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):

Richardson Smith Gardner and Associates, Inc.

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

Name: Madeline German Phone: 919-828-0577 x222

E-mail: madeline@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	921 Liles Rd, Aurelian Springs, NC	42-04	.0500	February 20-23, 2012

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.

Madeline German, PG — Geologist — 919-828-0577 x 222

Facility Representative Name (Print) — Title — (Area Code) Telephone Number

4/27/2012

Signature — Date

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 4/27/2012 GEOLOGIST MADELINE GERMAN

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

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Halifax County Landfill
Ground Water Monitoring Report

February 2012 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 70

Halifax, North Carolina 27839

April 2012

RICHARDSON SMITH GARDNER
& ASSOCIATES
ENGINEERING & GEOLOGICAL
SERVICES

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Halifax County Landfill

Semi-annual Ground Water Monitoring Report

February 2012 Monitoring Event

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1.0 Introduction

The Halifax County Landfill, operating under Solid Waste Permit #42-04, is required to submit semi-annual ground water monitoring reports (15A NCAC 13B .0544) for assessment monitoring. This report presents the results from the semi-annual monitoring event conducted February 20-23, 2012.

The Halifax County Landfill is currently accepting C&D waste over the closed municipal solid waste (MSW) landfill. In December 1997 the landfill stopped accepting MSW; and the County is currently transferring waste off-site to a lined landfill. The old landfill was closed per Solid Waste Regulations and the certification report was submitted to the Solid Waste Section (SWS) in September 1998. In 2007 the landfill was assessed to determine if groundwater issues warranted a remediation plan. The Corrective Action Plan (CAP) was approved June 8, 2009. **Section 7.0** of this report provides an update regarding the current corrective action situation for this facility.

This report includes a field procedure summary, laboratory analyses, statistical analyses and ground water characterization. Summary tables and graphs, laboratory analytical reports and statistical results are also provided.

2.0 Site Hydrogeology

According to the *1985 North Carolina Geological Map* and *Ground Water in the Halifax Area, North Carolina* (Dept. of Conservation and Development Bulletin #51, 1946) the landfill is situated on the eastern edge of the Eastern Piedmont Physiographic Province; slightly west of the Coastal Plain overlap. Generally, Western Halifax County is underlain by felsic to intermediate, crystalline igneous and metamorphic rocks of early to late Paleozoic age. Eastern Piedmont rocks generally exhibit a northeastern strike and locally dip gently eastward due to regional metamorphism and folding that produced a broad plunging anticline. The area was simultaneously intruded by a number of felsic (granite) plutons. The granitic pluton underlying the landfill is the Butterwood Creek intrusion.

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

3.0 Sampling Locations

The sampling event performed by Environment 1, Inc. utilized the ground water monitoring network that includes thirteen wells (MW-1, MW-2A, MW-2AD, MW-3AS, MW-3D, MW-6D, MW-7D, MW-15R, MW-16A, MW-17, MW-18S and MW-18D) located around the landfill perimeter and three surface water sampling points (SW-1, SW-2 and SW-3) up and downstream of the landfill. Trip and equipment blanks were also analyzed for quality control.

Figure 1 illustrates sampling locations. Boring logs for the groundwater monitoring wells are included in **Appendix A**.

4.0 Sampling Procedures

Sampling methods followed the protocol outlined in the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (DENR, DWM) and the approved site Water Quality Monitoring Plan[1]. Each well was gauged to determine ground water depth and then purged three to five well volumes or until dry. Field measurements for pH, specific conductivity and temperature were recorded at each well. Water table elevations and field parameter results are included in **Tables 1 and 2,** respectively.

Samples were collected by Environment 1 personnel in laboratory prepared containers for the specified analytical procedures. Ground water samples were properly preserved, placed on ice and transported to the laboratory facility within the specified hold times for each analysis.

5.0 Field & Laboratory Results

5.1 Field Results

Temperature, pH, and specific conductance were measured in the field at the time of sampling via direct read instruments. The field parameter results are summarized in **Table 2** and have remained consistent with previously reported sampling events.

5.2 Laboratory Analysis

Samples were transported to Environment 1, Inc., in Greenville, NC, a North Carolina certified laboratory (NC Wastewater ID #10). Laboratory analysis included metals via EPA Test Method 200.8, Appendix II Volatile Organic Compounds (VOCs) via EPA Test Method 8260B, pesticides and PCBs via EPA Test Method 8081B and 8151A, semi-volatile organics via EPA Test Method 8270C. The designated wells (MW-2A, MW-2AD, MW-3AS, MW-3D, MW-6D, MW-17, MW-18S and MW-18D) were also analyzed for MNA and indicator parameters by Solid Waste Section approved methods as reported on the laboratory report included in **Appendix B** and summarized in **Table 5**. Parameters were reported to the established Solid Waste Section Reporting Limits (SWSLs).

5.3 Laboratory Results

Analytical results were compared to the NC DWM Solid Waste Section Quantitation Limits (SWSLs) and 15A NCAC 2L.0200 (2LStandard).

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

5.3.1 Inorganic Constituents

Three inorganic constituents barium (MW-6D), iron (MW-2A, MW-2AD, MW-3AS, MW-6D, MW-17, MW-18S and MW-18D), and mercury (MW-15R) were detected above their respective SWSL standards. One inorganic constituent was detected above the 2L or GWP Standard:

- iron (MW-2A, MW-2AD, MW-3AS, MW-6D, MW-17, MW-18S and MW-18D).

The remaining inorganic constituents were either below the 2L/GWP standard or were "J-values" indicating a non-quantifiable value.

Zinc in was detected in SW-1 at a concentration below the 2B Standards.

5.3.2 Organic Constituents

The following constituents: 1,1-dichloroethane, 1,4-dichlorobenzene, dichlorofluoromethane, cis-1,2–dichloroethene, benzene, methylene chloride, tetrachloroethene, trichloroethene and vinyl chloride were detected above their respective SWSL. The following constituents were found at concentrations above their respective 2L Standards:

- Benzene (MW-3AS, MW-6D & MW-16A);
- 1,1-Dichloroethane (MW-3AS & MW-16A);
- Tetrachloroethene (MW-15R, MW-16A & MW-17);
- Trichloroethene (MW-16A); and
- Vinyl Chloride (MW-2A & MW-3AS).

Constituent concentrations reported between the MDL and MRL are estimated values and are denoted with a "J" qualifier. Inorganic and organic detections are provided on **Tables 3 & 4**, respectively. Time versus concentration graphs are included in **Appendix C**.

6.0 Ground Water Characterization

A potentiometric surface map was prepared from ground water elevation data for 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 reported 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 0.011 ft/day (MW-16A) to 0.327 ft/day (MW-2A). These calculated flow velocities are included in **Table 1**.

7.0 Corrective Action Update

The Halifax County Landfill is currently operating under a Corrective Action Plan[2] approved June 8, 2009. The CAP prescribed Monitored Natural Attenuation (MNA) with an active landfill gas (LFG) blower system. In accordance with SWS regulation regarding MNA baseline sampling wells MW-2A, MW-2AD, MW-3D, MW-3AS, MW-6D, MW-17, MW-18S and G-13 were analyzed for the SWS MNA indicator parameter list in accordance with the CAP. MNA sampling has been conducted semi-annually since the August 2009 event. MNA indicator results from this event are summarized in **Table 5**, and will be utilized for future site geochemistry and remedial strategy evaluation.

An approximately 350 foot long passive trench, used to vent LFG, is located between the landfill and MW-15R. Four passive vents are associated with this trench; two of which were initially planned for the installation blower assisted solar flares installed in August 2010. However, after installation of the flares, it became apparent that only enough gas to consistently keep on flare lit was present and the second flare could not sustain a flame. Therefore, the second flare was moved to an alternate location (passive vent) near MW-16a where it has been operating since.

A Corrective Action Evaluation Report (CAER) will be prepared submitted to the SWS summarizing the baseline evaluation and projecting future remedial outlook.

8.0 Conclusions

In general, the detected VOC constituent concentrations in groundwater have slightly decreased. More "j-qualified" metals were reported but this slight increase is more likely due to sample turbidity. Detection levels of metals and VOCs in MW-16A continue to fluctuate. The next groundwater monitoring event is scheduled for August 2012. A groundwater monitoring report will be submitted to NCDENR after receipt of analytical data and completion of statistical analyses.

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

Figures

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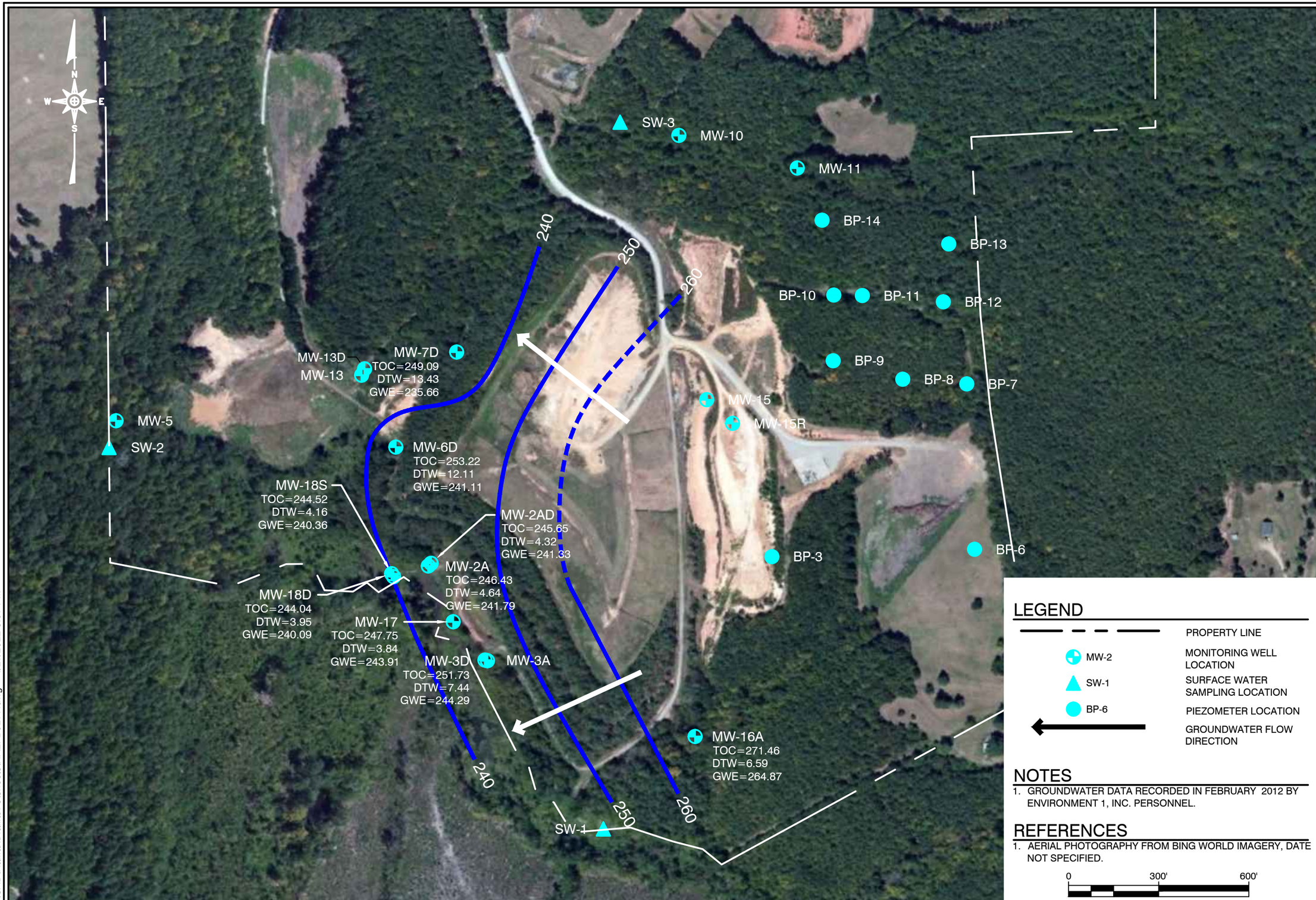

LEGEND

	PROPERTY LINE
MW-2	MONITORING WELL LOCATION
SW-1	SURFACE WATER SAMPLING LOCATION
BP-6	PIEZOMETER LOCATION
	GROUNDWATER FLOW DIRECTION

NOTES

1. GROUNDWATER DATA RECORDED IN FEBRUARY 2012 BY ENVIRONMENT 1, INC. PERSONNEL.

REFERENCES

1. AERIAL PHOTOGRAPHY FROM BING WORLD IMAGERY, DATE NOT SPECIFIED.

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FIGURE NO.	1
FILE NAME	HALI-B0177
SCALE:	AS SHOWN
PROJECT NO.	HALIFAX 8
CHECKED BY:	
DRAWN BY:	J.A.L.
DATE:	Apr. 2012

TITLE: HALIFAX COUNTY CLOSED MSW LANDFILL POTENTIOMETRIC SURFACE MAP FEBRUARY 2012

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Tables

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By: MG
Date: 3/30/2012

Table 1
Halifax County Closed Landfill
Ground Water Elevations & Velocities
February 20 - 23, 2012

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	--	37.22	--	--	--	--	--
MW-2A	246.43	4.64	241.79	1.835	0.2	0.036	0.327
MW-2AD	245.65	4.32	241.33	--	--	--	--
MW-3AS	--	8.03	--	--	--	--	--
MW-3D	251.73	7.44	244.29	--	--	--	--
MW-6D	253.22	12.11	241.11	--	--	--	--
MW-7D	249.09	32.98	216.11	--	--	--	--
MW-16A	271.46	6.59	264.87	0.057	0.2	0.038	0.011
MW-17	247.75	3.84	243.91	--	--	--	--
MW-18S	244.52	4.16	240.36	--	--	--	--
MW-18D	244.04	3.95	240.09	--	--	--	--

NOTE:

1.) MW-1 is not used in the ground water characterization calculations due to its remote location from the landfill
2.) NS = Not Sampled
3.) Hydraulic Conductivity data from slug tests performed by G.N. Richardson and Associates in 1997.
4.) Porosity values assumed from Groundwater & Wells (Driscoll)
5.) Velocity Calculated from V=K*I/n
    V = velocity
    K = Hydraulic Conductivity
    I = Gradient
    n = Porosity
6.) Deep wells not used in velocity calculations

By: MG
Date: 3/30/2012

Table 2
Halifax County Closed Landfill
Field Parameters
February 20 - 23, 2012

Monitoring Location	pH (std units)	Specific Conductivity (umhos/cm)	Temperature (degrees C)	static water level (feet)
MW-1	6.1	30	17	37.22
MW-2A	5.84	196	11.71	4.64
MW-2AD	6.42	358	12.66	4.32
MW-3AS	5.72	489	14.09	8.03
MW-3D	5.82	162	15.86	7.44
MW-6D	5.84	504	16.11	12.11
MW-7D	6	42	14	32.98
MW-15R	5.1	59	17	NS
MW-16A	5.9	139	14	6.59
MW-17	5.5	127	11.96	3.84
MW-18S	6.13	241	13.49	4.16
MW-18D	6.16	131	13.36	3.95
SW-1	7.4	93	9	-
SW-2	7.1	82	9	-
SW-3	6.9	427	9	-

Note: Field data collected by Environment 1 personnel.
NS = Not Sampled

By: MG
Date: 3/30/2012

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Table 3
Halifax County Closed Landfill
Detected Inorganic Constituents
February 20 - 23, 2012

Monitoring Location	SWSL	2L or GWP Standard	2B Standard	MW-1	MW-2A	MW-2AD	MW-3AS	MW-3D	MW-6D	MW-7D	MW-15R	MW-16A	MW-17	MW-18S	MW-18D	SW-1	SW-2	SW-3
Antimony	6	1 §	640	ND	ND	ND	ND	ND	ND	ND	0.78 J	ND	ND	ND	ND	ND	0.28 J	ND
Arsenic	10	10	10	0.32 J	1.2 J	1.2 J	1.9 J	ND	0.18 J	0.33 J	ND	0.28 J	ND	2.7 J	ND	0.33 J	0.64 J	0.62 J
Barium	100	700	2000000	37.5 J	67.8 J	91.6 J	38.6 J	49.2 J	**464**	63.8 J	54.9 J	90.5 J	42.6 J	77.3 J	51.6 J	20.2 J	24.0 J	15.5 J
Beryllium	1	4 §	6.5	0.32 J	0.31 J	0.06 J	0.11 J	0.12 J	0.28 J	0.27 J	0.13 J	0.33 J	0.39 J	0.06 J	ND	0.06 J	ND	0.52 J
Cadmium	1	2	2	0.17 J	0.14 J	ND	ND	ND	0.53 J	0.37 J	0.15 J	0.18 J	0.06 J	ND	ND	ND	0.04 J	0.19 J
Cobalt	10	1 §	270	1.4 J	4.3 J	6.9 J	2.5 J	0.04 J	3.6 J	0.43 J	0.39 J	0.76 J	0.38 J	6.0 J	ND	0.24 J	0.44 J	0.62 J
Copper	10	1000	7	1.2 J	2.3 J	0.20 J	0.43 J	0.14 J	0.52 J	0.93 J	2.8 J	0.27 J	1.2 J	0.33 J	0.11 J	0.76 J	0.38 J	0.44 J
Chromium, total	10	10	50	0.54 J	0.31 J	ND	0.17 J	ND	ND	0.12 J	ND	ND	0.43 J	0.19 J	ND	0.48 J	ND	0.16 J
Iron	300	300	1000	NS	**23300**	**2011**	**108200**	112 J	**531**	NS	NS	NS	**1921**	**27030**	**383**	NS	NS	NS
Lead	10	15	25	1.5 J	0.29 J	0.07 J	0.49 J	ND	0.05 J	1.3 J	0.26 J	0.22 J	1.3 J	0.14 J	ND	0.46 J	0.21 J	0.17 J
Mercury	0.2	1	0.012	NS	ND	ND	ND	ND	ND	ND	**0.32**	0.11	ND	ND	ND	NS	NS	NS
Nickel	50	100	88	0.49 J	0.47 J	0.83 J	0.06 J	ND	1.3 J	0.18 J	0.20 J	0.24 J	0.55 J	1.2 J	0.22	0.32 J	0.32 J	0.69 J
Selenium	10	20	5	ND	ND	ND	ND	ND	0.22 J	ND	ND	0.24 J	ND	ND	ND	ND	0.78 J	2.0 J
Silver	10	20	0.06	ND	ND	ND	ND	ND	0.04 J	ND	0.27 J	ND	ND	ND	ND	0.04 J	ND	ND
Thallium	5.5	0.28 §	0.47	0.06 J	ND	ND	ND	ND	0.12 J	0.07 J	0.13 J	0.03 J	ND	ND	ND	0.16 J	0.03 J	ND
Tin	100	2000 §	NE	NS	0.21 J	0.19 J	0.18 J	ND	0.18 J	0.49 J	0.36 J	ND	0.36 J	ND	ND	NS	NS	NS
Vanadium	25	0.3 §	NE	2 J	2.0 J	ND	1.0 J	0.29 J	ND	1.2 J	ND	0.47 J	2.0 J	1.3 J	0.90 J	1.8 J	0.77 J	2.7 J
Zinc	10	1000	50	5.9 J	5.5 J	2.9 J	6.5 J	1.8 J	7.9 J	8.6 J	2.3 J	3.8 J	9.8 J	2.3 J	2.1 J	20	2.6 J	7.2 J

