure 1 – Ground Water Potentiometric Map

TABLES

Table 1 – Ground Water Elevations & Velocities
Table 2 – Field Parameters
Table 3 – Detected Inorganic Constituents
Table 4 – Detected Organic Constituents
Table 5 – Statistical Analysis Summary
Table 6 – MNA Parameter Summary

APPENDICES

Appendix A – Boring Logs
Appendix B – Laboratory Analytical Report
Appendix C – Time vs. Concentration Graphs

1.0 Introduction

The Halifax County Landfill, operating under Solid Waste Permit #42-04, is required to submit semi-annual ground water monitoring reports for assessment monitoring. This report presents the results of the second semi-annual monitoring event for 2009, conducted on August 19-20, 2009. This event was performed to comply with the semi-annual monitoring schedule required by NC Solid Waste Regulations.

The Halifax County Landfill is currently accepting C&D waste over the closed MSW landfill. All MSW is being transferred off-site to a lined landfill. The old landfill has been closed per Solid Waste Regulations and the certification report was submitted to the SWS in September 1998. The ground water monitoring network consists of 12 wells located around the perimeter of the landfill (**Figure 1**). Also included in the monitoring network are three surface water sampling points up and downstream of the landfill (**Figure 1**).

This report includes summaries of the field procedures, laboratory analyses, statistical analyses, and ground water characterization. Also included are summary tables of the results, graphs of the data, laboratory analytical reports, and statistical results.

2.0 Site Hydrogeology

A review of the *1985 North Carolina Geological Map* as well as *Ground Water in the Halifax Area, North Carolina* (Dept. of Conservation and Development Bulletin #51, 1946) indicates that the landfill site is situated on the eastern edge of the Eastern Piedmont Physiographic Province. The site is just west of the Coastal Plain overlap. Western Halifax County is underlain by an assemblage of felsic to intermediate crystalline igneous and metamorphic rocks of early to late Paleozoic age. The rocks of the eastern piedmont exhibit a northeast strike and locally dip gently eastward as a result of regional metamorphism and folding which produced a broad plunging anticline. The area was simultaneously intruded by a number of felsic (granite) plutons. The rock formation underlying the subject site is a granitic pluton identified as the Butterwood Creek intrusive.

Depths to ground water generally range from near surface in lowland areas along Brewer's Creek and its tributary to up to 45 ft. below grade along the ridge east of the landfill. Ground water at the site is flowing generally to the west towards Brewer's Creek and its tributary. There are minor seasonal variations in the flow pattern, but overall the direction of flow is the same.

Water levels are collected from piezometers upgradient of MW-15r to evaluate ground water direction in this area. This data indicates ground water flow is consistently to the west and there is no ground water reversal in the area of MW-15r. Boring logs for the groundwater monitoring wells are included in **Appendix A**.

3.0 Sampling Procedures

The sampling event, performed by Environment 1, Inc., consisted of collecting samples from twelve (12) ground water wells (MW-1, MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-15r, & MW-16a, MW-17, MW-18s, MW-18d), shown in **Figure 1**, in accordance with the

approved site Water Quality Monitoring Plan[1.] Also included in the analysis were trip and field blanks for quality control. Surface water samples were collected from three locations (SW-1 through SW-3) up and downstream from the landfill.

Sampling methods followed the protocol outlined in the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (DENR, DWM). The depth to water in each well was gauged prior to purging and sampling. Field measurements of pH, specific conductivity, and temperature were obtained from each well. Water table elevations and field parameter results are included in **Tables 1 and 2,** respectively.

All samples were collected by Environment 1 personnel in laboratory prepared containers for the specified analytical procedures. Sampling equipment (bailers) were cleaned in the laboratory and transported to the site in aluminum foil. Ground water samples were properly preserved, placed on ice, and transported to the laboratory facility within the specified holding times for each analysis.

4.0 Field & Laboratory Results

4.1 Laboratory Analysis

The ground and surface water samples were transported to Environment 1, Inc., a North Carolina certified laboratory (NC Wastewater ID #10). Laboratory analysis consisted of the full suite of RCRA Subtitle D Appendix II constituents for most of the compliance wells (MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-15r, MW-16a, MW-17, and MW-18s). Appendix I constituents were analyzed for the background well (MW-1), and surface water points. Parameters were reported at Solid Waste Practical Quantitation Limits (SWSLs). The laboratory analytical report is included as **Appendix B**, and a copy of the recent most lab data for the site is included on the attached CD as a text file (attached to the back cover).

4.2 Field and Laboratory Results

The field parameter results (**Table 2**) have remained consistent with previous sampling events. Detected constituents are presented in **Tables 3 & 4**.

Three (3) inorganic constituents (barium, beryllium and iron), shown in **Table 3** were detected in five (5) monitoring wells. One constituent, iron, was detected above the 2L standard. One (1) inorganic constituent (selenium) was detected in surface water sample, SW-3 above the SWSL. The locations of these samples are shown on **Figure 1**.

Nine (9) organic constituents, shown in **Table 4**, were detected in nine of the monitoring wells (MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-15r, MW-16a, and MW-17). Five (5) constituents were found at concentrations above their respective 2L standards.

- Benzene (MW-3a, MW-6d & MW-16a);
- 1,2-Dichloroethane (MW-2a and MW-3d);
- Methylene Chloride (MW-15r);

1 Water Quality Monitoring Plan, Halifax County Landfill, Richardson Smith Gardner & Associates, May 2009.

- Trichloroethene (MW-2ad, MW-15R, MW-16a & MW-17); and
- Vinyl Chloride (MW-2a, MW-2ad & MW-3a)

Constituents detected below the SWSL are denoted as "J" values and are also included in **Tables 3 & 4**.

5.0 Statistical Analysis and Results

5.1 Statistical Analysis

The laboratory data from the sampling event was reviewed and analyzed in order to evaluate trends and changes in the results as well as statistically significant differences between up and down gradient wells. Data entry and analysis was performed using the Chempoint/ Chemstat statistical software package developed specifically for RCRA Subtitle D sites (Starpoint Software, Cincinnati, OH). Chemstat follows EPA and DWM protocols for approved statistical analysis methods for groundwater data.

The data from the August 2009 sampling event were added to our existing database for this site. The data were reviewed to evaluate the most appropriate analysis methods. Initial analysis consisted of a basic review of the data and of time-concentration graphs (included in **Appendix C**) to determine any major changes or trends in the data. Non-parametric testing methods were used due to the high percentage of non-detects, and the lack of normality, in the data.

Statistical analysis was performed using MW-1 as the upgradient or background well and MW-2a, MW-2ad, MW-3a, MW-3d, MW-6d, MW-7d, MW-15r, MW-16a, MW-17 and MW-18s as the down gradient or compliance wells. The statistical analysis reports are summarized in **Table 5.**

5.2 Statistical Results

Statistically significant differences from background concentrations (**Table 5**) were found for, 1,1-dichloroethane (MW-2a, MW-2ad, MW-3d, MW-15r & MW-16a), 1,4-dichlorobenzene (MW-15r), barium (MW-6d), chlorobenzene (MW-3a & MW-6d), cis-1,2-dichloromethane (MW-2ad, MW-15r and MW-16a), dichlorodifluoromethane (MW-16a), tetrachloroethene (MW-16a), and trichloroethene (MW-16).

5.3 2L/MCL Statistical Analysis

For wells that showed statistically significant differences from background concentrations, additional analysis was performed. This analysis is required as part of ongoing Assessment monitoring for landfills in North Carolina. To perform the analysis, the respective 2L standard or MCL was determined for each parameter with statistically significant results. Each compliance well with statistical significance was re-analyzed against the 2L ground water standard or MCL if no 2L standard was available as a Ground Water Protection Standard (GWPS).

The statistical results for this additional analysis are presented in **Table 5**. An upper tolerance limit higher than the GWPS standard was considered to be a statistically significant result. This analysis indicated statistically significant results for 1,4-dichlorobenzene (MW-15r), barium

(MW-6d), tetrachloroethene (MW-16a), and trichloroethene (MW-16).

6.0 Ground Water Characterization

A potentiometric surface map was prepared from ground water elevation data collected during this sampling event. The data indicates that ground water is flowing generally to the west towards Brewer's Creek. This is consistent with ground water flow patterns previously detected for the site. The potentiometric surface map is attached as **Figure 1**.

Ground water flow velocities during the sampling event were calculated for several monitoring wells using the equation: $V = KI/n$

where: K = hydraulic conductivity
I = ground water gradient
n = porosity

Ground water flow velocities ranged from 0.007 ft/day (MW-16a) to 0.495 ft/day (MW-2a). These calculated flow velocities are included in **Table 1**.

7.0 Corrective Actions

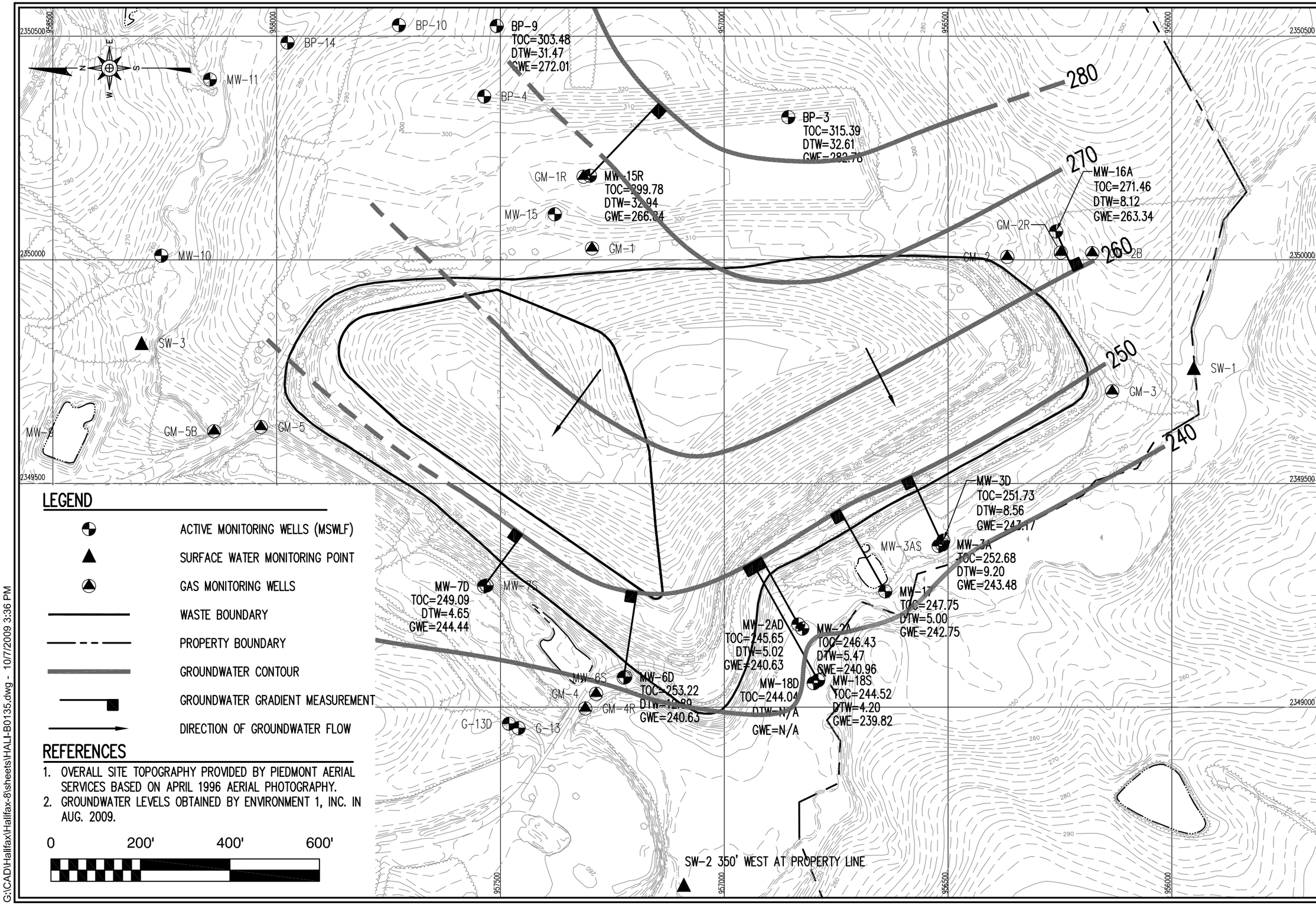
A Corrective Action Plan[2] has been approved by NCDENR and is in the process of implementation. Analytical parameters for Monitored Natural Attenuation (MNA) have been added to the analyte list for certain wells at the site. This is the first analysis of these parameters conducted to date. A summary of these analytical data is provided in **Table 6**. Implementation of the landfill gas portion of the CAP is planned for this fall.

8.0 Conclusions

In general, contaminant concentrations have remained stable over time with the exception of trichloroethane and tetrachoroethene in well MW-16a. These increases may be due to an increase in gas production in this area. Landfill gas in this area will be addressed during implementation of the Corrective Action Plan. The next monitoring event will be conducted in February 2010.

2 Corrective Action Plan Halifax County Landfill, Richardson Smith Gardner & Associates, May 2009.

Figures



LEGEND

- ACTIVE MONITORING WELLS (MSWLF)
- SURFACE WATER MONITORING POINT
- GAS MONITORING WELLS
- WASTE BOUNDARY
- PROPERTY BOUNDARY
- GROUNDWATER CONTOUR
- GROUNDWATER GRADIENT MEASUREMENT
- DIRECTION OF GROUNDWATER FLOW

REFERENCES

1. OVERALL SITE TOPOGRAPHY PROVIDED BY PIEDMONT AERIAL SERVICES BASED ON APRIL 1996 AERIAL PHOTOGRAPHY.
2. GROUNDWATER LEVELS OBTAINED BY ENVIRONMENT 1, INC. IN AUG. 2009.

0 200' 400' 600'

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FIGURE NO.	1
FILE NAME	HALI-B0135
SCALE:	AS SHOWN
PROJECT NO.	HALIFAX 8
CHECKED BY:	
DRAWN BY:	J.A.L.
DATE:	Oct. 2009

TITLE: HALIFAX COUNTY LANDFILL
GROUND WATER
POTENTIOMETRIC SURFACE MAP
AUGUST 2009

G:\CAD\Halifax\Halifax-8\sheets\HALI-B0135.dwg - 10/7/2009 3:36 PM

Tables

By: KBS
Date: 10/1/2009

Table 1
Halifax County Closed Landfill
Ground Water Elevations & Velocities
8/19-20/2009

Monitoring Location	TOC Elevation (ft)	Depth to Water (ft)	Water Table Elevation (ft)	Hydraulic Conductivity (ft/day)	Assumed Porosity	Hydraulic Gradient (ft/ft)	Ground Water Velocity (ft/day)
MW-1	--	33.41	--	--	--	--	--
MW-2a	246.43	5.47	240.96	1.835	0.2	0.054	0.495
MW-2ad	245.65	5.02	240.63	--	--	0.056	--
MW-3a	252.68	9.2	243.48	0.311	0.2	0.042	0.065
MW-3d	251.73	8.56	243.17	--	--	0.044	--
MW-6d	253.22	12.89	240.33	--	--	0.052	--
MW-7d	249.09	4.65	244.44	--	--	0.040	--
MW-15r	299.78	32.94	266.84	--	0.2	0.060	--
MW-16a	271.46	8.12	263.34	0.057	0.2	0.024	0.007
MW-17	247.75	5	242.75	--	--	0.037	--
MW-18s	244.52	4.7	239.82	--	--	0.036	--
MW-18d	244.04	---	---	--	--	--	--
BP-3	315.39	32.61	282.78	--	--	0.034	--
BP-9	303.48	31.47	272.01	--	--	0.020	--

MW-1 is not used in the ground water characterization calculations due to its remote location from the landfill
Hydraulic Conductivity data from slug testing
Porosity values assumed from Groundwater & Wells (Driscoll)
Velocity Calculated from V=K*I/n

V = velocity
K = Hydraulic Conductivity
I = Gradient
n = Porosity

Deep wells not used in velocity calculations

By: KBS
Date: 10/1/2009

Table 2
Halifax County Closed Landfill
Field Parameters
8/19-20/2009

Monitoring Location	pH (std units)	Specific Conductivity (umhos/cm)	Temperature (degrees C)	static water (feet)	Turbidity
MW-1	5.0	28	17	33.41	nm
MW-2a	6.0	249	24	5.47	105
MW-2ad	6.2	526	19	5.02	25
MW-3a	6.0	601	20	9.2	600
MW-3d	5.7	142	19	8.56	<BQL
MW-6d	5.8	442	19	12.89	10
MW-7d	5.7	43	18	4.65	nm
MW-15r	5.0	84	18	32.94	nm
MW-16a	5.5	139	20	8.12	nm
MW-17	5.7	133	19	5	260
MW-18s	6.3	258	21	4.7	210
SW-1	6.6	107	26	nm	nm
SW-1	6.7	115	23	nm	65
SW-2	6.6	315	25	nm	nm
SW-3	6.4	812	22	nm	nm

< BQL - Below Quantitive Limit
Note: Field data collected by Environment 1 Personnel.

By: KBS
Date: 10/1/2009

Table 3
Halifax County Closed Landfill
Detected Inorganic Constituents
8/19-20/2009

Monitoring Location	SWSL	2L or GWP Standard	MW-1	MW-2a	MW-2ad	MW-3a	MW-3d	MW-6d	MW-7d	MW-15r	MW-16a	MW-17	MW-18S	MW-18D	SW-1	SW-2	SW-3
Antimony	6	64	ND	0.1 J	0.1 J	ND	0.4 J	ND	0.6 J	0.2 J	ND	ND	ND	NS	0.7 J	ND	ND
Arsenic	10	50	0.2 J	0.2 J	1.4 J	1.8 J	0.2 J	0.3 J	0.2 J	0.2 J	ND	0.3 J	1.7 J	NS	0.9 J	1.6 J	0.4 J
Barium	100	2000	30.5 J	**113**	**129**	71.2 J	58.2 J	**575**	34.4 J	69.3 J	82.7 J	80.4 J	70.6 J	NS	25.7 J	54.2 J	33.5 J
Beryllium	1	4	0.2 J	0.3 J	0.1 J	0.1 J	0.2 J	0.4 J	0.1 J	0.2 J	0.5 J	**1.3**	0.2 J	NS	0.1 J	ND	0.9 J
Cadmium	1	1.75	0.1 J	ND	0.1 J	ND	0.1 J	0.3 J	0.2 J	0.1 J	0.2 J	0.2 J	ND	NS	0.1 J	0.1 J	0.6 J
Chromium, total	10	50	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	0.9 J	0.4 J	NS	0.7 J	ND	ND
Cobalt	10	70	0.5 J	7.8 J	6.3 J	3.2 J	0.1 J	2.6 J	0.1 J	0.7 J	0.3 J	1.4 J	5.4 J	NS	1.1 J	0.5 J	1.8 J
Copper	10	1000	2.8 J	0.3 J	0.7 J	1 J	0.3 J	0.6 J	0.9 J	1.6 J	0.3 J	2.5 J	1 J	NS	0.8 J	0.3 J	0.9 J
Lead	10	15	0.7 J	0.1 J	0.2 J	0.2 J	0.1 J	0.1 J	0.4 J	0.2 J	0.1 J	5.1 J	0.6 J	NS	0.9 J	0.1 J	0.1 J
Iron	300	300	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5745**	**17675**	NS	ND	ND	ND
Mercury	0.2	1.05	ND	0.06 J	0.11 J	0.05 J	0.15 J	0.08 J	0.12 J	ND	ND	0.18 J	ND	NS	ND	ND	ND
Nickel	50	100	0.8 J	1.2 J	2.9 J	1.2 J	0.5 J	2.9 J	0.4 J	0.5 J	0.3 J	2 J	2.1 J	NS	0.8 J	1.1 J	4.2 J
Selenium	10	50	0.6 J	ND	0.5 J	0.9 J	ND	1.4 J	ND	0.5 J	ND	0.2 J	ND	NS	ND	2.4 J	**13**
Silver	10	17.5	ND	ND	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J	ND	ND	0.1 J	ND	NS	ND	ND	0.1 J
Thallium	5	5	ND	ND	0.2 J	0.1 J	0.1 J	0.1 J	0.1 J	0.2 J	ND	0.1 J	0.1 J	NS	ND	ND	ND
Tin	100	---	ND	0.3 J	0.3 J	0.5 J	0.2 J	0.3 J	0.5 J	0.3 J	0.1 J	0.8 J	0.5 J	NS	ND	ND	ND
Vanadium	25	3.5	1.3 J	1.8 J	1 J	1.3 J	1 J	0.9 J	0.7 J	0.5 J	0.6 J	5.7 J	4.2 J	NS	4.3 J	0.8 J	2.1 J
Zinc	10	1050	4.1 J	3 J	3.8 J	1.6 J	2 J	6.3 J	ND	2.9 J	4.3 J	ND	7.1 J	NS	3.8 J	1.5 J	ND

ND - Not detected at or above SWSL
Shading - Concentrations above 2L standard or no 2L standard
Bold Letters - Concentrations below 2L standard
SWSL - Solid Waste Section Quantitation Limits
J - Detected constituents below the SWSL limit.
All results in ug/L
Sampling and analysis performed by Environment 1, Inc.

By: KBS
Date: 10/1/2009

Table 4
Halifax County Closed Landfill
Detected Organic Constituents
8/19-20/2009

Monitoring Location	SWSL	2L or GWP Standard	MW-1	MW-2a	MW-2ad	MW-3a	MW-3d	MW-6d	MW-7d	MW-15r	MW-16a	MW-17	MW-18S	MW-18D	SW-1	SW-2	SW-3
Benzene	1	1	ND	0.3 J	0.8 J	**2.6**	0.3 J	**1.8**	0.2 J	0.3 J	**2.5**	ND	ND	NS	ND	ND	ND
2-Butanone	100	4200	ND	ND	2.1 J	1.8 J	1.2 J	1.6 J	ND	ND	ND	1.3 J	ND	NS	1.6 J	2.9 J	3.5 J
Acetone	100	700	ND	1.3 J	1.8 J	1.5 J	ND	3.2 J	ND	ND	ND	1.6 J	2.6 J	NS	1.7 J	2 J	2.4 J
1,1-Dichloroethane	5	70	ND	ND	**25.5**	3.9 J	ND	0.3 J	ND	**8.1**	**9.6**	3.8 J	0.9 J	NS	ND	ND	ND
1,1-Dichloroethene	5	7	ND	0.3 J	0.5 J	ND	0.4 J	ND	ND	ND	0.2 J	ND	ND	NS	ND	ND	ND
1,2- Dichlorobenzene	5	24	ND	ND	ND	ND	ND	0.2 J	ND	ND	1 J	ND	ND	NS	ND	ND	ND
1,2-Dichloroethane	1	0.38	ND	**5.8**	0.4 J	ND	**6.5**	ND	ND	0.6 J	ND	ND	ND	NS	ND	ND	ND
1,2- Dichloropropane	1	0.51	ND	ND	ND	0.8 J	ND	ND	ND	ND	0.6 J	ND	ND	NS	ND	ND	ND
1,4-Dichlorobenzene	1	75	ND	ND	**1.3**	**3.2**	ND	**2.2**	ND	**12.3**	**1.8**	ND	ND	NS	ND	ND	ND
Dichlorodifluoromethane	5	1400	ND	0.5 J	0.2 J	0.2 J	1.4 J	ND	ND	ND	6.7	1.9 J	ND	NS	ND	ND	ND
Cis-1,2-Dichlorethene	5	70	ND	4.7 J	22.2	0.9 J	3.3 J	0.7 J	ND	6.8	29.8	3 J	ND	NS	ND	ND	ND
Chlorobenzene	3	50	ND	1 J	1.5 J	5.9	0.2 J	10.0	0.2 J	0.3 J	1.1 J	ND	ND	NS	ND	ND	ND
Chloroethane	10	2800	ND	ND	1.9 J	ND	ND	ND	ND	ND	0.7 J	ND	0.3 J	NS	ND	ND	ND
Chloromethane	1	2.6	ND	ND	ND	ND	ND	ND	ND	ND	0.6 J	ND	0.2 J	NS	0.3 J	0.4 J	0.3 J
Gamma-BHC (Lindane)	0.05	0.2	ND	ND	ND	ND	ND	ND	ND	0.039 J	ND	ND	ND	NS	ND	ND	ND
Heptachlor	0.05	0.0078	ND	ND	ND	ND	ND	0.042 J	ND	ND	0.044 J	0.042 J	ND	NS	ND	ND	ND
Methylene chloride	1	5	ND	ND	0.2 J	ND	0.2 J	ND	ND	**6.0**	**4.4**	0.8 J	ND	NS	ND	ND	ND
trans-1,2-Dichloroethene	5	100	ND	ND	0.2 J	ND	ND	ND	ND	ND	0.4 J	ND	ND	NS	ND	ND	ND
Tetrachloroethene	1	70	ND	ND	ND	ND	**2.1**	ND	ND	**3.1**	**40.9**	**1.5**	ND	NS	ND	ND	ND
Trichlorofluoromethane	1	2100	ND	ND	ND	ND	ND	ND	ND	ND	0.9 J	ND	ND	NS	ND	ND	ND
Trichloroethene	1	2.8	ND	**2.0**	**4.2**	ND	**1.4**	ND	ND	**3.5**	**19.9**	**2.3**	ND	NS	ND	ND	ND
Toluene	1	1000	ND	ND	ND	0.5 J	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND
Vinyl Chloride	1	0.015	ND	**4.9**	**4.3**	**1.0**	ND	0.7 J	ND	ND	ND	ND	0.4 J	NS	ND	ND	ND
Xylenes	5	530	ND	ND	ND	ND	ND	ND	**45**	0.8 J	ND	**24**	ND	NS	**17**	ND	**24**

ND	-	Not detected at or above SWSL .
Shading	-	Concentrations above 2L standard
Bold Letters	-	Concentrations below 2L standard
SWSL	-	Solid Waste Section Quantitation Limits
J	-	Detected constituents below the SWSL limit.
	*	All results in ug/L

Sampling and Analysis performed by Environment 1, Inc.

