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):

Smith Gardner, 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 x 222

E-mail: madeline@smithgardnerinc.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Davidson County Closed Phase 1 Landfill	1242 Old Highway 29 Thomasville, NC 27360	29-06	0.1600	September 23-24, 2014

Environmental Status: (Check all that apply)

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

Type of data submitted: (Check all that apply)

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

Notification attached?

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

Certification

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

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

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

Signature — Date: 12/13/14

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 2275 GEOLOGIST MADELINE GERMAN 12/3/14

14 N. Boylan Ave. Raleigh, NC 27603

Facility Representative Address

C-0828

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

This page intentionally left blank.

September 2014 Semi-Annual Groundwater Monitoring Report

Davidson County Phase 1 Lined Landfill
NC Solid Waste Permit No. 29-06

Prepared for:

Davidson County Integrated Solid Waste
1242 Old Highway 29
Thomasville, North Carolina 27360-0024

December 2014

Prepared by:

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

PRINTED ON 100% RECYCLED PAPER

© 2014 Smith Gardner, Inc.
This document is intended for the sole use of the client for which it was prepared and for the purpose agreed upon by the client and Smith Gardner, Inc.

This page intentionally left blank.

September 2014 Semi-Annual Groundwater Monitoring Report

Davidson County Phase 1 Lined Landfill
NC Solid Waste Permit No. 29-06

Prepared For:

Davidson County Integrated Solid Waste
Thomasville, North Carolina 27360-0024

S+G Project No. DAVDCO 14-10

12/3/14

Madeline German, P.G.
Project Geologist

12/3/14

Joan Smyth, P.G.
Senior Hydrogeologist

NORTH CAROLINA LICENSED SEAL 1369 GEOLOGIST JOAN A. SMYTH

December 2014

NC LIC. NO. C-0928 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

This page intentionally left blank.

Davidson County Phase 1 Lined Landfill
NC Solid Waste Permit No. 29-06

September 2014 Groundwater Monitoring Report

Table of Contents

Page

1.0 INTRODUCTION 1
2.0 SITE GEOLOGY 1
3.0 SAMPLING LOCATIONS 1
4.0 SAMPLING PROCEDURES 1
5.0 FIELD & LABORATORY RESULTS 2
5.1 Field Results 2
5.2 Laboratory Analysis 2
5.2.1 Inorganic Constituents 2
5.2.2 Organic Constituents 2
5.2.3 Surface Water Results 3
5.2.4 Leachate Analysis 3
6.0 STATISTICAL ANALYSIS 3
7.0 GROUNDWATER CHARACTERIZATION 3
8.0 CONCLUSIONS 3

FIGURE

Figure 1 Groundwater Potentiometric Map

TABLES

Table 1 Groundwater Elevations
Table 2 Field Parameters
Table 3 Detected Parameters
Table 4 Leachate Analytical Data
Table 5 Aquifer Conductivity and Velocity Calculations

APPENDICES

Appendix A Monitoring Well Information
Appendix B Laboratory Analytical Report
Appendix C Time vs. Concentration Graphs

This page intentionally left blank.

1.0 INTRODUCTION

Smith Gardner, Inc. (S+G) was contracted by Davidson County to perform their semi-annual groundwater monitoring at the Davidson County Phase 1 Lined Landfill, permit number 29-06, as required by 15A NCAC 13B .1600. Sampling was conducted September 23-24, 2014. This report summarizes the event sampling procedures, field and laboratory results and groundwater characterization as required by NC Solid Waste Regulations. Summary tables, a potentiometric map and the laboratory analytical report are also included.

2.0 SITE GEOLOGY

The Davidson County Landfill facility is located in the Piedmont Physiographic Province of North Carolina approximately three and a half miles northeast of the City of Lexington, NC. The Geologic Map of North Carolina (*USGS*, 1985) indicates that the site lies at the western margin of the Carolina Slate Belt; an area of predominantly volcanic and sedimentary rocks of Late Proterozoic to Cambrian age that have been metamorphosed and intruded by numerous igneous plutons. The boundary zone between the Carolina Slate Belt and the adjacent Charlotte Belt is known as the Gold Hill/Silver Hill shear zone. The site vicinity is underlain by volcanic rocks from the Flat Swamp Member of the Cid Formation and metavolcanic rocks of the Battleground Formation.

3.0 SAMPLING LOCATIONS

The groundwater monitoring network for the Davidson County Phase 1 includes thirteen monitoring wells (MW-1S, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7S, MW-7D, MW-8, MW-9A, MW-10, MW-11and MW-12), two surface water locations (SW-1 and SW-2) and one leachate location (Leachate). MW-1s is the upgradient well for the site. SW-1 is the upstream surface water location; SW-2 is located on Jimmy's Creek downstream of the landfill. A trip blank and equipment blank were submitted for quality control purposes. Sampling locations are shown in **Figure 1**. Available well logs are provided in **Appendix A**.

4.0 SAMPLING PROCEDURES

Sampling procedures followed the protocols set forth in the site's Water Quality Monitoring Plan[1] and the North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities (North Carolina Department of Environment and Natural Resources, Division of Waste Management). S+G personnel gauged each well to determine groundwater depth and purged three to five well volumes or until dry. Groundwater elevations are provided in **Table 1**.

Environment 1, Inc. (NC Laboratory Certification # 10) provided laboratory prepared sample containers for the specified analytical procedures. Groundwater samples were properly preserved, placed on ice and transported to the laboratory facility within the specified hold times for each analysis.

1 Davidson County Water Quality Monitoring Plan, G.N. Richardson and Associates, June 1999.

Sampling wells and locations were inspected and found to be in good condition and free of obstructions.

5.0 FIELD & LABORATORY RESULTS

5.1 Field Results

Temperature, pH, specific conductance and turbidity 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 for groundwater included metals via EPA Test Method 200.8 and Appendix I Volatile Organic Compounds (VOCs) via EPA Test Method 8260B. Leachate samples were also sampled for BOD, COD, nitrate nitrogen, total phosphorus and sulfate via SWS approved methods listed in the laboratory report. Analytical results were compared to the NC DWM Solid Waste Section Quantitation Limits (SWSLs), 15A NCAC 2L.0200 (2LStandard), SWS established Groundwater Protection (GWP) Standards and the Federal Maximum Contaminant Limits (MCLs). Surface water results were compared with the NCAC 2B Standard for Class C waters (2B Standards).

Most constituents were either below the method detection limit (MDL) or were "J-values" indicating a non-quantifiable value. The laboratory results are presented in **Appendix B**.

5.2.1 Inorganic Constituents

Cobalt in MW-8 and chromium in MW-11 were the only inorganic constituents detected above their 2L or GWP Standard this event. Inorganic detections are provided in **Table 3**.

5.2.2 Organic Constituents

Acetone was the only organic parameter detected this event; however, it was "j-qualified" and not detected above the SWSL or the 2L Standard. Organic detections are provided in **Table 3.**

5.2.3 Surface Water Results

No inorganic or organic constituents were detected above their MDL in surface water samples.

5.2.4 Leachate Analysis

Leachate samples were collected from the leachate collection system. A summary of constituents detected in the leachate is included as **Table 4**.

6.0 STATISTICAL ANALYSIS

No statistical analyses were performed on the analytical data based on the latest version of 15A NCAC 13B.1632 and .1633 effective April 1, 2011. Time vs. concentration graphs are included as **Appendix C**.

7.0 GROUNDWATER CHARACTERIZATION

A potentiometric surface map was prepared from groundwater data from this sampling event. Groundwater flow velocities for this sampling event were calculated for monitoring wells using the equation:

$$V = Ki/n$$

where: K = hydraulic conductivity
i = groundwater gradient
n = porosity

Groundwater velocities in the uppermost aquifer ranged from 0.0049 feet/day (MW-6) to 2.683 feet/day (MW-9A) and averaging 0.384 feet/day. Calculations are included in **Table 5**. Groundwater elevations indicate the flow direction is generally north and northwest across the site; which is consistent with historically reported ground water flow patterns. The potentiometric surface map is included as **Figure 1**.

8.0 CONCLUSIONS

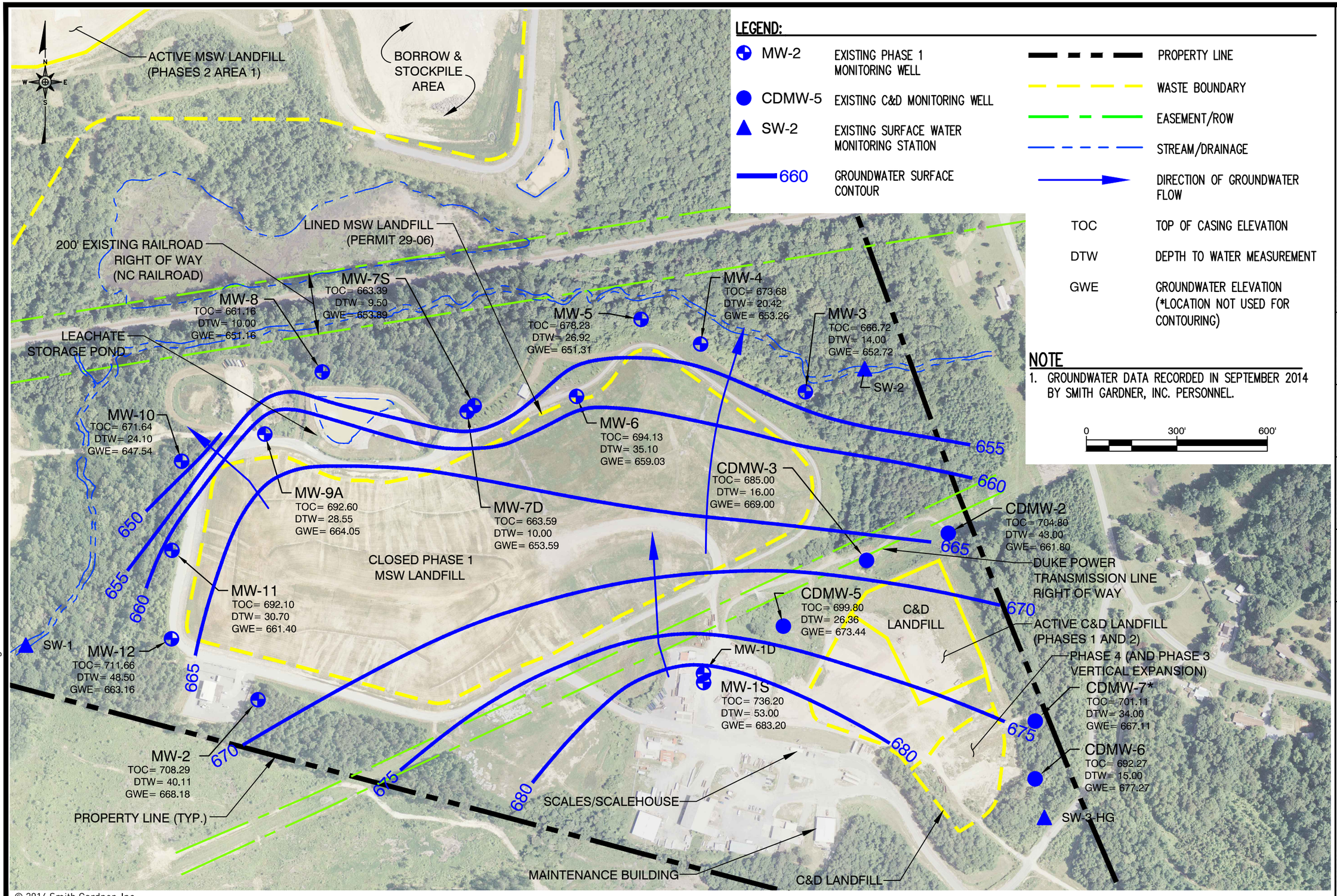
The analytical results for the Phase 1 lined landfill are consistent with reported historic inorganic detections; likely due to variations in these naturally occurring constituents and are not indicative of groundwater impact from the landfill. The next groundwater monitoring event is tentatively scheduled for April 2015.