SWSL	-	Solid Waste Section Quantitation Limits
2L	-	Groundwater Standards (15A NCAC 2L 0200)
GWP	-	Groundwater Protection Standards (noted by §)
2B	-	NCAC 2B Standard for Class C waters
MDL	-	Method Detection Limit
Shading	-	Detection above 2L standard or GWP standard
Bold Letters	-	Constituents detected above SWSL
J	-	Detected between MDL and SWSL limit
ND	-	Not detected at or above MDL

By: MG

Date: 3/30/2012

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Table 4
Halifax County Closed Landfill
Detected Organic Constituents
February 20 - 23, 2012

Monitoring Location	SWSL	2L Standard	2B Standard	MW-2A	MW-2AD	MW-3AS	MW-3D	MW-6D	MW-15R	MW-16A	MW-17
Benzene	1	1	NA	ND	0.3 J	**1.2**	ND	**1.1**	ND	**1.9**	ND
1,1,2,2- Tetrachloroethane				ND	ND	ND	ND	ND	ND	0.6 J	ND
1,1-Dichloroethane	5	6	NA	1 J	5.0	**6.1**	**5.8**	ND	4.1 J	**11.2**	4.7 J
1,1-Dichloroethene	5	7	NA	ND	ND	ND	0.2 J	ND	0.4 J	0.4 J	0.2 J
1,2- Dichloropropane	1	0.6	NA	ND	ND	ND	ND	ND	ND	0.4 J	ND
1,4-Dichlorobenzene	1	6	NA	ND	ND	0.6 J	ND	**1.8**	ND	ND	ND
4,4-DDD				ND	ND	ND	ND	0.055 J	ND	ND	ND
Bromoform				ND	ND	ND	ND	ND	ND	1 J	ND
Dichlorodifluoromethane	5	1000	NA	ND	ND	ND	0.6 J	ND	ND	**6.6**	1.1 J
Cis-1,2-Dichlorethene	5	70	NA	0.5 J	**6.2**	3.3 J	3 J	ND	1 J	**23.1**	2.4 J
Chlorobenzene	3	50	NA	ND	1 J	1.9 J	ND	**5.6**	ND	0.7 J	ND
Chloroethane	10	3000	NA	ND	ND	1.1 J	ND	0.7 J	ND	ND	ND
Methylene chloride	1	5	NA	ND	ND	ND	ND	ND	**2.0**	ND	ND
Tetrachloroethene	1	0.7	NA	ND	ND	ND	0.9 J	ND	**1.5**	**45.8**	**1.2**
Trans-1,2 Dichloroethene	5	100	NA	ND	ND	ND	ND	ND	ND	0.4 J	ND
Trichlorofluoromethane	1	2000	NA	ND	ND	ND	ND	ND	ND	0.6 J	ND
Trichloroethene	1	3	NA	ND	1.0	0.6 J	0.8 J	ND	0.7 J	**19.1**	**1.2**
Vinyl Chloride	1	0.03	NA	ND	**1.2**	**4.9**	ND	ND	ND	0.7 J	ND

SWSL - Solid Waste Section Quantitation Limits
2L - Groundwater Standards (15A NCAC 2L 0200)
GWP - Groundwater Protection Standards (noted by §)
2B - NCAC 2B Standard for Class C waters
MDL - Method Detection Limit
Shading - Detection above 2L standard or GWP standard
Bold Letters - Constituents detected above SWSL
J - Detected between MDL and SWSL limit
ND - Not detected at or above MDL

By: MG
Date: 3/30/2012

Table 5
Halifax County Closed Landfill
MNA Parameter Summary
February 20 - 23, 2012

	MDL*	SWSL	MW-2A	MW-2AD	MW-3AS	MW-3D	MW-6D*	MW-17	MW-18S	MW-18D
BOD, ug/l	2000	NE	<2000	<2000	11000	2100	<2000	<2000	<2000	<2000
COD, ug/l	20000	NE	25000	<20000	<20000	<20000	<20000	33000	29000	<2000
Nitrate Nitrogen as N, ug/l	30	10000	<30	<30	<30	<30	<30	120	<30	60
Total Organic Carbon, ug/l	300	NE	645	<300	5170	<300	1810	<300	7100	<300
Total Alkalinity, ug/l	1000	NE	96000	73000	251000	59000	216000	306000	128000	6700
Chloride, ug/l	5000	NE	6000	5000	7000	9000	23000	<5000	<5000	<5000
Sulfate, ug/l	5000	250000	<5000	13200 J	<5000	<5000	10100 J	<5000	<5000	<5000
Sulfide, ug/l	100	1000	<100	<100	<100	<100	<100	<100	<100	<100
Turbidity, NTU	1	NE	70	14	750	1	3	240	1	340
Dissolved Oxygen, ug/l	100	NE	2210	6140	1480	2310	700	2430	790	6600
Carbon Dioxide, ug/l	1000	NE	85000	54000	458000	15000	188000	25000	71000	15000
ORP, mv	--	NE	-39.2	97.3	48.3	243.1	151.1	217.9	-54.1	98
Methane, ug/l	0.015	NE	3900	230	3000	2500	38	1100	3800	30
Ethane, ug/l	0.010	NE	<0.010	0.03	0.51	<0.010	0.32	<0.010	<0.010	<0.010
Ethene, ug/l	0.010	NE	<0.010	0.058	0.22	0.069	0.033	<0.010	<0.010	0.68
Hydrogen, nM	0.60	NE	1.4	0.75	0.63	0.9	1.2	0.62	0.87	0.68
Lactic Acid, mg/l	0.10	NE	<0.10	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	0.10
Acetic Acid mg/l	0.070	NE	<0.070	<0.070	<0.070	<0.070	<0.070	<0.070	0.12	0.26
Propionic Acid, mg/l	0.050	NE	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.065
Butyric Acid, mg/l	0.050	NE	<0.050	<0.050	<0.050	0.24	<0.050	<0.050	0.093	0.23
Pyruvic Acid, mg/l	0.15	NE	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
i-Pentanoic Acid, mg/l	0.15	NE	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Pentanoic Acid, mg/l	0.070	NE	<0.070	<0.070	<0.070	<0.070	<0.070	<0.070	<0.070	<0.070
i-Hexanoic Acid, mg/l	0.050	NE	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Hexanoic Acid, mg/l	0.050	NE	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

MDL - Method Detection Limit
SWSL - Solid Waste Section Quantitation Limits
J - Detected between MDL and SWSL limit
< MDL - Not detected at or above MDL
NE - not established

Analysis provided by Environment 1, Inc and Microseeps Laboratories.
Note: * Microseeps data used RDL values in place of MDL values(method AM23G and AM20GAX).
* Sampe MW-6D was analyzed out of hold for Microseeps parameters

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Appendix A

Boring Logs

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FIELD BOREHOLE LOG

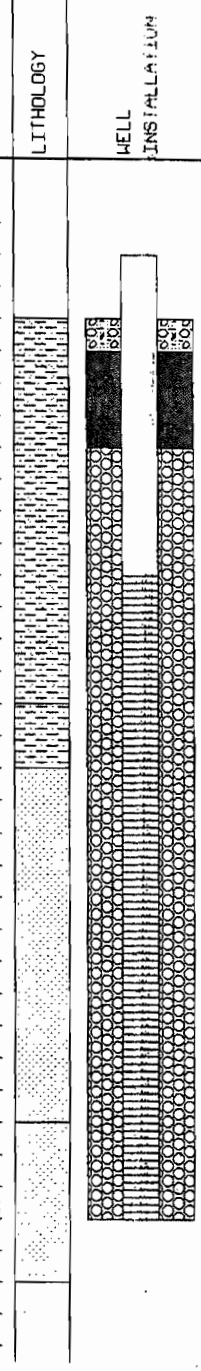
BOREHOLE NUMBER: MW-2A

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

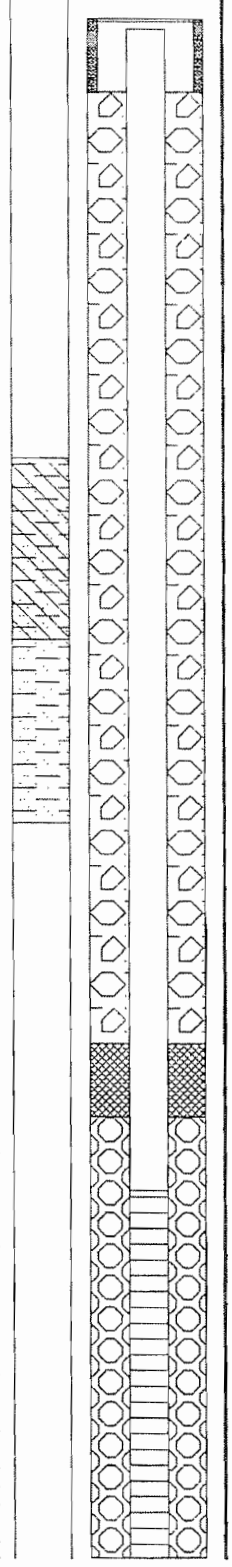
BOREHOLE NUMBER: MW-2aa

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

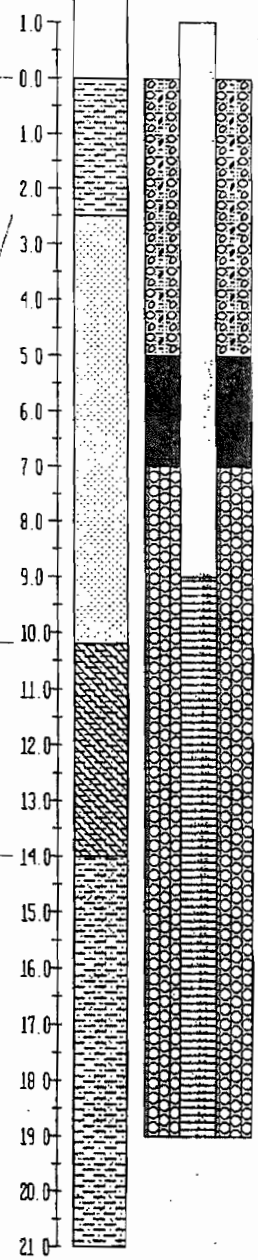
BOREHOLE NUMBER: MW-3A-S

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

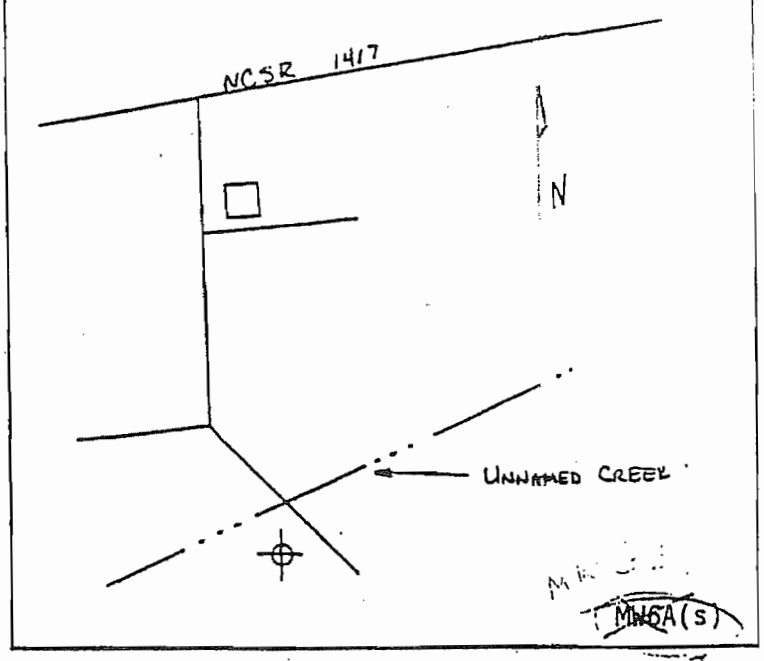
DEPTH FROM	TO	FORMATION DESCRIPTION
0.0	8.4	Brown fine sandy silt
8.4	23.0	Wet, brown, silty fine to medium sand

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 E

AW-7

TEST BORING FIELD REPORT

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

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

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 ___

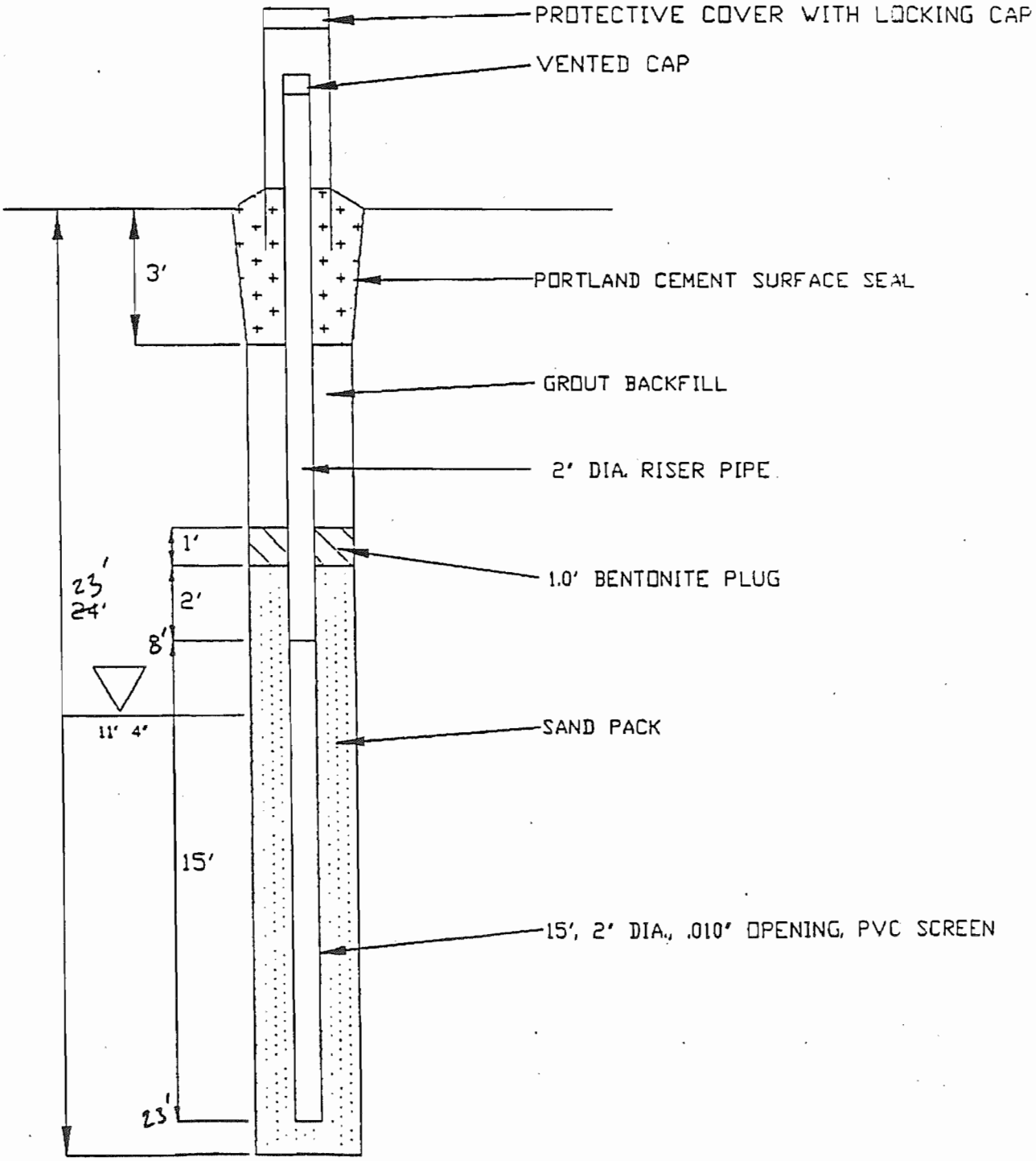
sing, Size Length ___

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

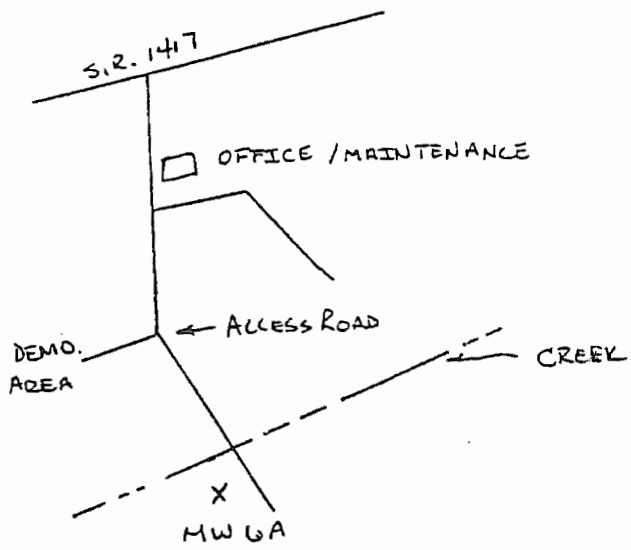
(m): _____ Method of Testing: _____ Casing is _____ feet above land surface

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.