By: KBS
Date: 10/1/2009

Table 5
Halifax County Landfill
Statistical Analysis Summary
8/19-20/2009

Monitoring Well	Parameters	Detected level	Detection Limit	Test Units	%ND	Test	Statistically Significant?	2L/MCL statistical analysis	Method for MCL analysis
MW-2a	1,1-Dichloroethane	5.8	<5	ug/l	51.53	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-3d	1,1-Dichloroethane	6.5	<5	ug/l	51.53	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-15r	1,1-Dichloroethane	8.1	<5	ug/l	51.53	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-16a	1,1-Dichloroethane	9.6	<5	ug/l	51.53	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-2ad	1,1-Dichloroethane	25.5	<5	ug/l	51.53	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-2ad	1,4-Dichlorobenzene	1.3	<1	ug/l	80.74	NPPL	N	N	---
MW-16a	1,4-Dichlorobenzene	1.8	<1	ug/l	80.74	NPPL	N	N	---
MW-6d	1,4-Dichlorobenzene	2.2	<1	ug/l	80.74	NPPL	N	N	---
MW-3a	1,4-Dichlorobenzene	3.2	<1	ug/l	80.74	NPPL	N	N	---
MW-15r	1,4-Dichlorobenzene	12.3	<1	ug/l	80.74	NPPL	Y	Y	MCL-PTI (EPA 1992)
MW-2a	Barium	0.113	<0.100	mg/l	70.37	NPPL	N	---	---
MW-2ad	Barium	0.129	<0.100	mg/l	70.37	NPPL	N	---	---
MW-6d	Barium	0.575	<0.100	mg/l	70.37	NPPL	Y	Y	MCL-PTI (EPA 1992)
MW-6d	Benzene	1.8	<1	ug/l	83.76	NPPL	N	---	---
MW-16a	Benzene	2.5	<1	ug/l	83.76	NPPL	N	---	---
MW-3a	Benzene	2.6	<1	ug/l	83.76	NPPL	N	---	---
MW-17	Beryllium	0.0013	<0.001	mg/l	70.73	NPPL	N	---	---
MW-3a	Chlorobenzene	5.9	<3	ug/l	65.51	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-6d	Chlorobenzene	10	<3	ug/l	65.51	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-15r	Cis-1,2-Dichloroethene	6.8	<5	ug/l	65.45	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-2ad	Cis-1,2-Dichloroethene	22.2	<5	ug/l	65.45	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-16a	Cis-1,2-Dichloroethene	29.8	<5	ug/l	65.45	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-16a	Dichlorodifluoromethane	6.7	<5	ug/l	65.21	NPPL	Y	N	MCL-PTI (EPA 1992)
MW-16a	Methylene Chloride	4.4	<1	ug/l	71.59	NPPL	N	---	---
MW-15r	Methylene Chloride	6	<1	ug/l	71.59	NPPL	N	---	---

By: KBS
Date: 10/1/2009

Table 5
Halifax County Landfill
Statistical Analysis Summary
8/19-20/2009

Monitoring Well	Parameters	Detected level	Detection Limit	Test Units	%ND	Test	Statistically Significant?	2L/MCL statistical analysis	Method for MCL analysis
MW-17	Tetrachloroethene	1.5	<1	ug/l	68.96	NPPL	N	---	---
MW-3d	Tetrachloroethene	2.1	<1	ug/l	68.96	NPPL	N	---	---
MW-15r	Tetrachloroethene	3.1	<1	ug/l	68.96	NPPL	N	---	---
MW-16a	Tetrachloroethene	40.9	<1	ug/l	68.96	NPPL	Y	Y	MCL-PTI (EPA 1992)
MW-3d	Trichloroethene	1.4	<1	ug/l	61.9	NPPL	N	---	---
MW-2a	Trichloroethene	2	<1	ug/l	61.9	NPPL	N	---	---
MW-17	Trichloroethene	2.3	<1	ug/l	61.9	NPPL	N	---	---
MW-15r	Trichloroethene	3.5	<1	ug/l	61.9	NPPL	N	---	---
MW-2ad	Trichloroethene	4.2	<1	ug/l	61.9	NPPL	N	---	---
MW-16a	Trichloroethene	19.9	<1	ug/l	61.9	NPPL	Y	Y	MCL-PTI (EPA 1992)
MW-3a	Vinyl Chloride	1	<1	ug/l	81.35	NPPL	N	---	---
MW-2ad	Vinyl Chloride	4.3	<1	ug/l	81.35	NPPL	N	---	---
MW-2a	Vinyl Chloride	4.9	<1	ug/l	81.35	NPPL	N	---	---
MW-17	Zinc	0.024	<0.010	mg/l	62.9	NPPL	N	---	---
MW-7d	Zinc	0.045	<0.010	mg/l	62.9	NPPL	N	---	---

NPTL Non-parametric Tolerance Limit (Inter-well comparision)
NPPL Non-parametric Prediction Limit (Inter-well comparision)
PPL Poisson Prediction Limit with 1/2 Detection Limit

Notes:

Highlighting indicates statistical significance

MW-1 used as background well

By: KBS
Date: 10/1/2009

Table 6
Halifax County Closed Landfill
MNA Parameter Summary
8/19-20/2009

Monitoring Location	SWSL or PQL	MW-2a	MW-2ad	MW-3a	MW-3d	MW-6d	MW-17	MW-18S
BOD, mg/l	2	5.1	ND	20	ND	ND	ND	ND
COD, mg/l	10	23	10	38	12	11	ND	19
Nitrate Nitrogen as N, mg/l	10	0.09 J	ND	ND	0.05 J	ND	0.09 J	ND
Total Organic Carbon, mg/l	1	5.18	ND	6.49	ND	1.61	ND	4.69
Total Alkalinity, mg/l	1	93	306	368	63	261	53	104
Chloride, mg/l	5	7	7	14	14	19	5	11
Sulfate, mg/l	250	10.1 J	10.5 J	12.2 J	14 J	16.5	10.3 J	11.4 J
Turbidity, NTU	1	105	25	600	ND	10	260	210
Sulfide, mg/l	1000	ND	ND	ND	ND	ND	ND	ND
Dissolved Oxygen, mg/l	---	0.93	1.85	1.48	1.68	1.91	1.24	1.06
Carbon Dioxide, mg/l	---	230	210	168	112	390	92	124
ORP, mv	---	-62.7	43.1	-18.5	504.2	86.7	186.8	12
N Ethane, ug/l	0.010	ND	0.098	2.2	ND	0.27	0.012	0.081
N Ethene, ug/l	0.010	0.043	0.38	ND	ND	0.036	ND	0.02
N Hydrogen, nM	0.600	1.2	1.1	5.3	1	1.3	1.1	1.6
N Methane, ug/l	0.015	6000	410	6300	2800	180	830	4100
N Acetic Acid, mg/l	0.070	ND	ND	0.079	ND	ND	0.072	ND
N Hexanoic Acid, mg/l	0.100	ND	ND	ND	ND	1.1	ND	ND
N Lactic Acid and H1BA, mg/l	0.100	ND	0.16	ND	ND	ND	0.25	0.11
N Propionic Acid, mg/l	0.070	0.14	0.14	0.17	0.15	0.14	0.16	0.14

ND - Not detected at or above SWSL
SWSL - Solid Waste Section Quantitation Limits
J - Detected constituents below the SWSL limit.
All results in ug/L

Analysis provided by Environment 1, Inc and Microseeps Laboratories.

Appendix A

Boring Logs

FIELD BOREHOLE LOG

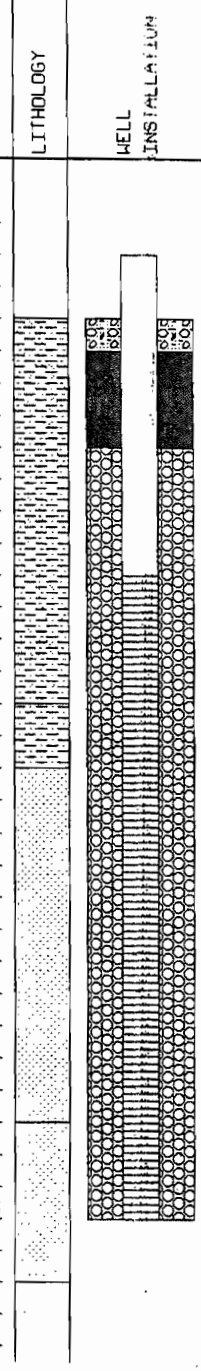
BOREHOLE NUMBER: MW-2A

PROJECT NUMBER HALIFAX-2
PROJECT NAME: HALIFAX COUNTY LANDFILL
LOCATION HALIFAX, NC
DRILLING COMPANY BORE & CORE
RIG TYPE & NUMBER MOBILE B-57 ATV
DRILLING METHOD HOLLOW STEM AUGER
WEATHER: HOT, HUMID
FIELD PARTY: BILL BROW
GEOLOGIST DAVID GARRETT
DATE BEGUN: 7/25/95 DATE COMPLETED: 7/26/95

TOP OF CASING ELEVATION -
TOTAL DEPTH: 16.0
GROUND SURFACE ELEVATION -
SHEET 1 OF 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	7.3 FT	
Time	2:00 PM	
Date	7/25/95	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
0.0–3.0				D				SILTY SAND: Loose red-brown very silty clayey coarse-fine SAND; SM-ML; fill pad.
3.0–6.0	2, 3, 3	Ss	S1					SILT: M. stiff black-gray fine sandy clayey SILT; wet; alluvium; ML.
6.0–9.0	8, 10, 11	Ss	S2					SAND: Loose light-gray and red-gray slightly silty-clayey fine-coarse SAND; alluvium; very clayey from 9.5' to 10.5'; fine rounded gravel from 10.5' to 12.5'; Water level at 7.3 ft; SW-SM; SC, CL, SW.
9.0–12.0	10, 7, 7	Ss	S3	W				
12.0–15.0	26, 50/0	Ss	4'					SAND: V. dense brown clayey fine SAND w/ scattered coarse sand; SM-ML; residual soil; well developed upon completion by surging and overpumping.



FIELD BOREHOLE LOG

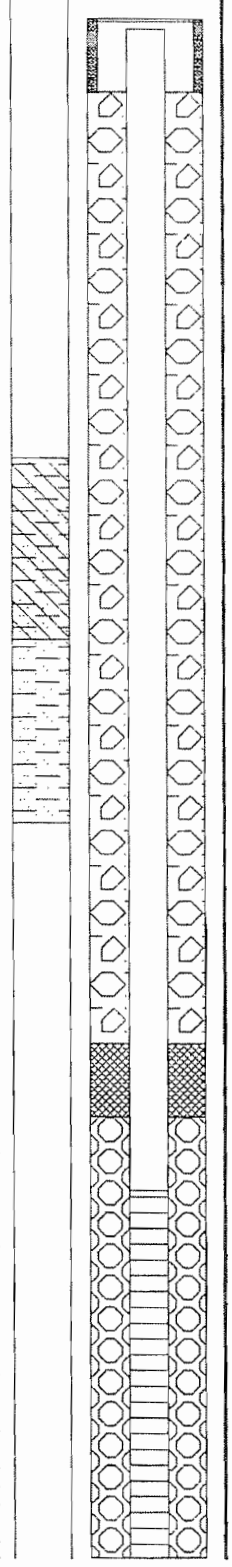
BOREHOLE NUMBER: MW-2aa

PROJECT NUMBER: HALIFAX-14
PROJECT NAME: Halifax County LandFill
LOCATION: Aurelian Springs, North Carolina
DRILLING COMPANY: Engineering Tectonics, P.A.
RIG TYPE & NUMBER: MOBILE B-60
DRILLING METHOD: Hollow Stem Auger
WEATHER: Cloudy, 70 degrees
FIELD PARTY: David Barron
GEOLOGIST: Philip May
DATE BEGUN: 9/1/99 DATE COMPLETED: 9/1/99

TOP OF CASING ELEVATION: TBD
TOTAL DEPTH: 40.0 FT
GROUND SURFACE ELEVATION: TBD
SHEET 1 OF 1

STATIC WATER LEVEL (BLS)		
WD-While Drilling AB-After Boring		
Depth(ft)	6.0'	5.25'
Time	12:00	9:00
Date:	9/1/99	9/2/99

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
10.0	5 5 6	Ss	61	W		10"		CLAYEY SILTY SAND: Grey clayey silty sand, wet, Fe staining and quartz gravel.
15.0	15 29 34	Ss	62	W		12"		SILTY SAND: Mottled white, tan-pink, grey & rust M-C slightly silty sand, moist, relict rock, quartz, some mica.
20.0	50/4	Ss	63	W		2"		PWR: Wet C sand, partially weathered rock, tan-pink gravel w/ white, brown, & grey mottling, micaceous;
25.0	50/3	Ss	64	W		1"		25.0' same as above;
30.0	50/4	Ss	65	W		2"		30.0' same as above;
35.0	50/2	Ss	66	W		0"		35.0' same as above;
40.0								40.0' Boring terminated at 40'.



North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section
P.O. Box 29578 - Raleigh, N.C. 27626-0578-Phone (919) 733-3221

'VELL CONSTRUCTION RECORD

Well ID: MW-2ad

DRILLING CONTRACTOR: Engineering Tectonics, P.A.
DRILLER REGISTRATION #: 835
STATE WELL CONSTRUCTION PERMIT#:

1. WELL USE (Check Applicable Box): Residential ☐ Municipal ☐ Industrial ☐ Agricultural ☐ Monitoring ☒
Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use:

2. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Aurelian Springs County: Halifax
Liles Road
(Road, Community, or Subdivision and Lot No.)

3. OWNER Halifax County
ADDRESS
(Street or Route No.)
Halifax NC
City or Town State Zip Code

4. DATE DRILLED 9/1/99
5. TOTAL DEPTH 40.0
6. CUTTINGS COLLECTED YES ☐ NO ☒
7. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
8. STATIC WATER LEVEL Below Top of Casing: 5.26 FT.
(Use '+' if Above Top of Casing)
9. TOP OF CASING IS 2.5 FT. Above Land Surface *
* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .01 18
10. YIELD(gpm): METHOD OF TEST
11. WATER ZONES (depth):

12. CHLORINATION: Type Amount

DEPTH From	To	DRILLING LOG Formation Description
See attached boring log		

If additional space is needed use back of form

13. CASING:

	Depth From	TO	Ft.	Diameter	Wall Thickness or Weight/Ft	Material
	2.0	30.0		2"		PVC

14. GROUT:

	Depth From	TO	Ft.	Material	Method
	0	26.0		Portland cement	Tremie
	26.0	28.0		Bentonite	

15. SCREEN:

	Depth From	TO	Ft	Diameter	Slot Size	Material
	30.0	40.0		2 in.	10 in.	PVC
				in.	in.	
				in.	in.	

16. SAND/GRAVEL PACK:

	Depth From	To	Ft.	Size	Material
	28.0	40.0		No. 2 Filter Sand	

17. REMARKS:

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

FOR OFFICE USE ONLY
Quad No:

SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Water Quality and copy to well owner.

FIELD BOREHOLE LOG

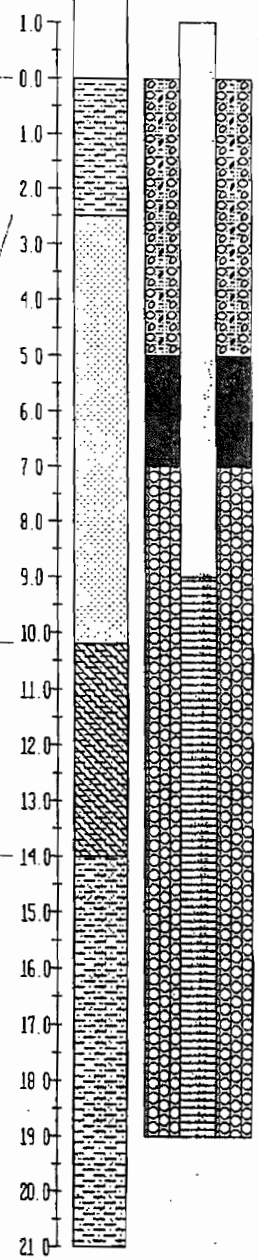
BOREHOLE NUMBER: MW-3A-S

PROJECT NUMBER HALIFAX-2
PROJECT NAME HALIFAX COUNTY LANDFILL
LOCATION HALIFAX, NC
DRILLING COMPANY BORE & CORE
RIG TYPE & NUMBER MOBILE B-57 ATV
DRILLING METHOD HOLLOW STEM AUGER
WEATHER HOT, HUMID
FIELD PARTY BILL BROW
GEOLOGIST DAVID GARRETT
DATE BEGUN 7/25/95 DATE COMPLETED 7/25/95

TOP OF CASING ELEVATION -
TOTAL DEPTH 21
GROUND SURFACE ELEVATION -
SHEET 1 OF 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	6.0 FT	
Time	3:45PM	
Date	7/25/95	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
1.0								
0.0								SILTY SAND: Loose brwon-gray dry silty fine SAND w/ scattered roots, sticks, and inert debris on surface; SM.
1.0								
2.0				D				
3.0	2	Ss	S1					
4.0	1							SAND: Soft, dark brown wet clayey silty fine SAND w/ small sticks, rounded pebbles; alluvium; CL/ML.
	1							
5.0								
6.0								
7.0								
8.0								
9.0	4	Ss	S2					
10.0	4			W				
	6							
11.0								CLAYEY SILT: Stiff orange-yellow clayey SILT w/ coarse sand, scattered mica; relict rock texture; residual soil; ML; saturated below 11'.
12.0								
13.0								
14.0	6	Ss	S3					SILTY SAND: Orange-white mottled silty fine-coarse SAND, trace clay, mica; residual soil, weathered granite; SM.
15.0	6							
	7							
16.0								
17.0								
18.0								
19.0	8	Ss	S4					
20.0	9							
	13							
21.0								



N. C. Department of Human Resources
Division of Health Services

MW 6S

WELL COMPLETION RECORD

...MPLETE ALL INFORMATION REQUESTED BELOW FOR EACH WELL INSTALLED, AND RETURN FORM TO THE N.C
...EPARTMENT OF HUMAN RESOURCES, SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH
...P. O. BOX 2091, RALEIGH, N.C. 27602

SOLID WASTE SECTION
JAN 27 ...

NAME OF SITE: Halifax County Landfill	PERMIT NO.: 41-0176-WM-0033
ADDRESS: S.R. 1417 Aurelian Springs, N.C.	OWNER (print): Halifax County
DRILLING CONTRACTOR: Bore and Core, Inc.	REGISTRATION NO.: 763

Casing Type:	PVC	dia.	2	in.	Grout Depth:	from	0	to	-6'	ft. - dia.	7 in
Casing Depth:	from 2'2	to	-8'8	ft. - dia.	2 in.	Bentonite Seal:	from	-6	to	-7'	ft. - dia. 7 in
Screen Type:	.010 slotted PVC	dia.	2	in.	Sand/Gravel PK:	from	-7	to	-23	ft. - dia. 7 in	
Screen Depth:	from -8'8	to	-23'	ft. - dia.	2 in.	Total Well Depth:	from	3	to	-23'	ft. - dia. 7 in

Static Water Level: 11'4" ~~feet from top of casing~~ below ground surface Date Measured 1 / 6 / 92

Yield (gpm): _____ Method of Testing: _____ Casing is _____ feet above land surface

DRILLING LOG

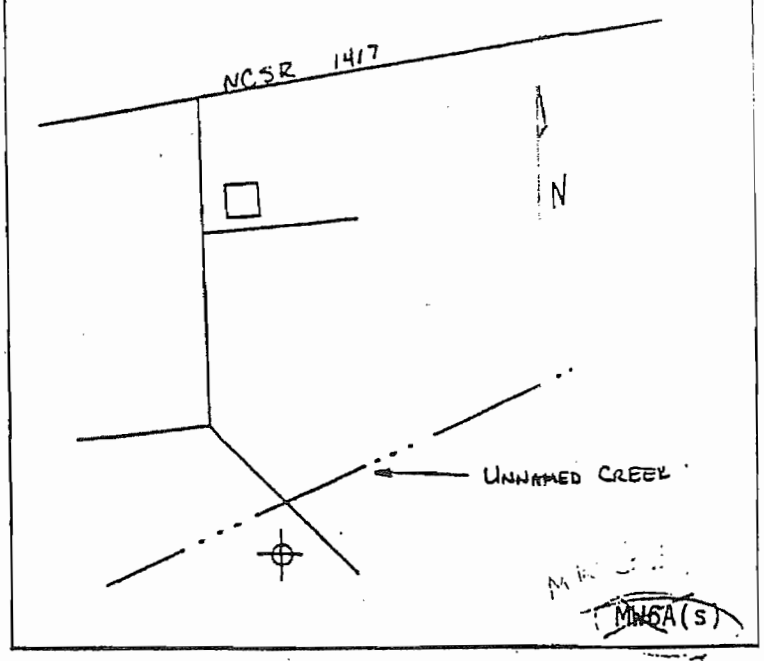
DEPTH FROM	TO	FORMATION DESCRIPTION
0.0	8.4	Brown fine sandy silt
8.4	23.0	Wet, brown, silty fine to medium sand

Well numbering scheme changed on 12-13-93 to match scheme used during past sampling episodes.

LK

LOCATION SKETCH

(show distance to numbered roads, or other map reference points)



DATE: 1/6/92 SIGNATURE: John D Barnard

S 3342 (6/85)

MW 6S

MW 6 S

TEST BORING FIELD REPORT

MW-7

Name Halifax County Landfill Aurelian Springs, N.C. Job No. 3720

ield Supervisor Tony Crew Ken Hrs. Drilling ___ Hrs. Moving ___ ~~MW6A(s)~~ Boring # ___

a e 1/6/92 Weather Cool Ground Surface Elevation ___

Soil Strata			Sampling/Blows per F				
c...	To	Soil Description and Remarks	No.	Depth	1st6"	2nd6"	3r
.0	8.4	Brown fine sandy silt					
..	23.0	Wet brown silty fine to medium sand/gravel B.T. 23.0'					
		Set 2"x 15' screen at 23.0 with 10' riser 4 bags sand					
		½ bucket bentonite, grout to top, 1 2" locking cap 1 4"x 5'					
		protective casing					

Level 11'4" at TOB

Level ___ at ___

t Level ___ at 24 Hours

t r Losses ___

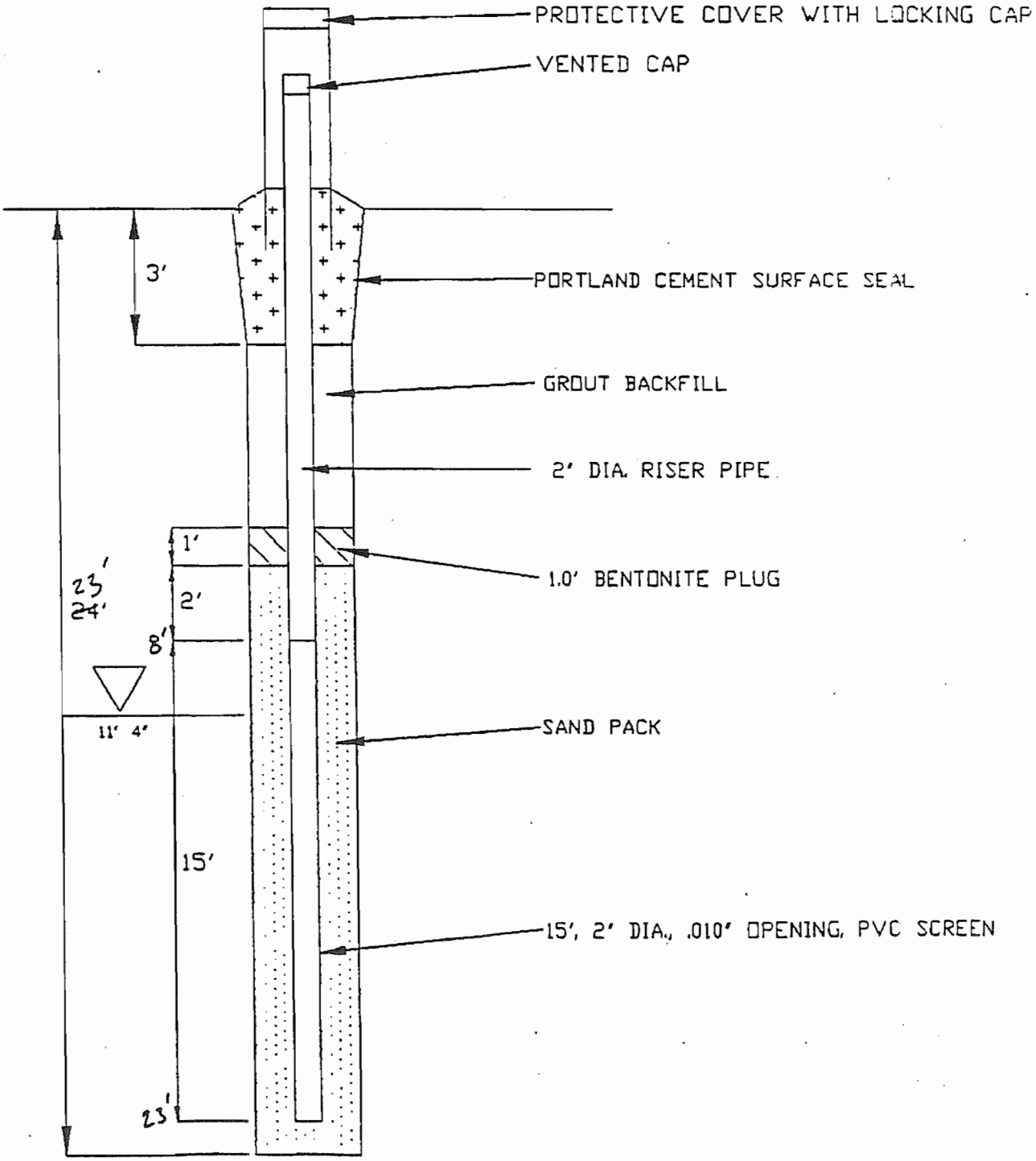
sing, Size Length ___

Note: (Record Methods of Drilling & Depths)

CME 450 ATV
4¼" I.D. H.S.A.
0.0' - 23.0'

TYPICAL MONITORING WELL SCHEMATIC

PROJECT HALIFAX COUNTY LANDFILL VERTICAL EXPANSION
WELL NUMBER MW-6a(s)



WELL COMPLETION RECORD

MW-6A MW-6d

'I ETE ALL INFORMATION REQUESTED BELOW FOR EACH WELL INSTALLED, AND RETURN FORM TO THE N.C. ' MENT OF HUMAN RESOURCES, SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH, 91, RALEIGH, N.C. 27602

OF SITE: Halifax County Sanitary Landfill	PERMIT NO.: 41-0176-WM-0033
ES: R. 1417 Aurelian Springs, N.C.	OWNER (print): Halifax County
G CONTRACTOR: ore & Core, Inc.	REGISTRATION NO.: 763

Type:	PVC dia. 2 in.	Grout Depth:	from 0' to -21' ft. - dia. 4 in.
Depth:	from 2' to -25 ft. - dia. 2 in.	Bentonite Seal:	from -21' to -23 ft. - dia. 4 in.
Type:	slotted .010 dia. 2 in.	Sand/Gravel PK:	from -23 to -40 ft. - dia. 4 in.
Depth:	from -25 to -40 ft. - dia. 2 in.	Total Well Depth:	from 2' to -41 ft. - dia. 4 in.

Water Level: 11' 7" Below ground surface ~~feet from top of casing~~ Date Measured 11 / 26 / 91

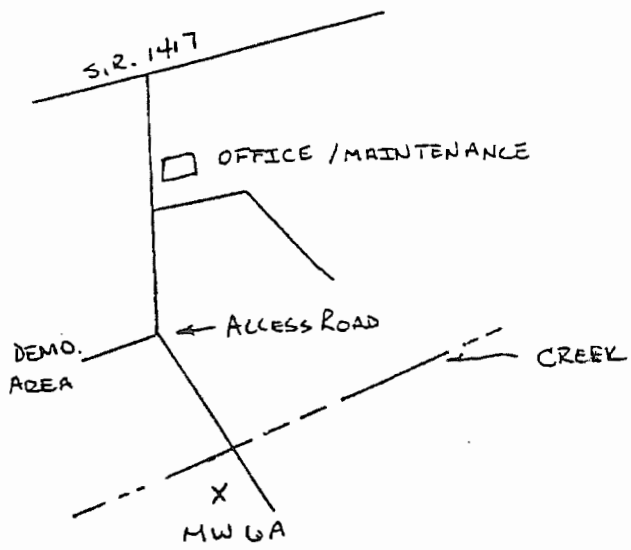
(m): _____ Method of Testing: _____ Casing is _____ feet above land surface

DRILLING LOG

DEPTH FROM	TO	FORMATION DESCRIPTION
	2.8	Brown fine sandy silt
	10.6	Brown medium to fine silt
C 6	22.4	Damp DrkBr.Med. sandy silt
2.4	40.0	Wet Br. fine sandy silt

LOCATION SKETCH

(show distance to numbered roads, or other map reference points)



RKS: Well screened too deep.
Static water level is above the screen.