This page intentionally left blank.

FIGURES

September 2014 Groundwater Monitoring Report
Davidson County Phased 1 Lined Landfill
NC Solid Waste Permit No. 29-06

This page intentionally left blank.



LEGEND:

MW-2	EXISTING PHASE 1 MONITORING WELL
CDMW-5	EXISTING C&D MONITORING WELL
SW-2	EXISTING SURFACE WATER MONITORING STATION
660	GROUNDWATER SURFACE CONTOUR
	PROPERTY LINE
	WASTE BOUNDARY
	EASEMENT/ROW
	STREAM/DRAINAGE
	DIRECTION OF GROUNDWATER FLOW
TOC	TOP OF CASING ELEVATION
DTW	DEPTH TO WATER MEASUREMENT
GWE	GROUNDWATER ELEVATION (*LOCATION NOT USED FOR CONTOURING)

NOTE

1. GROUNDWATER DATA RECORDED IN SEPTEMBER 2014 BY SMITH GARDNER, INC. PERSONNEL.

0 300' 600'

© 2014 Smith Gardner, Inc.

PREPARED BY:

NC LIC. NO. C-0928 [ENGINEERING]
SMITH+GARDNER
14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

PREPARED FOR:

POTENTIOMETRIC SURFACE MAP
SEPTEMBER 2014
CLOSED PHASE 1 AND C&D
DAVIDSON COUNTY, NC

DRAWN:	T.R.S.
APPROVED:	M.M.G.
SCALE:	AS SHOWN
FIGURE NO.	1
DATE:	Dec 2014
PROJECT NO:	DAVDCO-4
FILENAME:	DAVDCO-B0790

This page intentionally left blank.

TABLES

September 2014 Groundwater Monitoring Report
Davidson County Phase 1 Lined Landfill
Solid Waste Permit No. 29-06

This page intentionally left blank.

SMITH+GARDNER

By: SH
Date: 10/31/2014

Table 1
Groundwater Elevations
Davidson County Phase 1 Lined Landfill
September 23, 2014

Well	Well Installation Date	Latitude	Longitude	Well Diameter (inches)	Total Well Depth (ft. bgs)	Ground Surface Elevation (ft. amsl)	TOC Elevation (ft. amsl)	Depth to Water (ft. bgs)	Groundwater Elevation (ft. amsl)	Screen Interval (ft. bgs)	Screen Geology
MW-1S	6/19/1991	35.84160	80.17795	2.0	62.5	731.10	736.20	53.00	683.20	47.5-62.5	schist
MW-2	5/5/1994	35.84139	80.18294	2.0	39.0	704.59	708.29	40.11	668.18	24-39	diorite
MW-3	4/27/1994	35.84426	80.17685	2.0	20.0	663.89	666.72	14.00	652.72	7.5-17.5	sand, silt and clay
MW-4	4/28/1994	35.84468	80.17803	2.0	20.0	682.10	673.68	20.42	653.26	10-20	sand, silt and clay
MW-5	3/24/2008	35.84490	80.17870	2.0	38.0	676.29	678.23	26.92	651.31	28-38	clayey silt
MW-6	6/7/1994	35.84419	80.17941	2.0	68.5	691.19	694.13	35.10	659.03	58.5-68.5	granite gneiss
MW-7S	4/25/1994	35.84409	80.18056	2.0	15.0	661.35	663.39	9.50	653.89	5-15	clay and silt or sand
MW-7D	4/26/1994	35.84404	80.18064	2.0	46.0	661.13	663.59	10.00	653.59	36-46	sand and clay
MW-8	4/27/1994	35.84438	80.18226	2.0	15.0	661.31	661.16	10.00	651.16	5-15	sand, silt and clay
MW-9A	11/11/2010	35.84381	80.18290	2.0	33.0	691.34	692.60	28.55	664.05	23-33	silt and PWR
MW-10	9/8/1999	35.84356	80.18383	2.0	27.5	667.00	671.64	24.10	647.54	17.5-27.5	diorite
MW-11	12/18/1997	35.84274	80.18392	2.0	33.0	689.22	692.10	30.70	661.40	23-33	rock
MW-12	9/7/1999	35.84194	80.18391	2.0	80.0	709.29	711.66	48.50	663.16	70-80	granite pegmatite

Notes: Survey Data collected by Michael Green and Associates.
amsl = above mean sea level
bgs = below ground surface
Well construction information from well logs (provided in Appendix A)

SMITH+GARDNER

By: SH
Date: 10/31/2014

Table 2
Field Parameters
Davidson County Phase 1 Lined Landfill
September 23, 2014

Well	pH (Std. Units)	Conductivity (umhos)	Temperature (celsius)	Turbidity (NTU)
MW-1	7.43	93	16.7	2.53
MW-3	7.57	36	14.8	117
MW-4	7.51	20	14.3	31.6
MW-5	7.61	25	14.3	14.4
MW-6	7.26	37	15.4	2.41
MW-7S	6.27	26	16.2	45.4
MW-7d	8.48	15	15	3.31
MW-8	6.70	36	15.2	413
MW-9A	7.05	65	15.1	52.6
MW-10	7.13	64	14.1	74.2
MW-11	6.80	66	14.5	678
MW-12	6.78	121	15.1	29.5

NOTES:
Data Collected by S+G personel,Madeline German and John Fearrington.

SMITH+GARDNER

By: SH
Date: 5/1/2014

Table 3
Detected Parameters
Davidson County Phase 1 Lined Landfill
March 31 and April 1, 2014

Parameter	MDL	SWSL	2L or GWP	MCL	MW-1S	MW-3	MW-4	MW-5	MW-6	MW-7D	MW-8	MW-7S	MW-9A	MW-10	MW-11	MW-12
Inorganic Constituents																
antimony	0.12	6	1 §	6	<0.12	<0.12	<0.12	<0.12	0.33 J	<0.12	<0.12	0.15 J	0.94 J	<0.12	<0.12	0.88 J
arsenic	0.10	10	10	10	0.85 J	0.36 J	0.42 J	0.41 J	0.15 J	0.14 J	0.76 J	0.6 J	0.3 J	0.25 J	0.76 J	0.39 J
barium	0.12	100	700	2000	39 J	141	64.5 J	48.1 J	12.2 J	4.5 J	116	27.4 J	11.2 J	10.2 J	55.9 J	1.4 J
beryllium	0.04	1	4 §	4	0.08 J	0.16 J	0.13 J	0.07 J	0.08 J	0.08 J	0.54 J	0.13 J	0.09 J	0.16 J	0.8 J	0.09 J
cadmium	0.04	1	2	5	0.06 J	0.08 J	0.08 J	0.06 J	0.09 J	<0.04	0.13 J	0.11 J	0.04 J	0.06 J	0.19 J	0.07 J
cobalt	0.12	10	1 §	NE	0.2 J	3.3 J	2.1 J	0.41 J	<0.12	<0.12	**10**	6.1 J	0.33 J	1.5 J	3.6 J	0.33 J
copper	0.10	10	1000	1300	0.81 J	13	9.4 J	0.94 J	<0.10	0.28 J	17	5.1 J	1.7 J	3.1 J	38	0.77 J
chromium, total	0.14	10	10	100	<0.14	1.2 J	3.3 J	0.17 J	<0.14	<0.14	10	1.3 J	2 J	3.3 J	**14**	0.53 J
iron	16	300	300	300	286 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
manganese	0.21	50	50	50	15 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
lead	0.13	10	15	15	<0.13	0.79 J	2.2 J	0.2 J	<0.13	<0.13	12	0.46 J	0.27 J	0.62 J	5.8 J	0.23 J
nickel	0.12	50	100	NE	2 J	3.2 J	2.4 J	0.63 J	0.68 J	0.22 J	6.3 J	3 J	1.4 J	2.6 J	7.5 J	1.9 J
selenium	0.16	10	20	50	2.5 J	0.6 J	0.68 J	1.4 J	0.66 J	0.37 J	1 J	0.48 J	0.84 J	0.51 J	1.1 J	0.94 J
silver	0.04	10	20	100	<0.04	0.04 J	<0.04	<0.04	<0.04	<0.04	0.05 J	<0.04	<0.04	<0.04	0.13 J	<0.04
vanadium	0.06	25	0.3 §	NE	1.9 J	16.7 J	9.1 J	3.2 J	0.13 J	0.6 J	46	4.5 J	5.5 J	9.3 J	76	4.8 J
zinc	0.53	10	1000	5000	2.2 J	25	20	1.4 J	1.2 J	0.57 J	37	5.7 J	3 J	4.8 J	32	0.97 J

Organic Constituents

Parameter	MDL	SWSL	2L	MCL	MW-7S
toluene	0.23	1	600	1000	0.3 J

NOTE:
- MDL - Method Detection Limit
- SWSL - Solid Waste Section Quantitation Limits
- 2L - Groundwater Standards (15A NCAC 2L 0200)
- GWP - SWS Groundwater Protection Standards (noted by §)
- MCL - Federal Maximum Contaminant Limit
- 2B - NCAC 2B Standard for Class C waters
- J - Laboratory defined detection between MDL and SWSL
- <MDL - Not detected at or above MDL
- NA - Not analyzed
- NE - Not Established

Table units are presented in ug/l.