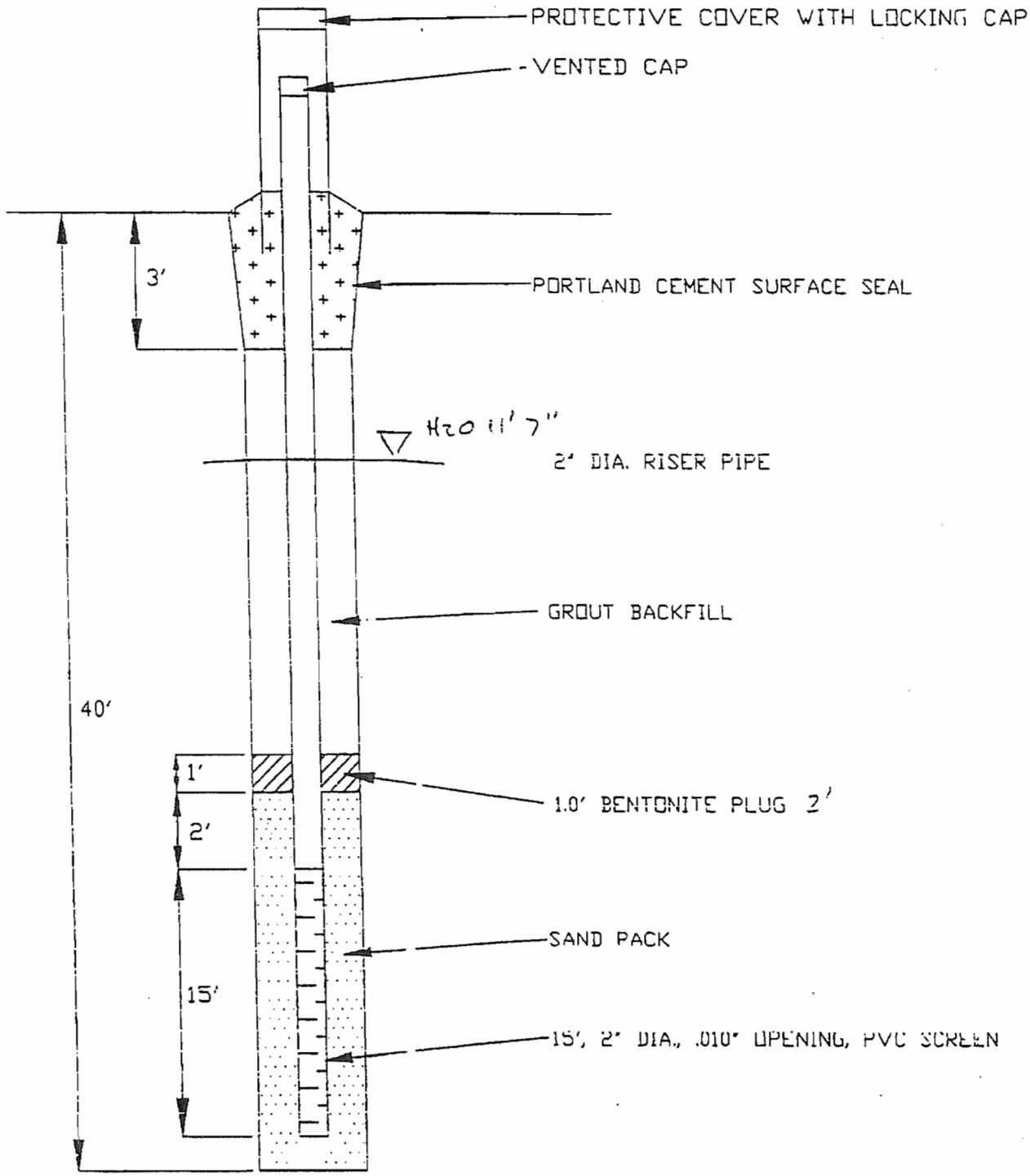
_____ SIGNATURE: _____

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

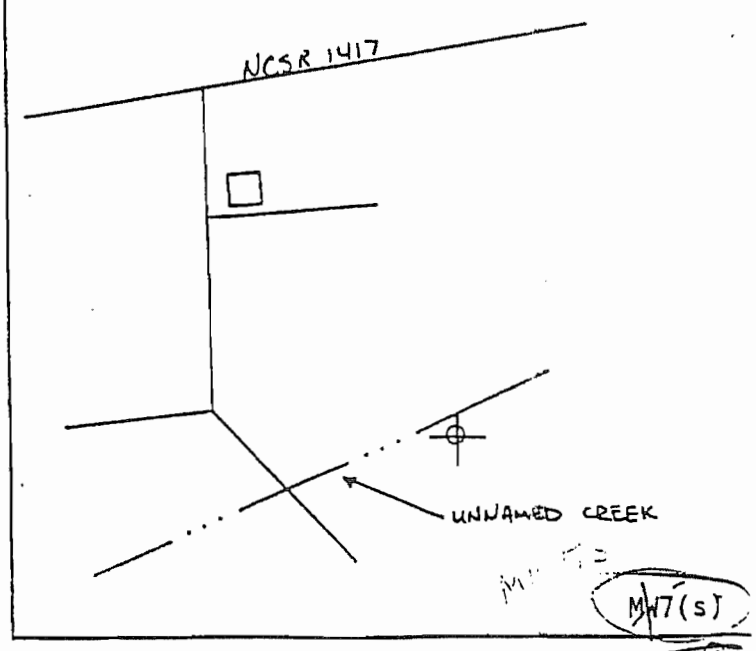
Yield (gpm): _____ Method of Testing: _____ Casing is _____ feet above land surface

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 ___

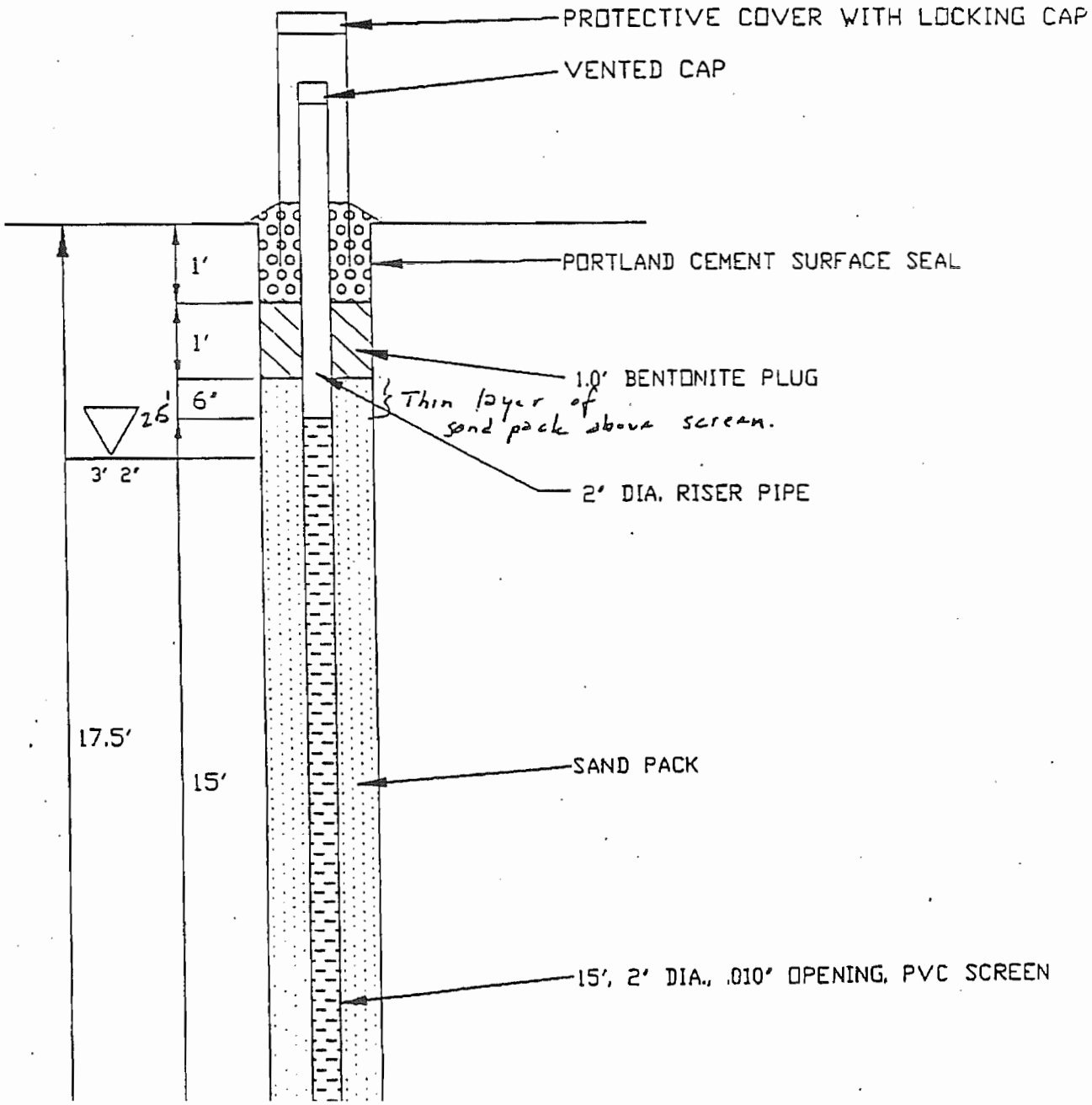
Casing, Size ___ Length ___

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

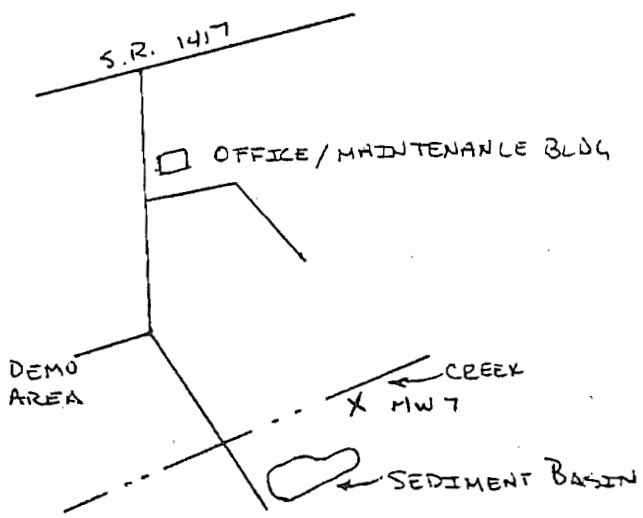
(g m): _____ Method of Testing: _____ Casing is _____ feet above land surface

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.

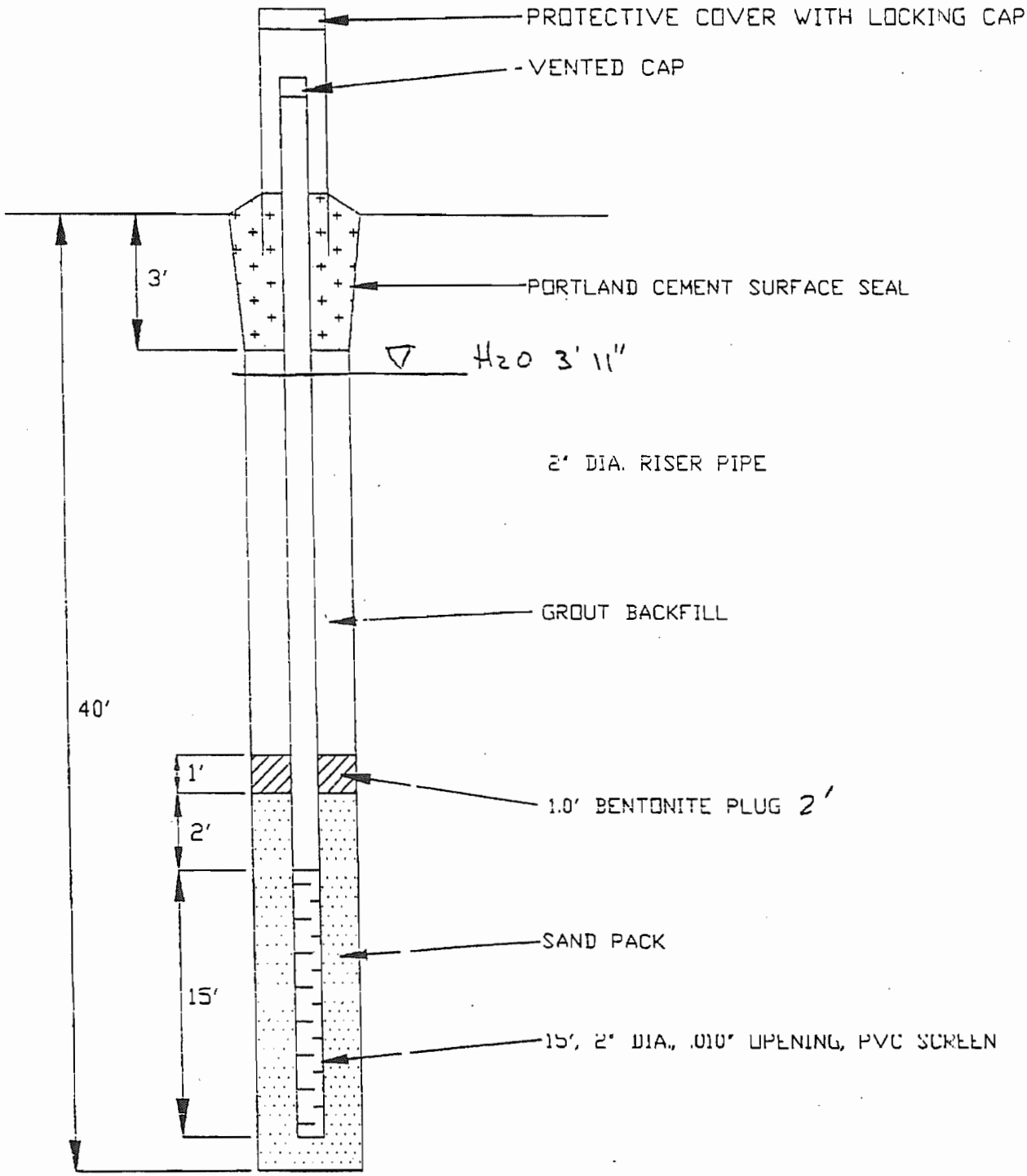
SIGNATURE: _____

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

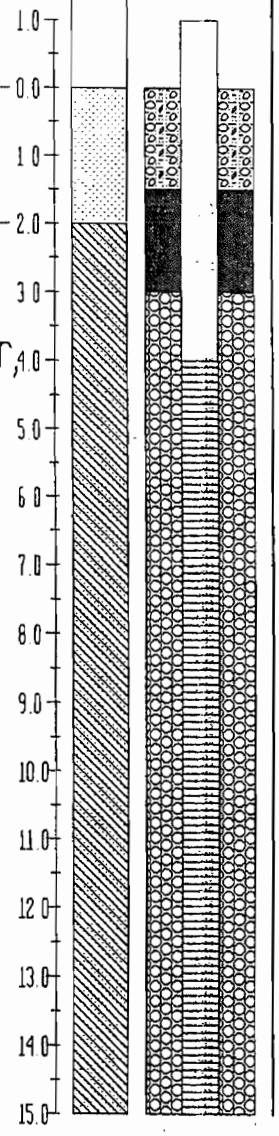
BOREHOLE NUMBER: MW-16A

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

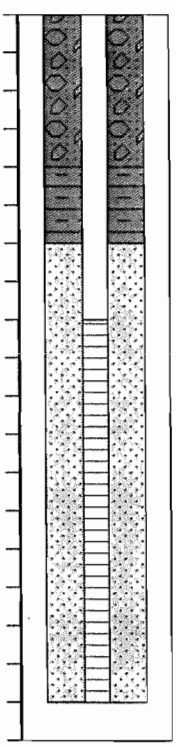
BOREHOLE NUMBER **MW-18s**

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	



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(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	

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Appendix B

Laboratory Analytical Report

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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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 02/20/12
DATE REPORTED : 03/13/12

REVIEWED BY:

PARAMETERS	MDL	SWSL	SW-1	SW-2	SW-3	Analysis Date	Analyst	Method Code
PH (field measurement), Units			7.4	7.1	6.9	02/20/12	RJH	SM4500HB
Antimony, ug/l	0.14	6.0	--- U	0.28 J	--- U	02/23/12	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	0.33 J			03/05/12	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0		0.64 J	0.62 J	02/23/12	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	20.2 J			03/05/12	LFJ	EPA200.8
Barium, ug/l	0.02	100.0		24.0 J	15.5 J	02/23/12	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.06 J			03/05/12	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0		--- U	0.52 J	02/23/12	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	--- U			03/05/12	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0		0.04 J	0.19 J	02/23/12	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0	0.24 J			03/05/12	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0		0.44 J	0.62 J	02/23/12	LFJ	EPA200.8
Copper, ug/l	0.02	10.0	0.76 J			03/05/12	LFJ	EPA200.8
Copper, ug/l	0.02	10.0		0.38 J	0.44 J	02/23/12	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	0.48 J			03/05/12	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0		--- U	0.16 J	02/23/12	LFJ	EPA200.8
Lead, ug/l	0.02	10.0	0.46 J			03/05/12	LFJ	EPA200.8
Lead, ug/l	0.02	10.0		0.21 J	0.17 J	02/23/12	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	0.32 J			03/05/12	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0		0.32 J	0.69 J	02/23/12	LFJ	EPA200.8
Selenium, ug/l	0.20	10.0	--- U			03/05/12	LFJ	EPA200.8
Selenium, ug/l	0.20	10.0		0.78 J	2.0 J	02/23/12	LFJ	EPA200.8
Silver, ug/l	0.02	10.0	0.04 J			03/05/12	LFJ	EPA200.8
Silver, ug/l	0.02	10.0		--- U	--- U	02/23/12	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	0.16 J			03/05/12	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5		0.03 J	--- U	02/23/12	LFJ	EPA200.8
Vanadium, ug/l	0.14	25.0	1.8 J			03/05/12	LFJ	EPA200.8
Vanadium, ug/l	0.14	25.0		0.77 J	2.7 J	02/23/12	LFJ	EPA200.8
Zinc, ug/l	0.24	10.0	20			03/05/12	LFJ	EPA200.8
Zinc, ug/l	0.24	10.0		2.6 J	7.2 J	02/23/12	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	93	82	427	02/20/12	RJH	SM2510B
Temperature, °C			9	9	9	02/20/12	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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 A

ANALYST: MAO
DATE COLLECTED: 02/20/12
DATE ANALYZED: 03/02/12
DATE REPORTED: 03/13/12

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	SW-1	SW-2	SW-3
1. Chloromethane	0.77	1.0	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- 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 A **Week:** 8

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
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
							12			12	12
						P	P	P	P	G	G
						A	A	A	A	E	E
SW-1	02/20/12	1010		9	4	G	G	G	G	G	G
SW-2	02/20/12	1110		9	4	G	G	G	G	G	G
SW-3	02/20/12	1000		9	4	G	G	G	G	G	G

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

PARAMETERS

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)
H Page / Fox

SAMPLES RECEIVED IN LAB AT 0.3 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
H Page	02/20/12	[signature]	2/20/12 230
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.