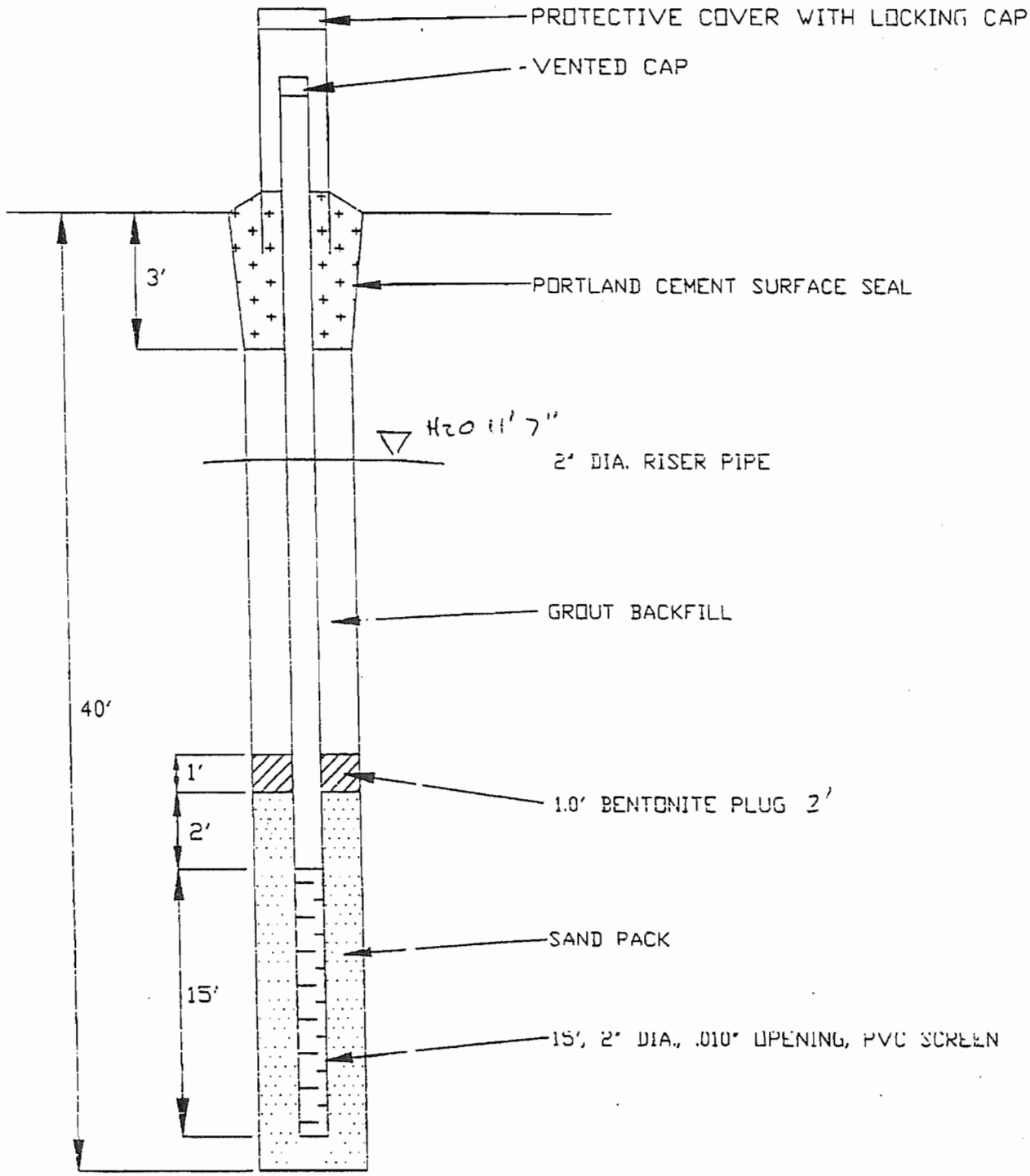
_____ SIGNATURE: _____

3342 (6/85)
& Hazardous Waste Management Branch

TYPICAL MONITORING WELL SCHEMATIC

PROJECT HALIFAX COUNTY LANDFILL VERTICAL EXPANSION
WELL NUMBER MW-6A

6d



TEST BORING FIELD REPORT

MW6d

Name Halifax County Landfill Vertical Expansion Job No. _____

Supervisor Tony Crew Ben Hrs. Drilling ____ Hrs. Moving ____ Boring # MW6

a e 10/30/91 Weather _____ Ground Surface Elevation _____

Soil Strata			Sampling/Blows per Ft.				
o	To	Soil Description and Remarks	No.	Depth	1st6"	2nd6"	3rd6"
.0	2.8	Brown fine sandy silt w/rocks					
.8	10.6	Brown medium to fine sandy silt					
.6	22.4	Damp dark brown medium sandy silt					
.4	40.0	Wet brown fine sandy silt					
		B.T. 40.0					
		Set 2"x15' PVC screen at 40.0 with 30' PVC riser 4 bags					
		sand, ½ bucket bentonite 1 2" locking cap, 1 4"x5'					
		protective casing					

ter Level _____ at TOB

er Level _____ at _____

er Level _____ at 24 Hours

Losses _____

sing, Size _____ Length _____

Note: (Record Methods of Drilling & Depths)

CME 450 ATV
4¼" ID hollow stem auger
0.0 - 40.0

N. C. Department of Human Resources
Division of Health Services

MW 7S

WELL COMPLETION RECORD

)MPLETE ALL INFORMATION REQUESTED BELOW FOR EACH WELL INSTALLED, AND RETURN FORM TO THE N.C
EPARTMENT OF HUMAN RESOURCES, SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH
P. O. BOX 2091, RALEIGH, N.C. 27602

NAME OF SITE: Halifax County Landfill	PERMIT NO.: 41-0176-WW-0033
ADDRESS: S.R. 141/ Aurelian Springs, NC	OWNER (print): Halifax County
DRILLING CONTRACTOR: Bore and Core, Inc.	REGISTRATION NO.: 763

Casing Type: PVC dia. 2 in. Grout Depth: from 0 to -1 ft. - dia. 7 in
Casing Depth: from 2.5 to -2.5 ft. - dia. 2 in. Bentonite Seal: from -1 to -2 ft. - dia. 7 in
Screen Type: .010 slotted PVC dia. 2 in. Sand/Gravel PK: from -2 to -17 ft. - dia. 7 in
Screen Depth: from -2.5 to -17.5 ft. - dia. 2 in. Total Well Depth: from 2.5 to -17.5 ft. - dia. 7 in

Static Water Level: 3'2" ~~feet from top of casing~~ below ground surface Thin sand pack between bentonite + screen. Date Measured 1 / 7 / 92

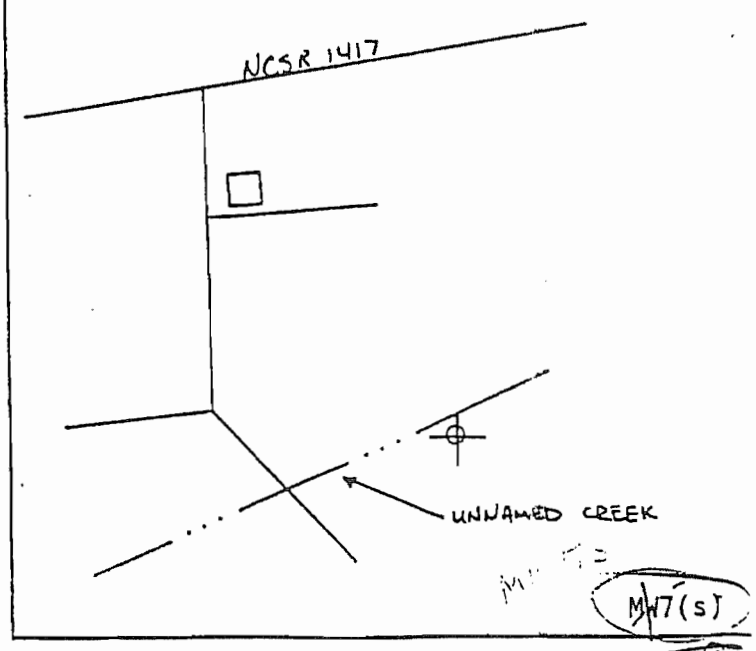
Yield (gpm): _____ Method of Testing: _____ Casing is _____ feet above land surface

DRILLING LOG

DEPTH FROM	TO	FORMATION DESCRIPTION
.0	3.4	Brown fine to medium sandy silt
.4	17.0	Damp brown fine to medium sand/gravel

LOCATION SKETCH

(show distance to numbered roads, or other map reference points)



REMARKS: _____

DATE: 1-7-92 SIGNATURE: John O Barnard

MW 7S

TEST BORING FIELD REPORT

Name Halifax County Landfill - Aurelian Springs, N.C. Job No. 3720

Field Supervisor Tony Crew Ken Hrs. Drilling ___ Hrs. Moving ___ Boring # MW7S

Date 1-7-92 Weather Cool Ground Surface Elevation ___

Soil Strata			Sampling/Blows per				
From	To	Soil Description and Remarks	No.	Depth	1st6"	2nd6"	3
0.0	3.4	Brown fine to medium sandy silt					
3.4	17.0	Damp brown fine to medium sand/gravel B.T. 17.0					
		Set 2"x 15' screen at 17.~~0~~5' with 5.0' riser 4 bags					
		sand, ½ bucket bentonite, grout to top. 1, 2" locking cap					
		1, 4"x 5' protective casing.					

Water Level 3'2" at TOB
Water Level ___ at ___
Water Level ___ at 24 Hours

Water Losses ___

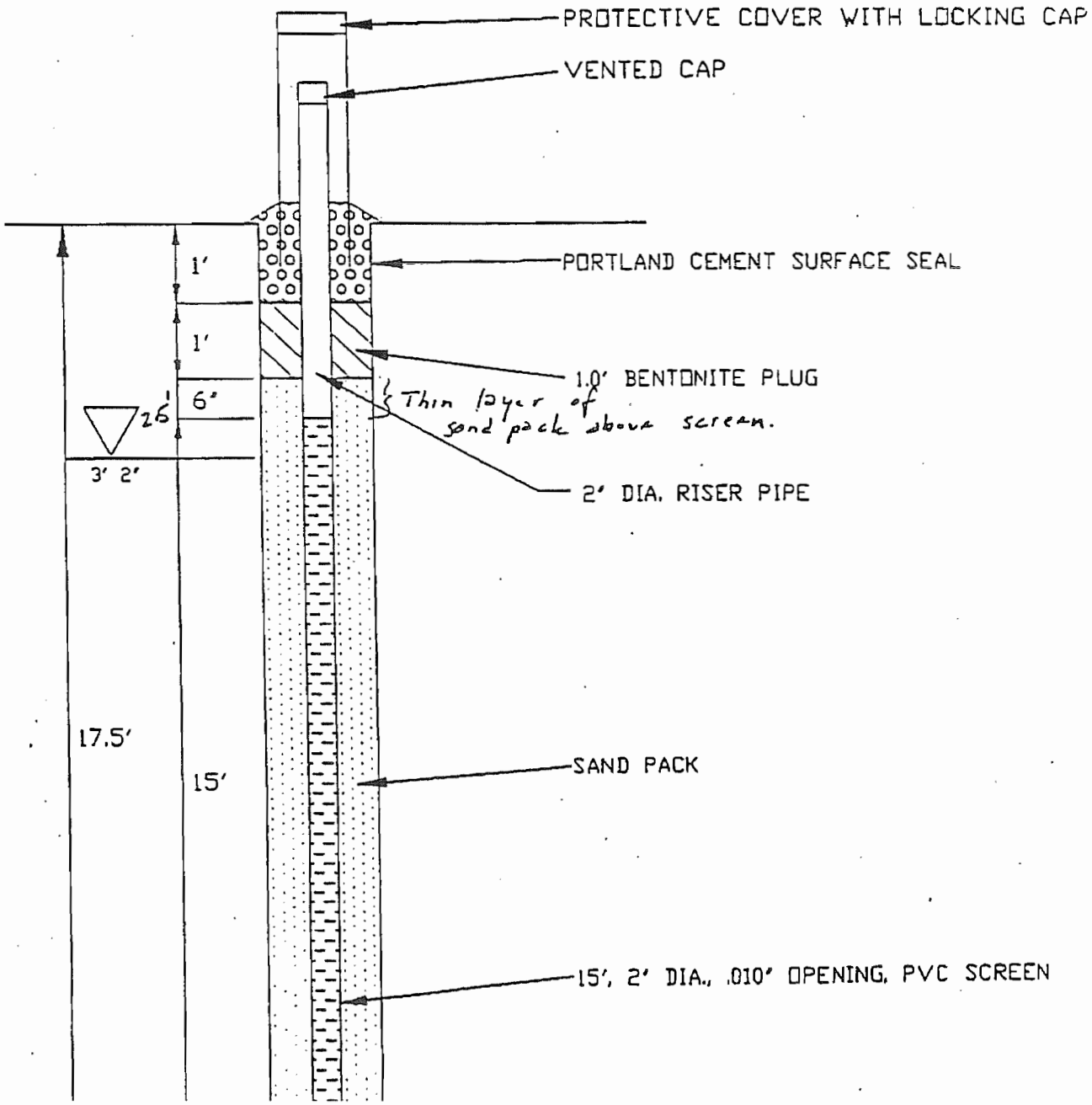
Casing, Size ___ Length ___

Note: (Record Methods of Drilling & Depths)

CME 450 ATV
4¼" I.D. H.S.A.
0.0' - 17.0'

TYPICAL MONITORING WELL SCHEMATIC

PROJECT HALIFAX COUNTY LANDFILL VERTICAL EXPANSION
WELL NUMBER MW-7(s)



WELL COMPLETION RECORD

MW-7 MW-7d

'I ETE ALL INFORMATION REQUESTED BELOW FOR EACH WELL INSTALLED, AND RETURN FORM TO THE N.C. ' MENT OF HUMAN RESOURCES, SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH, 091, RALEIGH, N.C. 27602

.C.F SITE: ifax County Sanitary Landfill	PERMIT NO.: 41-0176-WM-0033
.E S: .. 1417 Aurelian Springs, N.C.	OWNER (print): Halifax County
.I G CONTRACTOR: 'e & Core, Inc.	REGISTRATION NO.: 763

'pe:	PVC	dia.	2 in.	Grout Depth:	from	0	to	-21'	ft. - dia. 4" in.
epth:	from 2	to -25	ft. - dia. 2 in.	Bentonite Seal:	from	-21'	to	-23'	ft. - dia. 4" in.
Type:	slotted PVC .010	dia.	2 in.	Sand/Gravel PK:	from	-23'	to	40'	ft. - dia. 4" in.
Depth:	from -25	to -40	ft. - dia. 2 in.	Total Well Depth:	from	2'	to	-40'	ft. - dia. 4" in.

W. ater Level: 3' 11" Below ground surface feet from top of casing Date Measured 11 / 26 / 91

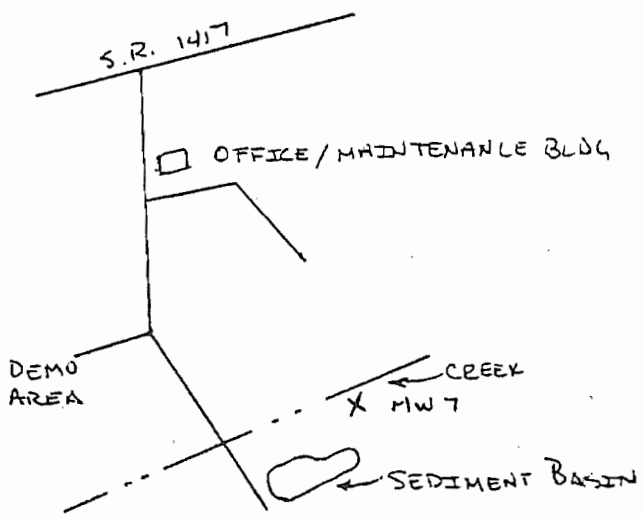
(g m): _____ Method of Testing: _____ Casing is _____ feet above land surface

DRILLING LOG

DEPTH FROM	TO	FORMATION DESCRIPTION
	1.4	Brown fine sandy silt
4	6.7	Brown fine sandy silt
.7	14.3	Damp DrkBr. fine very sandy silt.
4 ?	40.0	Wet Brown medium sandy silt/gravel

LOCATION SKETCH

(show distance to numbered roads, or other map reference points)



1 RKS: Well screened too deep.
Static water table is above the screen.

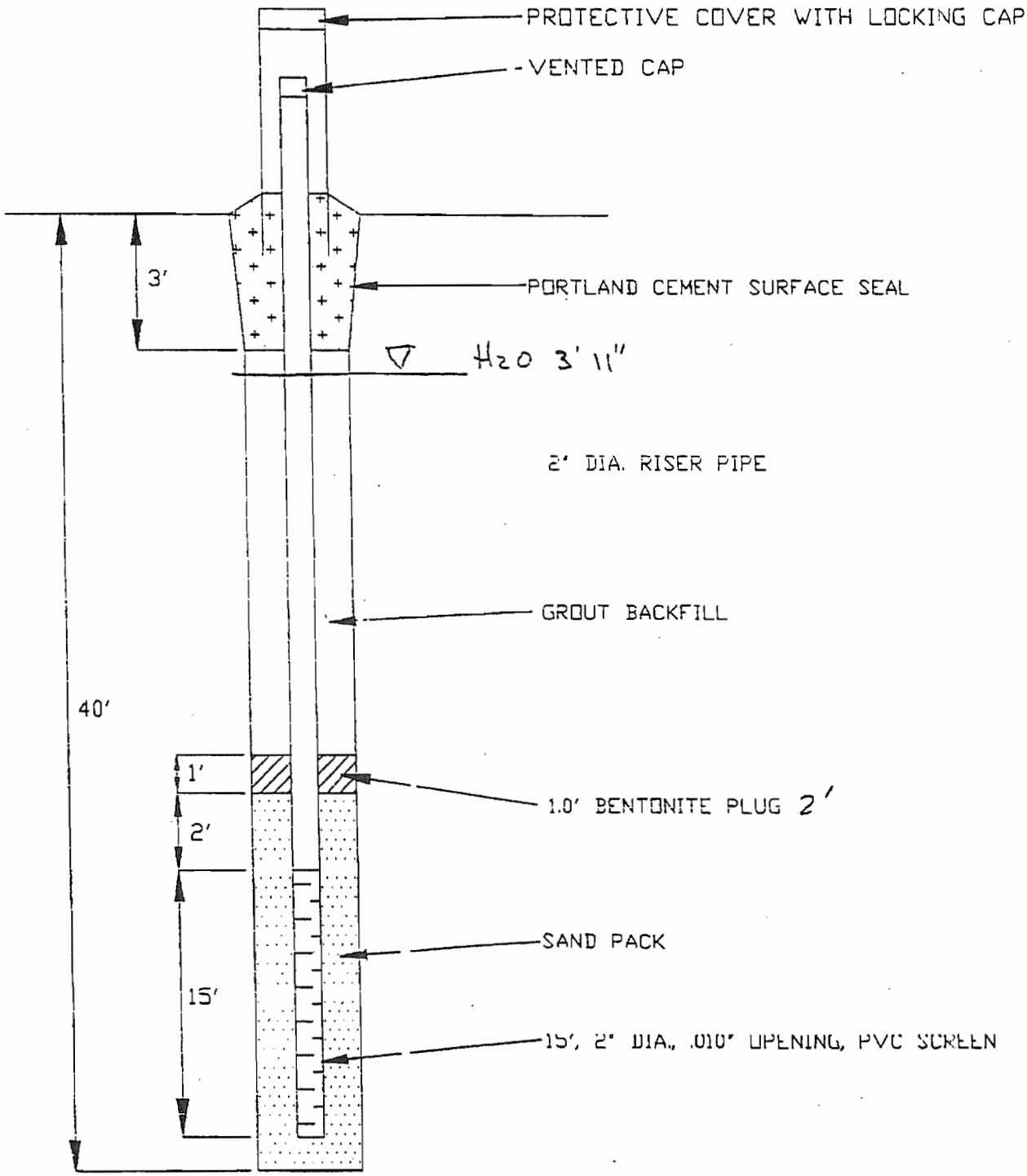
SIGNATURE: _____

3342 (6/85)
& Hazardous Waste Management Branch

TYPICAL MONITORING WELL SCHEMATIC

PROJECT HALIFAX COUNTY LANDFILL VERTICAL EXPANSION
WELL NUMBER MW-7

7d



TEST BORING FIELD REPORT

MW7d

Name Halifax County Landfill Vertical Expansion Job No. _____

Supervisor Tony Crew Ben Hrs. Drilling ____ Hrs. Moving ____ Boring # MW7

Date 10/31/91 Weather _____ Ground Surface Elevation _____

Soil Strata			Sampling/Blows per Ft				
From	To	Soil Description and Remarks	No.	Depth	1st6"	2nd6"	3rd6"
.0	1.4	Brown fine sandy silt with roots					
.4	6.7	Brown fine sandy silt					
.	14.3	Damp dark brown fine very sandy silt					
.3	40.0	Wet brown medium sandy silt with gravel B.T. 40.0					
		Set 2" PVC screen (15') at 40.0 with 30' PVC riser 4 bags					
		sand, ½ bucket Bentonite 1 2" locking cap, 1 4"x5'					
		protective casing					

ater Level _____ at TOB

er Level _____ at _____

Level _____ at 24 Hours

Losses _____

asing, Size _____ Length _____

Note: (Record Methods of Drilling & Depths)

CME 450 ATV
4¼" ID hollow stem auger
0.0 - 40.0

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-15R

PROJECT NUMBER: HALIFAX-14
PROJECT NAME: Halifax County Landfill
LOCATION: Aurelian Springs, North Carolina
DRILLING COMPANY: Engineering Tectonics, P.A.
RIG TYPE & NUMBER: MOBILE B-60
DRILLING METHOD: Hollow Stem Auger
WEATHER: Cloudy, 70 degrees
FIELD PARTY: David Barron
GEOLOGIST: Philip May
DATE BEGUN: 8/31/99 DATE COMPLETED: 8/31/99

TOP OF CASING ELEVATION TBD
TOTAL DEPTH 43.0 FT
GROUND SURFACE ELEVATION: TBD
SHEET: 1 OF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(Ft)	31.5'	31.55'
Time	2:00	12:00
Date	8/31/99	9/1/99

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
5.0	5 6 8	Ss	81	SM		8"		SANDY CLAYEY SILT: Slightly moist rust-brown F sandy clayey silt, mottled (20%) w/ grey clay & some gravel, lower 1" moist white F sandy silt w/ rust mottling, some Mn & quartz throughout.
10.0	6 10 15	Ss	82	SM		12"		CLAYEY SILTY SAND: Slightly moist tan-pink clayey silty F sand w/ grey, white, yellow, & rust mottles (50%);
15.0	9 12 15	Ss	83	SM		12"		15.0' same as above, grading into rust orange matrix w/ other mottles, some mica & quartz.
20.0	10 14 17	Ss	84	M		12"		SANDY CLAYEY SILT: Moist M-C sandy clayey silt, mottled tan-pink, grey-black, white, & rust, quartz gravel;
25.0	8 11 15	Ss	85	M		6"		25.0' Moist M-C sandy clayey silt, grey-tan-pink, brown-black, grey-tan, & white mottles, quartz, Feldspar, Mn, Mica;
30.0	9 17 25	Ss	86	M		8"		30.0' same as above;
35.0	20 29 11	Ss	87	W		12"		35.0' same as above, very moist;
43.0	11 20 33	Ss	88	W		14"		43.0' same as above, wet, boring terminated at 43.0'.

LITHOLOGY

WELL INSTALLATION

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section
P.O. Box 29578 - Raleigh, N.C. 27626-0578-Phone (919) 733-3221

WELL CONSTRUCTION RECORD

Well ID: MW-15r

DRILLING CONTRACTOR: Engineering Tectonics, P.A.
DRILLER REGISTRATION #: 835
STATE WELL CONSTRUCTION PERMIT#:

1. WELL USE (Check Applicable Box): Residential ☐ Municipal ☐ Industrial ☐ Agricultural ☐ Monitoring ☒
Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use:

2. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Aurelian Springs County: Halifax
Liles Road
(Road, Community, or Subdivision and Lot No.)

3. OWNER Halifax County
ADDRESS
(Street or Route No.)
Halifax NC
City or Town State Zip Code

4. DATE DRILLED 8/31/99
5. TOTAL DEPTH 43.0
6. CUTTINGS COLLECTED YES ☐ NO ☒
7. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
8. STATIC WATER LEVEL Below Top of Casing: 31.55 FT
(Use + if Above Top of Casing)
9. TOP OF CASING IS 2.5 FT. Above Land Surface *
* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .01 18
10. YIELD(gpm): METHOD OF TEST
11. WATER ZONES (depth):

DEPTH From	DEPTH To	DRILLING LOG Formation Description
See attached boring log		

If additional space is needed use back of form

12. CHLORINATION: Type Amount

13. CASING:

	Depth From	Depth TO	Ft.	Diameter	Wall Thickness or Weight/Ft	Material
	2.0	33.0		2"		PVC

14. GROUT:

	Depth From	Depth TO	Ft.	Material	Method
	0	29.0		Portland cement	Tremie
	29.0	31.0		Bentonite	

15. SCREEN:

	Depth From	Depth TO	Ft	Diameter	in.	Slot Size	in.	Material
	33.0	43.0		2		10		PVC

16. SAND/GRAVEL PACK:

	Depth From	Depth To	Ft.	Size	Material
	31.0	43.0		No. 2 Filter Sand	

17. REMARKS:

LOCATION SKETCH
(Show direction and distance from at least two State Roads, or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

FOR OFFICE USE ONLY
Quad No:

SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Water Quality and copy to well owner.