Lab data analysis by Environment 1, Inc. report dated 10/17/2014, Client ID#6038.

This page intentionally left blank.

SMITH+GARDNER

By: SH
Date: 10/29/2014

Table 4
Leachate Analytical Data
Davidson County Phase 1 Lined Landfill
September 23, 2014

Parameter	Unit	Leachate
Antimony	ug/l	0.94 J
Arsenic	ug/l	2.4 J
Barium	ug/l	56 J
Beryllium	ug/l	0.05 J
BOD	mg/l	16
Cobalt	ug/l	1.4 J
COD	mg/l	672
Copper	ug/l	3.5 J
Lead	ug/l	0.22 J
Nitrate Nitrogen as N	mg/l	0.14 J
Nickel	ug/l	13.8 J
Selenium	ug/l	3.3 J
Sulfate	mg/l	16.3 J
Total Chromium	ug/l	1.4 J
Total Phosphorus as P	mg/l	0.19
Vanadium	ug/l	10.2 J
Zinc	ug/l	3 J

NOTES:

J-values indicate the parameter was detected between the laboratory MDL and the SWSL. These are estimated concentrations.

Lab data analysis by Environment 1, Inc. report dated 10/17/2014, Client ID#6038.

SMITH+GARDNER

By: MG
Date: 12/01/2014

Table 5
Aquifer Conductivity and Velocity Calculations
Davidson County Phase 1 Lined Landfill
September 23, 2014

Well Number	Aquifer	Conductivity (ft/day)	Conductivity (ft/min)	Assumed Porosity (n)	Gradient (I)	Velocity (ft/day)
MW-1S	Bedrock	0.14	9.72E-05	0.1	0.064	0.0896
MW-2	Bedrock	0.17	1.18E-04	0.1	0.018	0.0309
MW-3	Unconsolidated	0.62	4.31E-04	0.2	0.046	0.1414
MW-4	Unconsolidated	1.31	9.10E-04	0.2	0.025	0.1628
MW-6	Bedrock	0.02	1.39E-05	0.1	0.024	0.0049
MW-7S	Unconsolidated	0.38	2.64E-04	0.15	0.016	0.0402
MW-8	Unconsolidated	0.57	3.96E-04	0.15	0.048	0.1824
MW-9A	Unconsolidated	2.65	1.84E-03	0.1	0.101	2.6831
MW-10	Unconsolidated	0.88	6.11E-04	0.2	0.082	0.3608
MW-11	Unconsolidated	4.13	2.87E-03	0.2	0.023	0.4646
MW-12	Unconsolidated	0.58	4.03E-04	0.2	0.023	0.0667

Notes:

Velocity Calculated from V=K*I/n where:
V = velocity
K = Hydraulic Conductivity
I = Gradient
n = Porosity
Hydraulic Conductivity data from slug tests performed in 1994
Porosity values assumed from Groundwater & Wells (Driscoll)
Survey Data collected by Michael Green and Associates.
Gradient calculated from Fall 2013 potentiometric surface.

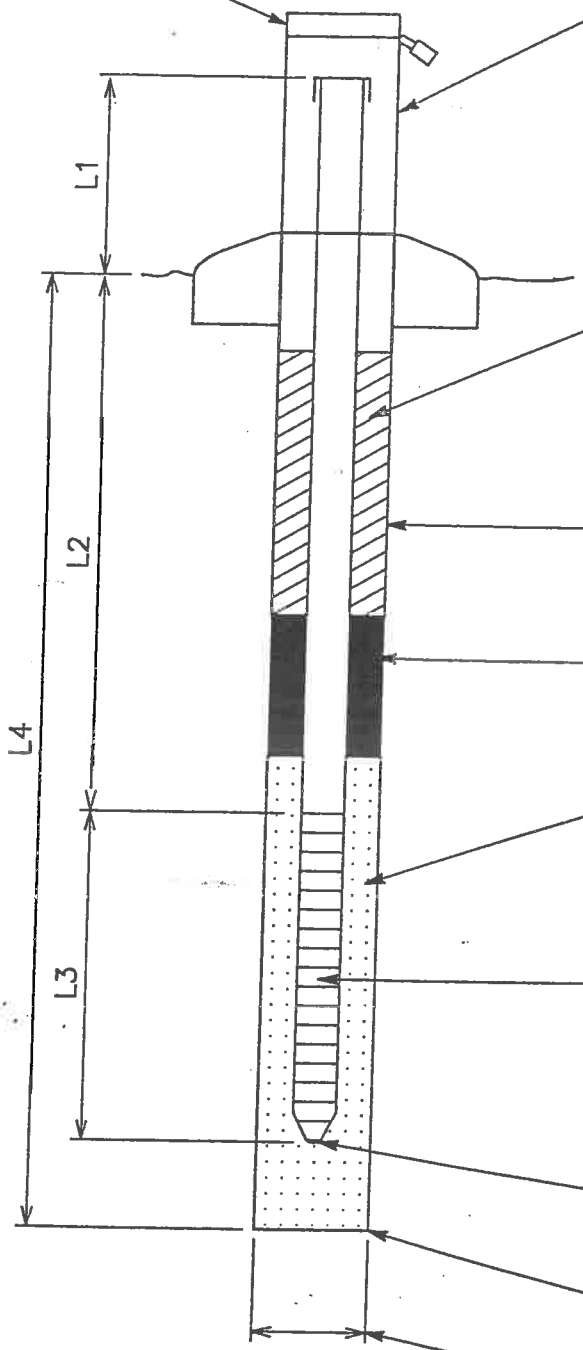
NM - Not Measured
NA - Not Available

Appendix A

Monitoring Well Information

This page intentionally left blank.

LANDFILL MONITORING WELL No. MW- 1
TYPE II WELL INSTALLATION



PROTECTIVE CASING AND CONCRETE PAD

P. CASING MATERIAL	Steel
P. CASING DIAMETER	6 X 6 inches
P. CASING LENGTH	5 feet
PAD DIMENSIONS	3 ft. dia.
HEIGHT ABOVE GROUND	1.20 feet
PAD ELEVATION	735.00
TOP OF CASING ELEVATION	736.20

WELL RISER CASING

MATERIAL	Schedule 40 PVC
DIAMETER	2 inch
JOINT TYPE	Flush-thread
LENGTH	47.5 feet

BACKFILL AROUND CASING

MATERIAL	Cement grout
THICKNESS	46.5 feet

ANNULAR SEAL

TYPE OF SEAL	Bentonite
THICKNESS	1.0 feet

FILTER PACK

TYPE OF FILTER	Sand
DISTANCE ABOVE SCREEN	0.0 feet
LENGTH	15.0 feet

WELL SCREEN

SCREEN MATERIAL	Schedule 40 PVC
DIAMETER	2 inch
LENGTH	15.0 feet
SLOT SIZE	0.010 inch

DEPTH TO BOTTOM OF MONITORING WELL	62.5 feet
DEPTH TO BOTTOM OF FILTER SAND	62.5 feet
DIAMETER OF BOREHOLE	6 inch

L1 =1.20 FT.
L2 =47.5 FT.
L3 =15.0 FT.
L4 =62.5 FT.

CROSS-SECTIONAL VIEW

Note: Well was installed ± 6/19/1991 by Engineering Tectonics (REG. #835) and denoted as well MW-4 under former landfill permit # 29-02.

TITLE

MONITORING WELL CONSTRUCTION DETAIL
NEW DAVIDSON COUNTY LANDFILL
LEXINGTON, NORTH CAROLINA

G · N · Richardson & Associates
CONSULTING ENGINEERING

CAD FILE	PREP. BY	REV. BY	DATE	PROJECT NO.
94012-2.DWG	GHS		06-07-94	GRA94012

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-2

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/5/94 DATE COMPLETED: 5/5/94

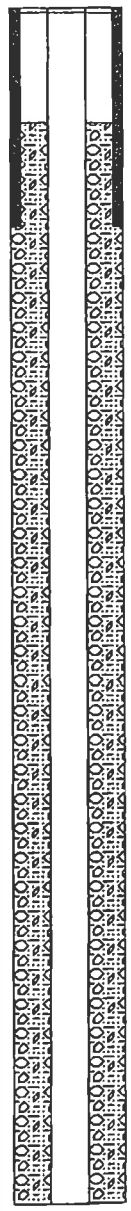
TOP OF CASING ELEVATION: -
TOTAL DEPTH: 39.0
GROUND SURFACE ELEVATION: -
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date:		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								SAND AND SILT: brown;fine grained.
1.0								
2.0								CLAY AND SILT AND SAND: brown to green; fine grained.
3.0	6	Ss	S1					
4.0	6 7							
5.0								
6.0								
7.0								
8.0	4	Ss	S2					
9.0	6 7							
10.0								
11.0								SAND AND SILT: brown green; fine grained.
12.0								
13.0	11	Ss	S3					
14.0	16 16							
15.0								
16.0								
17.0								
18.0	14	Ss	S4					
19.0	21 22							
20.0								