FORM #5

№ 236293

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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 02/21/12
DATE REPORTED : 03/29/12

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-1	MW-7D	MW-15R	MW-16A	Trip Blank	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.1	6.0	5.1	5.9		02/21/12	RJH	SM4500HB
Cyanide, ug/l	5.0	10.0		--- U	--- U	--- U		02/23/12	SEJ	SM4500 CNE
Antimony, ug/l	0.14	6.0	--- U	--- U	0.78 J	--- U		02/23/12	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	0.32 J	0.33 J	--- U	0.28 J		02/23/12	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	37.5 J	63.8 J	54.9 J	90.5 J		02/23/12	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.32 J	0.27 J	0.13 J	0.33 J		02/23/12	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	0.17 J	0.37 J	0.15 J	0.18 J		02/23/12	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0	1.4 J	0.43 J	0.39 J	0.76 J		02/23/12	LFJ	EPA200.8
Copper, ug/l	0.02	10.0	1.2 J	0.93 J	2.8 J	0.27 J		02/23/12	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	0.54 J	0.12 J	--- U	--- U		02/23/12	LFJ	EPA200.8
Lead, ug/l	0.02	10.0	1.5 J	1.3 J	0.26 J	0.22 J		02/23/12	LFJ	EPA200.8
Mercury, ug/l	0.05	0.20		--- U	0.32	0.11 J		02/23/12	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	0.49 J	0.18 J	0.20 J	0.24 J		02/23/12	LFJ	EPA200.8
Selenium, ug/l	0.20	10.0	--- U	--- U	--- U	0.24 J		02/23/12	LFJ	EPA200.8
Silver, ug/l	0.02	10.0	--- U	--- U	0.27 J	--- U		02/23/12	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	0.06 J	0.07 J	0.13 J	0.03 J		02/23/12	LFJ	EPA200.8
Tin, ug/l	0.16	100.0		0.49 J	0.36 J	--- U		02/23/12	LFJ	EPA200.8
Vanadium, ug/l	0.14	25.0	2.0 J	1.2 J	--- U	0.47 J		02/23/12	LFJ	EPA200.8
Zinc, ug/l	0.24	10.0	5.9 J	8.6 J	2.3 J	3.8 J		02/23/12	LFJ	EPA200.8
Sulfide, ug/l	100	1000		--- U	--- U	--- U		02/27/12	LFJ	SM4500-S2D
Conductivity (at 25c), uMhos/cm	1.0	1.0	30	42	59	139		02/21/12	RJH	SM2510B
Temperature, °C			17	14	17	14		02/21/12	RJH	SM2550B
Static Water Level, feet			37.22	13.43	32.98	6.59		02/21/12	RJH	
Well Depth, feet			42.36	39.57	46.41	22.73		02/21/12	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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

REVIEWED BY:

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/21/12
DATE EXTRACTED: 02/28/12
DATE ANALYZED: 03/07/12
DATE REPORTED: 03/29/12

PESTICIDES AND PCB'S
EPA METHOD 8081B

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	--- U	--- 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	0.075	--- 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	--- U
17. Heptachlor Epoxide	0.042	0.075	--- 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	1.50	--- U	--- U	--- U

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Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/21/12
DATE EXTRACTED: 02/28/12
DATE ANALYZED: 02/28/12
DATE REPORTED: 03/29/12

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

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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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 02/21/12
DATE ANALYZED: 03/05/12
DATE REPORTED: 03/29/12

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-1
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	--- U
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	--- U
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	--- U
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	--- U
37. Xylenes	0.68	5.0	--- U
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/21/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A
1. Acenaphthene	2.66	10.0	--- U	--- U	--- U
2. Acenaphthylene	2.60	10.0	--- U	--- U	--- U
3. Anthracene	2.97	10.0	--- U	--- U	--- U
4. Benzo[a]antrhacene	4.16	10.0	--- U	--- U	--- U
5. Benzo[b]fluoranthene	3.32	10.0	--- U	--- U	--- U
6. Benzo[k]fluoranthene	4.23	10.0	--- U	--- U	--- U
7. Benzo[g,h,i]perylene	2.61	10.0	--- U	--- U	--- U
8. Benzo[a]pyrene	3.27	10.0	--- U	--- U	--- U
9. 4-Bromophenyl Phenyl Ether	2.63	10.0	--- U	--- U	--- U
10. Butyl Benzyl Phthalate	5.78	10.0	--- U	--- U	--- U
11. Bis-(2-Chloroethoxy) Methane	3.14	10.0	--- U	--- U	--- U
12. Bis-(2-Chloroethyl) Ether	2.58	10.0	--- U	--- U	--- U
13. Bis-(2-Chloroisopropyl) Ether	2.58	10.0	--- U	--- U	--- U
14. 2-Chloronaphthalene	2.17	10.0	--- U	--- U	--- U
15. 4-Chlorophenyl Phenyl Ether	2.42	10.0	--- U	--- U	--- U
16. Chrysene	4.04	10.0	--- U	--- U	--- U
17. Dibenzo[a,h]anthracene	2.78	10.0	--- U	--- U	--- U
18. Di-N-Butyl Phthalate	3.09	10.0	--- U	--- U	--- U
19. Dimethyl Phthalate	3.78	10.0	--- U	--- U	--- U
20. Diethyl Phthalate	3.92	10.0	--- U	--- U	--- U
21. 2,4-Dinitrotoluene	3.95	10.0	--- U	--- U	--- U
22. 2,6-Dinitrotoluene	3.88	10.0	--- U	--- U	--- U
23. Di-N-Octyl Phthalate	2.81	10.0	--- U	--- U	--- U
24. Bis-(2-Ethylhexyl) Phthalate	9.97	15.0	--- U	--- U	--- U
25. Fluoranthene	3.92	10.0	--- U	--- U	--- U
26. Fluorene	2.95	10.0	--- U	--- U	--- U
27. Hexachlorobenzene	2.61	10.0	--- U	--- U	--- U
28. Hexachlorocyclopentadiene	4.16	10.0	--- U	--- U	--- U
29. Indeno[1,2,3-Cd]pyrene	2.91	10.0	--- U	--- U	--- U
30. Isophorone	3.74	10.0	--- U	--- U	--- U
31. Nitrobenzene	2.85	10.0	--- U	--- U	--- U
32. N-Nitrosodimethylamine	4.25	10.0	--- U	--- U	--- U
33. N-Nitrosodiphenylamine	3.95	10.0	--- U	--- U	--- U
34. N-Nitrosodi-N-Propylamine	4.06	10.0	--- U	--- U	--- U
35. Phenanthrene	3.24	10.0	--- U	--- U	--- U
36. Pyrene	3.63	10.0	--- U	--- U	--- U
37. 4-Chloro-3-Methylphenol	3.79	20.0	--- U	--- U	--- U
38. 2-Chlorophenol	2.75	10.0	--- U	--- U	--- U
39. O-Cresol	3.68	10.0	--- U	--- U	--- U
40. P-Cresol	4.12	10.0	--- U	--- U	--- U
41. 2,4-Dichlorophenol	5.19	10.0	--- U	--- U	--- U
42. 2,6-Dichlorophenol	4.89	10.0	--- U	--- U	--- U
43. 2,4-Dimethylphenol	3.21	10.0	--- U	--- U	--- U
44. 4,6-Dinitro-2-Methylphenol	4.77	50.0	--- U	--- U	--- U
45. 2,4-Dinitrophenol	4.37	50.0	--- U	--- U	--- U
46. Ethyl Methanesulfonate	5.26	20.0	--- U	--- U	--- U
47. Methyl Methanesulfonate	4.92	10.0	--- U	--- U	--- U
48. 2-Nitrophenol	3.64	10.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/21/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A
49. 4-Nitrophenol	3.17	50.0	--- U	--- U	--- U
50. Pentachlorophenol	5.33	25.0	--- U	--- U	--- U
51. Phenol	1.86	10.0	--- U	--- U	--- U
52. 2,3,4,6-Tetrachlorophenol	3.12	10.0	--- U	--- U	--- U
53. 2,4,5-Trichlorophenol	4.17	10.0	--- U	--- U	--- U
54. 2,4,6-Trichlorophenol	3.84	10.0	--- U	--- U	--- U
55. Acetophenone	2.89	10.0	--- U	--- U	--- U
56. 2-Acetylaminofluorene	3.98	20.0	--- U	--- U	--- U
57. 4-Aminobiphenyl	4.12	20.0	--- U	--- U	--- U
58. Benzyl Alcohol	4.47	20.0	--- U	--- U	--- U
59. 4-Chloroaniline	3.36	20.0	--- U	--- U	--- U
60. Chlorobenzilate	5.12	10.0	--- U	--- U	--- U
61. Diallate	2.98	10.0	--- U	--- U	--- U
62. Dibenzofuran	4.28	10.0	--- U	--- U	--- U
63. 3,3-Dichlorobenzidine	4.22	20.0	--- U	--- U	--- U
64. Dimethoate	3.98	20.0	--- U	--- U	--- U
65. P-Dimethylaminoazobenzene	2.89	10.0	--- U	--- U	--- U
66. 7,12-Dimethylbenz[a]anthracene	5.26	10.0	--- U	--- U	--- U
67. 3,3-Dimethylbenzadine	3.21	10.0	--- U	--- U	--- U
68. 1,3-Dinitrobenzene	2.89	20.0	--- U	--- U	--- U
69. Diphenylamine	5.10	10.0	--- U	--- U	--- U
70. Disulfoton	4.28	10.0	--- U	--- U	--- U
71. Famphur	3.98	20.0	--- U	--- U	--- U
72. Hexachloropropene	4.31	10.0	--- U	--- U	--- U
73. Isosafrole	2.88	10.0	--- U	--- U	--- U
74. Kepone	2.78	20.0	--- U	--- U	--- U
75. Methapyrilene	3.54	100.0	--- U	--- U	--- U
76. 3-Methylchloroanthrene	4.21	10.0	--- U	--- U	--- U
77. 2-Methylnaphthalene	3.79	10.0	--- U	--- U	--- U
78. Methyl Parathion	4.32	10.0	--- U	--- U	--- U
79. m-Cresol	3.81	10.0	--- U	--- U	--- U
80. 1,4-Naphthoquinone	4.00	10.0	--- U	--- U	--- U
81. 1-Naphthylamine	5.61	10.0	--- U	--- U	--- U
82. 2-Naphthylamine	4.62	10.0	--- U	--- U	--- U
83. 2-Nitroaniline	3.61	50.0	--- U	--- U	--- U
84. 3-Nitroaniline	4.81	50.0	--- U	--- U	--- U
85. 4-Nitroaniline	4.22	20.0	--- U	--- U	--- U
86. 5-Nitro-O-Toluidine	4.01	10.0	--- U	--- U	--- U
87. N-Nitrosodi-n-butylamine	3.63	10.0	--- U	--- U	--- U
88. N-Nitrosodiethylamine	3.83	20.0	--- U	--- U	--- U
89. N-Nitrosomethylethylamine	3.83	10.0	--- U	--- U	--- U
90. N-Nitrosopiperidine	5.19	20.0	--- U	--- U	--- U
91. N-Nitrosopyrrolidine	2.89	10.0	--- U	--- U	--- U
92. Parathion	3.12	10.0	--- U	--- U	--- U
93. Pentachlorobenzene	3.92	10.0	--- U	--- U	--- U
94. Pentachloronitrobenzene	3.71	20.0	--- U	--- U	--- U
95. Phenacetin	4.41	20.0	--- U	--- U	--- U
96. 1,4 Benzenediamine	2.99	10.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/21/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A
97. Phorate	3.86	10.0	--- U	--- U	--- U
98. Pronamide	3.69	10.0	--- U	--- U	--- U
99. Safrole	4.12	10.0	--- U	--- U	--- U
100. 1,2,4,5-Tetrachlorobenzene	5.01	10.0	--- U	--- U	--- U
101. Thionazin	4.62	20.0	--- U	--- U	--- U
102. O-Toluidine	4.11	10.0	--- U	--- U	--- U
103. 1,3,5-Trinitrobenzene	3.98	10.0	--- U	--- U	--- U
104. 0,0,0-Triethyl Phosphorothioate	3.61	10.0	--- U	--- U	--- U
105. Hexachloroethane	1.49	10.0	--- U	--- U	--- U
106. Isodrin	3.11	20.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 02/21/12
DATE ANALYZED: 03/05/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A	Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	0.70 J	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	0.60 J	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	0.40 J	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	2.00	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	0.40 J	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	4.10 J	11.20	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	1.00 J	23.10	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	1.90	--- U
21. 1,2-Dichloroethane	0.21	1.0	--- U	0.40 J	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	0.70 J	19.10	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	0.40 J	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	1.50	45.80	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	0.70 J	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	1.00 J	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	0.60 J	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U
48. Acrolein	40.57	53.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 02/21/12
DATE ANALYZED: 03/05/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-7D	MW-15R	MW-16A	Trip Blank
49. Allyl Chloride	0.20	10.0	--- U	--- U	--- U	--- U
50. Chloroprene	0.21	20.0	--- U	--- U	--- U	--- U
51. 1,3-Dichlorobenzene	0.41	5.0	--- U	--- U	--- U	--- U
52. Dichlorodifluoromethane	0.51	5.0	--- U	--- U	6.60	--- U
53. 1,3-Dichloropropane	0.28	1.0	--- U	--- U	--- U	--- U
54. 2,2-Dichloropropane	0.17	15.0	--- U	--- U	--- U	--- U
55. 1,1-Dichloropropene	0.22	5.0	--- U	--- U	--- U	--- U
56. Ethyl Methacrylate	0.16	10.0	--- U	--- U	--- U	--- U
57. Hexachlorobutadiene	0.57	10.0	--- U	--- U	--- U	--- U
58. Isobutyl Alcohol	12.80	100.0	--- U	--- U	--- U	--- U
59. Methacrylonitrile	1.93	100.0	--- U	--- U	--- U	--- U
60. Methyl Methacrylate	0.25	30.0	--- U	--- U	--- U	--- U
61. Naphthalene	0.47	10.0	--- U	--- U	--- U	--- U
62. Propionitrile	3.26	150.0	--- U	--- U	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.50	10.0	--- U	--- U	--- U	--- U
64. Acetonitrile	36.29	55.0	--- U	--- U	--- U	--- U

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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: 8**

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

CHLORINE NEUTRALIZED AT COLLECTION																					
pH CHECK (LAB)				>12		>9															
CONTAINER TYPE, P/G			P	P	P	P	P	P		G	G	G	G	G	G	G	G	G			
CHEMICAL PRESERVATION			A	D	A	F D	A	A		E	E	A	A	A	A	E	E	E			
SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	Cyanide	Metals	Sulfide	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081B	8151A Duplicate	8260B App. II	8260 App. II 1	8260 App. II 2
MW-1	02/21/12	0945		17	4	G		G		G	G	G	G	G							
[redacted]																					
[redacted]																					
MW-7D	02/21/12	1150		14	13	G	G	G	G	G	G	G			G	G	G	G	G	G	G
[redacted]																					
[redacted]																					
MW-15R	02/21/12	1110		17	12	G	G	G	G	G	G	G			G	G	G	G	G	G	
[redacted]																					
MW-16A	02/21/12	1055		14	12	G	G	G	G	G	G	G			G	G	G	G	G	G	
Equipment Blank	02/21/12				2														G	G	
Trip Blank					2																

PARAMETERS

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) R Hogue / Fox

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Rob Hogue	02/21/12	[signature]	2/21/228
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.

№ 236

FORM #5

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: 8**

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
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	8151A Landfill (G)	8151A Landfill (A)
MW-1	02 2/12				4		
[redacted]					12		
[redacted]							
MW-7D	02 2/12	1150		14	13	G	
[redacted]							
[redacted]							
MW-15R	02 2/12	1110		17	12	G	
[redacted]							
MW-16A	02 2/12	1055		14	12	G	
Equipment Blank					2		
Trip Blank					2		

CHLORINE NEUTRALIZED AT COLLECTION
pH CHECK (LAB)
CONTAINER TYPE, P/G
CHEMICAL PRESERVATION

PARAMETERS

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)
[illegible] Fox

SAMPLES RECEIVED IN LAB AT 6.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[illegible]	02 2/12	[illegible]	2/21 228
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.

№ 236294

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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 02/22/12
DATE REPORTED : 03/29/12

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS	Analysis Date	Analyst	Method Code
PH (field measurement), Units			5.84	5.82	6.42	5.84	5.72	02/22/12	RJH	SM4500HB
Cyanide, ug/l	5.0	10.0	--- U	--- U	--- U	--- U	--- U	02/23/12	SEJ	SM4500 CNE
Antimony, ug/l	0.14	6.0	--- U	--- U	--- U	--- U	--- U	03/05/12	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	1.2 J	--- U	1.2 J	0.18 J	1.9 J	03/05/12	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	67.8 J	49.2 J	91.6 J	464	38.6 J	03/05/12	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.31 J	0.12 J	0.06 J	0.28 J	0.11 J	03/05/12	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	0.14 J	--- U	--- U	0.53 J	--- U	03/05/12	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0	4.3 J	0.04 J	6.9 J	3.6 J	2.5 J	03/05/12	LFJ	EPA200.8
Copper, ug/l	0.02	10.0	2.3 J	0.14 J	0.20 J	0.52 J	0.43 J	03/05/12	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	0.31 J	--- U	--- U	--- U	0.17 J	03/05/12	LFJ	EPA200.8
Iron, ug/l	15.9	300.0	23300	112 J	2011	531	108200	03/15/12	ADD	SM3111B
Lead, ug/l	0.02	10.0	0.29 J	--- U	0.07 J	0.05 J	0.49 J	03/05/12	LFJ	EPA200.8
Mercury, ug/l	0.05	0.20	--- U	--- U	--- U	--- U	--- U	03/05/12	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	0.47 J	--- U	0.83 J	1.3 J	0.06 J	03/05/12	LFJ	EPA200.8
Selenium, ug/l	0.20	10.0	--- U	--- U	--- U	0.22 J	--- U	03/05/12	LFJ	EPA200.8
Silver, ug/l	0.02	10.0	--- U	--- U	--- U	0.04 J	--- U	03/05/12	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	--- U	--- U	--- U	0.12 J	--- U	03/05/12	LFJ	EPA200.8
Tin, ug/l	0.16	100.0	0.21 J	--- U	0.19 J	0.18 J	0.18 J	03/05/12	LFJ	EPA200.8
Vanadium, ug/l	0.14	25.0	2.0 J	0.29 J	--- U	--- U	1.0 J	03/05/12	LFJ	EPA200.8
Zinc, ug/l	0.24	10.0	5.5 J	1.8 J	2.9 J	7.9 J	6.5 J	03/05/12	LFJ	EPA200.8
Sulfide, ug/l	100	1000	--- U	--- U	--- U	--- U	--- U	02/27/12	LFJ	SM4500-S2D
Conductivity (at 25c), uMhos/cm	1.0	1.0	196	162	358	504	489	02/22/12	RJH	SM2510B
Temperature, °C			11.71	15.86	12.66	16.11	14.09	02/22/12	RJH	SM2550B
Static Water Level, feet			4.64	7.44	4.32	12.11	8.03	02/22/12	RJH	
Well Depth, feet			17.21	52.07	41.75	43.55	22.89	02/22/12	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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

REVIEWED BY:

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/28/12
DATE ANALYZED: 03/07/12
DATE REPORTED: 03/29/12

PESTICIDES AND PCB'S
EPA METHOD 8081B

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-3D	MW-6D	MW-3AS
1. Aldrin	0.029	0.05	--- U	--- U	--- U	--- U
2. Alpha-BHC	0.032	0.05	--- U	--- U	--- U	--- U
3. Beta-BHC	0.031	0.05	--- U	--- U	--- U	--- U
4. Delta-BHC	0.030	0.05	--- U	--- U	--- U	--- U
5. Gamma-BHC (Lindane)	0.032	0.05	--- U	--- U	--- U	--- U
6. Chlordane	0.320	0.50	--- U	--- U	--- U	--- U
7. 4,4-DDD	0.051	0.10	--- U	--- U	0.055 J	--- U
8. 4,4-DDE	0.049	0.10	--- U	--- U	--- U	--- U
9. 4,4-DDT	0.052	0.10	--- U	--- U	--- U	--- U
10. Dieldrin	0.042	0.075	--- U	--- U	--- U	--- U
11. Endosulfan I	0.056	0.10	--- U	--- U	--- U	--- U
12. Endosulfan II	0.046	0.10	--- U	--- U	--- U	--- U
13. Endosulfan Sulfate	0.072	0.10	--- U	--- U	--- U	--- U
14. Endrin	0.053	0.10	--- U	--- U	--- U	--- U
15. Endrin Aldehyde	0.068	0.10	--- U	--- U	--- U	--- U
16. Heptachlor	0.039	0.05	--- U	--- U	--- U	--- U
17. Heptachlor Epoxide	0.042	0.075	--- U	--- U	--- U	--- U
18. Methoxychlor	0.530	1.00	--- U	--- U	--- U	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U	--- U	--- U	--- U
20. Toxaphene	0.690	1.50	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/28/12
DATE ANALYZED: 02/28/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-3D	MW-6D	MW-3AS
1. 2,4-D	0.36	2.0	--- U	--- U	--- U	--- U
2. Dinoseb	0.54	1.0	--- U	--- U	--- U	--- U
3. 2,4,5-TP	0.42	2.0	--- U	--- U	--- U	--- U
4. 2,4,5-T	0.47	2.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