FIELD BOREHOLE LOG

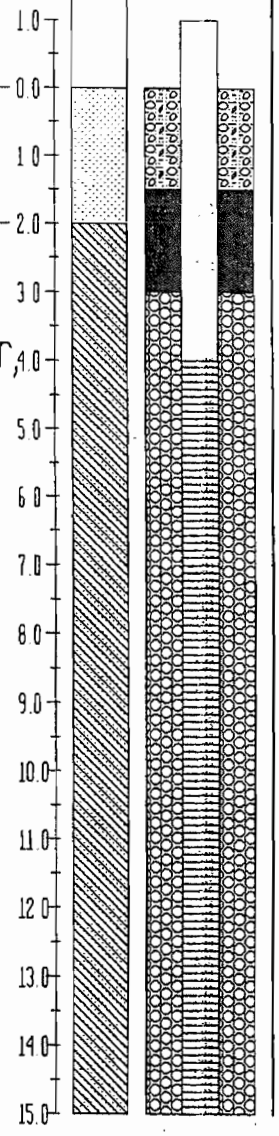
BOREHOLE NUMBER: MW-16A

PROJECT NUMBER HALIFAX-2
PROJECT NAME HALIFAX COUNTY LANDFILL
LOCATION HALIFAX, NC
DRILLING COMPANY: BORE & CORE
RIG TYPE & NUMBER: MOBILE B-57 ATV
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER HOT, HUMID
FIELD PARTY: BILL BROW
GEOLOGIST: GREG MILLS
DATE BEGUN: 7/26/95 DATE COMPLETED: 7/26/95

TOP OF CASING ELEVATION -
TOTAL DEPTH 16.0
GROUND SURFACE ELEVATION -
SHEET 1 OF 1

STATIC WATER LEVEL (BLS)		
WO=While Drilling AB=After Boring		
Depth(Ft)	7.2 FT	
Time	3:00 PM	
Date	7/26/95	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
1.0								
0.0								SAND: Tan coarse grained SAND w/ some organics.
1.0								
2.0				D				CLAYEY SAND: White, pink and orange coarse grained clayey SAND with mica, feldspar, K-feldspar, and some quartz; weathered granite; residual soil; SC.
3.0								
4.0	6	Ss	S1					
5.0	7 9							
6.0								
7.0								
8.0								
9.0	5	Ss	S2					
10.0	8 8			W				
11.0								
12.0								
13.0								
14.0	86	Ss	S3					
15.0	50/0	4'						



Richardson Smith Gardner and Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

BOREHOLE NUMBER **MW-17**

PROJECT NAME: **Halifax Landfill**
OCATION: **Halifax Co.**
DRILLING CO: **McCall Bros.**
DRILLING METHOD: **HSA**
FIELD PARTY: **Ken McDonald**
GEOLOGIST: **J. Smyth**
DATE BEGUN: **10/03/07** DATE COMPLETED: **10/03/07**

TOTAL DEPTH: **25**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
0.0				HSA	SILTY CLAY: Wet, dark brown silty clay with organic matter.		0.0	
1.0							1.0	
2.0							2.0	
3.0							3.0	
4.0							4.0	
5.0	2,2,4,6	SS	16"				5.0	
6.0							6.0	
7.0							7.0	
8.0							8.0	
9.0							9.0	
10.0	4,6,10,12	SS	14"		SAPROLITE: Wet, very weathered to weathered K-spar granitic saprolite. Boring terminated at 25' below grade.		10.0	
11.0							11.0	
12.0							12.0	
13.0							13.0	
14.0							14.0	
15.0	11,16,22,27	SS	8"				15.0	
16.0							16.0	
17.0							17.0	
18.0							18.0	
19.0							19.0	
20.0	7,22,29,33	SS	6"				20.0	
21.0							21.0	
22.0							22.0	
23.0							23.0	
24.0							24.0	
25.0							25.0	

Richardson Smith Gardner and Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

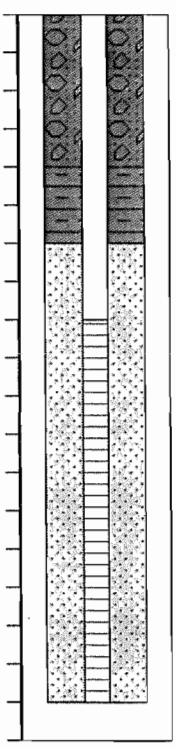
BOREHOLE NUMBER **MW-18s**

PROJECT NAME: **Halifax Landfill**
LOCATION: **Halifax Co.**
DRILLING CO: **McCall Bros.**
DRILLING METHOD: **HSA**
FIELD PARTY: **Ken McDonald**
GEOLOGIST: **J. Smyth**
DATE BEGUN: **10/16/07** DATE COMPLETED: **10/16/07**

TOTAL DEPTH: **19**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
0.0				HSA	SILTY CLAY: Moist to Wet gray green silty clay		0.0	
1.0							1.0	
2.0							2.0	
3.0							3.0	
4.0							4.0	
5.0	2,2,1,2	SS	6"				5.0	
6.0							6.0	
7.0							7.0	
8.0							8.0	
							9.0	
10.0	3,2,3,11	SS	8"		CLAYEY SILTY SAND: Wet, dark gray, clayey silty sand with some partially weathered rock.		10.0	
11.0							11.0	
12.0							12.0	
13.0							13.0	
14.0							14.0	
15.0	18,26,27,26	SS	12"		SAPROLITE: Wet weathered potassium feldspar granite saprolite. Auger Refusal at 19 feet. Running sands backfilled hole to 18' where well was then set.		15.0	
16.0							16.0	
17.0							17.0	
18.0							18.0	
19.0							19.0	



Richardson Smith Gardner and Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

BOREHOLE NUMBER **MW-18d**

PROJECT NAME: **Halifax Landfill**
LOCATION: **Halifax Co.**
DRILLING CO: **McCall Bros.**
DRILLING METHOD: **HSA**
FIELD PARTY: **Ken McDonald**
GEOLOGIST: **J. Smyth**
DATE BEGUN: **10/16/07** DATE COMPLETED: **10/17/07**

TOTAL DEPTH: **52**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
0.0				HSA	SILTY CLAY: Moist to Wet gray green silty clay		0.0	
1.0							1.0	
2.0							2.0	
3.0							3.0	
4.0							4.0	
5.0	2,2,1,2	SS	6"				5.0	
6.0							6.0	
7.0							7.0	
8.0							8.0	
							9.0	
10.0	3,2,3,11	SS	8"		CLAYEY SILTY SAND: Wet, dark gray, clayey silty sand with some partially weathered rock.		10.0	
11.0							11.0	
12.0							12.0	
13.0							13.0	
14.0							14.0	
15.0	18,26,27,26	SS	12"		SAPROLITE: Wet weathered potassium feldspar granite saprolite. Auger Refusal at 32 feet.		15.0	
16.0							16.0	
17.0							17.0	
18.0							18.0	
19.0							19.0	
20.0		Grab					20.0	
21.0							21.0	
22.0							22.0	
23.0							23.0	
24.0							24.0	
25.0		Grab					25.0	
26.0							26.0	
27.0							27.0	
28.0							28.0	
29.0							29.0	
		Grab					30.0	

Richardson Smith Gardner and Assoc
14 North Boylan Avenue, Raleigh NC 27603
(919) 828-0577

FIELD BOREHOLE LOG

BOREHOLE NUMBER **MW-18d**

PROJECT NAME: **Halifax Landfill**
LOCATION: **Halifax Co.**
DRILLING CO: **McCall Bros.**
DRILLING METHOD: **HSA**
FIELD PARTY: **Ken McDonald**
GEOLOGIST: **J. Smyth**
DATE BEGUN: **10/16/07** DATE COMPLETED: **10/17/07**

TOTAL DEPTH: **52**
GROUND SURFACE ELEVATION:
TOP OF CASING ELEVATION:

STATIC WATER LEVEL (TOC)		
Depth (ft)		
Time		
Date		

DEPTH	BLOW COUNT	SAMPLING METHOD	RECOVERY	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH	WELL INSTALLATION
31.0							31.0	
32.0				AH	GRANITE: Wet Potassium Feldspar Granite (observed by cuttings). Boring terminated at 52'.		32.0	
33.0							33.0	
34.0							34.0	
35.0		Grab					35.0	
36.0							36.0	
37.0							37.0	
38.0							38.0	
39.0							39.0	
40.0		Grab					40.0	
41.0							41.0	
42.0							42.0	
43.0							43.0	
44.0							44.0	
45.0		Grab					45.0	
46.0							46.0	
47.0							47.0	
48.0							48.0	
49.0							49.0	
50.0		Grab					50.0	
51.0							51.0	
52.0							52.0	

Appendix B

Laboratory Analytical Report

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/19/09
DATE REPORTED : 09/21/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-2A	MW-2AD	MW-6D	MW-3AS	MW-3AD	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.0	6.2	5.8	6.0	5.7	08/19/09	RJH	SM4500HB
Antimony, ug/l	0.06	6.0	0.1 J	0.1 J	--- U	--- U	0.4 J	09/03/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0	2. J	1.4 J	0.3 J	1.8 J	0.2 J	09/03/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	113	129	575	71.2 J	58.2 J	09/03/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0	0.3 J	0.1 J	0.4 J	0.1 J	0.2 J	09/03/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	--- U	0.1 J	0.3 J	--- U	0.1 J	09/03/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	7.8 J	6.3 J	2.6 J	3.2 J	0.1 J	09/03/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	0.3 J	0.7 J	0.6 J	1 J	0.3 J	09/03/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	--- U	--- U	--- U	--- U	--- U	09/03/09	LFJ	EPA200.8
Lead, ug/l	0.04	10.0	0.1 J	0.2 J	0.1 J	0.2 J	0.1 J	09/03/09	LFJ	EPA200.8
Mercury, ug/l	0.03	0.20	0.06 J	0.11 J	0.08 J	0.05 J	0.15 J	09/03/09	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	1.2 J	2.9 J	2.9 J	1.2 J	0.5 J	09/03/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	--- U	0.5 J	1.4 J	0.9 J	--- U	09/03/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	0.1 J	0.1 J	0.1 J	0.1 J	09/03/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0	--- U	0.2 J	0.1 J	0.1 J	0.1 J	09/03/09	LFJ	EPA200.8
Tin, ug/l	0.08	100.0	0.3 J	0.3 J	0.3 J	0.5 J	0.2 J	09/03/09	LFJ	EPA200.8
Vanadium, ug/l	0.28	25.0	1.8 J	1 J	0.9 J	1.3 J	1 J	09/03/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	3 J	3.8 J	6.3 J	1.6 J	2 J	09/03/09	LFJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	249	526	442	601	142	08/19/09	RJH	SM2510B
Temperature, °C			24	19	19	20	19	08/19/09	RJH	SM2550B
Static Water Level, feet			5.47	5.02	12.89	9.20	8.56	08/19/09	RJH	
Well Depth, feet			17.21	41.25	43.55	22.89	52.07	08/19/09	RJH	

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/19/09
DATE REPORTED : 09/21/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	BP-3	BP-9	Analysis Date	Analyst	Method Code
Static Water Level, feet			32.61	31.47	08/19/09	RJH	

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/21/09
DATE ANALYZED: 09/10/09
DATE REPORTED: 09/21/09

REVIEWED BY:

PESTICIDES AND PCB'S
EPA METHOD 8081A

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-2AD	MW-6D	MW-3AS	MW-3AD
1. Aldrin	0.029	0.05	--- U	--- U	--- U	--- U	--- U
2. Alpha-BHC	0.032	0.05	--- U	--- U	--- U	--- U	--- U
3. Beta-BHC	0.031	0.05	--- U	--- U	--- U	--- U	--- U
4. Delta-BHC	0.030	0.05	--- U	--- U	--- U	--- U	--- U
5. Gamma-BHC (Lindane)	0.032	0.05	--- U	--- U	--- U	--- U	--- U
6. Chlordane	0.320	0.50	--- U	--- U	--- U	--- U	--- U
7. 4,4-DDD	0.051	0.10	--- U	--- U	--- U	--- U	--- U
8. 4,4-DDE	0.049	0.10	--- U	--- U	--- U	--- U	--- U
9. 4,4-DDT	0.052	0.10	--- U	--- U	--- U	--- U	--- U
10. Dieldrin	0.042	0.07	--- U	--- U	--- U	--- U	--- U
11. Endosulfan I	0.056	0.10	--- U	--- U	--- U	--- U	--- U
12. Endosulfan II	0.046	0.10	--- U	--- U	--- U	--- U	--- U
13. Endosulfan Sulfate	0.072	0.10	--- U	--- U	--- U	--- U	--- U
14. Endrin	0.053	0.10	--- U	--- U	--- U	--- U	--- U
15. Endrin Aldehyde	0.068	0.10	--- U	--- U	--- U	--- U	--- U
16. Heptachlor	0.039	0.05	--- U	--- U	0.042 J	--- U	--- U
17. Hepthchlor Epoxide	0.042	0.07	--- U	--- U	--- U	--- U	--- U
18. Methoxychlor	0.530	1.00	--- U	--- U	--- U	--- U	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U	--- U	--- U	--- U	--- U
20. Toxaphene	0.690	1.00	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/26/09
DATE ANALYZED: 09/03/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

LANDFILL APPENDIX II
EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-2AD	MW-6D	MW-3AS	MW-3AD
1. 2,4-D	0.36	2.0	--- U	--- U	--- U	--- U	--- U
2. Dinoseb	0.54	1.0	--- U	--- U	--- U	--- U	--- U
3. 2,4,5-TP	0.42	2.0	--- U	--- U	--- U	--- U	--- U
4. 2,4,5-T	0.47	2.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-2AD	MW-6D	MW-3AS	MW-3AD
1. Acenaphthene	2.66	10.0	--- U	--- U	--- U	--- U	--- U
2. Acenaphthylene	2.60	10.0	--- U	--- U	--- U	--- U	--- U
3. Anthracene	2.97	10.0	--- U	--- U	--- U	--- U	--- U
4. Benzo[a]antrhacene	4.16	10.0	--- U	--- U	--- U	--- U	--- U
5. Benzo[b]fluoranthene	3.32	10.0	--- U	--- U	--- U	--- U	--- U
6. Benzo[k]fluoranthene	4.23	10.0	--- U	--- U	--- U	--- U	--- U
7. Benzo[g,h,i]perylene	2.61	10.0	--- U	--- U	--- U	--- U	--- U
8. Benzo[a]pyrene	3.27	10.0	--- U	--- U	--- U	--- U	--- U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	--- U	--- U	--- U	--- U	--- U
10. Butyl Benzyl Phthalate	5.78	10.0	--- U	--- U	--- U	--- U	--- U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	--- U	--- U	--- U	--- U	--- U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	--- U	--- U	--- U	--- U	--- U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	--- U	--- U	--- U	--- U	--- U
14. 2-Chloronaphthalene	2.17	10.0	--- U	--- U	--- U	--- U	--- U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	--- U	--- U	--- U	--- U	--- U
16. Chrysene	4.04	10.0	--- U	--- U	--- U	--- U	--- U
17. Dibenzo[a,h]anthracene	2.78	10.0	--- U	--- U	--- U	--- U	--- U
18. Di-N-Butyl Phthalate	3.09	10.0	--- U	--- U	--- U	--- U	--- U
19. Dimethyl Phthalate	3.78	10.0	--- U	--- U	--- U	--- U	--- U
20. Diethyl Phthalate	3.92	10.0	--- U	--- U	--- U	--- U	--- U
21. 2,4-Dinitrotoluene	3.95	10.0	--- U	--- U	--- U	--- U	--- U
22. 2,6-Dinitrotoluene	3.88	10.0	--- U	--- U	--- U	--- U	--- U
23. Di-N-Octyl Phthalate	2.81	10.0	--- U	--- U	--- U	--- U	--- U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	--- U	--- U	--- U	--- U	--- U
25. Fluoranthene	3.92	10.0	--- U	--- U	--- U	--- U	--- U
26. Fluorene	2.95	10.0	--- U	--- U	--- U	--- U	--- U
27. Hexachlorobenzene	2.61	10.0	--- U	--- U	--- U	--- U	--- U
28. Hexachlorocyclopentadiene	4.16	10.0	--- U	--- U	--- U	--- U	--- U
29. Indeno[1,2,3-Cd]pyrene	2.91	10.0	--- U	--- U	--- U	--- U	--- U
30. Isophorone	3.74	10.0	--- U	--- U	--- U	--- U	--- U
31. Nitrobenzene	2.85	10.0	--- U	--- U	--- U	--- U	--- U
32. N-Nitrosodimethylamine	4.25	10.0	--- U	--- U	--- U	--- U	--- U
33. N-Nitrosodiphenylamine	3.95	10.0	--- U	--- U	--- U	--- U	--- U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	--- U	--- U	--- U	--- U	--- U
35. Phenanthrene	3.24	10.0	--- U	--- U	--- U	--- U	--- U
36. Pyrene	3.63	10.0	--- U	--- U	--- U	--- U	--- U
37. 4-Chloro-3-Methylphenol	3.79	20.0	--- U	--- U	--- U	--- U	--- U
38. 2-Chlorophenol	2.75	10.0	--- U	--- U	--- U	--- U	--- U
39. O-Cresol	3.68	10.0	--- U	--- U	--- U	--- U	--- U
40. P-Cresol	4.12	10.0	--- U	--- U	--- U	--- U	--- U
41. 2,4-Dichlorophenol	5.19	10.0	--- U	--- U	--- U	--- U	--- U
42. 2,6-Dichlorophenol	4.89	10.0	--- U	--- U	--- U	--- U	--- U
43. 2,4-Dimethylphenol	3.21	10.0	--- U	--- U	--- U	--- U	--- U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	--- U	--- U	--- U	--- U	--- U
45. 2,4-Dinitrophenol	4.37	50.0	--- U	--- U	--- U	--- U	--- U
46. Ethyl Methanesulfonate	5.26	10.0	--- U	--- U	--- U	--- U	--- U
47. Methyl Methanesulfonate	4.92	10.0	--- U	--- U	--- U	--- U	--- U
48. 2-Nitrophenol	3.64	10.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-2AD	MW-6D	MW-3AS	MW-3AD
49. 4-Nitrophenol	3.17	50.0	--- U	--- U	--- U	--- U	--- U
50. Pentachlorophenol	5.33	25.0	--- U	--- U	--- U	--- U	--- U
51. Phenol	1.86	10.0	--- U	--- U	--- U	--- U	--- U
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	--- U	--- U	--- U	--- U	--- U
53. 2,4,5-Trichlorophenol	4.17	10.0	--- U	--- U	--- U	--- U	--- U
54. 2,4,6-Trichlorophenol	3.84	10.0	--- U	--- U	--- U	--- U	--- U
55. Acetophenone	2.89	10.0	--- U	--- U	--- U	--- U	--- U
56. 2-Acetylaminofluorene	3.98	20.0	--- U	--- U	--- U	--- U	--- U
57. 4-Aminobiphenyl	4.12	20.0	--- U	--- U	--- U	--- U	--- U
58. Benzyl Alcohol	4.47	20.0	--- U	--- U	--- U	--- U	--- U
59. 4-Chloroaniline	3.36	20.0	--- U	--- U	--- U	--- U	--- U
60. Chlorobenzilate	5.12	10.0	--- U	--- U	--- U	--- U	--- U
61. Diallate	2.98	10.0	--- U	--- U	--- U	--- U	--- U
62. Dibenzofuran	4.28	10.0	--- U	--- U	--- U	--- U	--- U
63. 3,3-Dichlorobenzidine	4.22	20.0	--- U	--- U	--- U	--- U	--- U
64. Dimethoate	3.98	20.0	--- U	--- U	--- U	--- U	--- U
65. P-Dimethylaminoazobenzene	2.89	10.0	--- U	--- U	--- U	--- U	--- U
66. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	--- U	--- U	--- U	--- U	--- U
67. 3,3-Dimethylbenzadine	3.21	10.0	--- U	--- U	--- U	--- U	--- U
68. 1,3-Dinitrobenzene	2.89	20.0	--- U	--- U	--- U	--- U	--- U
69. Diphenylamine	5.10	10.0	--- U	--- U	--- U	--- U	--- U
70. Disulfoton	4.28	10.0	--- U	--- U	--- U	--- U	--- U
71. Famphur	3.98	20.0	--- U	--- U	--- U	--- U	--- U
72. Hexachloropropene	4.31	10.0	--- U	--- U	--- U	--- U	--- U
73. Isosafrole	2.88	10.0	--- U	--- U	--- U	--- U	--- U
74. Kepone	2.78	20.0	--- U	--- U	--- U	--- U	--- U
75. Methapyrilene	3.54	100.0	--- U	--- U	--- U	--- U	--- U
76. 3-Methylchloroanthrene	4.21	10.0	--- U	--- U	--- U	--- U	--- U
77. 2-Methylnaphthalene	3.79	10.0	--- U	--- U	--- U	--- U	--- U
78. Methyl Parathion	4.32	10.0	--- U	--- U	--- U	--- U	--- U
79. m-Cresol	3.81	10.0	--- U	--- U	--- U	--- U	--- U
80. 1,4-Naphthoquinone	4.00	10.0	--- U	--- U	--- U	--- U	--- U
81. 1-Naphthylamine	5.61	10.0	--- U	--- U	--- U	--- U	--- U
82. 2-Naphthylamine	4.62	10.0	--- U	--- U	--- U	--- U	--- U
83. 2-Nitroaniline	3.61	50.0	--- U	--- U	--- U	--- U	--- U
84. 3-Nitroaniline	4.81	50.0	--- U	--- U	--- U	--- U	--- U
85. 4-Nitroaniline	4.22	20.0	--- U	--- U	--- U	--- U	--- U
86. 5-Nitro-O-Toluidine	4.01	10.0	--- U	--- U	--- U	--- U	--- U
87. N-Nitrosodi-n-butylamine	3.63	10.0	--- U	--- U	--- U	--- U	--- U
88. N-Nitrosodiethylamine	3.83	20.0	--- U	--- U	--- U	--- U	--- U
89. N-Nitrosomethylethylamine	3.83	10.0	--- U	--- U	--- U	--- U	--- U
90. N-Nitrosopiperidine	5.19	20.0	--- U	--- U	--- U	--- U	--- U
91. N-Nitrosopyrrolidine	2.89	10.0	--- U	--- U	--- U	--- U	--- U
92. Parathion	3.12	10.0	--- U	--- U	--- U	--- U	--- U
93. Pentachlorobenzene	3.92	10.0	--- U	--- U	--- U	--- U	--- U
94. Pentachloronitrobenzene	3.71	20.0	--- U	--- U	--- U	--- U	--- U
95. Phenacetin	4.41	20.0	--- U	--- U	--- U	--- U	--- U
96. 1,4 Benzenediamine	2.99	10.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-2AD	MW-6D	MW-3AS	MW-3AD
97. Phorate	3.86	10.0	--- U	--- U	--- U	--- U	--- U
98. Pronamide	3.69	10.0	--- U	--- U	--- U	--- U	--- U
99. Safrole	4.12	10.0	--- U	--- U	--- U	--- U	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U	--- U	--- U	--- U
101. Thionazin	4.62	20.0	--- U	--- U	--- U	--- U	--- U
102. O-Toluidine	4.11	10.0	--- U	--- U	--- U	--- U	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U	--- U	--- U	--- U
104. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U	--- U	--- U	--- U
105. Hexachloroethane	1.49	10.0	--- U	--- U	--- U	--- U	--- U
106. Isodrin	3.11	20.0	--- U	--- U	--- U	--- U	--- U

NOTE: Surrogate recovery for MW-2A & MW-6D
was outside control limits

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/19/09
DATE ANALYZED: 08/27/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-2AD	MW-6D	MW-3AS	MW-3AD
1. Chloromethane	0.18	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.34	1.0	4.90	4.30	0.70 J	1.00	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	1.90 J	--- U	--- U	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	0.30 J	0.50 J	--- U	--- U	0.40 J
7. Acetone	1.21	100.0	1.30 J	1.80 J	3.20 J	1.50 J	--- U
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	--- U	0.20 J	--- U	--- U	0.20 J
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	0.20 J	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	5.80	25.50	0.30 J	3.90 J	6.50
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	4.70 J	22.20	0.70 J	0.90 J	3.30 J
15. 2-Butanone	0.85	100.0	--- U	2.10 J	1.60 J	1.80 J	1.20 J
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	0.30 J	0.80 J	1.80	2.60	0.30 J
21. 1,2-Dichloroethane	0.12	1.0	--- U	0.40 J	--- U	--- U	--- U
22. Trichloroethene	0.13	1.0	2.00	4.20	--- U	--- U	1.40
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U	0.80 J	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	--- U	--- U	--- U	0.50 J	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	--- U	--- U	--- U	--- U	2.10
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	1.00 J	1.50 J	10.00	5.90	0.20 J
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	1.30	2.20	3.20	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	0.20 J	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U	--- U
48. Acrolein	5.46	50.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/19/09
DATE ANALYZED: 08/27/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-2AD	MW-6D	MW-3AS	MW-3AD
49. Allyl Chloride	0.17	10.0	--- U	--- U	--- U	--- U	--- U
50. Chloroprene	0.16	20.0	--- U	--- U	--- U	--- U	--- U
51. 1,3-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
52. Dichlorodifluoromethane	0.16	5.0	0.50 J	0.20 J	--- U	0.20 J	1.40 J
53. 1,3-Dichloropropane	0.12	1.0	--- U	--- U	--- U	--- U	--- U
54. 2,2-Dichloropropane	0.18	15.0	--- U	--- U	--- U	--- U	--- U
55. 1,1-Dichloropropene	0.13	5.0	--- U	--- U	--- U	--- U	--- U
56. Ethyl Methacrylate	0.14	10.0	--- U	--- U	--- U	--- U	--- U
57. Hexachlorobutadiene	0.22	10.0	--- U	--- U	--- U	--- U	--- U
58. Isobutyl Alcohol	5.23	100.0	--- U	--- U	--- U	--- U	--- U
59. Methacrylonitrile	1.64	100.0	--- U	--- U	--- U	--- U	--- U
60. Methyl Methacrylate	0.10	30.0	--- U	--- U	--- U	--- U	--- U
61. Naphthalene	0.13	10.0	--- U	--- U	--- U	--- U	--- U
62. Propionitrile	1.60	150.0	--- U	--- U	--- U	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.11	10.0	--- U	--- U	--- U	--- U	--- U
64. Acetonitrile	5.96	50.0	--- U	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6015 **Week:** 33

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

PARAMETERS	Field pH	Metals	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081A	8260B App. II	8260 App. II 1	8260 App. II 2	8260 App. II 3	8151A Landfill
CHLORINE NEUTRALIZED AT COLLECTION															
pH CHECK (LAB)											<2	<2	<2	<2	
CONTAINER TYPE, P/G	P	P	P	P		G	G	G	G	G	G	G	G	G	G
CHEMICAL PRESERVATION	A	A	A	A		E	E	A	A	A	E	E	E	E	A

CHEMICAL PRESERVATION: A - NONE; B - HNO_3; C - H_2SO_4; D - NAOH; E - HCL; F - ZINC ACETATE; G - NA THIOSULFATE

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	Metals	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081A	8260B App. II	8260 App. II 1	8260 App. II 2	8260 App. II 3	8151A Landfill
~~Well #1~~					4															
Well #2A	08/19/09	1100		24	8	G	G	G	G	G			G	G	G	G	G			G
~~Well #3D~~ MW 3A S	08/19/09	1405		20	9	G	G	G	G	G			G	G	G	G	G	G		G
~~Well #7D~~					8															
~~SW-1~~					4															
~~SW-2~~					4															
~~SW-3~~					4															
Well #2AD	08/19/09	1955		19	8	G	G	G	G	G			G	G	G	G	G			G
Well #6D	08/19/09	1505		19	8	G	G	G	G	G			G	G	G	G	G			G
Well #15R					8															
Well #3AD	08/19/09	1330		19	10	G	G	G	G	G			G	G	G	G	G	G	G	G

CLASSIFICATION:
☐ WASTEWATER (NPDES)
☐ DRINKING WATER
☐ DWQ/GW
☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY: Y N

SAMPLES COLLECTED BY: (Please Print) H Page / Fat

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
H Page	08/19/09 1100	[signature]	8/20 8:00
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS: W.7D WILL BE DONE Aug 20
W.1 WILL BE DONE Aug 20
W.15R WILL BE DONE Aug 20
SW1, SW2, SW3 WILL BE DONE Aug 18