LITHOLOGY

WELL INSTALLATION



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-2

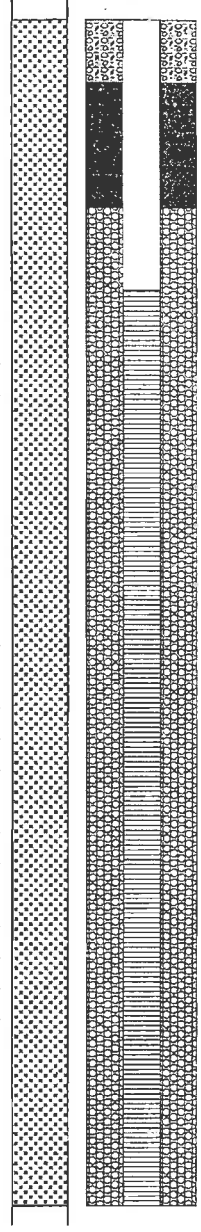
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/5/94 DATE COMPLETED: 5/5/94

TOP OF CASING ELEVATION: -
TOTAL DEPTH: 39.0
GROUND SURFACE ELEVATION: -
SHEET: 2 OF 2

STATIC WATER LEVEL (BLS)		
WO=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
20.0								DIORITE: white feldspar with augite, weathered
21.0								
22.0								
23.0	15	Ss	S5					
24.0	32							
	37							
25.0								
26.0								
27.0								
28.0	40	Ss	S6					
29.0	50/5							
30.0								
31.0								
32.0				W				
33.0	50/5	Ss	S7					
34.0								
35.0								
36.0								
37.0								
38.0	50/5	Ss	S8					
39.0								

DEPTH | LITHOLOGY | WELL INSTALLATION



FIELD BOREHOLE LOG

BOREHOLE NUMBER
MW-3

PROJECT NUMBER 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/27/94 DATE COMPLETED: 4/27/94

TOP OF CASING ELEVATION 666.72
TOTAL DEPTH 20.0
GROUND SURFACE ELEVATION 664.56
SHEET: 1 OF: 1

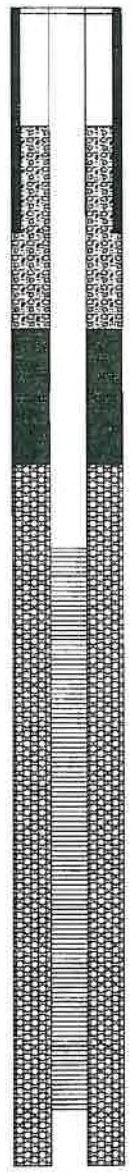
STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	12.10 AB	
Time	15:40	
Date:	05/03/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								SAND AND CLAY: organic rich, heavily rooted, trace to abundant 1/4" black and orange rind concretions, moist, firm to stiff; brown to dark brown.
1.0								
2.0								
3.0	4	Ss	S1					
4.0	5 11							
5.0								
6.0								
7.0								
8.0	10	Ss	S2					
9.0	12 15							CLAY AND SILT AND SAND: numerous white feldspar black manganese, and orange iron inclusions, firm; moist; orange brown
10.0								
11.0								
12.0								
13.0	50/6	Ss	S3					
14.0								SAND AND CLAY: medium to coarse grained sand, some muscovite and feldspar, moist, light tan to medium gray
15.0								
16.0								
17.0								
18.0	10	Ss	S4	W				
19.0	11 12							SAND AND CLAY AND SILT: 1.5 inch pegmatite zones; med. tan to gray
20.0								

DEPTH

LITHOLOGY

WELL INSTALLATION



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-4

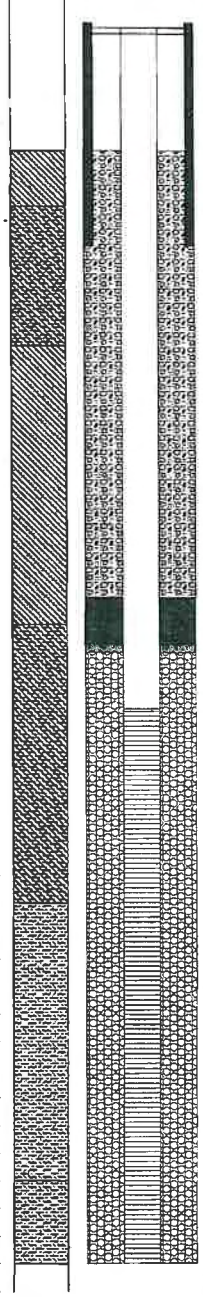
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/28/94 DATE COMPLETED: 4/28/94

TOP OF CASING ELEVATION: 673.68
TOTAL DEPTH: 20.0
GROUND SURFACE ELEVATION: 671.51
SHEET 1 OF: 1

STATIC WATER LEVEL (BLS)		
WO=While Drilling AB=After Boring		
Depth(ft)	19.21 AB	
Time	16:50	
Date	05/03/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								SAND AND CLAY: tan to orange; fill
1.0								SAND AND CLAY AND SILT: rooted, med. brown
2.0								
3.0	16	Ss	S1					CLAY AND SAND: some silt, relict granite gneiss with white med to coarse feldspar, medium to fine quartz and abundant biotite laminae dry, very dense; light tan to orange tan
4.0	32							
	42							
5.0								
6.0								
7.0								
8.0	36	Ss	S2					SILT AND CLAY: trace fine biotite (2 inches), coarse clayey sand granite gneiss, coarse white feldspar and biotite, dry, very dense; dark olive green
9.0	50/4							
	25							
10.0								
11.0								
12.0								
13.0	27	Ss	S3					SAND AND SILT: with some clay; medium to coarse grained feldspar and quartz, abundant muscovite; weathered granite gneiss; equigranular, dry; very dense; light tan
14.0								
15.0								
16.0								
17.0								
18.0	36	Ss	S4	W				SAND AND SILT: fine to med feldspar, some biotite; moist, very dense, light gray
19.0	36							
	50/5							
20.0								

LITHOLOGY



WELL INSTALLATION

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-5A

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/28/94 DATE COMPLETED: 4/28/94

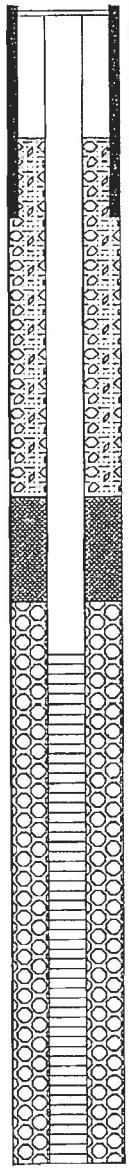
TOP OF CASING ELEVATION: 674.57
TOTAL DEPTH: 19.5
GROUND SURFACE ELEVATION: 672.23
SHEET: 1 OF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	19.45 DB	
Time	16:15	
Date:	04/28/94	

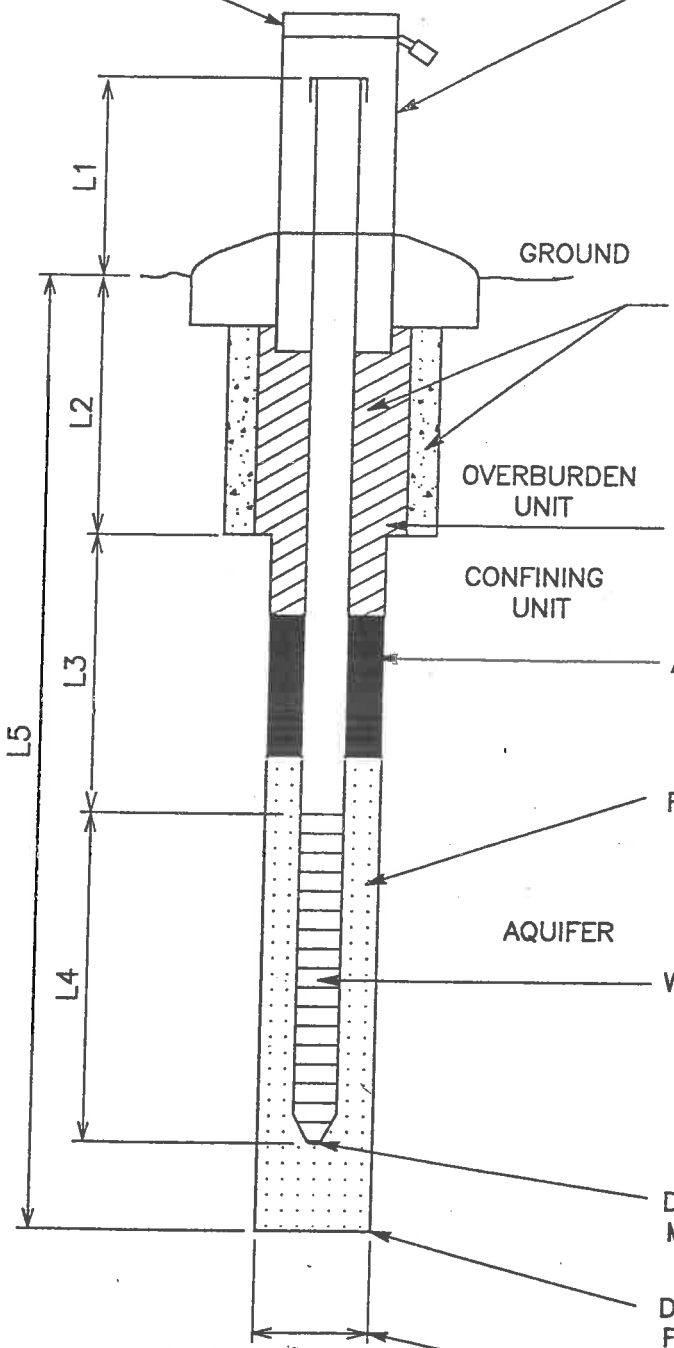
DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								CLAY AND SILT: with manganese staining; dry; stiff; yellow tan.
1.0								
2.0								
3.0	8	Ss	S1					
4.0	7 9							
5.0								
6.0								
7.0								
8.0	12	Ss	S2					
9.0	15 25							SAND AND CLAY: med. to coarse grained quartz and feldspar; feldspar is white to pinkish; abundant biotite; some iron staining; dry; dense; weathered granite gneiss; light tan.
10.0								
11.0								
12.0								
13.0	25	Ss	S3					
14.0	50/5							SAND AND CLAY: med. to coarse feldspar (white) and quartz; abundant muscovite; orange iron staining throughout; equigranular; very dense; wet; orange tan.
15.0								
16.0								
17.0								
18.0	50/5	Ss	S4					
19.0				W				CLAY AND SAND AND SILT: med. to fine grained; abundant feldspar and blue quartz; lt. brown.
20.0								