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

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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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY:

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

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

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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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY:

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

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

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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 02/22/12
DATE ANALYZED: 03/05/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	1.20	--- U	4.90
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	0.70 J	1.10 J
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	0.20 J	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	1.00 J	5.80	5.00	--- U	6.10
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	0.50 J	3.00 J	6.20	--- U	3.30 J
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	0.30 J	1.10	1.20
21. 1,2-Dichloroethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	0.80 J	1.00	--- U	0.60 J
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U	--- U	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U	--- U	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	0.90 J	--- U	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U	--- U	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U	--- U	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U	--- U	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U	1.00 J	5.60	1.90 J
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U	--- U	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U	--- U	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U	--- U	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U	--- U	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U	--- U	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U	--- U	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U	--- U	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U	--- U	1.80	0.60 J
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U	--- U	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U	--- U	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U	--- U	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U	--- U	--- U	--- U
48. Acrolein	40.57	53.0	--- U	--- U	--- U	--- U	--- U

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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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 02/22/12
DATE ANALYZED: 03/05/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-2A	MW-3D	MW-2AD	MW-6D	MW-3AS
49. Allyl Chloride	0.20	10.0	--- U	--- U	--- U	--- U	--- U
50. Chloroprene	0.21	20.0	--- U	--- U	--- U	--- U	--- U
51. 1,3-Dichlorobenzene	0.41	5.0	--- U	--- U	--- U	--- U	--- U
52. Dichlorodifluoromethane	0.51	5.0	--- U	0.60 J	--- U	--- U	--- U
53. 1,3-Dichloropropane	0.28	1.0	--- U	--- U	--- U	--- U	--- U
54. 2,2-Dichloropropane	0.17	15.0	--- U	--- U	--- U	--- U	--- U
55. 1,1-Dichloropropene	0.22	5.0	--- U	--- U	--- U	--- U	--- U
56. Ethyl Methacrylate	0.16	10.0	--- U	--- U	--- U	--- U	--- U
57. Hexachlorobutadiene	0.57	10.0	--- U	--- U	--- U	--- U	--- U
58. Isobutyl Alcohol	12.80	100.0	--- U	--- U	--- U	--- U	--- U
59. Methacrylonitrile	1.93	100.0	--- U	--- U	--- U	--- U	--- U
60. Methyl Methacrylate	0.25	30.0	--- U	--- U	--- U	--- U	--- U
61. Naphthalene	0.47	10.0	--- U	--- U	--- U	--- U	--- U
62. Propionitrile	3.26	150.0	--- U	--- U	--- U	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.50	10.0	--- U	--- U	--- U	--- U	--- U
64. Acetonitrile	36.29	55.0	--- U	--- U	--- U	--- U	--- U

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DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Trip Blank
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	--- U
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	--- U
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	--- U
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	--- U
21. 1,2-Dichloroethane	0.21	1.0	--- U
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	--- U
37. Xylenes	0.68	5.0	--- U
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U
48. Acrolein	40.57	53.0	--- U

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Environment 1, Incorporated

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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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: MAO
DATE COLLECTED: 02/22/12
DATE ANALYZED: 03/05/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Trip Blank
49. Allyl Chloride	0.20	10.0	--- U
50. Chloroprene	0.21	20.0	--- U
51. 1,3-Dichlorobenzene	0.41	5.0	--- U
52. Dichlorodifluoromethane	0.51	5.0	--- U
53. 1,3-Dichloropropane	0.28	1.0	--- U
54. 2,2-Dichloropropane	0.17	15.0	--- U
55. 1,1-Dichloropropene	0.22	5.0	--- U
56. Ethyl Methacrylate	0.16	10.0	--- U
57. Hexachlorobutadiene	0.57	10.0	--- U
58. Isobutyl Alcohol	12.80	100.0	--- U
59. Methacrylonitrile	1.93	100.0	--- U
60. Methyl Methacrylate	0.25	30.0	--- U
61. Naphthalene	0.47	10.0	--- U
62. Propionitrile	3.26	150.0	--- U
63. 1,2,4-Trichlorobenzene	0.50	10.0	--- U
64. Acetonitrile	36.29	55.0	--- U

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Environment 1, Inc.
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Greenville, NC 27858

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

CHAIN OF CUSTODY RECORD

CLIENT: 6015 **Week: 8**

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
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	Cyanide	Metals	Sulfide	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081B	8151A Duplicate	8260B App. II	8260 App. II 1	8260 App. II 2
CHLORINE NEUTRALIZED AT COLLECTION							Yi														
pH CHECK (LAB)							>2		>9												
CONTAINER TYPE, P/G						P	P	P	P	P	P		G	G	G	G	G	G	G	G	G
CHEMICAL PRESERVATION						A	D	A	F D	A	A		E	E	A	A	A	A	E	E	E
[redacted]																					
MW-2A	02/22/12	1040		11.71	12	G	G	G	G	G	G	G			G	G	G	G	G	G	
MW-3D	02/22/12	1300		15.86	13	G	G	G	G	G	G	G			G	G	G	G	G	G	G
[redacted]																					
MW-2AD	02/22/12	1105		12.66	12	G	G	G	G	G	G	G			G	G	G	G	G	G	
MW-6D	02/22/12	1345		16.11	12	G	G	G	G	G	G	G			G	G	G	G	G	G	
[redacted]																					
MW-3AS	02/22/12	1230		14.09	13	G	G	G	G	G	G	G			G	G	G	G	G	G	G
[redacted]																					
Equipment Blank	02/22/12				2														G	G	
Trip Blank					2																

PARAMETERS

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 02 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[illegible]	02/22/12	[illegible]	2/22 1357
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:
GLASS BOTTLES FOR WELL 2AD WILL BE DONE FEB. 24

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.

№ 236295

FORM #5

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: 8**

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

CHLORINE NEUTRALIZED AT COLLECTION
pH CHECK (LAB)
CONTAINER TYPE, P/G: G
CHEMICAL PRESERVATION: A

PARAMETERS: 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	8151A Landfill
[redacted]						
MW-2A	02 22 12	1040		11.71	12	G
MW-3D	02 22 12	1300		15.86	13	G
[redacted]					13	
MW-2AD	02 22 12	1105		12.66	12	G
MW-6D	02 22 12	1345		16.71	12	G
[redacted]						
MW-3AS	02 22 12	1230		14.09	13	G
[redacted]						
Equipment Blank	02 22 12				2	
Trip Blank					2	

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

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

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

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bob N Page	02 22 12	[signature]	2/22 1350
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:
WELL 2AD WILL BE DONE FEB 24

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.

№ 236294

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 B

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 02/22/12
DATE REPORTED : 03/29/12

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-17	MW-18S	BP-3	BP-9	Trip Blank	Analysis Date	Analyst	Method Code
PH (field measurement), Units			5.50	6.13				02/22/12	RJH	SM4500HB
Cyanide, ug/l	5.0	10.0	--- U	--- U				02/23/12	SEJ	SM4500 CNE
Antimony, ug/l	0.14	6.0	--- U	--- U				03/05/12	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	--- U	2.7 J				03/05/12	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	42.6 J	77.3 J				03/05/12	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.39 J	0.06 J				03/05/12	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	0.06 J	--- U				03/05/12	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0	0.38 J	6.0 J				03/05/12	LFJ	EPA200.8
Copper, ug/l	0.02	10.0	1.2 J	0.33 J				03/05/12	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	0.43 J	0.19 J				03/05/12	LFJ	EPA200.8
Iron, ug/l	15.9	300.0	1921	27030				03/15/12	ADD	SM3111B
Lead, ug/l	0.02	10.0	1.3 J	0.14 J				03/05/12	LFJ	EPA200.8
Mercury, ug/l	0.05	0.20	--- U	--- U				03/05/12	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	0.55 J	1.2 J				03/05/12	LFJ	EPA200.8
Selenium, ug/l	0.20	10.0	--- U	--- U				03/05/12	LFJ	EPA200.8
Silver, ug/l	0.02	10.0	--- U	--- U				03/05/12	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	--- U	--- U				03/05/12	LFJ	EPA200.8
Tin, ug/l	0.16	100.0	0.36 J	--- U				03/05/12	LFJ	EPA200.8
Vanadium, ug/l	0.14	25.0	2.0 J	1.3 J				03/05/12	LFJ	EPA200.8
Zinc, ug/l	0.24	10.0	9.8 J	2.3 J				03/05/12	LFJ	EPA200.8
Sulfide, ug/l	100	1000	--- U	--- U				02/27/12	LFJ	SM4500-S2D
Conductivity (at 25c), uMhos/cm	1.0	1.0	127	241				02/22/12	RJH	SM2510B
Temperature, °C			11.96	13.49				02/22/12	RJH	SM2550B
Static Water Level, feet			3.84	4.16	32.37	33.00		02/22/12	RJH	
Well Depth, feet			27.59	20.25				02/22/12	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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

REVIEWED BY:

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/28/12
DATE ANALYZED: 03/07/12
DATE REPORTED: 03/29/12

PESTICIDES AND PCB'S
EPA METHOD 8081B

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	0.075	--- 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	--- U	--- U
17. Heptachlor Epoxide	0.042	0.075	--- U	--- U
18. Methoxychlor	0.530	1.00	--- U	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U	--- U
20. Toxaphene	0.690	1.50	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

REVIEWED BY:

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/28/12
DATE ANALYZED: 02/28/12
DATE REPORTED: 03/29/12

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
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CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: MAO
DATE COLLECTED: 02/22/12
DATE ANALYZED: 03/05/12
DATE REPORTED: 03/29/12

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	Trip Blank
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	--- U
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	--- U
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	--- U
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	--- U
37. Xylenes	0.68	5.0	--- U
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

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	20.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: MAO
DATE COLLECTED: 02/22/12
DATE ANALYZED: 03/05/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
1. Chloromethane	0.77	1.0	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	0.20 J	--- U
7. Acetone	9.06	100.0	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	4.70 J	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	2.40 J	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U
21. 1,2-Dichloroethane	0.21	1.0	--- U	--- U
22. Trichloroethene	0.23	1.0	1.20	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U
30. Tetrachloroethene	0.17	1.0	1.20	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U
48. Acrolein	40.57	53.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 B

ANALYST: MAO
DATE COLLECTED: 02/22/12
DATE ANALYZED: 03/05/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B

PARAMETERS, ug/l	MDL	SWSL	MW-17	MW-18S
49. Allyl Chloride	0.20	10.0	--- U	--- U
50. Chloroprene	0.21	20.0	--- U	--- U
51. 1,3-Dichlorobenzene	0.41	5.0	--- U	--- U
52. Dichlorodifluoromethane	0.51	5.0	1.10 J	--- U
53. 1,3-Dichloropropane	0.28	1.0	--- U	--- U
54. 2,2-Dichloropropane	0.17	15.0	--- U	--- U
55. 1,1-Dichloropropene	0.22	5.0	--- U	--- U
56. Ethyl Methacrylate	0.16	10.0	--- U	--- U
57. Hexachlorobutadiene	0.57	10.0	--- U	--- U
58. Isobutyl Alcohol	12.80	100.0	--- U	--- U
59. Methacrylonitrile	1.93	100.0	--- U	--- U
60. Methyl Methacrylate	0.25	30.0	--- U	--- U
61. Naphthalene	0.47	10.0	--- U	--- U
62. Propionitrile	3.26	150.0	--- U	--- U
63. 1,2,4-Trichlorobenzene	0.50	10.0	--- U	--- U
64. Acetonitrile	36.29	55.0	--- 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 B** **Week: 8**

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

DISINFECTION
- ☐ CHLORINE
- ☐ UV
- ☐ NONE
- ☐ ______

	Field pH	Cyanide	Metals	Sulfide	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081B	8260B App. II	8260 App. II 1	8260 App. II 2	8151A Landfill
CHLORINE NEUTRALIZED AT COLLECTION		√21														
pH CHECK (LAB)		>12		>9												
CONTAINER TYPE, P/G	P	P	P	P	P	P		G	G	G	G	G	G	G	G	G
CHEMICAL PRESERVATION	A	D	A	F D	A	A		E	E	A	A	A	E	E	E	A

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 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	Cyanide	Metals	Sulfide	Conductivity	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	EPA 8270C	8270C Dup. 1	EPA 8081B	8260B App. II	8260 App. II 1	8260 App. II 2	8151A Landfill
MW-17	022212	1145		11.96	12	G	G	G	G	G	G	G			G	G	G	G	G	G	G
MW-18S	022212	0955	BTH	13.49	12	G	G	G	G	G	G	G			G	G	G	G	G	G	G
BP-3	022212				1							G									
BP-9	022212				1							G									
Trip Blank					2																

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. [illegible] Fox

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	022212	[signature]	2/22/12 1353
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.

№ 236292

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 B **Week:** 8

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
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	8151A Duplicate
MW-17	02 22 12				12	
MW-18S	02 22 12				12	
BP-3					1	
BP-9					1	
Trip Blank					2	

PARAMETERS	G	A
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) H Pope / Fat

SAMPLES RECEIVED IN LAB AT 02 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bob H Pope	02 22 12		2/22 353
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.

№ 236291

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 D

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 02/22/12
DATE REPORTED : 03/02/12

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-2A	MW-3D	MW-6D	MW-17	MW-2AD	Analysis Date	Analyst	Method Code
BOD, mg/l	2.0	2.0	--- U	2.1	--- U	--- U	--- U	02/23/12	TRB	SM5210B
COD, mg/l	20.0	20.0	25	--- U	--- U	--- U	--- U	02/28/12	TRB	HACH8000
Nitrate Nitrogen as N, mg/l	0.03	10.0	--- U	--- U	--- U	0.12 J	--- U	02/24/12	ANO	EPA353.2
Total Organic Carbon, mg/l	0.30	1.0	6.45	--- U	1.81	--- U	--- U	02/27/12	SEJ	SM5310C
Total Alkalinity, mg/l	1.0	1.0	96	73	251	59	216	02/22/12	TRB	SM2320B
Chloride, mg/l	5.0	5.0	6	9	23	5	5	02/24/12	HLB	SM4500-CLB
Sulfate, mg/l	5.0	250.0	--- U	5.0 J	10.1 J	--- U	13.2 J	02/24/12	TRB	SM426C
Turbidity, NTU	1.0	1.0	70	--- U	3.0	240	14	02/23/12	MEL	SM2130B
Dissolved Oxygen, mg/l	0.1	0.1	2.21	2.31	0.70	2.43	6.14	02/22/12	RJH	SM4500OG
Carbon Dioxide, mg/l	1.0	1.0	85	15	188	25	54	02/22/12	TRB	SM4500CO2C
ORP, mv			-39.2	243.1	151.1	217.9	97.3	02/22/12	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 D

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 02/22/12
DATE REPORTED : 03/02/12

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-3AS	MW-18S	MW-18D	Analysis Date	Analyst	Method Code
BOD, mg/l	2.0	2.0	11	--- U	--- U	02/23/12	TRB	SM5210B
COD, mg/l	20.0	20.0	33	29	--- U	02/28/12	TRB	HACH8000
Nitrate Nitrogen as N, mg/l	0.03	10.0	--- U	--- U	0.06 J	02/24/12	ANO	EPA353.2
Total Organic Carbon, mg/l	0.30	1.0	5.17	7.10	--- U	02/27/12	SEJ	SM5310C
Total Alkalinity, mg/l	1.0	1.0	306	128	67	02/22/12	TRB	SM2320B
Chloride, mg/l	5.0	5.0	7	5	5	02/24/12	HLB	SM4500-CLB
Sulfate, mg/l	5.0	250.0	--- U	--- U	5.8 J	02/24/12	TRB	SM426C
Turbidity, NTU	1.0	1.0	750	340	--- U	02/23/12	MEL	SM2130B
Dissolved Oxygen, mg/l	0.1	0.1	1.48	0.79	6.60	02/22/12	RJH	SM4500OG
Carbon Dioxide, mg/l	1.0	1.0	458	71	15	02/22/12	TRB	SM4500CO2C
ORP, mv			48.3	-54.1	98.0	02/22/12	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 D **Week:** 8

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX NC 27839

(252) 583-1807

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

CHLORINE NEUTRALIZED AT COLLECTION																			
pH CHECK (LAB)		<2	<2																
CONTAINER TYPE, P/G	P	P	P	P	P	P	P	P	P	P	P								
CHEMICAL PRESERVATION	A	C	A	C	A	A	A	A	A	A	A								
PARAMETERS	BOD	COD	Nitrate	TOC	Alkalinity	Chloride	Sulfate	Turbidity	DO	CO2	ORP								

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

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	DO	CO2	ORP
MW-2A	02/22/12	1040		11.71	9	G	G	G	G	G	G	G	G	G	G	G
MW-3D	02/22/12	1300		15.86	9	G	G	G	G	G	G	G	G	G	G	G
MW-6D	02/22/12	1345		16.11	9	G	G	G	G	G	G	G	G	G	G	G
MW-17	02/22/12	1145		11.96	9	G	G	G	G	G	G	G	G	G	G	G
MW-2AD	02/22/12	1105		12.66	9	G	G	G	G	G	G	G	G	G	G	G
MW-3AS	02/22/12	1230		14.09	9	G	G	G	G	G	G	G	G	G	G	G
MW-18S	02/22/12	0935		13.49	9	G	G	G	G	G	G	G	G	G	G	G
MW-18D	02/22/12	0955		13.36	9	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)
N Page Fot

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bob N Page	02/22/12	[signature]	2/22 1350
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.