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

№ 190918

FORM #5

Environment 1, Incorporated

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

RECD SEP 25 2009

Drinking Water ID: 37715
Wastewater ID: 10

ID#: 6015 X

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/19/09
DATE REPORTED : 08/27/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-2A	MW-2AD	MW-6D	MW-17	MW-3AS	Analysis Date	Analyst	Method Code
BOD, mg/l	2.0	2.0	5.1	--- U	--- U	--- U	20	08/20/09	TRB	SM5210B
COD, mg/l	10.0	10.0	23	10	11	--- U	38	08/25/09	TRB	HACH8000
Nitrate Nitrogen as N, mg/l	0.03	10.0	0.09 J	--- U	--- U	0.09 J	--- U	08/21/09	TWA	EPA353.2
Total Organic Carbon, mg/l	0.15	1.0	5.18	--- U	1.61	--- U	6.49	08/25/09	SEJ	SM5310C
Total Alkalinity, mg/l	1.0	1.0	93	306	261	53	368	08/22/09	TRB	SM2320B
Chloride, mg/l	5.0	5.0	7	7	19	5	14	08/25/09	MJN	SM4500-CLB
Sulfate, mg/l	5.0	250.0	10.1 J	10.5 J	16.5 J	10.3 J	12.2 J	08/26/09	TRB	SM4500-SO4
Turbidity, NTU	1.0	1.0	105	25	10	260	600	08/20/09	MJN	SM2130B
Sulfide, ug/l	100	1000	--- U	--- U	--- U	--- U	--- U	08/25/09	LFJ	SM4500-S2D
Dissolved Oxygen, mg/l			0.93	1.85	1.91	1.24	1.48	08/19/09	RJH	SM4500OG
Carbon Dioxide, mg/l			230	210	390	92	168	08/19/09	RJH	SM4500CO2C
ORP, mv			-62.7	43.1	86.7	186.8	-18.5	08/19/09	RJH	SM2580B

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015 X

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/19/09
DATE REPORTED : 08/27/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-3AD	MW-18S	Analysis Date	Analyst	Method Code
BOD, mg/l	2.0	2.0	--- U	--- U	08/20/09	TRB	SM5210B
COD, mg/l	10.0	10.0	12	19	08/25/09	TRB	HACH8000
Nitrate Nitrogen as N, mg/l	0.03	10.0	0.05 J	--- U	08/21/09	TWA	EPA353.2
Total Organic Carbon, mg/l	0.15	1.0	--- U	4.69	08/25/09	SEJ	SM5310C
Total Alkalinity, mg/l	1.0	1.0	63	104	08/22/09	TRB	SM2320B
Chloride, mg/l	5.0	5.0	14	11	08/25/09	MJN	SM4500-CLB
Sulfate, mg/l	5.0	250.0	14.0 J	11.4 J	08/26/09	TRB	SM4500-SO4E
Turbidity, NTU	1.0	1.0	--- U	210	08/20/09	MJN	SM2130B
Sulfide, ug/l	100	1000	--- U	--- U	08/25/09	LFJ	SM4500-S2D
Dissolved Oxygen, mg/l			1.68	1.06	08/19/09	RJH	SM4500OG
Carbon Dioxide, mg/l			112	124	08/19/09	RJH	SM4500CO2C
ORP, mv			504.2	12.0	08/19/09	RJH	SM2580B

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6015 X **Week:** 33

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION
- [ ] CHLORINE
- [ ] UV
- [ ] NONE
- [ ] _____

SAMPLE LOCATION		COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	BOD	COD	Nitrate	TOC	Alkalinity	Chloride	Sulfate	Turbidity	Sulfide	DO	CO2	ORP
								<2		<2					>9			
							P	P	P	P	P	P	P	P	P	P	P	P
							A	C	A	C	A	A	A	A	F D	A	A	A
MW-2A	08	1909	1100		24	9	G	G	G	G	G	G	G	G	G	G	G	G
MW-2AD	08	1909	0955		19	9	G	G	G	G	G	G	G	G	G	G	G	G
MW-6D	08	1909	1505		19	9	G	G	G	G	G	G	G	G	G	G	G	G
MW-17	08	1909	1235		19	9	G	G	G	G	G	G	G	G	G	G	G	G
MW-3AS	08	1909	1405		20	9	G	G	G	G	G	G	G	G	G	G	G	G
MW-3AD	08	1909	1330		19	9	G	G	G	G	G	G	G	G	G	G	G	G
MW-18S	08	1909	1145		21	9	G	G	G	G	G	G	G	G	G	G	G	G

PARAMETERS

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

A - NONE
B - HNO_3
C - H_2SO_4
D - NAOH
E - HCL
F - ZINC ACETATE
G - NA THIOSULFATE

CLASSIFICATION:
- [ ] WASTEWATER (NPDES)
- [ ] DRINKING WATER
- [ ] DWQ/GW
- [X] SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
(Y) N

SAMPLES COLLECTED BY: (Please Print) H Logue / Fox

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bob H Logue 08	1909 5:17PM	B Jeff	8/20 8:00
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

№ 191101

FORM #5

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/20/09
DATE REPORTED : 09/21/09

REVIEWED BY: _____

PARAMETERS	MDL	SWSL	MW-1	MW-7D	MW-15R	MW-16A	Analysis Date	Analyst	Method Code
PH (field measurement), Units			5.0	5.7	5.0	5.5	08/20/09	RJH	SM4500HB
Antimony, ug/l	0.06	6.0	0.7 J	0.6 J	0.2 J	--- U	09/03/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0	0.2 J	0.2 J	0.2 J	--- U	09/03/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	30.5 J	34.4 J	69.3 J	82.7 J	09/03/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0	0.2 J	0.1 J	0.2 J	0.5 J	09/03/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.1 J	0.2 J	0.1 J	0.2 J	09/03/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	0.5 J	0.1 J	0.7 J	0.3 J	09/03/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	2.8 J	0.9 J	1.6 J	0.3 J	09/03/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	0.5 J	--- U	--- U	--- U	09/03/09	LFJ	EPA200.8
Lead, ug/l	0.04	10.0	0.7 J	0.4 J	0.2 J	0.1 J	09/03/09	LFJ	EPA200.8
Mercury, ug/l	0.13	0.20		0.12 J			09/03/09	LFJ	EPA200.8
Mercury, ug/l	0.13	0.20			--- U	--- U	09/10/09	ADD	EPA245.1
Nickel, ug/l	0.04	50.0	0.8 J	0.4 J	0.5 J	0.3 J	09/03/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	0.6 J	--- U	0.5 J	--- U	09/03/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	0.1 J	--- U	--- U	09/03/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0	--- U	0.1 J	0.2 J	--- U	09/03/09	LFJ	EPA200.8
Tin, ug/l	0.08	100.0		0.5 J	0.3 J	0.1 J	09/03/09	LFJ	EPA200.8
Vanadium, ug/l	0.28	25.0	1.3 J	0.7 J	0.5 J	0.6 J	09/03/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	4.1 J	45	2.9 J	4.3 J	09/03/09	LFJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	28	43	84	139	08/20/09	RJH	SM2510B
Temperature, °C			17	18	18	20	08/20/09	RJH	SM2550B
Static Water Level, feet			33.41	4.65	32.94	8.12	08/20/09	RJH	
Well Depth, feet			42.36	39.57	46.41	22.73	08/20/09	RJH	

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/20/09
DATE EXTRACTED: 08/21/09
DATE ANALYZED: 09/10/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

PESTICIDES AND PCB'S
EPA METHOD 8081A

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A
1. Aldrin	0.029	0.05	--- U	--- U	--- U
2. Alpha-BHC	0.032	0.05	--- U	--- U	--- U
3. Beta-BHC	0.031	0.05	--- U	--- U	--- U
4. Delta-BHC	0.030	0.05	--- U	--- U	--- U
5. Gamma-BHC (Lindane)	0.032	0.05	--- U	0.039 J	--- U
6. Chlordane	0.320	0.50	--- U	--- U	--- U
7. 4,4-DDD	0.051	0.10	--- U	--- U	--- U
8. 4,4-DDE	0.049	0.10	--- U	--- U	--- U
9. 4,4-DDT	0.052	0.10	--- U	--- U	--- U
10. Dieldrin	0.042	0.07	--- U	--- U	--- U
11. Endosulfan I	0.056	0.10	--- U	--- U	--- U
12. Endosulfan II	0.046	0.10	--- U	--- U	--- U
13. Endosulfan Sulfate	0.072	0.10	--- U	--- U	--- U
14. Endrin	0.053	0.10	--- U	--- U	--- U
15. Endrin Aldehyde	0.068	0.10	--- U	--- U	--- U
16. Heptachlor	0.039	0.05	--- U	--- U	0.044 J
17. Hepthchlor Epoxide	0.042	0.07	--- U	--- U	--- U
18. Methoxychlor	0.530	1.00	--- U	--- U	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U	--- U	--- U
20. Toxaphene	0.690	1.00	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/20/09
DATE EXTRACTED: 08/26/09
DATE ANALYZED: 09/03/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

LANDFILL APPENDIX II
EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A
1. 2,4-D	0.36	2.0	--- U	--- U	--- U
2. Dinoseb	0.54	1.0	--- U	--- U	--- U
3. 2,4,5-TP	0.42	2.0	--- U	--- U	--- U
4. 2,4,5-T	0.47	2.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/20/09
DATE ANALYZED: 08/28/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-1
1. Chloromethane	0.18	1.0	--- U
2. Vinyl Chloride	0.34	1.0	--- U
3. Bromomethane	0.26	10.0	--- U
4. Chloroethane	0.29	10.0	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U
7. Acetone	1.21	100.0	--- U
8. Iodomethane	0.12	10.0	--- U
9. Carbon Disulfide	0.14	100.0	--- U
10. Methylene Chloride	0.14	1.0	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U
12. 1,1-Dichloroethane	0.16	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U
15. 2-Butanone	0.85	100.0	--- U
16. Bromochloromethane	0.11	3.0	--- U
17. Chloroform	0.13	5.0	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U
20. Benzene	0.16	1.0	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U
22. Trichloroethene	0.13	1.0	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U
24. Bromodichloromethane	0.13	1.0	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U
27. Toluene	0.13	1.0	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U
30. Tetrachloroethene	0.16	1.0	--- U
31. 2-Hexanone	1.00	50.0	--- U
32. Dibromochloromethane	0.14	3.0	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U
34. Chlorobenzene	0.13	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U
36. Ethylbenzene	0.16	1.0	--- U
37. Xylenes	0.48	5.0	--- U
38. Dibromomethane	0.17	10.0	--- U
39. Styrene	0.16	1.0	--- U
40. Bromoform	0.11	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U
46. Acrylonitrile	1.49	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/20/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-15R	MW-16A
1. Acenaphthene	2.66	10.0	--- U	--- U
2. Acenaphthylene	2.60	10.0	--- U	--- U
3. Anthracene	2.97	10.0	--- U	--- U
4. Benzo[a]antrhacene	4.16	10.0	--- U	--- U
5. Benzo[b]fluoranthene	3.32	10.0	--- U	--- U
6. Benzo[k]fluoranthene	4.23	10.0	--- U	--- U
7. Benzo[g,h,i]perylene	2.61	10.0	--- U	--- U
8. Benzo[a]pyrene	3.27	10.0	--- U	--- U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	--- U	--- U
10. Butyl Benzyl Phthalate	5.78	10.0	--- U	--- U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	--- U	--- U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	--- U	--- U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	--- U	--- U
14. 2-Chloronaphthalene	2.17	10.0	--- U	--- U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	--- U	--- U
16. Chrysene	4.04	10.0	--- U	--- U
17. Dibenzo[a,h]anthracene	2.78	10.0	--- U	--- U
18. Di-N-Butyl Phthalate	3.09	10.0	--- U	--- U
19. Dimethyl Phthalate	3.78	10.0	--- U	--- U
20. Diethyl Phthalate	3.92	10.0	--- U	--- U
21. 2,4-Dinitrotoluene	3.95	10.0	--- U	--- U
22. 2,6-Dinitrotoluene	3.88	10.0	--- U	--- U
23. Di-N-Octyl Phthalate	2.81	10.0	--- U	--- U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	--- U	--- U
25. Fluoranthene	3.92	10.0	--- U	--- U
26. Fluorene	2.95	10.0	--- U	--- U
27. Hexachlorobenzene	2.61	10.0	--- U	--- U
28. Hexachlorocyclopentadiene	4.16	10.0	--- U	--- U
29. Indeno[1,2,3-Cd]pyrene	2.91	10.0	--- U	--- U
30. Isophorone	3.74	10.0	--- U	--- U
31. Nitrobenzene	2.85	10.0	--- U	--- U
32. N-Nitrosodimethylamine	4.25	10.0	--- U	--- U
33. N-Nitrosodiphenylamine	3.95	10.0	--- U	--- U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	--- U	--- U
35. Phenanthrene	3.24	10.0	--- U	--- U
36. Pyrene	3.63	10.0	--- U	--- U
37. 4-Chloro-3-Methylphenol	3.79	20.0	--- U	--- U
38. 2-Chlorophenol	2.75	10.0	--- U	--- U
39. O-Cresol	3.68	10.0	--- U	--- U
40. P-Cresol	4.12	10.0	--- U	--- U
41. 2,4-Dichlorophenol	5.19	10.0	--- U	--- U
42. 2,6-Dichlorophenol	4.89	10.0	--- U	--- U
43. 2,4-Dimethylphenol	3.21	10.0	--- U	--- U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	--- U	--- U
45. 2,4-Dinitrophenol	4.37	50.0	--- U	--- U
46. Ethyl Methanesulfonate	5.26	10.0	--- U	--- U
47. Methyl Methanesulfonate	4.92	10.0	--- U	--- U
48. 2-Nitrophenol	3.64	10.0	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/20/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-15R	MW-16A
49. 4-Nitrophenol	3.17	50.0	--- U	--- U
50. Pentachlorophenol	5.33	25.0	--- U	--- U
51. Phenol	1.86	10.0	--- U	--- U
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	--- U	--- U
53. 2,4,5-Trichlorophenol	4.17	10.0	--- U	--- U
54. 2,4,6-Trichlorophenol	3.84	10.0	--- U	--- U
55. Acetophenone	2.89	10.0	--- U	--- U
56. 2-Acetylaminofluorene	3.98	20.0	--- U	--- U
57. 4-Aminobiphenyl	4.12	20.0	--- U	--- U
58. Benzyl Alcohol	4.47	20.0	--- U	--- U
59. 4-Chloroaniline	3.36	20.0	--- U	--- U
60. Chlorobenzilate	5.12	10.0	--- U	--- U
61. Diallate	2.98	10.0	--- U	--- U
62. Dibenzofuran	4.28	10.0	--- U	--- U
63. 3,3-Dichlorobenzidine	4.22	20.0	--- U	--- U
64. Dimethoate	3.98	20.0	--- U	--- U
65. P-Dimethylaminoazobenzene	2.89	10.0	--- U	--- U
66. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	--- U	--- U
67. 3,3-Dimethylbenzadine	3.21	10.0	--- U	--- U
68. 1,3-Dinitrobenzene	2.89	20.0	--- U	--- U
69. Diphenylamine	5.10	10.0	--- U	--- U
70. Disulfoton	4.28	10.0	--- U	--- U
71. Famphur	3.98	20.0	--- U	--- U
72. Hexachloropropene	4.31	10.0	--- U	--- U
73. Isosafrole	2.88	10.0	--- U	--- U
74. Kepone	2.78	20.0	--- U	--- U
75. Methapyrilene	3.54	100.0	--- U	--- U
76. 3-Methylchloroanthrene	4.21	10.0	--- U	--- U
77. 2-Methylnaphthalene	3.79	10.0	--- U	--- U
78. Methyl Parathion	4.32	10.0	--- U	--- U
79. m-Cresol	3.81	10.0	--- U	--- U
80. 1,4-Naphthoquinone	4.00	10.0	--- U	--- U
81. 1-Naphthylamine	5.61	10.0	--- U	--- U
82. 2-Naphthylamine	4.62	10.0	--- U	--- U
83. 2-Nitroaniline	3.61	50.0	--- U	--- U
84. 3-Nitroaniline	4.81	50.0	--- U	--- U
85. 4-Nitroaniline	4.22	20.0	--- U	--- U
86. 5-Nitro-O-Toluidine	4.01	10.0	--- U	--- U
87. N-Nitrosodi-n-butylamine	3.63	10.0	--- U	--- U
88. N-Nitrosodiethylamine	3.83	20.0	--- U	--- U
89. N-Nitrosomethylethylamine	3.83	10.0	--- U	--- U
90. N-Nitrosopiperidine	5.19	20.0	--- U	--- U
91. N-Nitrosopyrrolidine	2.89	10.0	--- U	--- U
92. Parathion	3.12	10.0	--- U	--- U
93. Pentachlorobenzene	3.92	10.0	--- U	--- U
94. Pentachloronitrobenzene	3.71	20.0	--- U	--- U
95. Phenacetin	4.41	20.0	--- U	--- U
96. 1,4 Benzenediamine	2.99	10.0	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 08/20/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-15R	MW-16A
97. Phorate	3.86	10.0	--- U	--- U
98. Pronamide	3.69	10.0	--- U	--- U
99. Safrole	4.12	10.0	--- U	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U
101. Thionazin	4.62	20.0	--- U	--- U
102. O-Toluidine	4.11	10.0	--- U	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U
104. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U
105. Hexachloroethane	1.49	10.0	--- U	--- U
106. Isodrin	3.11	20.0	--- U	--- U

NOTE: Surrogate recovery for MW-15R
was outside control limits

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/20/09
DATE ANALYZED: 08/28/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A	Equipment Blank
1. Chloromethane	0.18	1.0	--- U	--- U	0.60 J	--- U
2. Vinyl Chloride	0.34	1.0	--- U	--- U	--- U	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U	0.70 J	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	0.90 J	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U	--- U	0.20 J	--- U
7. Acetone	1.21	100.0	--- U	--- U	--- U	1.40 J
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	--- U	6.00	4.40	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	0.40 J	--- U
12. 1,1-Dichloroethane	0.16	5.0	--- U	8.10	9.60	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U	6.80	29.80	--- U
15. 2-Butanone	0.85	100.0	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	--- U	0.30 J	2.50	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U	0.60 J	--- U	--- U
22. Trichloroethene	0.13	1.0	--- U	3.50	19.90	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	0.60 J	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	--- U	3.10	40.90	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	--- U	0.30 J	1.10 J	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U
37. Xylenes	0.48	5.0	--- U	0.80 J	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	12.30	1.80	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	1.00 J	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U
48. Acrolein	5.46	50.0	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 08/20/09
DATE ANALYZED: 08/28/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A	Equipment Blank
49. Allyl Chloride	0.17	10.0	--- U	--- U	--- U	--- U
50. Chloroprene	0.16	20.0	--- U	--- U	--- U	--- U
51. 1,3-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U
52. Dichlorodifluoromethane	0.16	5.0	--- U	--- U	6.70	--- U
53. 1,3-Dichloropropane	0.12	1.0	--- U	--- U	--- U	--- U
54. 2,2-Dichloropropane	0.18	15.0	--- U	--- U	--- U	--- U
55. 1,1-Dichloropropene	0.13	5.0	--- U	--- U	--- U	--- U
56. Ethyl Methacrylate	0.14	10.0	--- U	--- U	--- U	--- U
57. Hexachlorobutadiene	0.22	10.0	--- U	--- U	--- U	--- U
58. Isobutyl Alcohol	5.23	100.0	--- U	--- U	--- U	--- U
59. Methacrylonitrile	1.64	100.0	--- U	--- U	--- U	--- U
60. Methyl Methacrylate	0.10	30.0	--- U	--- U	--- U	--- U
61. Naphthalene	0.13	10.0	--- U	--- U	--- U	--- U
62. Propionitrile	1.60	150.0	--- U	--- U	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.11	10.0	--- U	--- U	--- U	--- U
64. Acetonitrile	5.96	50.0	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

REVIEWED BY: _____

CLIENT ID: 6015 A

ANALYST: CHS
DATE COLLECTED: 08/20/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/21/09

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-7D
1. Acenaphthene	2.66	10.0	--- U
2. Acenaphthylene	2.60	10.0	--- U
3. Anthracene	2.97	10.0	--- U
4. Benzo[a]antrhacene	4.16	10.0	--- U
5. Benzo[b]fluoranthene	3.32	10.0	--- U
6. Benzo[k]fluoranthene	4.23	10.0	--- U
7. Benzo[g,h,i]perylene	2.61	10.0	--- U
8. Benzo[a]pyrene	3.27	10.0	--- U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	--- U
10. Butyl Benzyl Phthalate	5.78	10.0	--- U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	--- U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	--- U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	--- U
14. 2-Chloronaphthalene	2.17	10.0	--- U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	--- U
16. Chrysene	4.04	10.0	--- U
17. Dibenzo[a,h]anthracene	2.78	10.0	--- U
18. Di-N-Butyl Phthalate	3.09	10.0	--- U
19. Dimethyl Phthalate	3.78	10.0	--- U
20. Diethyl Phthalate	3.92	10.0	--- U
21. 2,4-Dinitrotoluene	3.95	10.0	--- U
22. 2,6-Dinitrotoluene	3.88	10.0	--- U
23. Di-N-Octyl Phthalate	2.81	10.0	--- U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	--- U
25. Fluoranthene	3.92	10.0	--- U
26. Fluorene	2.95	10.0	--- U
27. Hexachlorobenzene	2.61	10.0	--- U
28. Hexachlorocyclopentadiene	4.16	10.0	--- U
29. Indeno[1,2,3-Cd]pyrene	2.91	10.0	--- U
30. Isophorone	3.74	10.0	--- U
31. Nitrobenzene	2.85	10.0	--- U
32. N-Nitrosodimethylamine	4.25	10.0	--- U
33. N-Nitrosodiphenylamine	3.95	10.0	--- U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	--- U
35. Phenanthrene	3.24	10.0	--- U
36. Pyrene	3.63	10.0	--- U
37. 4-Chloro-3-Methylphenol	3.79	20.0	--- U
38. 2-Chlorophenol	2.75	10.0	--- U
39. O-Cresol	3.68	10.0	--- U
40. P-Cresol	4.12	10.0	--- U
41. 2,4-Dichlorophenol	5.19	10.0	--- U
42. 2,6-Dichlorophenol	4.89	10.0	--- U
43. 2,4-Dimethylphenol	3.21	10.0	--- U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	--- U
45. 2,4-Dinitrophenol	4.37	50.0	--- U
46. Ethyl Methanesulfonate	5.26	10.0	--- U
47. Methyl Methanesulfonate	4.92	10.0	--- U
48. 2-Nitrophenol	3.64	10.0	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 A

ANALYST: CHS
DATE COLLECTED: 08/20/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-7D
49. 4-Nitrophenol	3.17	50.0	--- U
50. Pentachlorophenol	5.33	25.0	--- U
51. Phenol	1.86	10.0	--- U
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	--- U
53. 2,4,5-Trichlorophenol	4.17	10.0	--- U
54. 2,4,6-Trichlorophenol	3.84	10.0	--- U
55. Acetophenone	2.89	10.0	--- U
56. 2-Acetylaminofluorene	3.98	20.0	--- U
57. 4-Aminobiphenyl	4.12	20.0	--- U
58. Benzyl Alcohol	4.47	20.0	--- U
59. 4-Chloroaniline	3.36	20.0	--- U
60. Chlorobenzilate	5.12	10.0	--- U
61. Diallate	2.98	10.0	--- U
62. Dibenzofuran	4.28	10.0	--- U
63. 3,3-Dichlorobenzidine	4.22	20.0	--- U
64. Dimethoate	3.98	20.0	--- U
65. P-Dimethylaminoazobenzene	2.89	10.0	--- U
66. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	--- U
67. 3,3-Dimethylbenzadine	3.21	10.0	--- U
68. 1,3-Dinitrobenzene	2.89	20.0	--- U
69. Diphenylamine	5.10	10.0	--- U
70. Disulfoton	4.28	10.0	--- U
71. Famphur	3.98	20.0	--- U
72. Hexachloropropene	4.31	10.0	--- U
73. Isosafrole	2.88	10.0	--- U
74. Kepone	2.78	20.0	--- U
75. Methapyrilene	3.54	100.0	--- U
76. 3-Methylchloroanthrene	4.21	10.0	--- U
77. 2-Methylnaphthalene	3.79	10.0	--- U
78. Methyl Parathion	4.32	10.0	--- U
79. m-Cresol	3.81	10.0	--- U
80. 1,4-Naphthoquinone	4.00	10.0	--- U
81. 1-Naphthylamine	5.61	10.0	--- U
82. 2-Naphthylamine	4.62	10.0	--- U
83. 2-Nitroaniline	3.61	50.0	--- U
84. 3-Nitroaniline	4.81	50.0	--- U
85. 4-Nitroaniline	4.22	20.0	--- U
86. 5-Nitro-O-Toluidine	4.01	10.0	--- U
87. N-Nitrosodi-n-butylamine	3.63	10.0	--- U
88. N-Nitrosodiethylamine	3.83	20.0	--- U
89. N-Nitrosomethylethylamine	3.83	10.0	--- U
90. N-Nitrosopiperidine	5.19	20.0	--- U
91. N-Nitrosopyrrolidine	2.89	10.0	--- U
92. Parathion	3.12	10.0	--- U
93. Pentachlorobenzene	3.92	10.0	--- U
94. Pentachloronitrobenzene	3.71	20.0	--- U
95. Phenacetin	4.41	20.0	--- U
96. 1,4 Benzenediamine	2.99	10.0	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 A

ANALYST: CHS
DATE COLLECTED: 08/20/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/21/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-7D
97. Phorate	3.86	10.0	--- U
98. Pronamide	3.69	10.0	--- U
99. Safrole	4.12	10.0	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U
101. Thionazin	4.62	20.0	--- U
102. O-Toluidine	4.11	10.0	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U
104. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U
105. Hexachloroethane	1.49	10.0	--- U
106. Isodrin	3.11	20.0	--- U

NOTE: Surrogate recovery for MW-7D
was outside control limits

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015 B

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/19/09
DATE REPORTED : 09/23/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-17	Trip Blank	MW-18S	Analysis Date	Analyst	Method Code
PH (field measurement), Units			5.7		6.3	08/19/09	RJH	SM4500HB
Antimony, ug/l	0.06	6.0	--- U		--- U	09/03/09	LFJ	EPA200.8
Arsenic, ug/l	0.17	10.0	0.3 J		1.7 J	09/03/09	LFJ	EPA200.8
Barium, ug/l	0.04	100.0	80.4 J		70.6 J	09/03/09	LFJ	EPA200.8
Beryllium, ug/l	0.06	1.0	1.3		0.2 J	09/03/09	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.2 J		--- U	09/03/09	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	1.4 J		5.4 J	09/03/09	LFJ	EPA200.8
Copper, ug/l	0.04	10.0	2.5 J		1 J	09/03/09	LFJ	EPA200.8
Total Chromium, ug/l	0.10	10.0	0.9 J		0.4 J	09/03/09	LFJ	EPA200.8
Iron, ug/l	14.0	300.0	5745		17675	09/23/09	ADD	SM3111B
Lead, ug/l	0.04	10.0	5.1 J		0.6 J	09/03/09	LFJ	EPA200.8
Mercury, ug/l	0.03	0.20	0.18 J		--- U	09/03/09	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	2 J		2.1 J	09/03/09	LFJ	EPA200.8
Selenium, ug/l	0.12	10.0	0.2 J		--- U	09/03/09	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	0.1 J		--- U	09/03/09	LFJ	EPA200.8
Thallium, ug/l	0.03	5.0	0.1 J		0.1 J	09/03/09	LFJ	EPA200.8
Tin, ug/l	2.75	100.0	0.8 J		0.5 J	09/03/09	LFJ	EPA200.7
Vanadium, ug/l	0.28	25.0	5.7 J		4.2 J	09/03/09	LFJ	EPA200.8
Zinc, ug/l	0.14	10.0	24		7.1 J	09/03/09	LFJ	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	133		258	08/19/09	RJH	SM2510B
Temperature, °C			19		21	08/19/09	RJH	SM2550B
Static Water Level, feet			5.00		4.70	08/19/09	RJH	
Well Depth, feet			27.59		20.25	08/19/09	RJH	