LITHOLOGY

WELL INSTALLATION



LANDFILL MONITORING WELL No. MW– 6
TYPE III WELL INSTALLATION



PROTECTIVE CASING AND CONCRETE PAD

P. CASING MATERIAL	Steel
P. CASING DIAMETER	4 X 4 inches
P. CASING LENGTH	5 feet
PAD DIMENSIONS	2 X 2 feet
HEIGHT ABOVE GROUND	1.34 feet
PAD ELEVATION	692.79
TOP OF CASING ELEVATION	694.12

WELL RISER CASING

	INNER	OUTER
MATERIAL	Sch. 40 PVC	Sch. 40 PVC
DIAMETER	2.0 inch	6.0 inch
JOINT TYPE	Flush-thread	Flush-threa
LENGTH	58.5 feet	29.0 feet

RISER BACKFILL

	INNER	OUTER
MATERIAL	Cement grout	Cement grou
THICKNESS	53.0 feet	29.0 feet

ANNULAR SEAL

TYPE OF SEAL	Bentonite chips
THICKNESS	3.0 feet

FILTER PACK

TYPE OF FILTER	#3 filter sand
DISTANCE ABOVE SCREEN	2.5 feet
LENGTH	12.5 feet

WELL SCREEN

SCREEN MATERIAL	Schedule 40 PVC
DIAMETER	2 inch
LENGTH	10.0 feet
SLOT SIZE	0.010 inch

DEPTH TO BOTTOM OF MONITORING WELL	68.5 feet
DEPTH TO BOTTOM OF FILTER SAND	68.5 feet
DIAMETER OF BOREHOLE	5.88 inches

L1 = 1.34 FT.
L2 = 29.0 FT.
L3 = 29.5 FT.
L4 = 10.0 FT.
L5 = 68.5 FT.

CROSS–SECTIONAL VIEW

TITLE

MONITORING WELL CONSTRUCTION DETAIL
NEW DAVIDSON COUNTY LANDFILL
LEXINGTON, NORTH CAROLINA

G • N • Richardson & Associates
CONSULTING ENGINEERING

CAD FILE	PREP. BY	REV. BY	DATE	PROJECT NO.
94012–2.DWG	GHS		06–07–94	GRA94012

FIELD BOREHOLE LOG

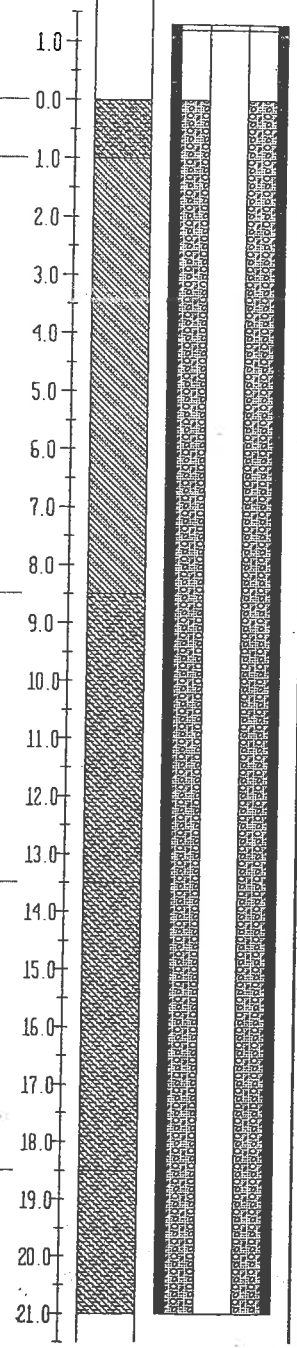
BOREHOLE NUMBER: MW-6D

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/04/94 DATE COMPLETED: 5/04/94

TOP OF CASING ELEVATION: 694.13
TOTAL DEPTH: 68.5
GROUND SURFACE ELEVATION: 692.79
SHEET: 1 OF: 3

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date:		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
1.0								
0.0								CLAY AND SILT AND SAND: fill.
1.0								CLAY AND SAND: coarse sand; light tan brown; soft; moist; fill; some roots.
2.0								
3.0	5	Ss	S1					
4.0	7							
	7							
5.0								
6.0								
7.0								
8.0	5	Ss	S2					
9.0	6							CLAY AND SILT: tan brown to orange red; interbedded with light tan coarse sandy clay; with quartz and feldspar; soft; moist; medium dense.
	9							
10.0								
11.0								
12.0								
13.0	6	Ss	S3					
14.0	10							CLAY AND SILT: light tan; interbedded with orange coarse sandy clay; some greenstone and wood fragments; stiff
	12							
15.0								
16.0								
17.0								
18.0	9	Ss	S4					
19.0	10							CLAY AND SILT: light tan; interbedded with orange coarse sandy clay; some greenstone fragments; stiff.
	9							
20.0								
21.0								



FIELD BOREHOLE LOG

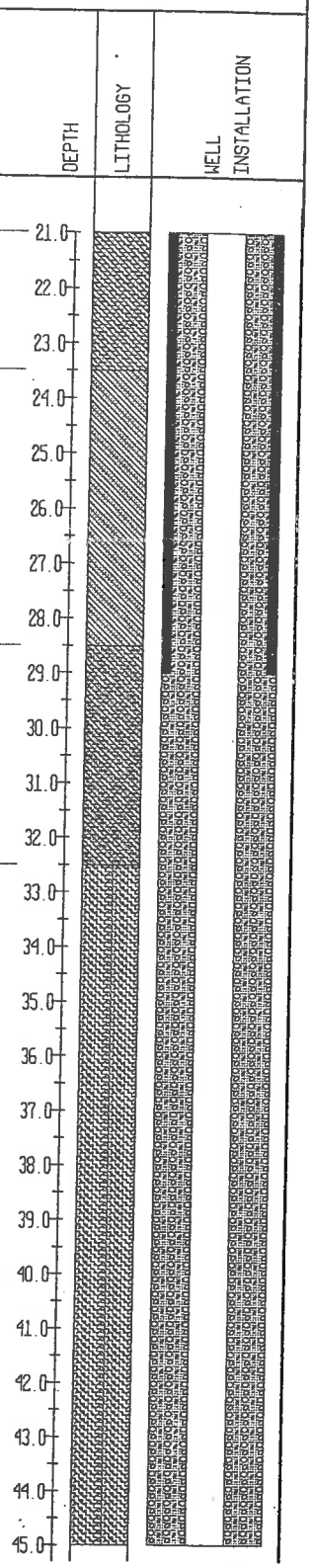
BOREHOLE NUMBER: MW-6D

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/04/94 DATE COMPLETED: 5/04/94

TOP OF CASING ELEVATION: 694.13
TOTAL DEPTH: 68.5
GROUND SURFACE ELEVATION: 692.79
SHEET: 2 OF: 3

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date:		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
21.0								CLAY AND SILT: light tan; interbedded with orange coarse sandy clay; some greenstone fragments; stiff.
22.0								
23.0	6	Ss	S5					
24.0	10							CLAY AND SAND: orange brown; coarse grained; moist; stiff.
	14							
25.0								
26.0								
27.0								
28.0	12	Ss	S6					
29.0	50/5							CLAY AND SAND AND SILT: dark brown to orange and tan; heavy manganese staining; tan feldspar bands; residual weathered gneiss.
30.0								
31.0								
32.0								
33.0	50/1	Ss	S7					GRANITE GNEISS: bedrock; auger refusal.
34.0								
35.0								
36.0								
37.0								
38.0								
39.0								
40.0								
41.0								
42.0								
43.0								
44.0								
45.0								



FIELD BOREHOLE LOG

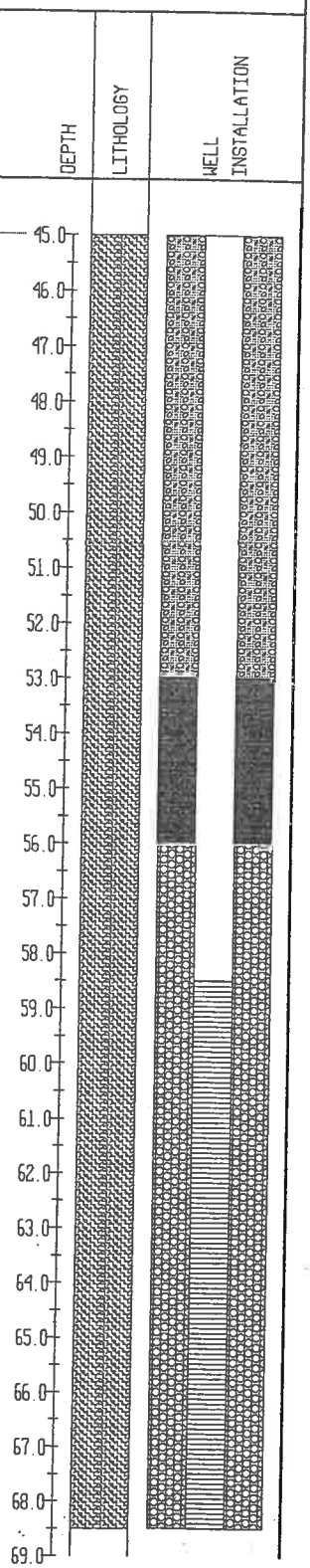
BOREHOLE NUMBER: MW-6D

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 5/04/94 DATE COMPLETED: 5/04/94