FORM #5

№ 238804

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 E

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX ,NC 27839

DATE COLLECTED: 02/22/12
DATE REPORTED : 03/29/12

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-18D	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.16	02/22/12	RJH	SM4500HB
Cyanide, ug/l	5.0	10.0	--- U	02/23/12	SEJ	SM4500 CNE
Antimony, ug/l	0.14	6.0	--- U	03/05/12	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	--- U	03/05/12	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	56.1 J	03/05/12	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	--- U	03/05/12	LFJ	EPA200.8
Cadmium, ug/l	0.02	1.0	--- U	03/05/12	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0	--- U	03/05/12	LFJ	EPA200.8
Copper, ug/l	0.02	10.0	0.11 J	03/05/12	LFJ	EPA200.8
Total Chromium, ug/l	0.04	10.0	--- U	03/05/12	LFJ	EPA200.8
Iron, ug/l	15.9	300.0	383	03/15/12	ADD	SM3111B
Lead, ug/l	0.02	10.0	--- U	03/05/12	LFJ	EPA200.8
Mercury, ug/l	0.05	0.20	--- U	03/05/12	LFJ	EPA200.8
Nickel, ug/l	0.04	50.0	0.22 J	03/05/12	LFJ	EPA200.8
Selenium, ug/l	0.20	10.0	--- U	03/05/12	LFJ	EPA200.8
Silver, ug/l	0.02	10.0	--- U	03/05/12	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	--- U	03/05/12	LFJ	EPA200.8
Tin, ug/l	0.16	100.0	--- U	03/05/12	LFJ	EPA200.8
Vanadium, ug/l	0.14	25.0	0.90 J	03/05/12	LFJ	EPA200.8
Zinc, ug/l	0.24	10.0	2.1 J	03/05/12	LFJ	EPA200.8
Sulfide, ug/l	100	1000	--- U	02/27/12	LFJ	SM4500-S2D
Conductivity (at 25c), uMhos/cm	1.0	1.0	131	02/22/12	RJH	SM2510B
Temperature, °C			13.36	02/22/12	RJH	SM2550B
Static Water Level, feet			3.95	02/22/12	RJH	
Well Depth, feet			55.11	02/22/12	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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

REVIEWED BY:

CLIENT ID: 6015 E

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/28/12
DATE ANALYZED: 03/07/12
DATE REPORTED: 03/29/12

PESTICIDES AND PCB'S
EPA METHOD 8081B

PARAMETERS, ug/l	MDL	SWSL	MW-18D
1. Aldrin	0.029	0.05	--- U
2. Alpha-BHC	0.032	0.05	--- U
3. Beta-BHC	0.031	0.05	--- U
4. Delta-BHC	0.030	0.05	--- U
5. Gamma-BHC (Lindane)	0.032	0.05	--- U
6. Chlordane	0.320	0.50	--- U
7. 4,4-DDD	0.051	0.10	--- U
8. 4,4-DDE	0.049	0.10	--- U
9. 4,4-DDT	0.052	0.10	--- U
10. Dieldrin	0.042	0.075	--- U
11. Endosulfan I	0.056	0.10	--- U
12. Endosulfan II	0.046	0.10	--- U
13. Endosulfan Sulfate	0.072	0.10	--- U
14. Endrin	0.053	0.10	--- U
15. Endrin Aldehyde	0.068	0.10	--- U
16. Heptachlor	0.039	0.05	--- U
17. Heptachlor Epoxide	0.042	0.075	--- U
18. Methoxychlor	0.530	1.00	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U
20. Toxaphene	0.690	1.50	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 E

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/28/12
DATE ANALYZED: 02/28/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	MW-18D
1. 2,4-D	0.36	2.0	--- U
2. Dinoseb	0.54	1.0	--- U
3. 2,4,5-TP	0.42	2.0	--- U
4. 2,4,5-T	0.47	2.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 E

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY:

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-18D
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	20.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015 E

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-18D
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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

REVIEWED BY:

CLIENT ID: 6015 E

ANALYST: CHS
DATE COLLECTED: 02/22/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-18D
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

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 E **Week:** 8

HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
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	Cyanide	Metals	Sulfide	Conductivity	Temperature	Field Parameter	EPA 8270C	8270C Dup. 1	EPA 8081B	8260B App. II	8260 App. II 1	8151A Landfill	8151A Duplicate
							✓ ei												
							12		9										
CONTAINER TYPE, P/G						P	P	P	P	P	P		G	G	G	G	G	G	G
CHEMICAL PRESERVATION						A	D	A	F D	A	A		A	A	A	E	E	A	A
MW-18D	02/22/12	0955		1336	11	G	G	G	G	G	G	G	G	G	G	G	G	G	G

PARAMETERS

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

CLIENT: 6015 E Week: 8

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

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

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

SAMPLES COLLECTED BY: (Please Print) N Lane Fox

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bob N Lane	02/22/12		2/22 1353
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.

№ 236289

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

CLIENT: HALIFAX CO. LANDFILL (CLOSED MSW)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/23/12
DATE EXTRACTED: 03/01/12
DATE ANALYZED: 03/28/12
DATE REPORTED: 03/29/12

REVIEWED BY:

PESTICIDES AND PCB'S
EPA METHOD 8081B

PARAMETERS, ug/l	MDL	SWSL	MW-2AD
1. Aldrin	0.029	0.05	--- U
2. Alpha-BHC	0.032	0.05	--- U
3. Beta-BHC	0.031	0.05	--- U
4. Delta-BHC	0.030	0.05	--- U
5. Gamma-BHC (Lindane)	0.032	0.05	--- U
6. Chlordane	0.320	0.50	--- U
7. 4,4-DDD	0.051	0.10	--- U
8. 4,4-DDE	0.049	0.10	--- U
9. 4,4-DDT	0.052	0.10	--- U
10. Dieldrin	0.042	0.075	--- U
11. Endosulfan I	0.056	0.10	--- U
12. Endosulfan II	0.046	0.10	--- U
13. Endosulfan Sulfate	0.072	0.10	--- U
14. Endrin	0.053	0.10	--- U
15. Endrin Aldehyde	0.068	0.10	--- U
16. Heptachlor	0.039	0.05	--- U
17. Heptachlor Epoxide	0.042	0.075	--- U
18. Methoxychlor	0.530	1.00	--- U
19. Pcb's (Aroclors)	0.500	2.00	--- U
20. Toxaphene	0.690	1.50	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/23/12
DATE EXTRACTED: 02/28/12
DATE ANALYZED: 02/28/12
DATE REPORTED: 03/29/12

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8151A

PARAMETERS, ug/l	MDL	SWSL	MW-2AD
1. 2,4-D	0.36	2.0	--- U
2. Dinoseb	0.54	1.0	--- U
3. 2,4,5-TP	0.42	2.0	--- U
4. 2,4,5-T	0.47	2.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

REVIEWED BY:

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/23/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-2AD
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	20.0	--- 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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/23/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-2AD
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)
MS. GWEN MATTHEWS
P.O. BOX 70
HALIFAX, NC 27839

CLIENT ID: 6015

ANALYST: CHS
DATE COLLECTED: 02/23/12
DATE EXTRACTED: 02/24/12
DATE ANALYZED: 03/14/12
DATE REPORTED: 03/29/12

REVIEWED BY: _____

SEMI-VOLATILE ORGANICS
EPA METHOD 8270C

PARAMETERS, ug/l	MDL	SWSL	MW-2AD
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

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

Page 1 of 1

CLIENT: 6015 WK 8

Halifax Co. (Closed MSW)
Ms. Gwen Matthews
PO Box 70
Halifax, NC 27839

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

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	EPA 8270C	8270C Dup 1	EPA 8081B	8151A Dup	8151A Landfill
						G	G	G	G	G
						A	A	A	A	A
MW2AD	2-23-12	1550		17		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) Bobby Fox

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bobby Fox	2-23-12	[illegible]	2/24 820
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.

№ 239398

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

March 13, 2012

Steve Jones
Environment 1, Inc.
PO Box 7085
114 Oakmont Drive
Greenville, NC 27835

RE: **HALIFAX CO. LANDFILL / 6015**
Microseeps Workorder: 4311

Dear Steve Jones:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, February 24, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Julianne C. Sproull

Julianne Sproull 03/13/2012
jsproull@microseeps.com

Enclosures

Total Number of Pages 26

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	NELAP: State of Florida, Department of Health, Bureau of Laboratories
Accreditation ID:	E87832
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: State of Louisiana, Department of Environmental Quality
Accreditation ID:	04104
Scope:	Solid and Chemical Materials; Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 4311 HALIFAX CO LANDFILL / 6015

Lab ID	Sample ID	Matrix	Date Collected	Date Received
43110001	WL2A	Bubble Strip	2/22/2012 10:40	2/24/2012 14:00
43110002	WL2A	Water	2/22/2012 10:40	2/24/2012 14:00
43110003	W2AD	Bubble Strip	2/22/2012 11:05	2/24/2012 14:00
43110004	W2AD	Water	2/22/2012 11:05	2/24/2012 14:00
43110005	W3AS	Bubble Strip	2/22/2012 12:30	2/24/2012 14:00
43110006	W3AS	Water	2/22/2012 12:30	2/24/2012 14:00
43110007	MW3D	Bubble Strip	2/22/2012 13:30	2/24/2012 14:00
43110008	MW3D	Water	2/22/2012 13:30	2/24/2012 14:00
43110009	WL6D	Bubble Strip	2/22/2012 13:45	2/24/2012 14:00
43110010	WL6D	Water	2/22/2012 13:45	2/24/2012 14:00
43110011	MW17	Bubble Strip	2/22/2012 11:45	2/24/2012 14:00
43110012	MW17	Water	2/22/2012 11:45	2/24/2012 14:00
43110013	W18S	Bubble Strip	2/22/2012 09:35	2/24/2012 14:00
43110014	W18S	Water	2/22/2012 09:35	2/24/2012 14:00
43110015	W18D	Bubble Strip	2/22/2012 09:55	2/24/2012 14:00
43110016	W18D	Water	2/22/2012 09:55	2/24/2012 14:00

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PROJECT SUMMARY

Workorder: 4311 HALIFAX CO LANDFILL / 6015

Workorder Comments

Sample 4311 (0009) was analyzed outside the hold time of 14 days from collection for the light hydrocarbons and hydrogen The delay was caused by a necessary re-analysis associated to the QA/QC requirements of the method

Because the bubble samples were collected using Microseeps procedure SM9; aqueous headspace equilibration technique, any effect to the vapor phase component concentrations due to the delay of the analysis is expected to be minimal

Sample Comments

Lab ID: 43110009 **Sample ID:** WL6D **Sample Type:** N

Sample headspace vial not sufficiently pressurized for analysis Vial pressurized with an equal volume of UHP Nitrogen and analyzed Results reported at a dilution.

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO. LANDFILL / 6015

Lab ID: 43110001 Date Received: 2/24/2012 14:00 Matrix: Bubble Strip
Sample ID: WL2A Date Collected: 2/22/2012 10:40

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Methane	3900	ug/l	0.015	0.0030	1			3/7/2012 10:03	GT	
Ethane	<0.010	ug/l	0.010	0.0010	1			3/7/2012 10:03	GT	
Ethene	<0.010	ug/l	0.010	0.0020	1			3/7/2012 10:03	GT	
Hydrogen	1.4	nM	0.60	0.25	1			3/7/2012 10:03	GT	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO. LANDFILL / 6015

Lab ID: 43110002 Date Received: 2/24/2012 14:00 Matrix: Water
Sample ID: WL2A Date Collected: 2/22/2012 10:40

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
EDonors - MICR										
Analysis Desc: AM23G			Analytical Method: AM23G							
Lactic Acid	<0.10	mg/l	0.10	0.010	1			3/3/2012 17:59	KB	
Acetic Acid	<0.070	mg/l	0.070	0.0060	1			3/3/2012 17:59	KB	
Propionic Acid	<0.050	mg/l	0.050	0.0070	1			3/3/2012 17:59	KB	
Butyric Acid	<0.050	mg/l	0.050	0.0040	1			3/3/2012 17:59	KB	
Pyruvic Acid	<0.15	mg/l	0.15	0.033	1			3/3/2012 17:59	KB	
i-Pentanoic Acid	<0.15	mg/l	0.15	0.044	1			3/3/2012 17:59	KB	
Pentanoic Acid	<0.070	mg/l	0.070	0.012	1			3/3/2012 17:59	KB	
i-Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 17:59	KB	
Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 17:59	KB	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO LANDFILL / 6015

Lab ID: 43110003 Date Received: 2/24/2012 14:00 Matrix: Bubble Strip
Sample ID: W2AD Date Collected: 2/22/2012 11:05

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Methane	230	ug/l	0.015	0.0030	1			3/7/2012 10:15	GT	
Ethane	0.030	ug/l	0.010	0.0010	1			3/7/2012 10:15	GT	
Ethene	0.058	ug/l	0.010	0.0020	1			3/7/2012 10:15	GT	
Hydrogen	0.75	nM	0.60	0.25	1			3/7/2012 10:15	GT	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO LANDFILL / 6015

Lab ID: 43110004 Date Received: 2/24/2012 14:00 Matrix: Water
Sample ID: W2AD Date Collected: 2/22/2012 11:05

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
EDonors - MICR										
Analysis Desc: AM23G			Analytical Method: AM23G							
Lactic Acid	<0.10	mg/l	0.10	0.010	1			3/3/2012 20:05	KB	
Acetic Acid	<0.070	mg/l	0.070	0.0060	1			3/3/2012 20:05	KB	
Propionic Acid	<0.050	mg/l	0.050	0.0070	1			3/3/2012 20:05	KB	
Butyric Acid	<0.050	mg/l	0.050	0.0040	1			3/3/2012 20:05	KB	
Pyruvic Acid	<0.15	mg/l	0.15	0.033	1			3/3/2012 20:05	KB	
i-Pentanoic Acid	<0.15	mg/l	0.15	0.044	1			3/3/2012 20:05	KB	
Pentanoic Acid	<0.070	mg/l	0.070	0.012	1			3/3/2012 20:05	KB	
i-Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 20:05	KB	
Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 20:05	KB	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO. LANDFILL / 6015

Lab ID: 43110005 Date Received: 2/24/2012 14:00 Matrix: Bubble Strip
Sample ID: W3AS Date Collected: 2/22/2012 12:30

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Methane	3000	ug/l	0.015	0.0030	1			3/7/2012 10:33	GT	
Ethane	0.51	ug/l	0.010	0.0010	1			3/7/2012 10:33	GT	
Ethene	0.22	ug/l	0.010	0.0020	1			3/7/2012 10:33	GT	
Hydrogen	0.63	nM	0.60	0.25	1			3/7/2012 10:33	GT	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO. LANDFILL / 6015

Lab ID: 43110006 Date Received: 2/24/2012 14:00 Matrix: Water
Sample ID: W3AS Date Collected: 2/22/2012 12:30

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
EDonors - MICR										
Analysis Desc: AM23G			Analytical Method: AM23G							
Lactic Acid	<0.10	mg/l	0.10	0.010	1			3/3/2012 20:47	KB	
Acetic Acid	<0.070	mg/l	0.070	0.0060	1			3/3/2012 20:47	KB	
Propionic Acid	<0.050	mg/l	0.050	0.0070	1			3/3/2012 20:47	KB	
Butyric Acid	<0.050	mg/l	0.050	0.0040	1			3/3/2012 20:47	KB	
Pyruvic Acid	<0.15	mg/l	0.15	0.033	1			3/3/2012 20:47	KB	
i-Pentanoic Acid	<0.15	mg/l	0.15	0.044	1			3/3/2012 20:47	KB	
Pentanoic Acid	<0.070	mg/l	0.070	0.012	1			3/3/2012 20:47	KB	
i-Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 20:47	KB	
Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 20:47	KB	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO LANDFILL / 6015

Lab ID: 43110007 Date Received: 2/24/2012 14:00 Matrix: Bubble Strip
Sample ID: MW3D Date Collected: 2/22/2012 13:30

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Methane	2500	ug/l	0.015	0.0030	1			3/7/2012 10:45	GT	
Ethane	<0.010	ug/l	0.010	0.0010	1			3/7/2012 10:45	GT	
Ethene	0.069	ug/l	0.010	0.0020	1			3/7/2012 10:45	GT	
Hydrogen	0.90	nM	0.60	0.25	1			3/7/2012 10:45	GT	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO. LANDFILL / 6015

Lab ID: 43110008 Date Received: 2/24/2012 14:00 Matrix: Water
Sample ID: MW3D Date Collected: 2/22/2012 13:30

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
EDonors - MICR										
Analysis Desc: AM23G			Analytical Method: AM23G							
Lactic Acid	0.12	mg/l	0.10	0.010	1			3/3/2012 21:29	KB	
Acetic Acid	<0.070	mg/l	0.070	0.0060	1			3/3/2012 21:29	KB	
Propionic Acid	<0.050	mg/l	0.050	0.0070	1			3/3/2012 21:29	KB	
Butyric Acid	0.24	mg/l	0.050	0.0040	1			3/3/2012 21:29	KB	
Pyruvic Acid	<0.15	mg/l	0.15	0.033	1			3/3/2012 21:29	KB	
i-Pentanoic Acid	<0.15	mg/l	0.15	0.044	1			3/3/2012 21:29	KB	
Pentanoic Acid	<0.070	mg/l	0.070	0.012	1			3/3/2012 21:29	KB	
i-Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 21:29	KB	
Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 21:29	KB	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO. LANDFILL / 6015

Lab ID: 43110009 Date Received: 2/24/2012 14:00 Matrix: Bubble Strip
Sample ID: WL6D Date Collected: 2/22/2012 13:45

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Methane	38	ug/l	0 030	0 0060	2			3/12/2012 11:23	GT	
Ethane	0.32	ug/l	0 020	0 0020	2			3/12/2012 11:23	GT	
Ethene	0.033	ug/l	0 020	0 0040	2			3/12/2012 11:23	GT	
Hydrogen	1.2	nM	1 2	0 50	2			3/12/2012 11:23	GT	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO LANDFILL / 6015

Lab ID: 43110010 Date Received: 2/24/2012 14:00 Matrix: Water
Sample ID: WL6D Date Collected: 2/22/2012 13:45

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
EDonors - MICR										
Analysis Desc: AM23G			Analytical Method: AM23G							
Lactic Acid	<0.10	mg/l	0.10	0.010	1			3/3/2012 22:11	KB	
Acetic Acid	<0.070	mg/l	0.070	0.0060	1			3/3/2012 22:11	KB	
Propionic Acid	<0.050	mg/l	0.050	0.0070	1			3/3/2012 22:11	KB	
Butyric Acid	<0.050	mg/l	0.050	0.0040	1			3/3/2012 22:11	KB	
Pyruvic Acid	<0.15	mg/l	0.15	0.033	1			3/3/2012 22:11	KB	
I-Pentanoic Acid	<0.15	mg/l	0.15	0.044	1			3/3/2012 22:11	KB	
Pentanoic Acid	<0.070	mg/l	0.070	0.012	1			3/3/2012 22:11	KB	
I-Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 22:11	KB	
Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 22:11	KB	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO LANDFILL / 6015

Lab ID: 43110011 Date Received: 2/24/2012 14:00 Matrix: Bubble Strip
Sample ID: MW17 Date Collected: 2/22/2012 11:45

Parameters	Results	Units	RDL	MDL	DF Prepared	By	Analyzed	By	Qual
RISK - MICR									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	1100	ug/l	0.015	0.0030	1		3/7/2012 11:54	GT	
Ethane	<0.010	ug/l	0.010	0.0010	1		3/7/2012 11:54	GT	
Ethene	<0.010	ug/l	0.010	0.0020	1		3/7/2012 11:54	GT	
Hydrogen	0.62	nM	0.60	0.25	1		3/7/2012 11:54	GT	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO LANDFILL / 6015

Lab ID: 43110012 Date Received: 2/24/2012 14:00 Matrix: Water

Sample ID: MW17 Date Collected: 2/22/2012 11:45

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
EDonors - MICR										
Analysis Desc: AM23G			Analytical Method: AM23G							
Lactic Acid	<0.10	mg/l	0.10	0.010	1			3/3/2012 22:53	KB	
Acetic Acid	<0.070	mg/l	0.070	0.0060	1			3/3/2012 22:53	KB	
Propionic Acid	<0.050	mg/l	0.050	0.0070	1			3/3/2012 22:53	KB	
Butyric Acid	<0.050	mg/l	0.050	0.0040	1			3/3/2012 22:53	KB	
Pyruvic Acid	<0.15	mg/l	0.15	0.033	1			3/3/2012 22:53	KB	
i-Pentanoic Acid	<0.15	mg/l	0.15	0.044	1			3/3/2012 22:53	KB	
Pentanoic Acid	<0.070	mg/l	0.070	0.012	1			3/3/2012 22:53	KB	
i-Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 22:53	KB	
Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 22:53	KB	

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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO. LANDFILL / 6015

Lab ID: 43110013 Date Received: 2/24/2012 14:00 Matrix: Bubble Strip
Sample ID: W18S Date Collected: 2/22/2012 09:35