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/21/09
DATE ANALYZED: 09/10/09
DATE REPORTED: 09/23/09

REVIEWED BY:

PESTICIDES AND PCB'S
EPA METHOD 8081A

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
1. Aldrin	0.029	0.05	--- U	--- U
2. Alpha-BHC	0.032	0.05	--- U	--- U
3. Beta-BHC	0.031	0.05	--- U	--- U
4. Delta-BHC	0.030	0.05	--- U	--- U
5. Gamma-BHC (Lindane)	0.032	0.05	--- U	--- U
6. Chlordane	0.320	0.50	--- U	--- U
7. 4,4-DDD	0.051	0.10	--- U	--- U
8. 4,4-DDE	0.049	0.10	--- U	--- U
9. 4,4-DDT	0.052	0.10	--- U	--- U
10. Dieldrin	0.042	0.07	--- U	--- U
11. Endosulfan I	0.056	0.10	--- U	--- U
12. Endosulfan II	0.046	0.10	--- U	--- U
13. Endosulfan Sulfate	0.072	0.10	--- U	--- U
14. Endrin	0.053	0.10	--- U	--- U
15. Endrin Aldehyde	0.068	0.10	--- U	--- U
16. Heptachlor	0.039	0.05	0.042 J	--- U
17. Hepthchlor Epoxide	0.042	0.07	--- U	--- U
18. Methoxychlor	0.530	1.00	--- U	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U	--- U
20. Toxaphene	0.690	1.00	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/26/09
DATE ANALYZED: 09/03/09
DATE REPORTED: 09/23/09

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
1. 2,4-D	0.36	2.0	--- U	--- U
2. Dinoseb	0.54	1.0	--- U	--- U
3. 2,4,5-TP	0.42	2.0	--- U	--- U
4. 2,4,5-T	0.47	2.0	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/23/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
1. Acenaphthene	2.66	10.0	--- U	--- U
2. Acenaphthylene	2.60	10.0	--- U	--- U
3. Anthracene	2.97	10.0	--- U	--- U
4. Benzo[a]antrhacene	4.16	10.0	--- U	--- U
5. Benzo[b]fluoranthene	3.32	10.0	--- U	--- U
6. Benzo[k]fluoranthene	4.23	10.0	--- U	--- U
7. Benzo[g,h,i]perylene	2.61	10.0	--- U	--- U
8. Benzo[a]pyrene	3.27	10.0	--- U	--- U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	--- U	--- U
10. Butyl Benzyl Phthalate	5.78	10.0	--- U	--- U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	--- U	--- U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	--- U	--- U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	--- U	--- U
14. 2-Chloronaphthalene	2.17	10.0	--- U	--- U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	--- U	--- U
16. Chrysene	4.04	10.0	--- U	--- U
17. Dibenzo[a,h]anthracene	2.78	10.0	--- U	--- U
18. Di-N-Butyl Phthalate	3.09	10.0	--- U	--- U
19. Dimethyl Phthalate	3.78	10.0	--- U	--- U
20. Diethyl Phthalate	3.92	10.0	--- U	--- U
21. 2,4-Dinitrotoluene	3.95	10.0	--- U	--- U
22. 2,6-Dinitrotoluene	3.88	10.0	--- U	--- U
23. Di-N-Octyl Phthalate	2.81	10.0	--- U	--- U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	--- U	--- U
25. Fluoranthene	3.92	10.0	--- U	--- U
26. Fluorene	2.95	10.0	--- U	--- U
27. Hexachlorobenzene	2.61	10.0	--- U	--- U
28. Hexachlorocyclopentadiene	4.16	10.0	--- U	--- U
29. Indeno[1,2,3-Cd]pyrene	2.91	10.0	--- U	--- U
30. Isophorone	3.74	10.0	--- U	--- U
31. Nitrobenzene	2.85	10.0	--- U	--- U
32. N-Nitrosodimethylamine	4.25	10.0	--- U	--- U
33. N-Nitrosodiphenylamine	3.95	10.0	--- U	--- U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	--- U	--- U
35. Phenanthrene	3.24	10.0	--- U	--- U
36. Pyrene	3.63	10.0	--- U	--- U
37. 4-Chloro-3-Methylphenol	3.79	20.0	--- U	--- U
38. 2-Chlorophenol	2.75	10.0	--- U	--- U
39. O-Cresol	3.68	10.0	--- U	--- U
40. P-Cresol	4.12	10.0	--- U	--- U
41. 2,4-Dichlorophenol	5.19	10.0	--- U	--- U
42. 2,6-Dichlorophenol	4.89	10.0	--- U	--- U
43. 2,4-Dimethylphenol	3.21	10.0	--- U	--- U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	--- U	--- U
45. 2,4-Dinitrophenol	4.37	50.0	--- U	--- U
46. Ethyl Methanesulfonate	5.26	10.0	--- U	--- U
47. Methyl Methanesulfonate	4.92	10.0	--- U	--- U
48. 2-Nitrophenol	3.64	10.0	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/23/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
49. 4-Nitrophenol	3.17	50.0	--- U	--- U
50. Pentachlorophenol	5.33	25.0	--- U	--- U
51. Phenol	1.86	10.0	--- U	--- U
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	--- U	--- U
53. 2,4,5-Trichlorophenol	4.17	10.0	--- U	--- U
54. 2,4,6-Trichlorophenol	3.84	10.0	--- U	--- U
55. Acetophenone	2.89	10.0	--- U	--- U
56. 2-Acetylaminofluorene	3.98	20.0	--- U	--- U
57. 4-Aminobiphenyl	4.12	20.0	--- U	--- U
58. Benzyl Alcohol	4.47	20.0	--- U	--- U
59. 4-Chloroaniline	3.36	20.0	--- U	--- U
60. Chlorobenzilate	5.12	10.0	--- U	--- U
61. Diallate	2.98	10.0	--- U	--- U
62. Dibenzofuran	4.28	10.0	--- U	--- U
63. 3,3-Dichlorobenzidine	4.22	20.0	--- U	--- U
64. Dimethoate	3.98	20.0	--- U	--- U
65. P-Dimethylaminoazobenzene	2.89	10.0	--- U	--- U
66. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	--- U	--- U
67. 3,3-Dimethylbenzadine	3.21	10.0	--- U	--- U
68. 1,3-Dinitrobenzene	2.89	20.0	--- U	--- U
69. Diphenylamine	5.10	10.0	--- U	--- U
70. Disulfoton	4.28	10.0	--- U	--- U
71. Famphur	3.98	20.0	--- U	--- U
72. Hexachloropropene	4.31	10.0	--- U	--- U
73. Isosafrole	2.88	10.0	--- U	--- U
74. Kepone	2.78	20.0	--- U	--- U
75. Methapyrilene	3.54	100.0	--- U	--- U
76. 3-Methylchloroanthrene	4.21	10.0	--- U	--- U
77. 2-Methylnaphthalene	3.79	10.0	--- U	--- U
78. Methyl Parathion	4.32	10.0	--- U	--- U
79. m-Cresol	3.81	10.0	--- U	--- U
80. 1,4-Naphthoquinone	4.00	10.0	--- U	--- U
81. 1-Naphthylamine	5.61	10.0	--- U	--- U
82. 2-Naphthylamine	4.62	10.0	--- U	--- U
83. 2-Nitroaniline	3.61	50.0	--- U	--- U
84. 3-Nitroaniline	4.81	50.0	--- U	--- U
85. 4-Nitroaniline	4.22	20.0	--- U	--- U
86. 5-Nitro-O-Toluidine	4.01	10.0	--- U	--- U
87. N-Nitrosodi-n-butylamine	3.63	10.0	--- U	--- U
88. N-Nitrosodiethylamine	3.83	20.0	--- U	--- U
89. N-Nitrosomethylethylamine	3.83	10.0	--- U	--- U
90. N-Nitrosopiperidine	5.19	20.0	--- U	--- U
91. N-Nitrosopyrrolidine	2.89	10.0	--- U	--- U
92. Parathion	3.12	10.0	--- U	--- U
93. Pentachlorobenzene	3.92	10.0	--- U	--- U
94. Pentachloronitrobenzene	3.71	20.0	--- U	--- U
95. Phenacetin	4.41	20.0	--- U	--- U
96. 1,4 Benzenediamine	2.99	10.0	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 08/19/09
DATE EXTRACTED: 08/24/09
DATE ANALYZED: 09/11/09
DATE REPORTED: 09/23/09

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
97. Phorate	3.86	10.0	--- U	--- U
98. Pronamide	3.69	10.0	--- U	--- U
99. Safrole	4.12	10.0	--- U	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U
101. Thionazin	4.62	20.0	--- U	--- U
102. O-Toluidine	4.11	10.0	--- U	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U
104. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U
105. Hexachloroethane	1.49	10.0	--- U	--- U
106. Isodrin	3.11	20.0	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: MAO
DATE COLLECTED: 08/19/09
DATE ANALYZED: 08/28/09
DATE REPORTED: 09/23/09

REVIEWED BY: _____

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-17	Trip Blank	MW-18S
1. Chloromethane	0.18	1.0	--- U	--- U	0.20 J
2. Vinyl Chloride	0.34	1.0	--- U	--- U	0.40 J
3. Bromomethane	0.26	10.0	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U	0.30 J
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U	--- U	--- U
7. Acetone	1.21	100.0	1.60 J	--- U	2.60 J
8. Iodomethane	0.12	10.0	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	0.80 J	--- U	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	3.80 J	--- U	0.90 J
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	3.00 J	--- U	--- U
15. 2-Butanone	0.85	100.0	1.30 J	--- U	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U
20. Benzene	0.16	1.0	0.20 J	--- U	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U	--- U
22. Trichloroethene	0.13	1.0	2.30	--- U	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U
27. Toluene	0.13	1.0	--- U	0.20 J	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	1.50	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	0.20 J	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U
48. Acrolein	5.46	50.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: MAO
DATE COLLECTED: 08/19/09
DATE ANALYZED: 08/28/09
DATE REPORTED: 09/23/09

REVIEWED BY: _____

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-17	Trip Blank	MW-18S
49. Allyl Chloride	0.17	10.0	--- U	--- U	--- U
50. Chloroprene	0.16	20.0	--- U	--- U	--- U
51. 1,3-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U
52. Dichlorodifluoromethane	0.16	5.0	1.90 J	--- U	--- U
53. 1,3-Dichloropropane	0.12	1.0	--- U	--- U	--- U
54. 2,2-Dichloropropane	0.18	15.0	--- U	--- U	--- U
55. 1,1-Dichloropropene	0.13	5.0	--- U	--- U	--- U
56. Ethyl Methacrylate	0.14	10.0	--- U	--- U	--- U
57. Hexachlorobutadiene	0.22	10.0	--- U	--- U	--- U
58. Isobutyl Alcohol	5.23	100.0	--- U	--- U	--- U
59. Methacrylonitrile	1.64	100.0	--- U	--- U	--- U
60. Methyl Methacrylate	0.10	30.0	--- U	--- U	--- U
61. Naphthalene	0.13	10.0	--- U	--- U	--- U
62. Propionitrile	1.60	150.0	--- U	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.11	10.0	--- U	--- U	--- U
64. Acetonitrile	5.96	50.0	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6015 **Week:** 33

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION
- ☐ CHLORINE
- ☐ UV
- ☐ NONE
- ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	Metals	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081A	8260B App. II	8260 App. II 1	8260 App. II 2	8151A Landfill			PARAMETERS
																<2	<2	<2				
						P	P	P	P		G	G	G	G	G	G	G	G	G			
						A	A	A	A		E	E	A	A	A	E	E	E	A			
MW-2A					8																	
MW-1	08 20 09	0940		17	4	G	G	G	G	G	G	G										
MW-7D	08 20 09	0950		18	8	G	G	G	G	G			G	G	G	G	G		G			
MW-2AD					8																	
MW-6D					8																	
MW-15R	08 20 09	0845		18	8	G	G	G	G	G			G	G	G	G	G		G			
MW-3AS					9																	
MW-3AD					9																	
MW-16A	08 20 09	0955		20	8	G	G	G	G	G			G	G	G	G	G		G			
Trip Blank					2																	
Equipment Blank	08 20 09				2											G	G					

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE
G - NA THIOSULFATE

CLASSIFICATION:
- ☐ WASTEWATER (NPDES)
- ☐ DRINKING WATER
- ☐ DWQ/GW
- ☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
Y N

SAMPLES COLLECTED BY: (Please Print) H Lagoe / Fox

SAMPLES RECEIVED IN LAB AT 0°2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bob H Lagoe	08 20 09 1:06	B [signature]	8/20 1:06
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS: MW 2A - MW2AD - MW6D
MW3AS - MW3AD WILL BE
DONE AUG 19

PLEASE READ Instructions for completing this form on the reverse side.

Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

№ 191845

FORM #5

microseeps
from insight comes solutions

Client Name: Environment 1, Inc.
Contact: Steve Jones
Address: PO Box 7085
114 Oakmont Drive
Greenville, NC 27835

Page: Page 1 of 8
Lab Proj #: P0908238
Report Date: 09/11/09
Client Proj Name: Halifax
Client Proj #: 6015

Laboratory Results

Total pages in data package: 9

Lab Sample #	Client Sample ID
P0908238-01	MW2A
P0908238-02	MW-2AD
P0908238-03	MW6
P0908238-04	MW17
P0908238-05	MW3AS
P0908238-06	MW3AD
P0908238-07	MW18S

Microseeps test results meet all the requirements of the NELAC standards or provide reasons and/or justification if they do not.

Approved By: Debbie Hallo (dh) ***Date:*** 9.11.09

Project Manager: Debbie Hallo

The analytical results reported here are reliable and usable to the precision expressed in this report. As required by some regulating authorities, a full discussion of the uncertainty in our analytical results can be obtained at our web site or through customer service. Unless otherwise specified, all results are reported on a wet weight basis.

As a valued client we would appreciate your comments on our service.
Please call customer service at (412)826-5245 or email customerservice@microseeps.com.

Case Narrative:

Client Name: Environment 1, Inc.
Contact: Steve Jones
Address: PO Box 7085
114 Oakmont Drive
Greenville, NC 27835

Lab Proj #: P0908238
Report Date: 09/11/09
Client Proj Name: Halifax
Client Proj #: 6015

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
MW2A	Vapor	P0908238-01	19 Aug. 09	21 Aug. 09 12:01

Analyte(s)	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis						
N Ethane	<0.010	0.010	ug/L	AM20GAX	8/28/09	sl
N Ethene	0.043	0.010	ug/L	AM20GAX	8/28/09	sl
N Hydrogen	1.200	0.600	nM	AM20GAX	8/28/09	sl
N Methane	6000.000	0.015	ug/L	AM20GAX	8/28/09	sl
SemiVolatiles						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Butyric Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Lactic Acid and HIBA	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Propionic Acid	0.140	0.070	mg/L	AM23G	9/6/09	jb
N Pyruvic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb

N - NELAC certified analysis

Client Name: Environment 1, Inc.
Contact: Steve Jones
Address: PO Box 7085
114 Oakmont Drive
Greenville, NC 27835

Page: Page 3 of 8
Lab Proj #: P0908238
Report Date: 09/11/09
Client Proj Name: Halifax
Client Proj #: 6015

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
MW-2AD	Vapor	P0908238-02	19 Aug. 09	21 Aug. 09 12:01

Analyte(s)	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis						
N Ethane	0.098	0.010	ug/L	AM20GAX	8/28/09	sl
N Ethene	0.380	0.010	ug/L	AM20GAX	8/28/09	sl
N Hydrogen	1.100	0.600	nM	AM20GAX	8/28/09	sl
N Methane	410.000	0.015	ug/L	AM20GAX	8/28/09	sl
SemiVolatiles						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Butyric Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Lactic Acid and HIBA	0.160	0.100	mg/L	AM23G	9/6/09	jb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Propionic Acid	0.140	0.070	mg/L	AM23G	9/6/09	jb
N Pyruvic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb

N - NELAC certified analysis

Client Name: Environment 1, Inc.
Contact: Steve Jones
Address: PO Box 7085
114 Oakmont Drive
Greenville, NC 27835

Lab Proj #: P0908238
Report Date: 09/11/09
Client Proj Name: Halifax
Client Proj #: 6015

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
MW6	Vapor	P0908238-03	19 Aug. 09	21 Aug. 09 12:01

Analyte(s)	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis						
N Ethane	0.270	0.010	ug/L	AM20GAX	8/28/09	sl
N Ethene	0.036	0.010	ug/L	AM20GAX	8/28/09	sl
N Hydrogen	1.300	0.600	nM	AM20GAX	8/28/09	sl
N Methane	180.000	0.015	ug/L	AM20GAX	8/28/09	sl
SemiVolatiles						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/10/09	jb
N Butyric Acid	<0.070	0.070	mg/L	AM23G	9/10/09	jb
N Hexanoic Acid	1.100	0.100	mg/L	AM23G	9/10/09	jb
N i-Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/10/09	jb
N i-Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/10/09	jb
N Lactic Acid and HIBA	<0.100	0.100	mg/L	AM23G	9/10/09	jb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/10/09	jb
N Propionic Acid	0.140	0.070	mg/L	AM23G	9/10/09	jb
N Pyruvic Acid	<0.070	0.070	mg/L	AM23G	9/10/09	jb

N - NELAC certified analysis

Client Name: Environment 1, Inc.
Contact: Steve Jones
Address: PO Box 7085
114 Oakmont Drive
Greenville, NC 27835

Page: Page 5 of 8
Lab Proj #: P0908238
Report Date: 09/11/09
Client Proj Name: Halifax
Client Proj #: 6015

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
MW17	Vapor	P0908238-04	19 Aug. 09	21 Aug. 09 12:01

Analyte(s)	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis						
N Ethane	0.012	0.010	ug/L	AM20GAX	8/28/09	sl
N Ethene	<0.010	0.010	ug/L	AM20GAX	8/28/09	sl
N Hydrogen	1.100	0.600	nM	AM20GAX	8/28/09	sl
N Methane	830.000	0.015	ug/L	AM20GAX	8/28/09	sl
SemiVolatiles						
N Acetic Acid	0.072	0.070	mg/L	AM23G	9/6/09	jb
N Butyric Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Lactic Acid and HIBA	0.250	0.100	mg/L	AM23G	9/6/09	jb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Propionic Acid	0.160	0.070	mg/L	AM23G	9/6/09	jb
N Pyruvic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb

N - NELAC certified analysis

Client Name: Environment 1, Inc.
Contact: Steve Jones
Address: PO Box 7085
114 Oakmont Drive
Greenville, NC 27835

Page: Page 6 of 8
Lab Proj #: P0908238
Report Date: 09/11/09
Client Proj Name: Halifax
Client Proj #: 6015

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
MW3AS	Vapor	P0908238-05	19 Aug. 09	21 Aug. 09 12:01

Analyte(s)	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis						
N Ethane	2.200	0.010	ug/L	AM20GAX	8/28/09	sl
N Ethene	<0.010	0.010	ug/L	AM20GAX	8/28/09	sl
N Hydrogen	5.300	0.600	nM	AM20GAX	8/28/09	sl
N Methane	6300.000	0.015	ug/L	AM20GAX	8/28/09	sl
SemiVolatiles						
N Acetic Acid	0.079	0.070	mg/L	AM23G	9/6/09	jb
N Butyric Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Lactic Acid and HIBA	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Propionic Acid	0.170	0.070	mg/L	AM23G	9/6/09	jb
N Pyruvic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb

N - NELAC certified analysis

Client Name: Environment 1, Inc.
Contact: Steve Jones
Address: PO Box 7085
114 Oakmont Drive
Greenville, NC 27835

Page: Page 7 of 8
Lab Proj #: P0908238
Report Date: 09/11/09
Client Proj Name: Halifax
Client Proj #: 6015

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
MW3AD	Vapor	P0908238-06	19 Aug. 09	21 Aug. 09 12:01

Analyte(s)	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis						
N Ethane	<0.010	0.010	ug/L	AM20GAX	8/28/09	sl
N Ethene	<0.010	0.010	ug/L	AM20GAX	8/28/09	sl
N Hydrogen	1.000	0.600	nM	AM20GAX	8/28/09	sl
N Methane	2800.000	0.015	ug/L	AM20GAX	8/28/09	sl
SemiVolatiles						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Butyric Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Lactic Acid and HIBA	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Propionic Acid	0.150	0.070	mg/L	AM23G	9/6/09	jb
N Pyruvic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb

N - NELAC certified analysis

Client Name: Environment 1, Inc.
Contact: Steve Jones
Address: PO Box 7085
114 Oakmont Drive
Greenville, NC 27835

Lab Proj #: P0908238
Report Date: 09/11/09
Client Proj Name: Halifax
Client Proj #: 6015

Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received
MW18S	Vapor	P0908238-07	19 Aug. 09	21 Aug. 09 12:01

Analyte(s)	Result	PQL	Units	Method #	Analysis Date	By
RiskAnalysis						
N Ethane	0.081	0.010	ug/L	AM20GAX	8/28/09	sl
N Ethene	0.020	0.010	ug/L	AM20GAX	8/28/09	sl
N Hydrogen	1.600	0.600	nM	AM20GAX	8/28/09	sl
N Methane	4100.000	0.015	ug/L	AM20GAX	8/28/09	sl
SemiVolatiles						
N Acetic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Butyric Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Hexanoic Acid	<0.100	0.100	mg/L	AM23G	9/6/09	jb
N i-Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Lactic Acid and HIBA	0.110	0.100	mg/L	AM23G	9/6/09	jb
N Pentanoic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb
N Propionic Acid	0.140	0.070	mg/L	AM23G	9/6/09	jb
N Pyruvic Acid	<0.070	0.070	mg/L	AM23G	9/6/09	jb

N - NELAC certified analysis

Microseeps Lab. Proj. # P0408238

CHAIN - OF - CUSTODY RECORD

Microseeps COC cont. # 470

Phone: (412) 826-5245 Microseeps, Inc. - 220 William Pitt Way - Pittsburgh, PA 15238 Fax No. : (412) 826-3433

Company : ENVIRONMENT 1, INC

Co. Address : 114 OAKMONT DR, GREENVILLE, NC

Phone # : 252-756-6208 Fax # : 252-756-0637

Proj. Manager : STEVE JONES

Proj. Name/Number : HALIFAX CO. (6015)

Sampler's signature :

Cooler Temp.

Results to : SAME

Invoice to : SAME

Sample ID	Sample Description	Sample Type Water	Vapor	Solid	Date	Time	# of Cont.	HYDROGEN	LLUFA	METHANE/ETHANE/ETHENE								Remarks :
MW2A	WELL 2A	✓	✓		8/19/09			✓	✓	✓								
MW2AD	WELL 2AD	✓	✓		↓			✓	✓	✓								
MW6D	WELL 6D	✓	✓					✓	✓	✓								M/E/E → LOWEST
MW17	WELL 17	✓	✓					✓	✓	✓								REPORTING METHOD
MW3A5	WELL 3A5	✓	✓					✓	✓	✓								
MW3AD	WELL 3AD	✓	✓					✓	✓	✓								
MW18S	WELL 18S	✓	✓		↓			✓	✓	✓								

Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
	ENVIRONMENT 1	8/20/09	2400			8/21	1000
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :

WHITE COPY : Accompany Samples YELLOW COPY : Laboratory File PINK COPY : Submitter

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

ID#: 6015 A

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 08/18/09
DATE REPORTED : 09/17/09

REVIEWED BY:

PARAMETERS	MDL	SWSL	SW-1	SW-2	SW-3	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.6	6.6	6.4	08/18/09	RJH	SM4500HB
Antimony, ug/l	0.06	6.0	--- U	--- U	--- U	08/21/09	CMF	EPA200.8
Arsenic, ug/l	0.17	10.0	1.2 J	1.6 J	4.0 J	08/21/09	CMF	EPA200.8
Barium, ug/l	0.04	100.0	45.6 J	54.2 J	33.5 J	08/21/09	CMF	EPA200.8
Beryllium, ug/l	0.06	1.0	0.1 J	--- U	0.9 J	08/21/09	CMF	EPA200.8
Cadmium, ug/l	0.04	1.0	0.1 J	0.1 J	0.6 J	08/21/09	CMF	EPA200.8
Cobalt, ug/l	0.02	10.0	1.1 J	0.5 J	1.8 J	08/21/09	CMF	EPA200.8
Copper, ug/l	0.04	10.0	1.2 J	0.3 J	0.9 J	08/21/09	CMF	EPA200.8
Total Chromium, ug/l	0.10	10.0	0.7 J	--- U	--- U	08/21/09	CMF	EPA200.8
Lead, ug/l	0.04	10.0	3.1 J	0.1 J	0.1 J	08/21/09	CMF	EPA200.8
Nickel, ug/l	0.04	50.0	0.8 J	1.1 J	4.2 J	08/21/09	CMF	EPA200.8
Selenium, ug/l	0.12	10.0	--- U	2.4 J	13	08/21/09	CMF	EPA200.8
Silver, ug/l	0.04	10.0	--- U	--- U	0.1 J	08/21/09	CMF	EPA200.8
Thallium, ug/l	0.03	5.0	--- U	--- U	--- U	08/21/09	CMF	EPA200.8
Vanadium, ug/l	0.28	25.0	4.3 J	0.8 J	2.1 J	08/21/09	CMF	EPA200.8
Zinc, ug/l	0.14	10.0	17	1.5 J	24	08/21/09	CMF	EPA200.8
Conductivity (at 25c), uMhos	1.0	1.0	107	315	812	08/18/09	RJH	SM2510B
Temperature, °C			26	25	22	08/18/09	RJH	SM2550B

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

P.O. BOX 7085, 114 OAKMONT DRIVE
GREENVILLE, N.C. 27835-7085

PHONE (252) 756-6208
FAX (252) 756-0633

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 A

ANALYST: MAO
DATE COLLECTED: 08/18/09
DATE ANALYZED: 08/27/09
DATE REPORTED: 09/17/09

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	SW-1	SW-2	SW-3	Trip Blank
1. Chloromethane	0.18	1.0	0.30 J	0.40 J	0.30 J	--- U
2. Vinyl Chloride	0.34	1.0	--- U	--- U	--- U	--- U
3. Bromomethane	0.26	10.0	--- U	--- U	--- U	--- U
4. Chloroethane	0.29	10.0	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.13	1.0	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U
7. Acetone	1.21	100.0	1.70 J	2.00 J	2.40 J	--- U
8. Iodomethane	0.12	10.0	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.14	100.0	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.14	1.0	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.13	5.0	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.16	5.0	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.14	5.0	--- U	--- U	--- U	--- U
15. 2-Butanone	0.85	100.0	1.60 J	2.90 J	3.50 J	--- U
16. Bromochloromethane	0.11	3.0	--- U	--- U	--- U	--- U
17. Chloroform	0.13	5.0	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.11	1.0	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.13	1.0	--- U	--- U	--- U	--- U
20. Benzene	0.16	1.0	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.12	1.0	--- U	--- U	--- U	--- U
22. Trichloroethene	0.13	1.0	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.17	1.0	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.13	1.0	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.17	1.0	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	0.68	100.0	--- U	--- U	--- U	--- U
27. Toluene	0.13	1.0	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.14	1.0	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.20	1.0	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.16	1.0	--- U	--- U	--- U	--- U
31. 2-Hexanone	1.00	50.0	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.14	3.0	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.13	1.0	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.13	3.0	--- U	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.14	5.0	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.16	1.0	--- U	--- U	--- U	--- U
37. Xylenes	0.48	5.0	--- U	--- U	--- U	--- U
38. Dibromomethane	0.17	10.0	--- U	--- U	--- U	--- U
39. Styrene	0.16	1.0	--- U	--- U	--- U	--- U
40. Bromoform	0.11	3.0	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.16	3.0	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.06	1.0	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.21	1.0	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.13	5.0	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.26	13.0	--- U	--- U	--- U	--- U
46. Acrylonitrile	1.49	200.0	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.14	100.0	--- U	--- U	--- U	--- U

J = Between MDL and SWSL, U = Below ALL Quanititation Limits.