TOP OF CASING ELEVATION: 694.13
TOTAL DEPTH: 68.5
GROUND SURFACE ELEVATION: 692.79
SHEET: 3 OF: 3

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)		
Time		
Date:		

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
45.0								GRANITE GNEISS: bedrock
46.0								
47.0								
48.0								
49.0								
50.0								
51.0								
52.0								
53.0								
54.0								
55.0								
56.0								
57.0								
58.0								
59.0								
60.0								
61.0								
62.0								
63.0								
64.0								
65.0								
66.0								
67.0								
68.0								
69.0								



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-7

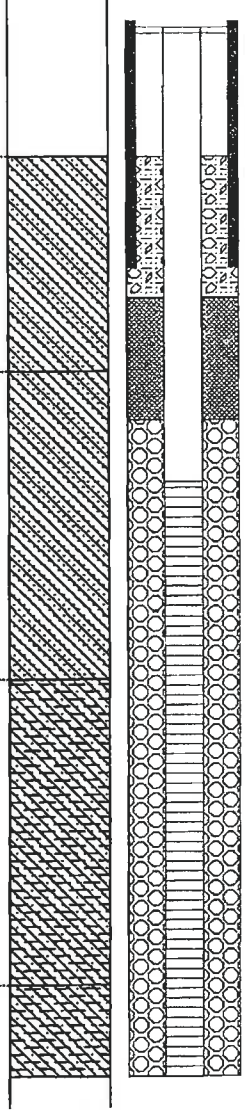
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/25/94 DATE COMPLETED: 4/25/94

TOP OF CASING ELEVATION: 663.39
TOTAL DEPTH: 15.0
GROUND SURFACE ELEVATION: 661.30
SHEET: 1 DF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	5.08 AB	
Time	12:43	
Date:	05/03/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								CLAY AND SAND: fill; orange brown; moist.
1.0								
2.0								
3.0	13	Ss	S1	W				
4.0	17							CLAY AND SAND: orange brown to orange gray; hard; moist; 1 inch orange to tan clay sand with quartz (granite residuum); 3 inch green and white chlorite feldspar gneiss; wet; SM.
	25							
5.0	26							
6.0								
7.0								
8.0	9	Ss	S2					
9.0	11							CLAY AND SILT: relict chlorite schist structure with trace of white feldspar veins; dark green and white; hard; wet.
	14							
10.0								
11.0								
12.0								
13.0	7	Ss	S3					
14.0	11							CLAY AND SILT: chlorite feldspar schist; one 45 degree fracture; dk. green and white.
	16							
15.0								

LITHOLOGY



WELL INSTALLATION

FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-7D

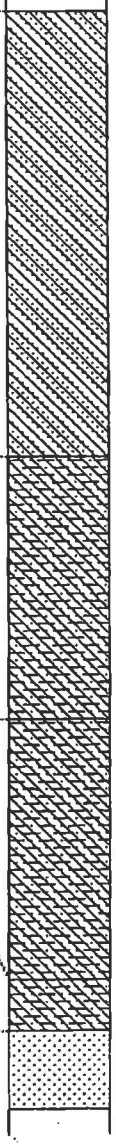
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER AND AIR ROTARY
WEATHER: SUNNY
FIELD PARTY: KENNY MOGLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/26/94 DATE COMPLETED: 4/26/94.

TOP OF CASING ELEVATION: 663.59
TOTAL DEPTH: 46.0
GROUND SURFACE ELEVATION: 661.44
SHEET: 1 OF: 2

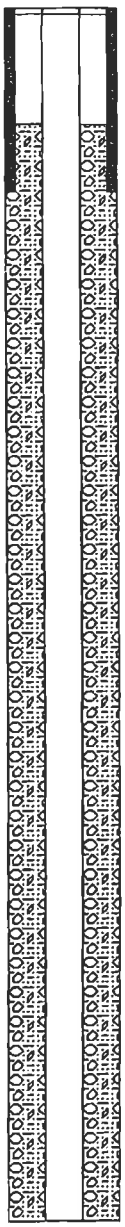
STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	4.55 AB	
Time	4:37	
Date:	04/26/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								CLAY AND SAND: with organics; yellowish orange grading to gray green coarse sandy clay; some relict chlorite schist fabric; dry to moist; hard.
1.0								
2.0								
3.0	8	Ss	S1					
4.0	13							
	18							
5.0								
6.0								
7.0								
8.0	8	Ss	S2					
9.0	11							CLAY AND SILT: gray to green; relict chlorite schist; with heavy orange brown iron staining and bands; saprolite; moist; trace hair veins; hard.
	13							
10.0								
11.0								
12.0								
13.0	13	Ss	S3					
14.0	13			W				CLAY AND SILT: equigranular chlorite/white feldspar schist with red/brown iron stained fractures; moist; dense.
	19							
15.0								
16.0								
17.0								SILT AND CLAY: gray green chlorite feldspar schist; numerous miscellaneously oriented feldspar microveins; orange staining.
18.0	20	Ss	S4					
19.0	36							
	50/6							
20.0								SAND: coarse grained feldspar, quartz muscovite granite; iron stained.
21.0								

LITHOLOGY



WELL INSTALLATION



FIELD BOREHOLE LOG

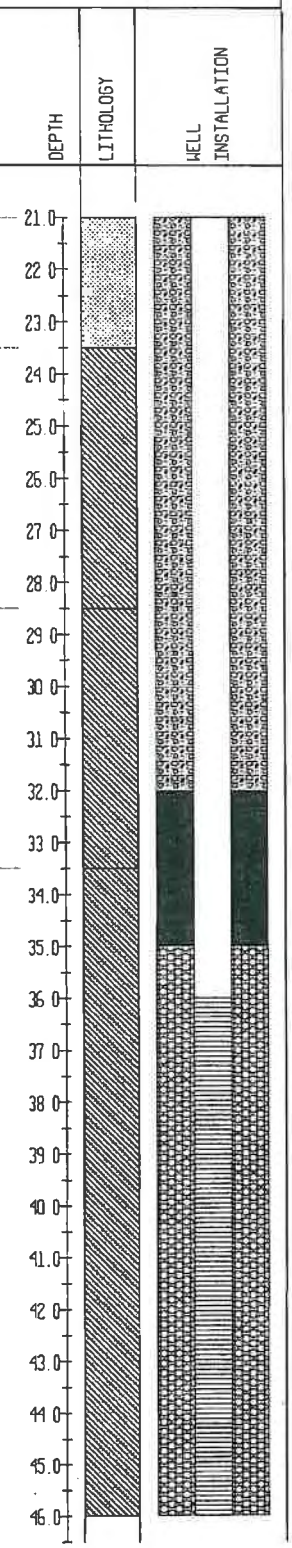
BOREHOLE NUMBER: MW-7D

PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/26/94 DATE COMPLETED: 4/26/94

TOP OF CASING ELEVATION 663.59
TOTAL DEPTH 46.0
GROUND SURFACE ELEVATION 661.44
SHEET: 2 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(Ft)	4.55 AB	
Time	4:37	
Date:	04/26/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
21.0								SAND coarse grained quartz muscovite granite, medium gray with gray quartz; heavy iron staining
22.0								
23.0	25	Ss	S5					
24.0	50/6 50/5							SAND AND CLAY coarse sand, orange brown porphyritic gray quartz/white feldspar trace muscovite and hornblende granite; heavy iron staining
25.0								
26.0								
27.0								
28.0	50/5	Ss	S6					
29.0								SAND AND CLAY coarse sand, brown; porphyritic gray quartz/white feldspar; trace muscovite and hornblende granite, heavy iron staining
30.0								
31.0								
32.0								
33.0	50/4	Ss	S7					
34.0								SAND AND CLAY coarse sand, dark brown; porphyritic gray quartz/white feldspar, trace muscovite and hornblende granite, heavy iron staining
35.0								
36.0								
37.0								
38.0	50/5	Ss	S8					
39.0								
40.0								
41.0								
42.0								
43.0	50/3	Ss	S9					
44.0								
45.0								
46.0								



FIELD BOREHOLE LOG

BOREHOLE NUMBER: MW-8

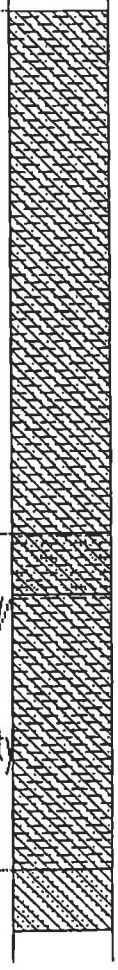
PROJECT NUMBER: 94012
PROJECT NAME: DAVIDSON COUNTY
LOCATION: LEXINGTON, NORTH CAROLINA
DRILLING COMPANY: BORE AND CORE
RIG TYPE & NUMBER: MOBILE B-53
DRILLING METHOD: HOLLOW STEM AUGER
WEATHER: SUNNY
FIELD PARTY: KENNY MOSLEY
GEOLOGIST: GRAHAM SIMMERMAN
DATE BEGUN: 4/27/94 DATE COMPLETED: 4/27/94

TOP OF CASING ELEVATION: 661.16
TOTAL DEPTH: 15.0
GROUND SURFACE ELEVATION: 659.83
SHEET: 1 OF: 1

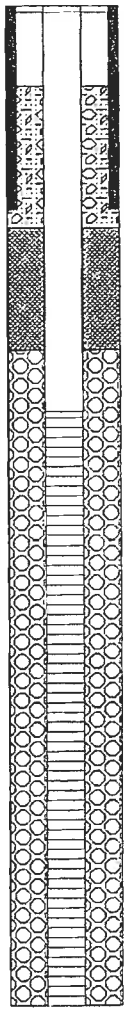
STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	6.34 AB	
Time	9:37	
Date:	04/28/94	