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Methane	3800	ug/l	0.015	0.0030	1			3/7/2012 12:08	GT	
Ethane	<0.010	ug/l	0.010	0.0010	1			3/7/2012 12:08	GT	
Ethene	<0.010	ug/l	0.010	0.0020	1			3/7/2012 12:08	GT	
Hydrogen	0.87	nM	0.60	0.25	1			3/7/2012 12:08	GT	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO. LANDFILL / 6015

Lab ID: 43110014 Date Received: 2/24/2012 14:00 Matrix: Water
Sample ID: W18S Date Collected: 2/22/2012 09:35

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
EDonors - MICR										
Analysis Desc: AM23G			Analytical Method: AM23G							
Lactic Acid	<0.10	mg/l	0.10	0.010	1			3/3/2012 23:35	KB	
Acetic Acid	0.12	mg/l	0.070	0.0060	1			3/3/2012 23:35	KB	
Propionic Acid	<0.050	mg/l	0.050	0.0070	1			3/3/2012 23:35	KB	
Butyric Acid	0.093	mg/l	0.050	0.0040	1			3/3/2012 23:35	KB	
Pyruvic Acid	<0.15	mg/l	0.15	0.033	1			3/3/2012 23:35	KB	
i-Pentanoic Acid	<0.15	mg/l	0.15	0.044	1			3/3/2012 23:35	KB	
Pentanoic Acid	<0.070	mg/l	0.070	0.012	1			3/3/2012 23:35	KB	
i-Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 23:35	KB	
Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/3/2012 23:35	KB	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO LANDFILL / 6015

Lab ID: 43110015 Date Received: 2/24/2012 14:00 Matrix: Bubble Strip
Sample ID: W18D Date Collected: 2/22/2012 09:55

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Methane	30	ug/l	0.015	0.0030	1			3/7/2012 12:20	GT	
Ethane	<0.010	ug/l	0.010	0.0010	1			3/7/2012 12:20	GT	
Ethene	0.68	ug/l	0.010	0.0020	1			3/7/2012 12:20	GT	
Hydrogen	0.68	nM	0.60	0.25	1			3/7/2012 12:20	GT	

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ANALYTICAL RESULTS

Workorder: 4311 HALIFAX CO. LANDFILL / 6015

Lab ID: 43110016 Date Received: 2/24/2012 14:00 Matrix: Water
Sample ID: W18D Date Collected: 2/22/2012 09:55

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
EDonors - MICR										
Analysis Desc: AM23G			Analytical Method: AM23G							
Lactic Acid	0.10	mg/l	0.10	0.010	1			3/4/2012 00:18	KB	
Acetic Acid	0.26	mg/l	0.070	0.0060	1			3/4/2012 00:18	KB	
Propionic Acid	0.065	mg/l	0.050	0.0070	1			3/4/2012 00:18	KB	
Butyric Acid	0.23	mg/l	0.050	0.0040	1			3/4/2012 00:18	KB	
Pyruvic Acid	<0.15	mg/l	0.15	0.033	1			3/4/2012 00:18	KB	
i-Pentanoic Acid	<0.15	mg/l	0.15	0.044	1			3/4/2012 00:18	KB	
Pentanoic Acid	<0.070	mg/l	0.070	0.012	1			3/4/2012 00:18	KB	
i-Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/4/2012 00:18	KB	
Hexanoic Acid	<0.050	mg/l	0.050	0.0060	1			3/4/2012 00:18	KB	

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 4311 HALIFAX CO LANDFILL / 6015

PARAMETER QUALIFIERS

U	Indicates the compound was analyzed for, but not detected.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (RDL)

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3004 1 0.0

Microseeps Lab. Proj. # 4311

CHAIN - OF - CUSTODY RECORD

Microseeps COC cont. #

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 27858

Phone # : 252-756-6208 Fax # : 252-756-0633

Proj. Manager : STEVE JONES

Proj. Name/Number : HALIFAX CO. LANDFILL / 6015

Sampler's signature : Bob Hook

Cooler Temp. 4°C

Results to : SAME

Invoice to : SAME

	Sample ID	Sample Description	Sample Type Water	Vapor	Solid	Date	Time	# Bottles			HYDROGEN	METHANE/ETHANE/ETHENE	LLUFA								Remarks :
1	WL2A	MW2A	✓	✓		2/22/12	10:48A	4			✓	✓	✓								
2	W2AD	MW2AD	✓	✓			11:05A	4			✓	✓	✓								
3	W3AS	W3AS	✓	✓			12:50P	4			✓	✓	✓								FACILITY ID # 4204
4	MW3D	W3D	✓	✓			1:30P	4			✓	✓	✓								
5	WL6D	WL6D	✓	✓			1:45P	4			✓	✓	✓								
6	MW17	MW17	✓	✓			11:45A	4			✓	✓	✓								
7	W18S	W18S	✓	✓			9:50A	4			✓	✓	✓								REPORT IN EDD
8	W18D	W18D	✓	✓			9:05A	4			✓	✓	✓								FILE PLEASE

Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Bob Hook	ENVIRONMENT 1	2/24/12	3:50P	[illegible]	ENVIRONMENT 1	2/24/12	3:50P
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
				H Lawford	MS	2/24/12	1400
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :

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

Microseeps Project Number: 4311

Date: 2-24-12 Time of Receipt: 1400 Receiver: H. Lan Young

Client: Environment 1.

REASON FOR NON-CONFORMANCE:

1. Sample 5th: COC ID: WL6D
Label ID: MW6D

2. No date & time of collection on vials.

ACTION TAKEN:

Client name: Steve Jones Date: 2/24 Time: 1510

emailed client
- no response from client - logged sample in as per COC ID & took date & time info from COC

Customer Service Initials: JS Date: 2-27-12

Mark Mikesell

From: Julianne Sproull
Sent: Wednesday, February 29, 2012 2:48 PM
To: Mark Mikesell
Subject: FW: Halifax Co Landfill / 6015

W64311

Juli Sproull

Microseeps, Inc.
William Pitt Way
Pittsburgh PA 15238
412-826-5245 (Phone)
412-826-3433 (Fax)

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From: Stephen E Jones [mailto:sjonese1@aol.com]
Sent: Wednesday, February 29, 2012 2:47 PM
To: Julianne Sproull
Subject: Re: Halifax Co Landfill / 6015

Hi Juli,

I spoke with my client and they requested that the samples be analyzed within holding time for the compounds that can be reported. Documentation should accompany the data stating the information which you provided below.

Thanks,

Steve
Stephen E Jones
sjonese1@aol.com

-----Original Message-----
From: Julianne Sproull <jsproull@microseeps.com>
To: sjonese1 <sjonese1@aol.com>
Sent: Mon, Feb 27, 2012 10:57 am
Subject: Halifax Co Landfill / 6015

Hi Steve,

I have just been notified that there is in instrumentation issue with the low-level volatile fatty acids. Please see below explanation, and let me know how to proceed:

> There is the potential that we will be unable to report the concentration of the heavy organic acids for the C5 & C6 compounds. Specifically, the affected acids are the pentanoic, iso-pentanoic, hexanoic and iso-hexanoic acids We expect this problem to be resolved during the next week, but the hold time for your samples is going to be at its limit soon, so we wanted to give you the choice of either asking us to analyze the remaining acids as per

normal and within hold time, or waiting until we have resolved the problems and analyzing your samples for all of the acids, even after the hold time has expired.

In reality, this is a small effect because there are very few samples which contain reportable concentrations of the C5 & C6 acids. The concentrations generally fall into the following pattern: Acetic > Propionic > Butyric > Pentanoic or iso-pentanoic > Hexanoic or iso-hexanoic so if there is little reportable propionic and no reportable butyric, it is very unlikely there is reportable concentrations of the C5 or C6 acids.

Juli Sproull

Microseeps, Inc.
William Pitt Way
Pittsburgh PA 15238
412-826-5245 (Phone)
412-826-3433 (Fax)

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Appendix C

Time Vs. concentration Graphs

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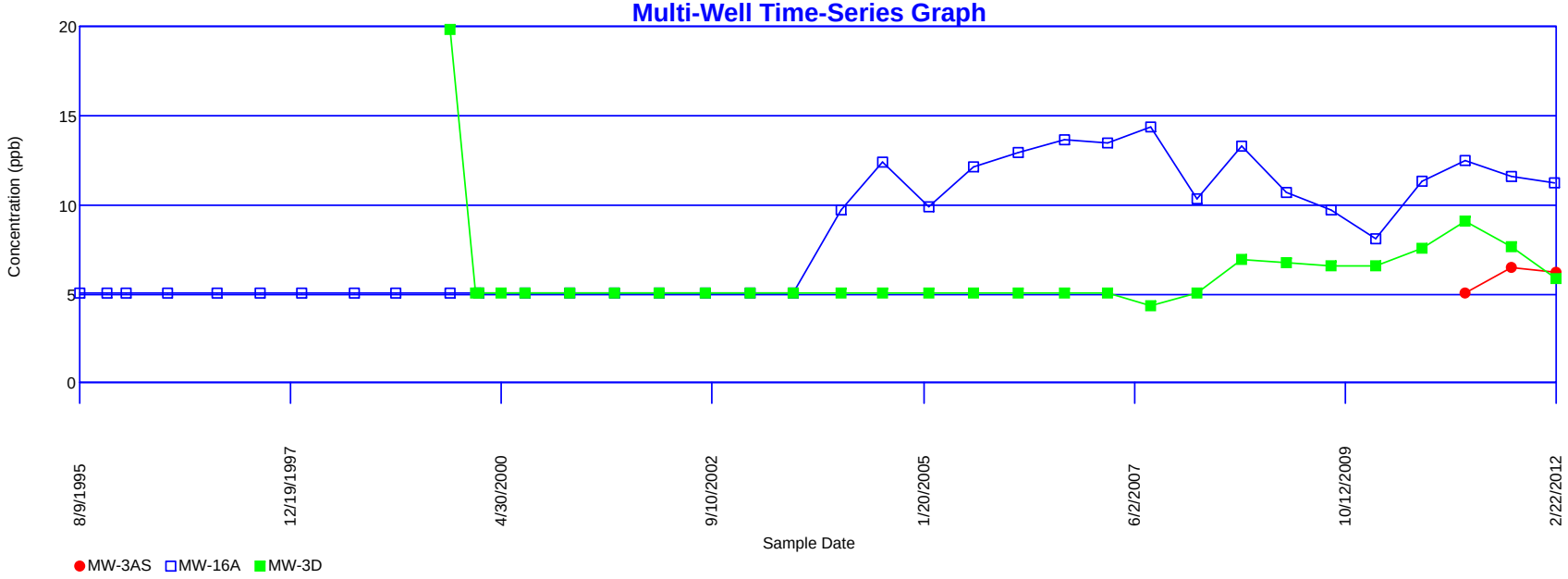
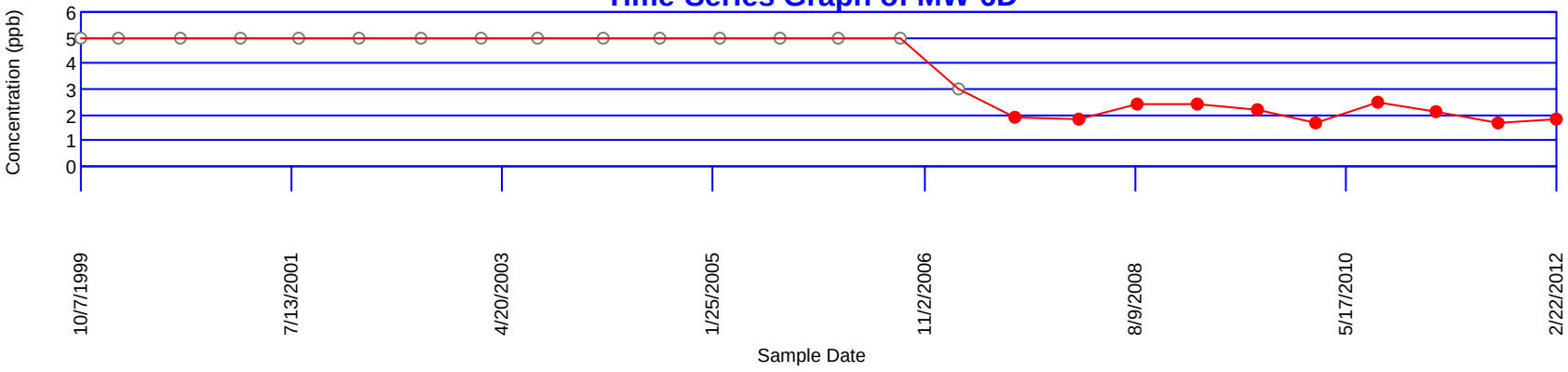
1,1-Dichloroethane

Multi-Well Time-Series Graph



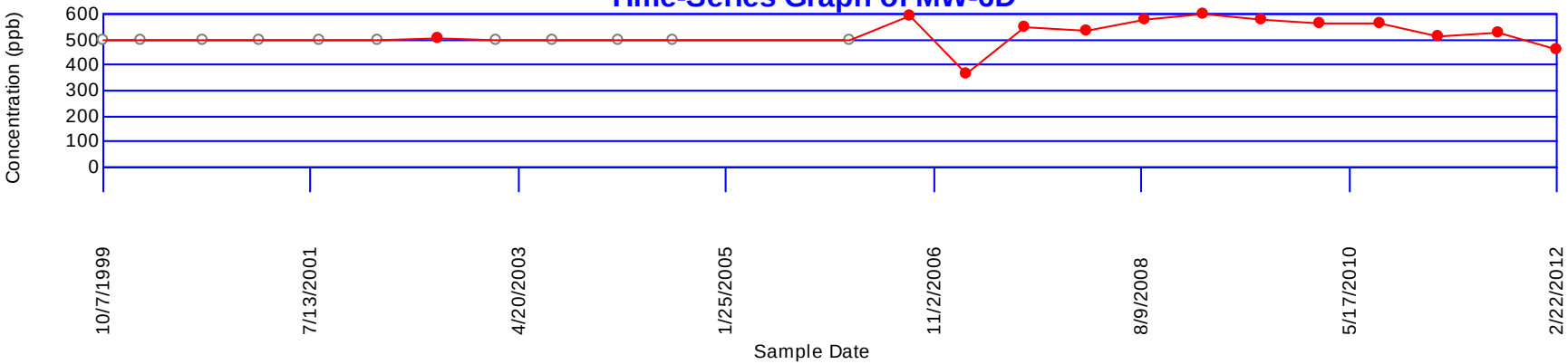
1,4-Dichlorobenzene

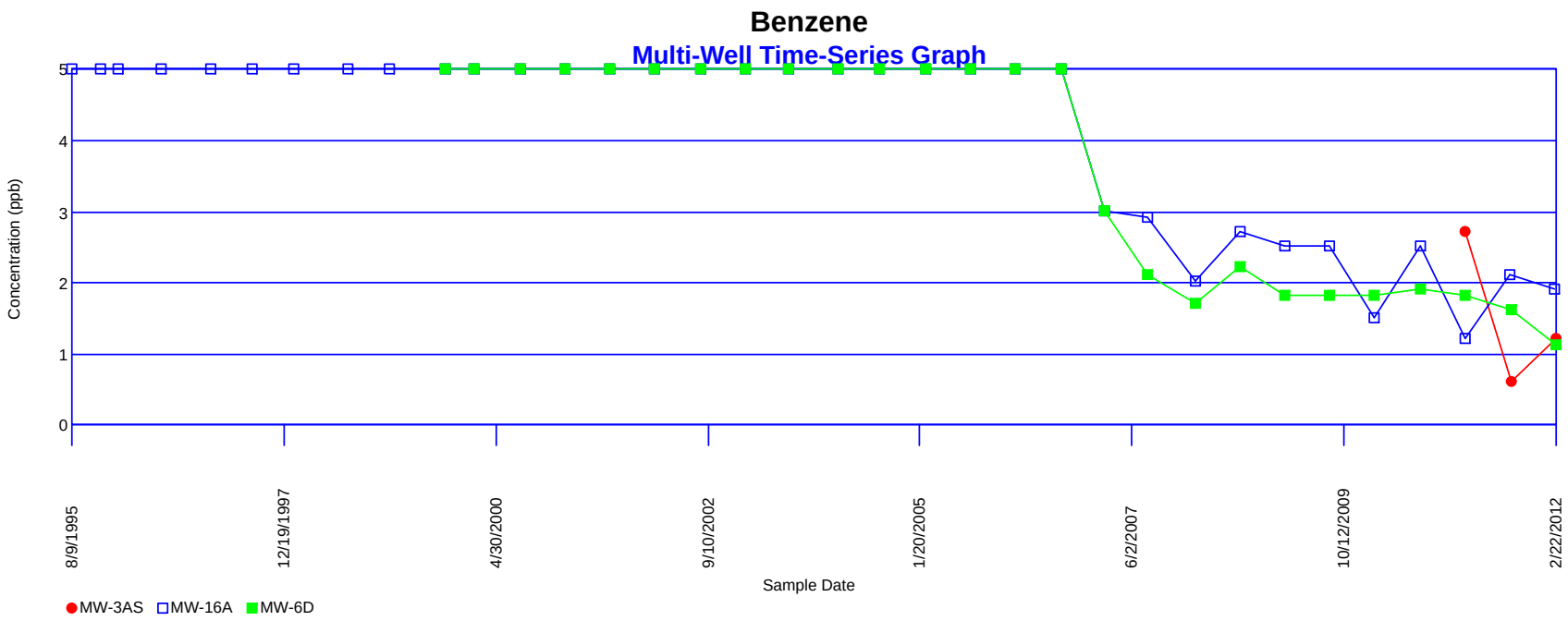
Time-Series Graph of MW-6D



Barium

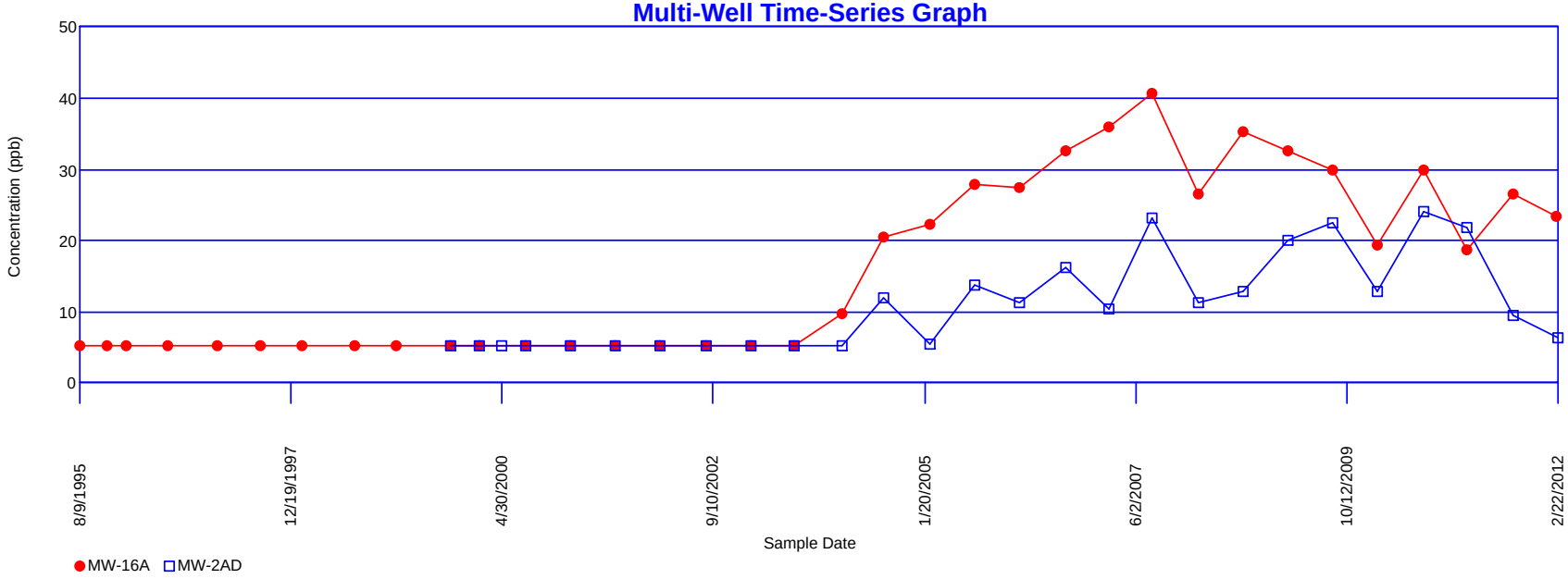
Time-Series Graph of MW-6D




Benzene
Multi-Well Time-Series Graph
Concentration (ppb)
5
4
3
2
1
0
8/9/1995
12/19/1997
4/30/2000
9/10/2002
1/20/2005
6/2/2007
10/12/2009
2/22/2012
Sample Date
MW-3AS
MW-16A
MW-6D