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6015 A **Week:** 33

HALIFAX CO. LANDFILL (CLOSED MSW)
MR. FRANK RALPH
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION
- ☐ CHLORINE
- ☐ UV
- ☐ NONE
- ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	Metals	Conductivity	Temperature	EPA 8260B	8260 Dup. 1
										<2	<2
CONTAINER TYPE, P/G						P	P	P	P	G	G
CHEMICAL PRESERVATION						A	A	A	A	E	E
SW-1	08/18/09	1115		26	4	G	G	G	G	G	G
SW-2	08/18/09	1140		25	4	G	G	G	G	G	G
SW-3	08/18/09	1000		22	4	G	G	G	G	G	G

PARAMETERS

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

A - NONE
B - HNO_3
C - H_2SO_4
D - NAOH
E - HCL
F - ZINC ACETATE
G - NA THIOSULFATE

CLASSIFICATION:
- ☐ WASTEWATER (NPDES)
- ☐ DRINKING WATER
- ☐ DWQ/GW
- ☒ SOLID WASTE SECTION

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY
Y N

SAMPLES COLLECTED BY: (Please Print)
[illegible]

SAMPLES RECEIVED IN LAB AT 0°3

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bob Hogue	08/18/09 3:02	B [illegible]	8/18/3:02
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

PLEASE READ Instructions for completing this form on the reverse side.

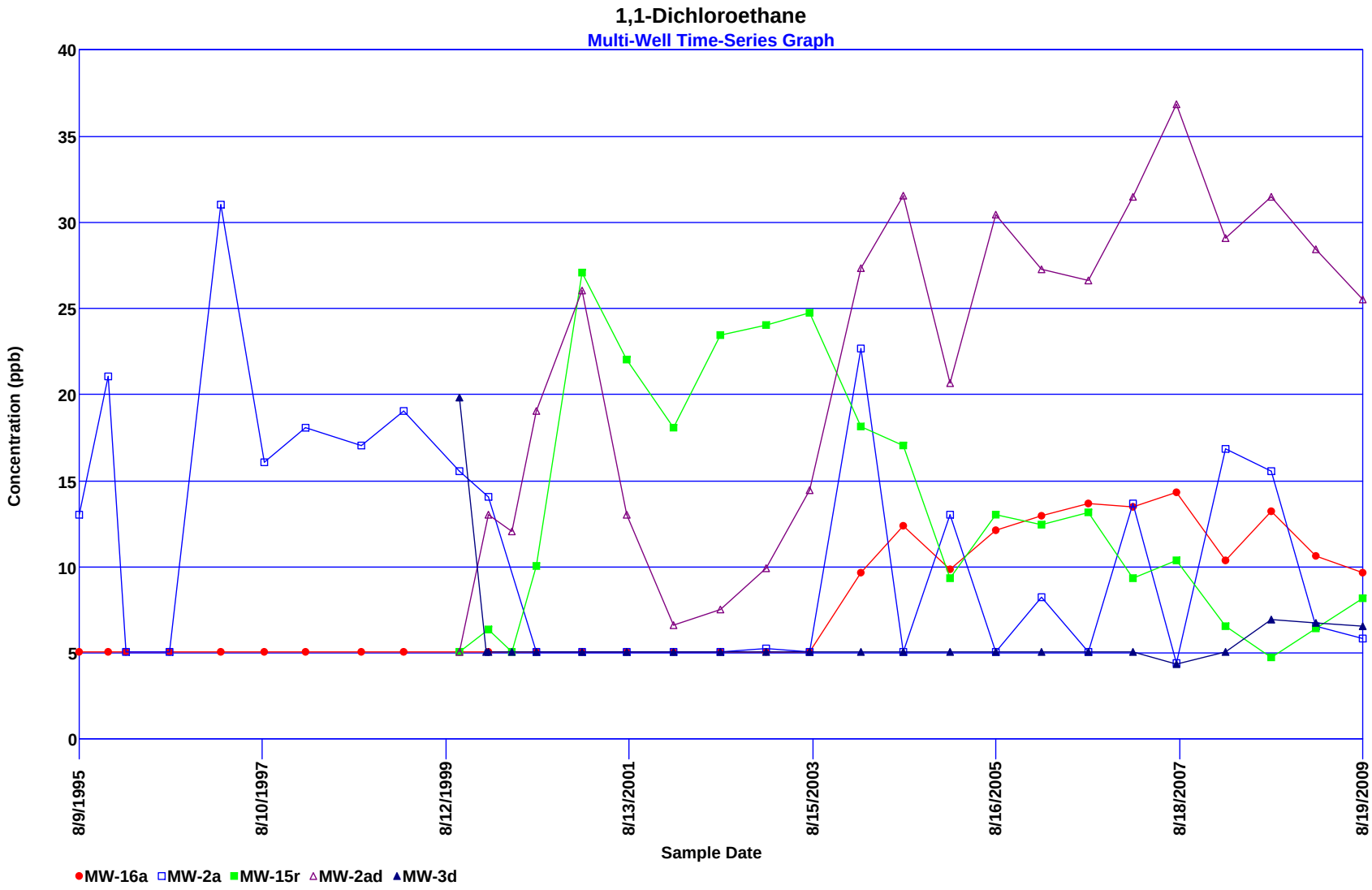
FORM #5

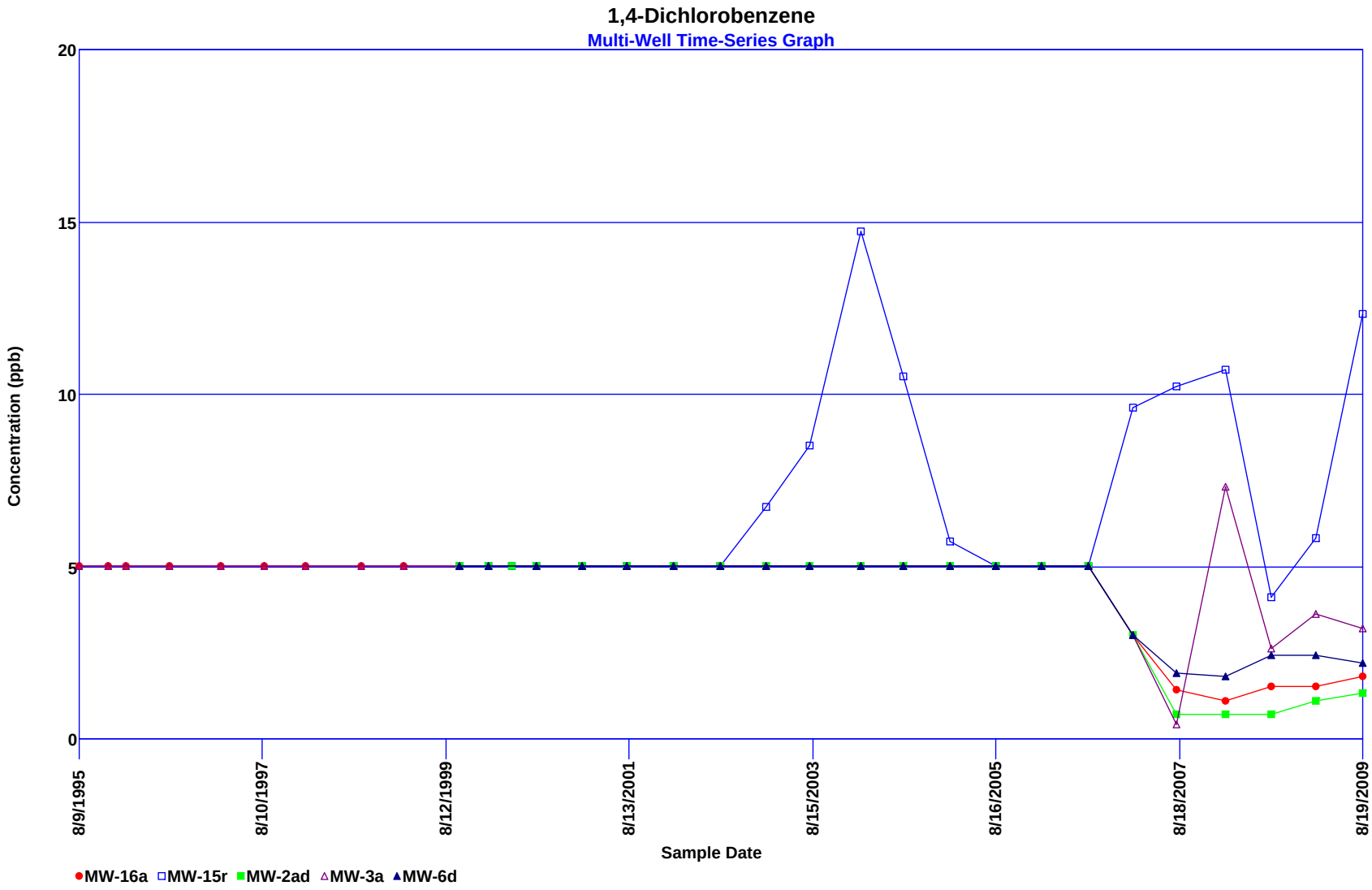
Sampler must place a "C" for composite sample or a "G" for Grab sample in the blocks above for each parameter requested.

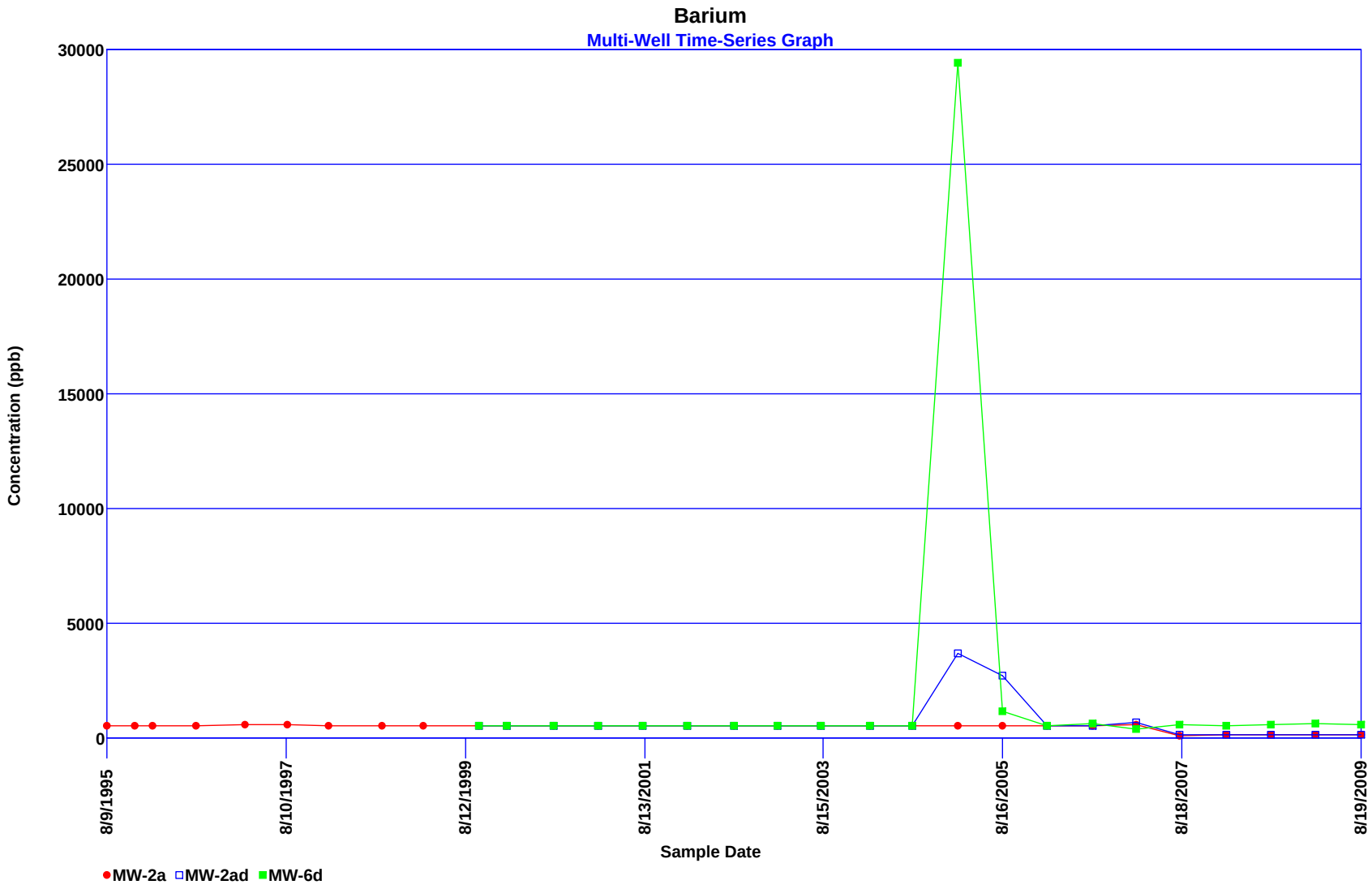
№ 191843

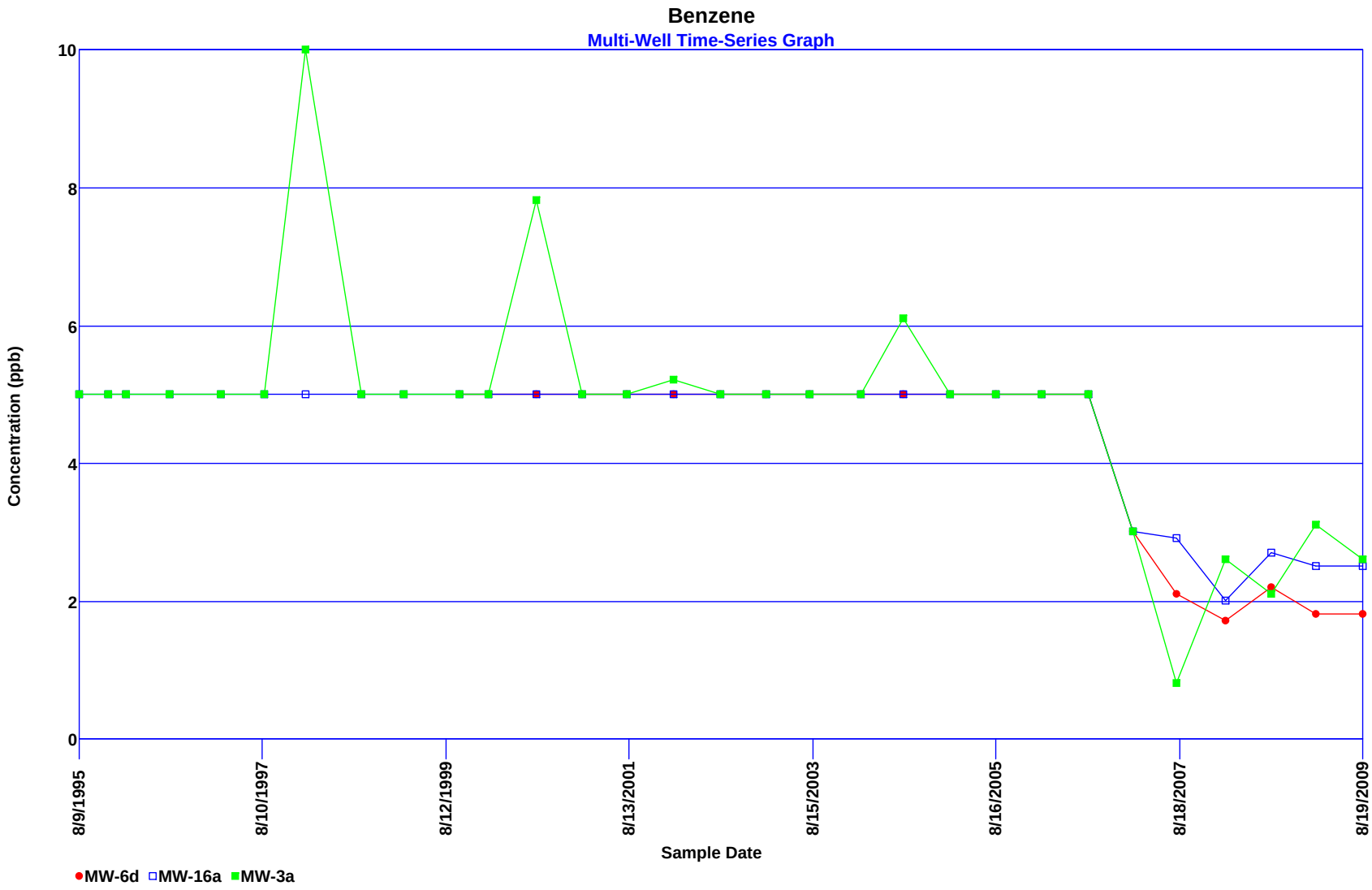
Appendix C

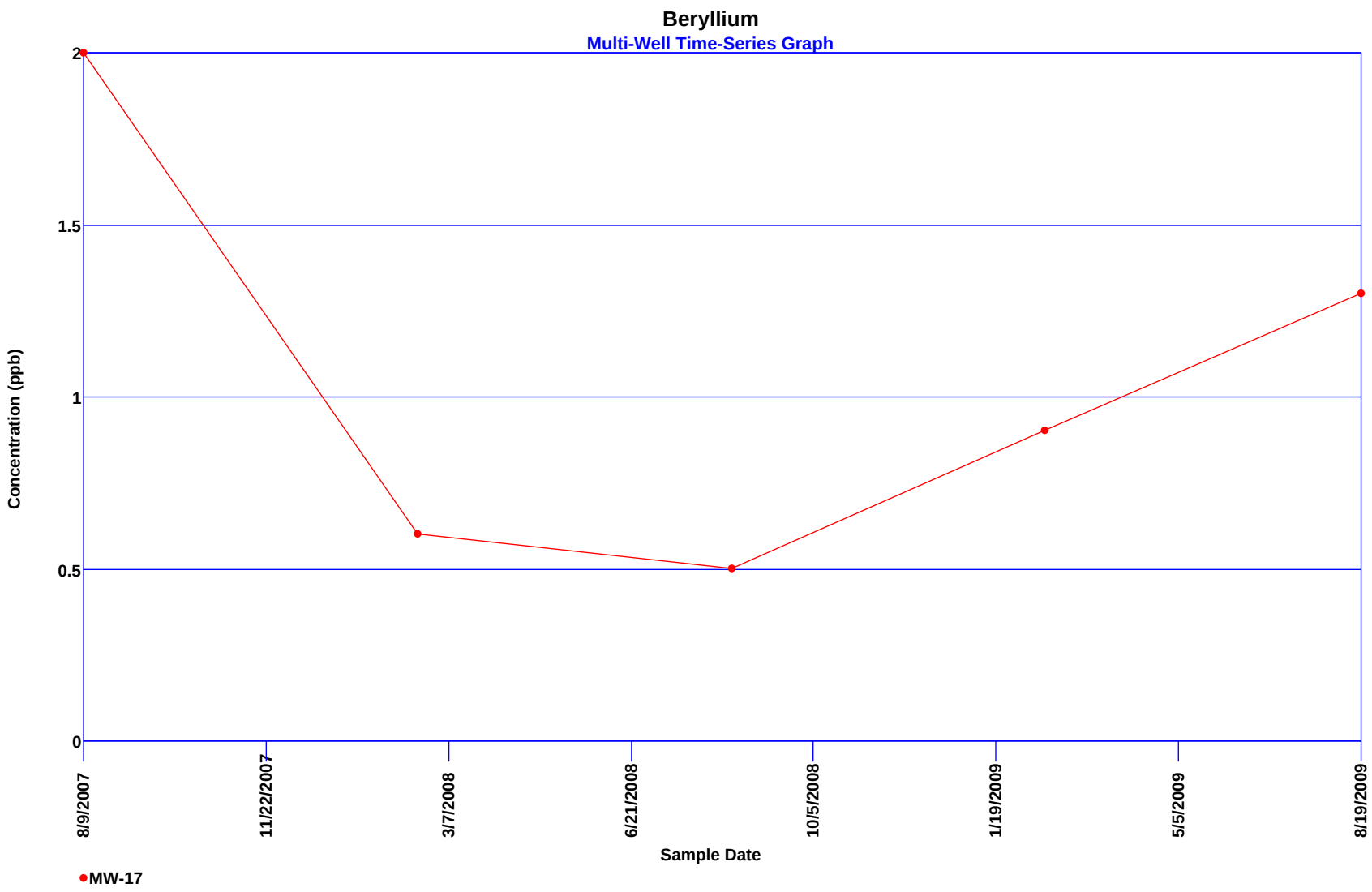
Time vs. Concentration Graphs

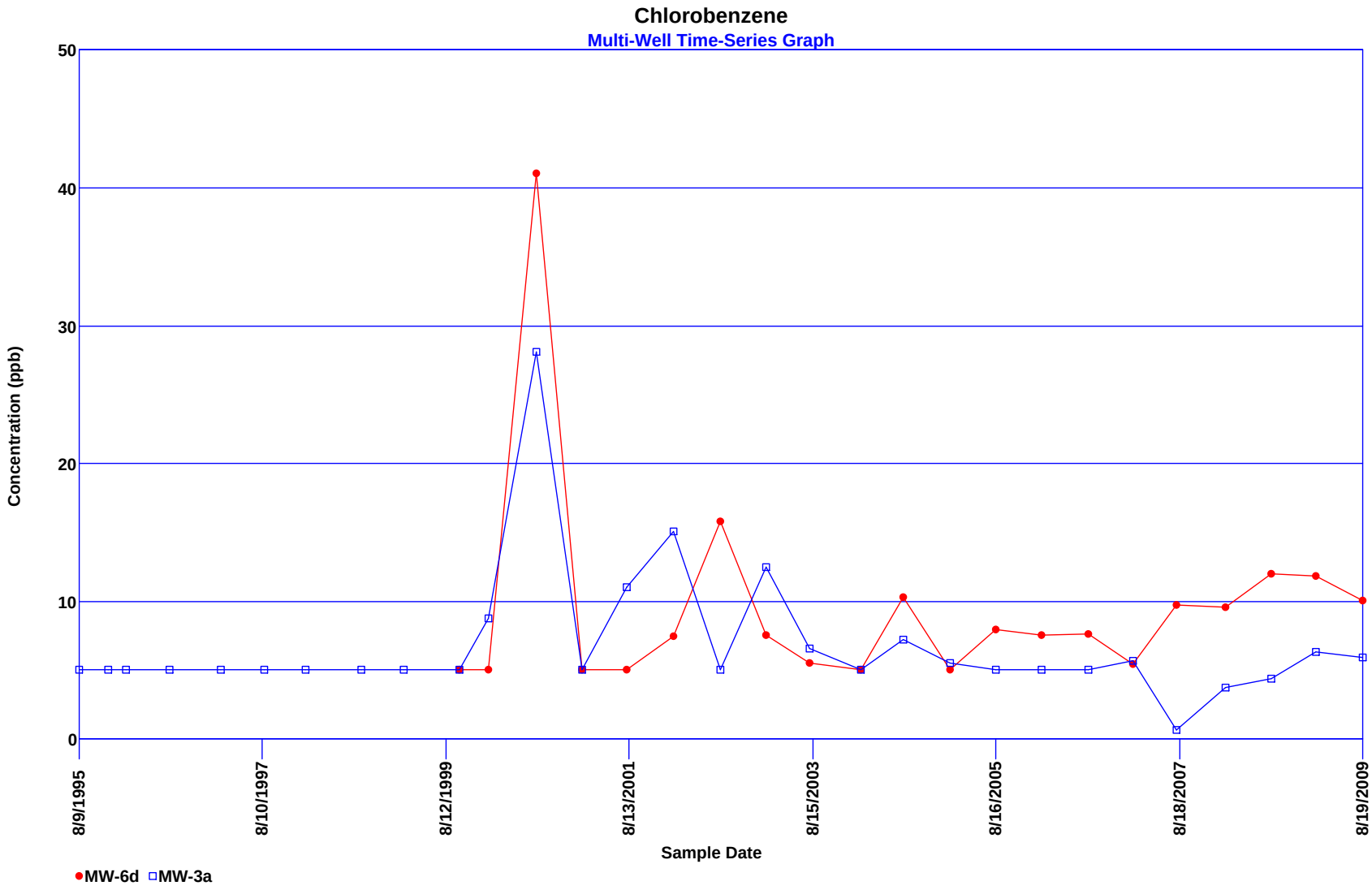

1,1-Dichloroethane
Multi-Well Time-Series Graph
Concentration (ppb)
40
35
30
25
20
15
10
5
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-16a
MW-2a
MW-15r
MW-2ad
MW-3d