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	ORGANIC VAPOR	CGI	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								CLAY AND SILT: with medium to coarse sand; engineered fill (nine inches thick); numerous root fragments; mottled iron staining; wetland soil; dark grayish brown.
1.0								
2.0								
3.0	7	Ss	S1					
4.0	4							
	5							
5.0								
6.0								
7.0				W				
8.0	6	Ss	S2					
9.0	4							CLAY AND SAND AND SILT: sand is med. to coarse blue quartz; angular; some reddish orange sandy clay; moist; med. dense.
	4							
10.0								
11.0								
12.0								CLAY AND SILT: light bluish green with tan silty clay; some iron staining; slight relict chlorite/feldspar schist fabric.
13.0	10	Ss	S3					
14.0	10							
	9							CLAY AND SAND: relict granite texture; quartz; feldspar; equigranular; moist.
15.0								

LITHOLOGY



WELL INSTALLATION



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

FIELD BOREHOLE LOG

BOREHOLE NUMBER **MW-9a** Page 1 of 1

PROJECT NAME: **Davidson Co Phase 1 Landfill**
LOCATION: **Davidson County**
DRILLING CO: **Geologic Explorations**
DRILLING METHOD: **AH**
FIELD PARTY: **Johnny Burr**
GEOLOGIST: **Lindsay Quant**
DATE BEGUN: **11/11/10** COMPLETED: **11/11/10**

TOTAL DEPTH: **33**
TOP OF CASING ELEV.:
GROUND ELEV.: **686.32**
NORTHING: **764126.597**
EASTING: **1649351.338**

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

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
0.0				AH	SILT: Dry tan silt.		0.0	
5.0		Grab			SILTY CLAY: Dry tan silty clay.		5.0	
10.0		Grab					10.0	
					SANDY SILT: Dry tan sandy silt.			
15.0		Grab					15.0	
20.0		Grab					20.0	
					SILT: Dry to moist gray silt.			
25.0		Grab					25.0	
					PWR: Moist to wet gray silty partially weathered granitic rock. Boring terminated at 33 feet.			
30.0		Grab					30.0	

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

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

Well ID: MW-10

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: Lexington County: Davidson
Davidson County Landfill Road
(Road, Community, or Subdivision and Lot No.)

3. OWNER Davidson County Landfill
ADDRESS 220 Davidson County Landfill Road
(Street or Route No.)
Lexington NC 27292
City or Town State Zip Code

4. DATE DRILLED 9/8/99
5. TOTAL DEPTH 27.5'
6. CUTTINGS COLLECTED YES ☐ NO ☒
7. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
8. STATIC WATER LEVEL Below Top of Casing: 19.0 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): >1 METHOD OF TEST Bailer
11. WATER ZONES (depth):

12. CHLORINATION: Type Amount

13. CASING:

	Depth From	TO	Ft.	Diameter	Wall Thickness or Weight/Ft	Material
From	2.5	TO 17.5	Ft.	2"		PVC
From		TO	Ft.			
From		TO	Ft.			

14. GROUT:

	Depth From	TO	Ft.	Material	Method
From	0	TO 14.5	Ft.	Portland cement	Tremie
From		To	Ft.		

15. SCREEN:

	Depth From	TO	Ft.	Diameter	in.	Slot Size	in.	Material
From	17.5	TO 27.5	Ft	2	in.	10	in.	PVC
From		To	Ft.		in.		in.	
From		TO	Ft.		in.		in.	

16. SAND/GRAVEL PACK:

	Depth From	To	Ft.	Size	Material
From	16.5	To 27.5	Ft.	No. 2 Filter Sand	
From		To	Ft.		

17. REMARKS:

DEPTH From	To	DRILLING LOG Formation Description
See attached boring log		

If additional space is needed use back of form

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:
Serial No:

SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Water Quality and copy to well owner.
GW-1 REV. 1/98

FIELD BOREHOLE LOG

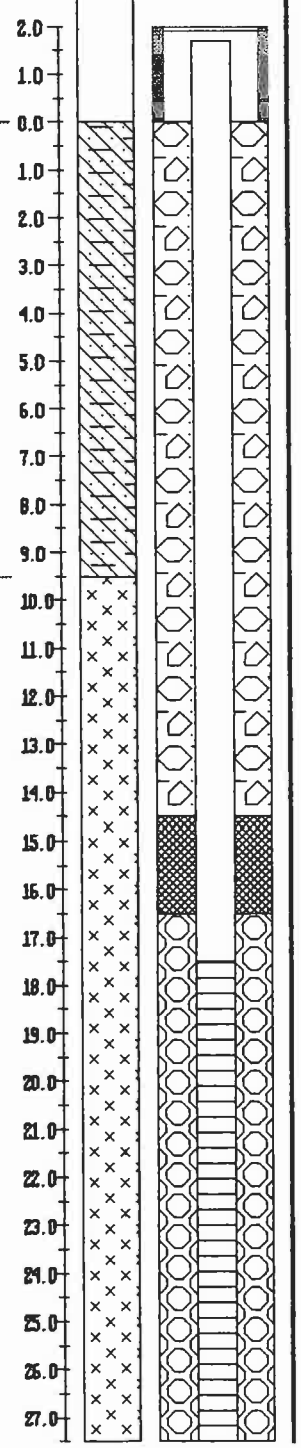
BOREHOLE NUMBER: MW-10

PROJECT NUMBER: DAVCO-19
PROJECT NAME: Davidson County Area 2 Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics, P.A.
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Bunny, 90 degrees
FIELD PARTY: David Barron
GEOLOGIST: Philip May
DATE BEGUN: 9/8/99 DATE COMPLETED: 9/8/99

TOP OF CASING ELEVATION: TBD
TOTAL DEPTH: 27.5 FT
GROUND SURFACE ELEVATION: TBD
SHEET: 1 OF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	23.5	19.0
Time	12:00	9:00
Date:	9/8/99	9/9/99

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
2.0								
1.0								
0.0								SANDY SILTY CLAY: Tan-orange fine sandy silty clay - backfill from road construction around landfill;
1.0								
2.0								
3.0								
4.0								
5.0								auger refusal at 5' - not able to obtain split spoon sample - backfilled 4.5' to regrade slope of landfill - adjusted all depths to reflect new ground surface.
6.0								
7.0								
8.0								
9.0								
10.0								DIORITE: Hard grey-green diorite bedrock with soft seams throughout;
11.0								
12.0								
13.0								
14.0								
15.0								
16.0								
17.0								
18.0								
19.0								
20.0								19.5' water bearing fracture - not apparently under pressure - not rising
21.0								
22.0								
23.0								
24.0								
25.0								
26.0								27.5 boring terminated.
27.0								



MW-11

FIELD BOREHOLE LOG

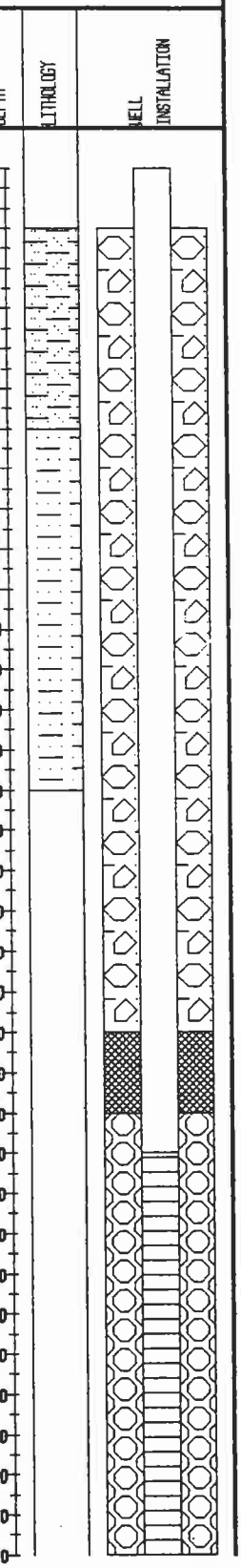
BOREHOLE NUMBER: B-12

PROJECT NUMBER: DAVDCO-12
PROJECT NAME: Davidson County Landfill Area 2 Cell
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Air Rotary/Hammer
WEATHER: Clear, 40 DEGREES
FIELD PARTY: D. Barron
GEOLOGIST: P. May
DATE BEGUN: 12/18/97 DATE COMPLETED: 12/18/97

TOP OF CASING ELEVATION: TBD
TOTAL DEPTH: 33.0 FT
GROUND SURFACE ELEVATION: TBD
SHEET: 1 OF: 1

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(ft)	27.90	26.40
Time	3:00	8:00
Date:	12/18/97	12/19/97

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
0.0							AR	SILTY SAND: White & gray brown F silty sand, some Fe & Mn.
3.0	13 24 29	Ss	S1	D		6"		
5.0								SANDY SILT: White & gray F sandy silt w/ thin tan orange (Fe) and Mn layers;
8.0	12 22 42	Ss	S2	SM		12"		
12.0								gray balck & white PWR (sandy silt); roller bit refusal at 14.0'.
13.0	50/4	Ss	S3	D		1"		
14.0							AH	Hard dark gray rock.
30.0								boring terminated at 33.0'.