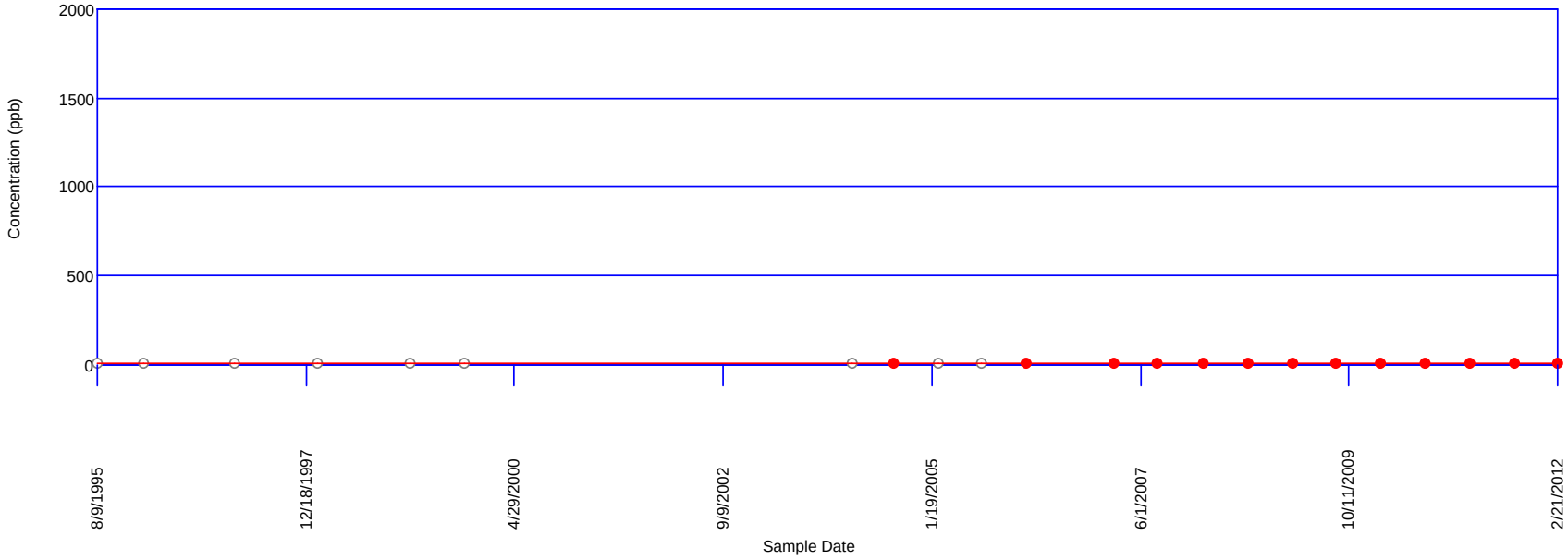
Cis-1,2-Dichloroethene

Multi-Well Time-Series Graph



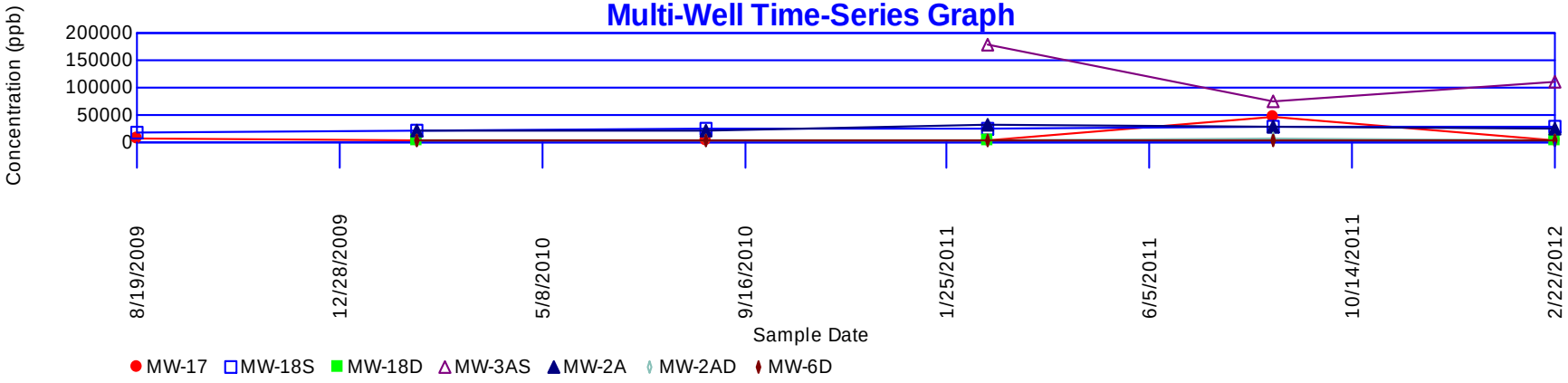
Dichlorodifluoromethane

Time-Series Graph of MW-16A



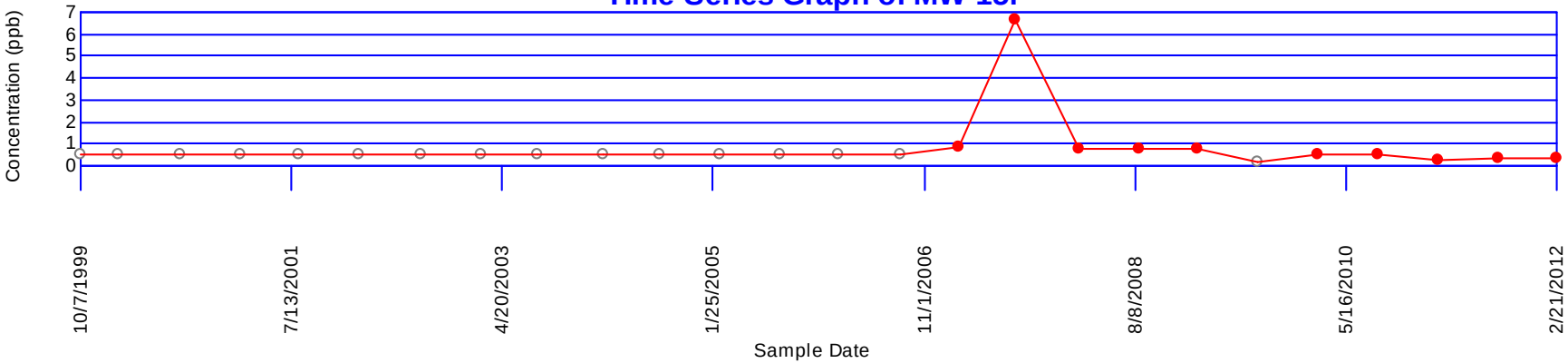
Iron

Multi-Well Time-Series Graph



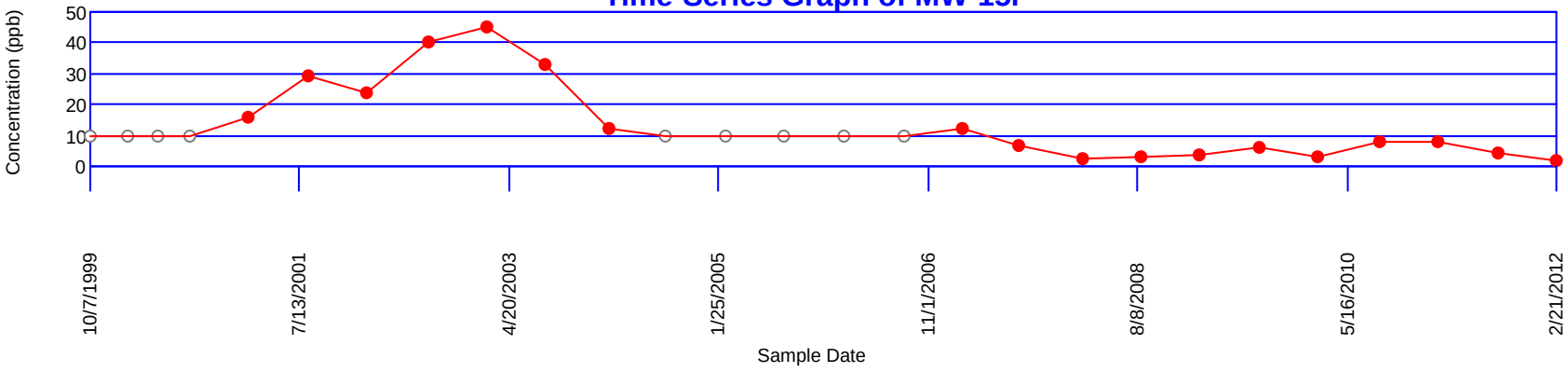
Mercury

Time-Series Graph of MW-15r



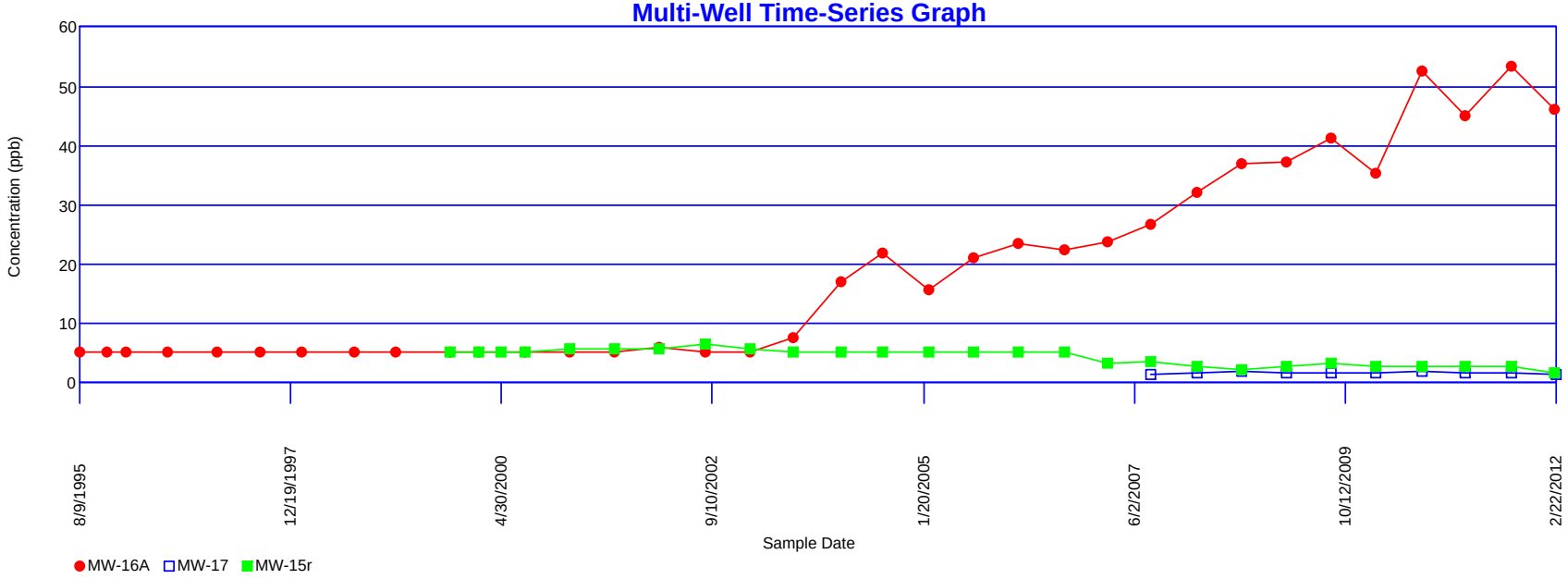
Methylene Chloride

Time-Series Graph of MW-15r



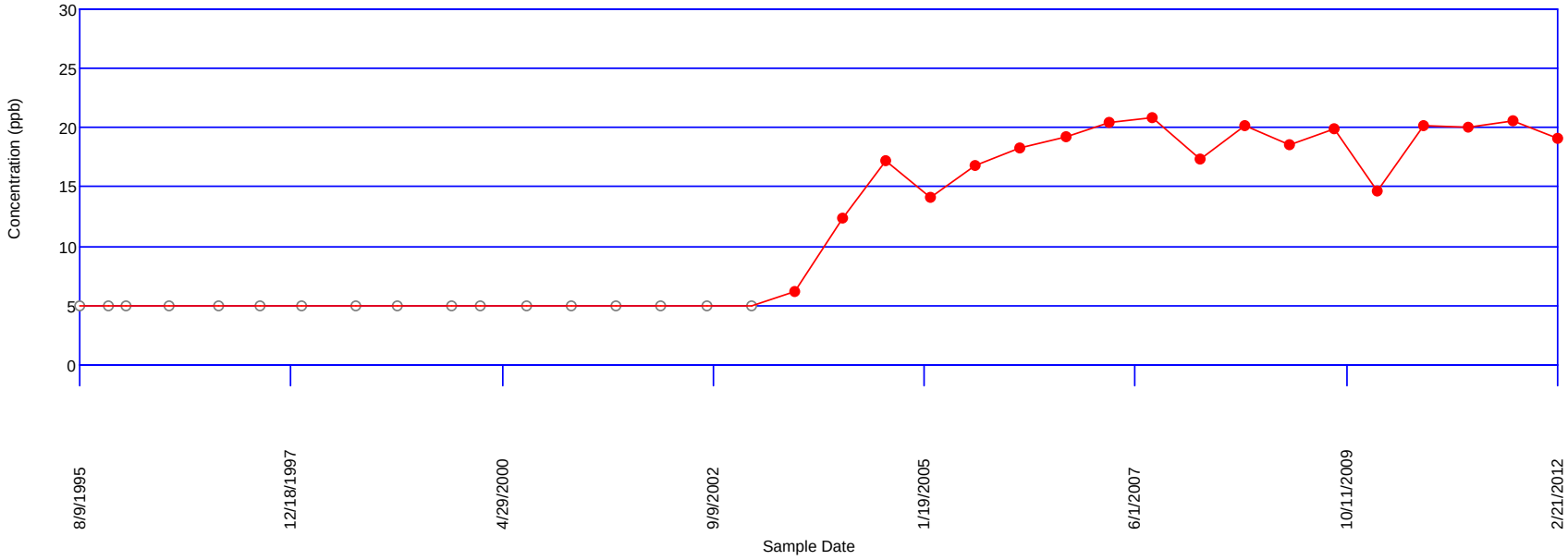
Tetrachloroethene

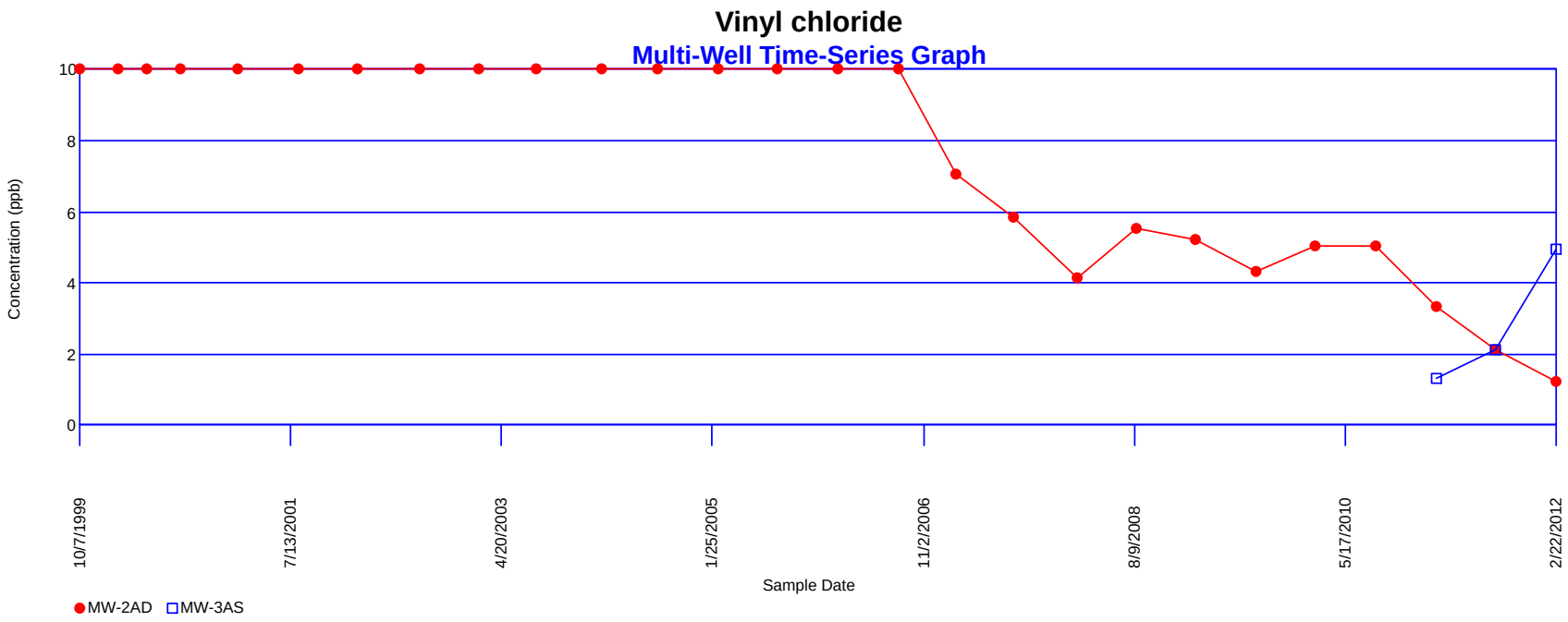
Multi-Well Time-Series Graph



Trichloroethene

Time-Series Graph of MW-16A




Vinyl chloride
Multi-Well Time-Series Graph
Concentration (ppb)
10
8
6
4
2
0
10/7/1999
7/13/2001
4/20/2003
1/25/2005
11/2/2006
8/9/2008
5/17/2010
2/22/2012
Sample Date
MW-2AD
MW-3AS