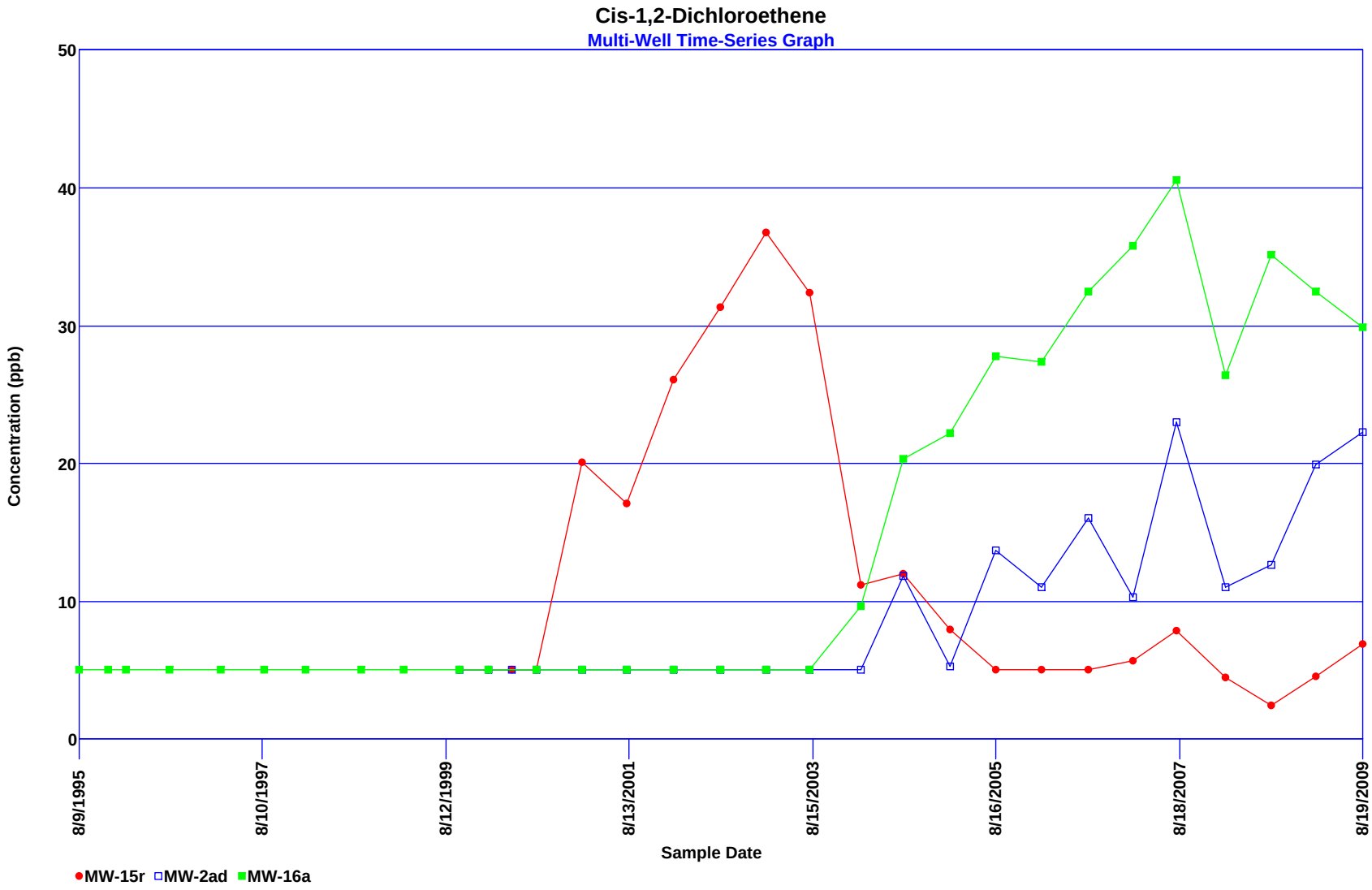

1,4-Dichlorobenzene
Multi-Well Time-Series Graph
Concentration (ppb)
20
15
10
5
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-16a
MW-15r
MW-2ad
MW-3a
MW-6d

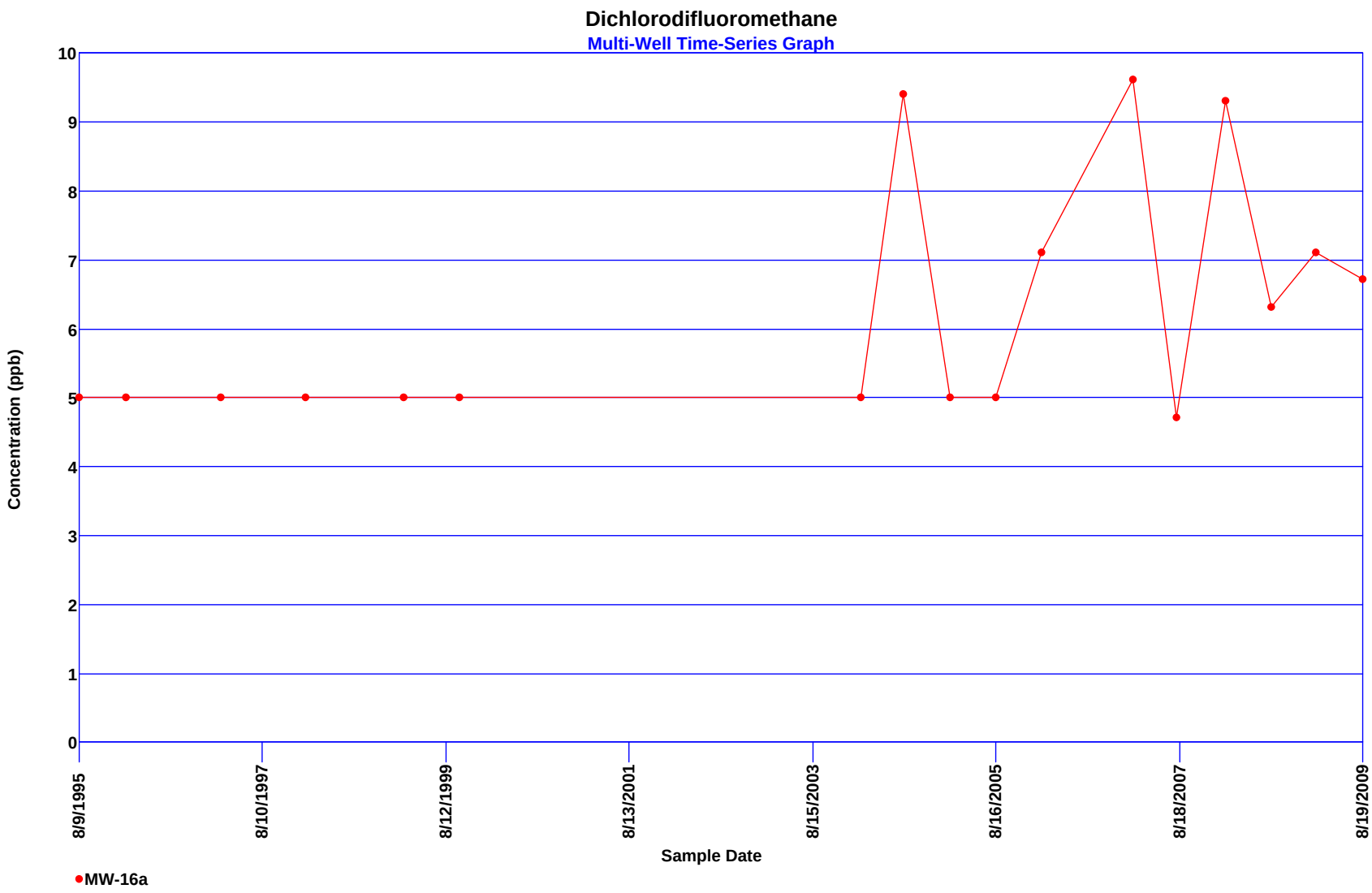

Barium
Multi-Well Time-Series Graph
Concentration (ppb)
30000
25000
20000
15000
10000
5000
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-2a
MW-2ad
MW-6d

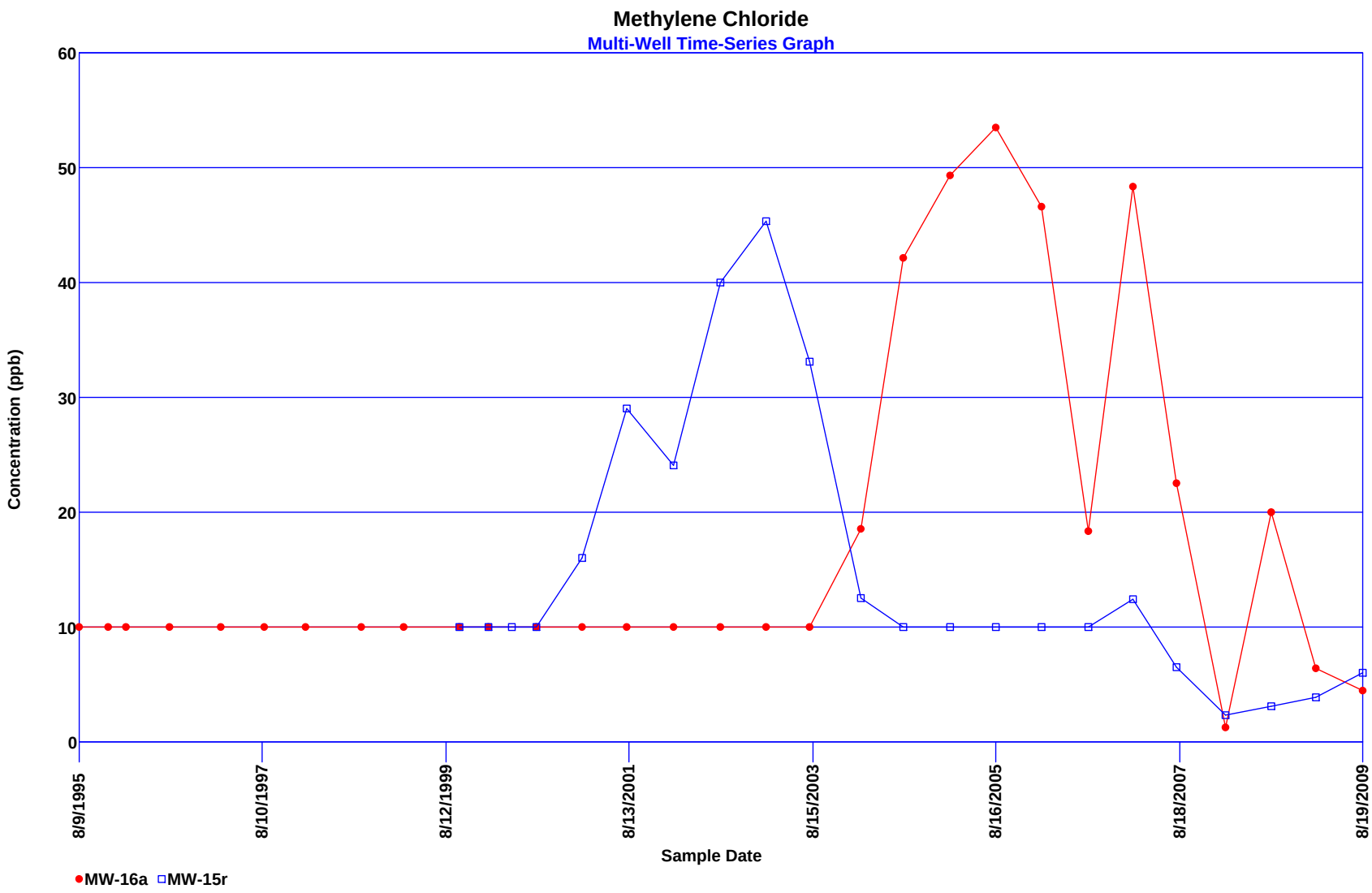

Benzene
Multi-Well Time-Series Graph
Concentration (ppb)
10
8
6
4
2
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-6d
MW-16a
MW-3a

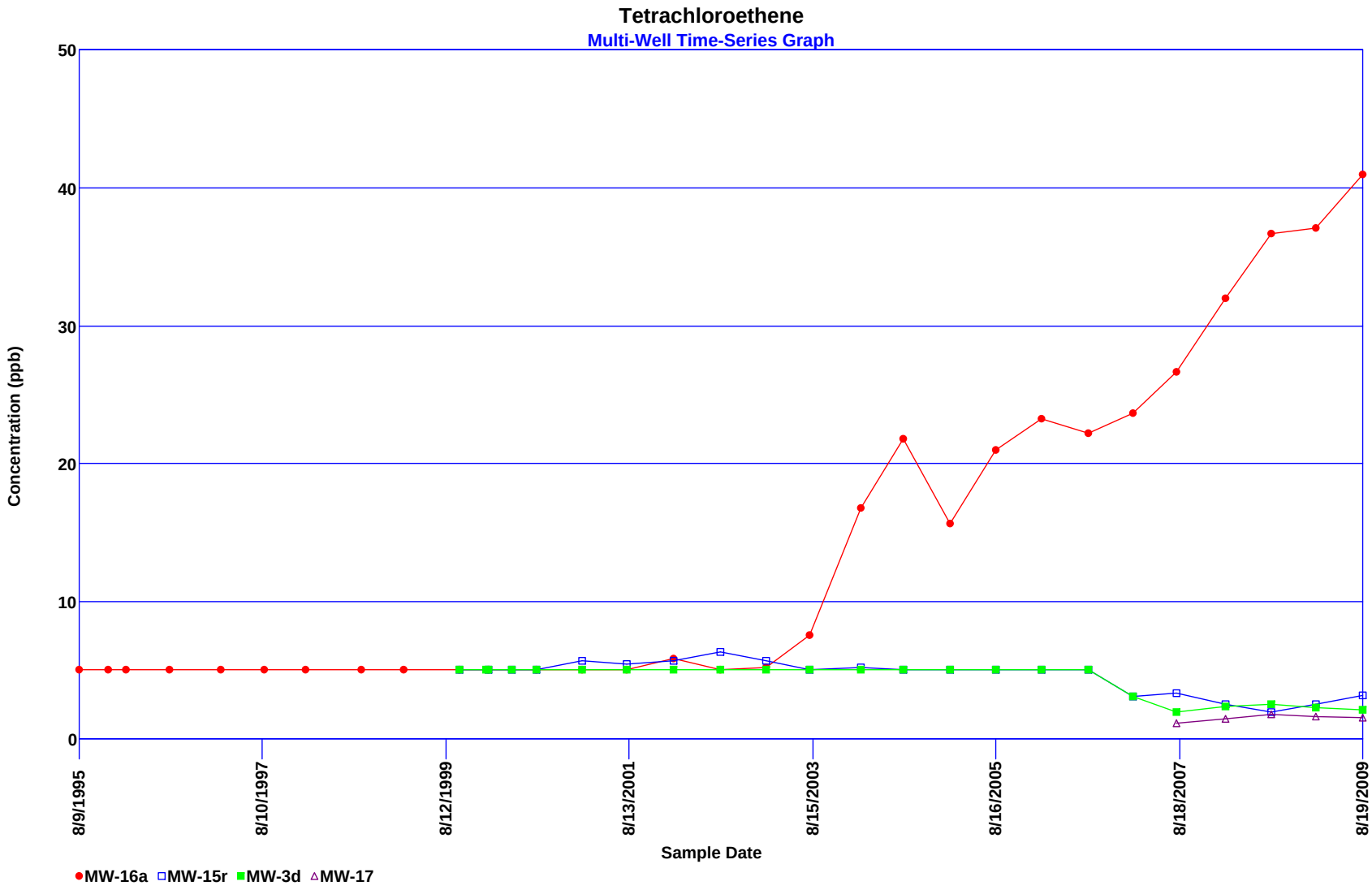

Beryllium
Multi-Well Time-Series Graph
Concentration (ppb)
2
1.5
1
0.5
0
8/9/2007
11/22/2007
3/7/2008
6/21/2008
10/5/2008
1/19/2009
5/5/2009
8/19/2009
Sample Date
MW-17

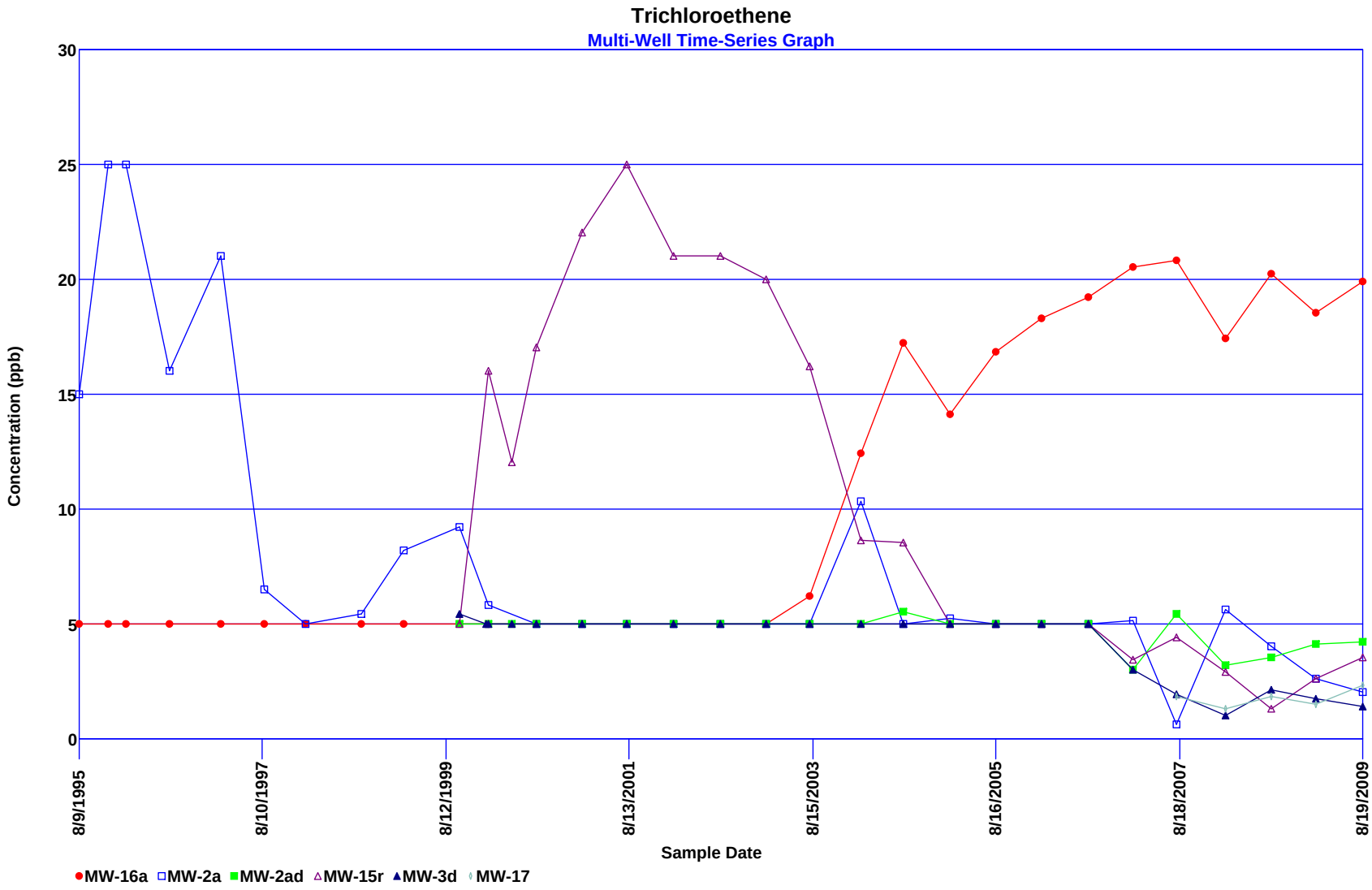

Chlorobenzene
Multi-Well Time-Series Graph
Concentration (ppb)
50
40
30
20
10
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-6d
MW-3a

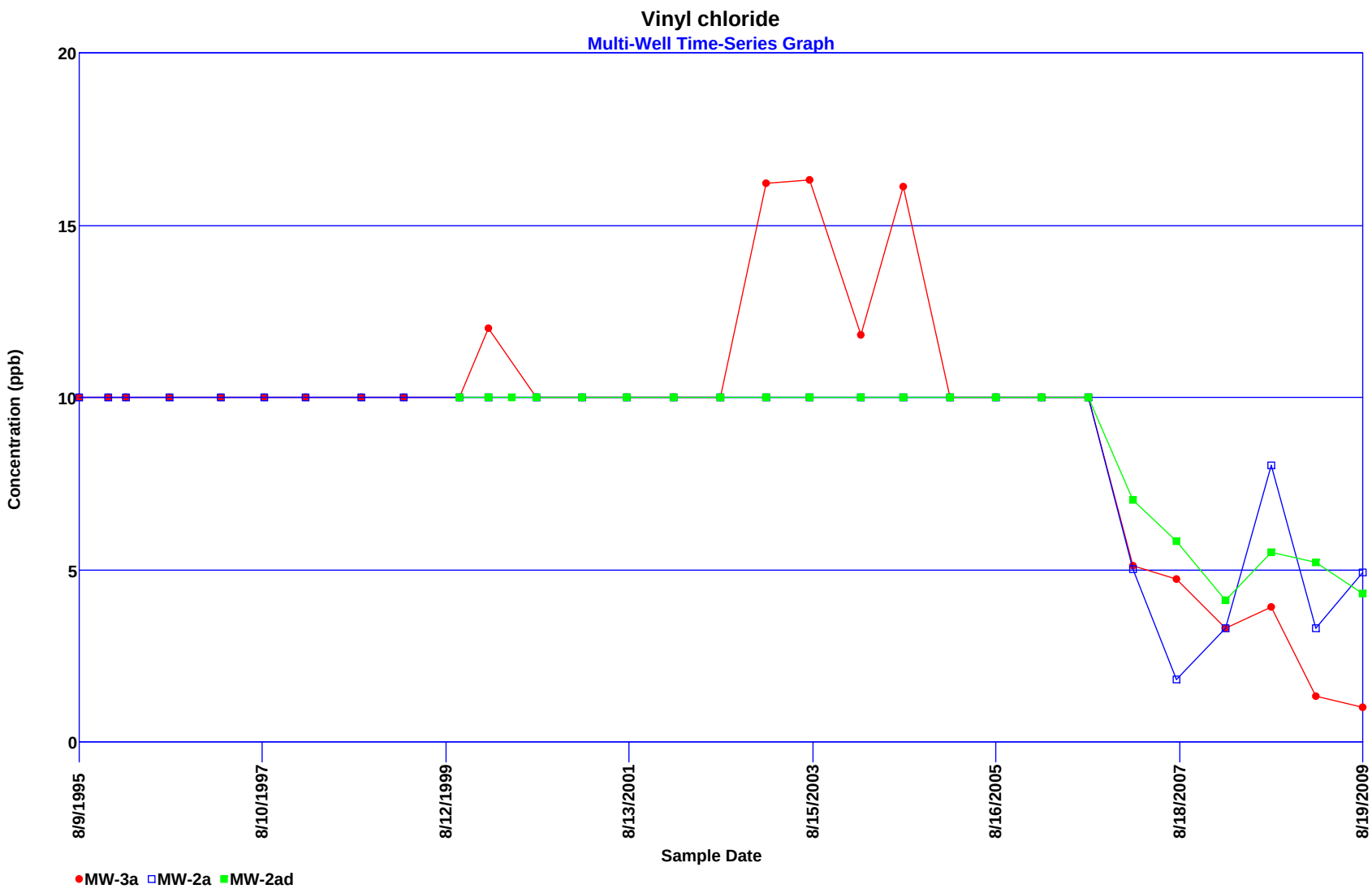

Cis-1,2-Dichloroethene
Multi-Well Time-Series Graph
Concentration (ppb)
50
40
30
20
10
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-15r
MW-2ad
MW-16a

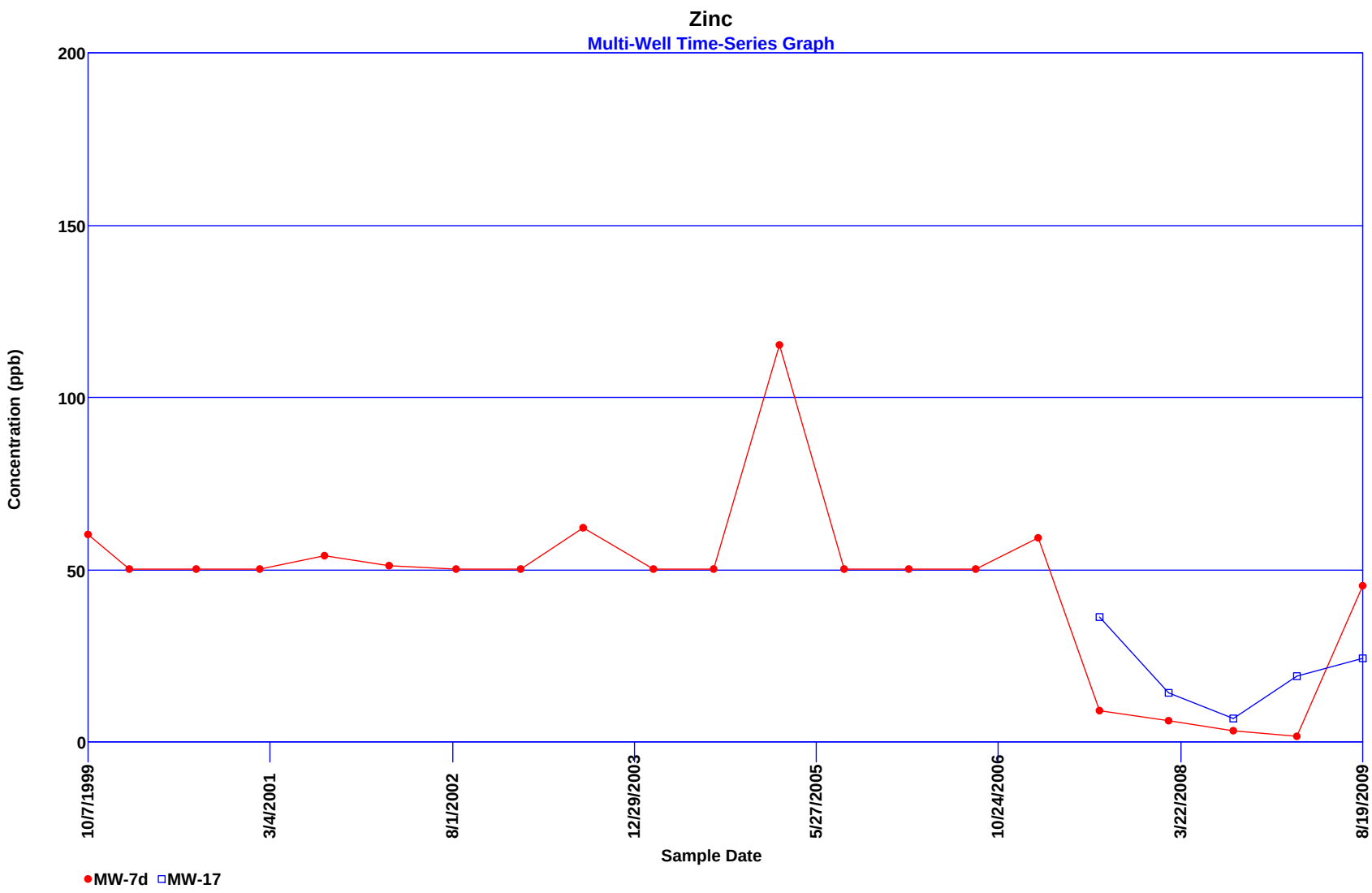

Dichlorodifluoromethane
Multi-Well Time-Series Graph
Concentration (ppb)
10
9
8
7
6
5
4
3
2
1
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-16a


Methylene Chloride
Multi-Well Time-Series Graph
Concentration (ppb)
60
50
40
30
20
10
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-16a
MW-15r


Tetrachloroethene
Multi-Well Time-Series Graph
Concentration (ppb)
50
40
30
20
10
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-16a
MW-15r
MW-3d
MW-17


Trichloroethene
Multi-Well Time-Series Graph
Concentration (ppb)
30
25
20
15
10
5
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-16a
MW-2a
MW-2ad
MW-15r
MW-3d
MW-17


Vinyl chloride
Multi-Well Time-Series Graph
Concentration (ppb)
20
15
10
5
0
8/9/1995
8/10/1997
8/12/1999
8/13/2001
8/15/2003
8/16/2005
8/18/2007
8/19/2009
Sample Date
MW-3a
MW-2a
MW-2ad


Zinc
Multi-Well Time-Series Graph
200
150
100
50
0
Concentration (ppb)
10/7/1999
3/4/2001
8/1/2002
12/29/2003
5/27/2005
10/24/2006
3/22/2008
8/19/2009
Sample Date
MW-7d
MW-17