FIELD BOREHOLE LOG

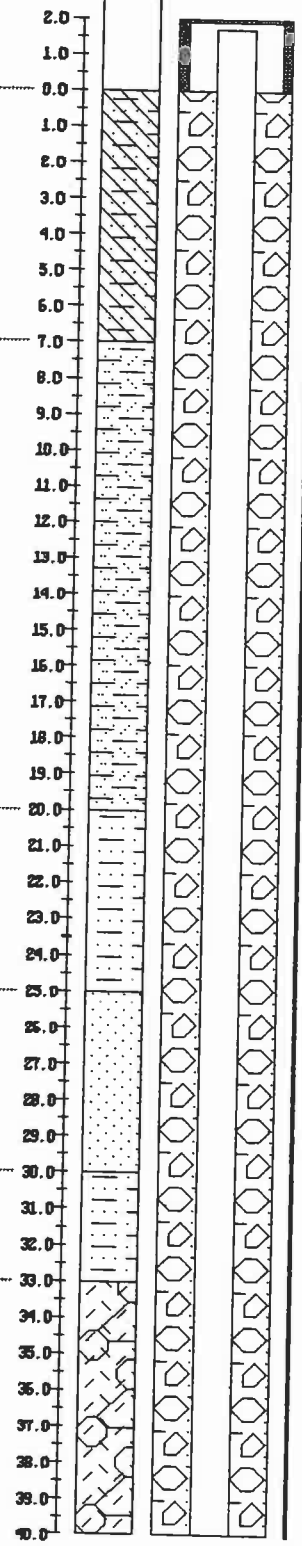
BOREHOLE NUMBER: MW-12

PROJECT NUMBER: DAVCO-19
PROJECT NAME: Davidson County Area 2 LandFill
LOCATION: Lexington North Carolina
DRILLING COMPANY: Engineering Tectonics, P.A.
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 90 degrees
FIELD PARTY: David Barron
GEOLOGIST: Phillip May
DATE BEGUN: 9/7/99 DATE COMPLETED: 9/8/99

TOP OF CASING ELEVATION: TBD
TOTAL DEPTH: 80.0 FT
GROUND SURFACE ELEVATION: TBD
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD-While Drilling AB-After Boring		
Depth(ft)	79.0	78.0
Time	12:00	9:00
Date:	9/8/99	9/9/99

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
5.0–6.0	3 1 5	Ss	S1	D		10"		SANDY SILTY CLAY: Dry grey fine sandy silty clay, tan & white salt & pepper mottles, mica - possible backfill from road construction.
10.0–11.0	8 26 40	Ss	S2	D		12"		SILTY SAND: Dry light tan-grey fine silty sand, some mica, lower 6" has gravel & Fe, Mn, quartz;
15.0–16.0	27 38 35	Ss	S3	D		0"		15' no recovery - cuttings are same as above.
20.0–21.0	12 22 32	Ss	S4	SM		12"		SANDY SILT: Light tan-grey fine sandy silt, moist, Mn, brown 45 degree streaks, some mica.
25.0–26.0	20 32 32	Ss	S5	M		8"		SAND: Light grey-brown & white mottled slightly moist F-M (some C) sand, brown mottles, some relict rock & gravel.
30.0–31.0	17 26 50	Ss	S6	M		12"		SANDY SILT: Light grey moist F sandy silt, Mn & Fe at 45 degree streaks; auger refusal at 33.0' - switched to air hammer.
								GRANITE PEGMATITE: no apparent fractures in rock;



FIELD BOREHOLE LOG

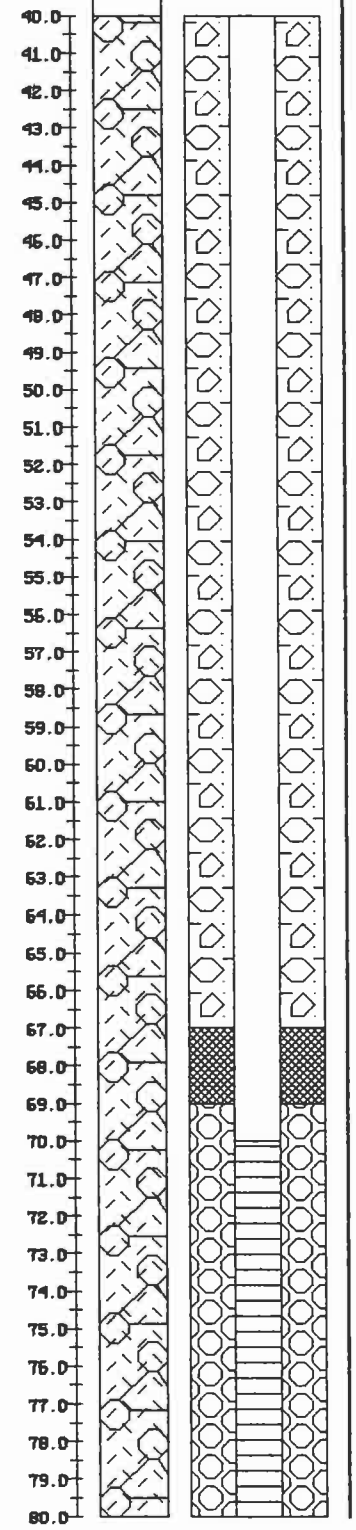
BOREHOLE NUMBER: MW-12

PROJECT NUMBER: DAVCO-19
PROJECT NAME: Davidson County Area 2 Landfill
LOCATION: Lexington, North Carolina
DRILLING COMPANY: Engineering Tectonics, P.A.
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: Hollow Stem Auger
WEATHER: Sunny, 90 degrees
FIELD PARTY: David Barron
GEOLOGIST: Philip May
DATE BEGUN: 9/7/99 DATE COMPLETED: 9/8/99

TOP OF CASING ELEVATION: TBD
TOTAL DEPTH: 80.0 FT
GROUND SURFACE ELEVATION: TBD
SHEET: 1 OF: 2

STATIC WATER LEVEL (BLS)		
WD=While Drilling AB=After Boring		
Depth(Ft)	79.0	76.0
Time	12:00	9:00
Date:	9/8/99	9/9/99

DEPTH	BLOW COUNTS	SAMPLING METHOD	SAMPLE NUMBER	MOISTURE	CONSISTANCY	SAMPLE RECOVERY	DRILL METHOD	LITHOLOGY DESCRIPTION
40.0								
41.0								
42.0								
43.0								no water prior to 70', moisture from 70' to 80', but no water- boring terminated at 80'.
44.0								
45.0								
46.0								
47.0								
48.0								
49.0								
50.0								
51.0								
52.0								
53.0								
54.0								
55.0								
56.0								
57.0								
58.0								
59.0								
60.0								
61.0								
62.0								
63.0								
64.0								
65.0								
66.0								
67.0								
68.0								
69.0								
70.0								
71.0								
72.0								
73.0								
74.0								
75.0								
76.0								
77.0								
78.0								
79.0								
80.0								



Appendix B

Laboratory Analytical Report

September 2014 Groundwater Monitoring Report
Davidson County Phase 1 Lined Landfill
NC Solid Waste Permit No. 29-06

This page intentionally left blank.

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#: 6038

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 09/23/14
DATE REPORTED : 10/17/14

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-6	MW-7D	MW-8	MW-7S	MW-9A	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.12	6.0	0.33 J	--- U	--- U	0.15 J	0.94 J	10/03/14	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	0.15 J	0.14 J	0.76 J	0.60 J	0.30 J	10/03/14	LFJ	EPA200.8
Barium, ug/l	0.12	100.0	12.2 J	4.5 J	116	24.7 J	11.2 J	10/03/14	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.08 J	0.08 J	0.54 J	0.13 J	0.09 J	10/03/14	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.09 J	--- U	0.13 J	0.11 J	0.04 J	10/03/14	LFJ	EPA200.8
Cobalt, ug/l	0.12	10.0	--- U	--- U	10	6.1 J	0.33 J	10/03/14	LFJ	EPA200.8
Copper, ug/l	0.10	10.0	--- U	0.28 J	17	5.1 J	1.7 J	10/03/14	LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	--- U	--- U	10	1.3 J	2.0 J	10/03/14	LFJ	EPA200.8
Lead, ug/l	0.13	10.0	--- U	--- U	12	0.46 J	0.27 J	10/03/14	LFJ	EPA200.8
Nickel, ug/l	0.12	50.0	0.68 J	0.22 J	6.3 J	3.0 J	1.4 J	10/03/14	LFJ	EPA200.8
Selenium, ug/l	0.16	10.0	0.66 J	0.37 J	1.0 J	0.48 J	0.84 J	10/03/14	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	--- U	0.05 J	--- U	--- U	10/07/14	LFJ	EPA200.8
Thallium, ug/l	0.13	5.5	--- U	--- U	--- U	--- U	--- U	10/03/14	LFJ	EPA200.8
Vanadium, ug/l	0.06	25.0	0.13 J	0.60 J	46	4.5 J	5.5 J	10/03/14	LFJ	EPA200.8
Zinc, ug/l	0.53	10.0	1.2 J	0.57 J	37	5.7 J	3.0 J	10/03/14	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation 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: DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

CLIENT ID: 6038

ANALYST: MAO
DATE COLLECTED: 09/23/14
DATE ANALYZED: 09/27/14
DATE REPORTED: 10/17/14

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-6	MW-7D	MW-8	MW-7S	MW-9A
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- 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	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- U	--- U
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	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
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	0.30 J	--- 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	--- U	--- 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	--- U	--- U	--- U
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	--- U	--- U
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

J = Between MDL and SWSL, U = Below ALL Quantitation 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#: 6038

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 09/24/14
DATE REPORTED : 10/17/14

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-1S	MW-2	MW-3	MW-4	MW-5	Analysis Date	Analyst	Method Code
Total Alkalinity (to pH 4.5), mg/l	1.0	1.0	275					09/25/14	TRB	2320B-97
Chloride, mg/l	5.0	5.0	70					09/29/14	CMC	4500CLB-97
Total Dissolved Residue, mg/l	1.0	1.0	491					09/25/14	LW	2540C-97
Sulfate, mg/l	5.0	250.0	28.5 J					09/26/14	TRB	4500SO42E9
Antimony, ug/l	0.12	6.0	--- U	Missing	--- U	--- U	--- U	10/03/14	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	0.85 J	Missing	0.36 J	0.42 J	0.41 J	10/03/14	LFJ	EPA200.8
Barium, ug/l	0.12	100.0	39.0 J	Missing	141	64.5 J	48.1 J	10/03/14	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.08 J	Missing	0.16 J	0.13 J	0.07 J	10/03/14	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.06 J	Missing	0.08 J	0.08 J	0.06 J	10/03/14	LFJ	EPA200.8
Cobalt, ug/l	0.12	10.0	0.20 J	Missing	3.3 J	2.1 J	0.41 J	10/03/14	LFJ	EPA200.8
Copper, ug/l	0.10	10.0	0.81 J	Missing	13	9.4 J	0.94 J	10/03/14	LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	--- U	Missing	1.2 J	3.3 J	0.17 J	10/03/14	LFJ	EPA200.8
Iron, ug/l	16.0	300.0	286 J					10/07/14	MTM	3111B-99
Manganese, ug/l	0.21	50.0	15 J					10/07/14	LFJ	EPA200.7
Lead, ug/l	0.13	10.0	--- U	Missing	0.79 J	2.2 J	0.20 J	10/03/14	LFJ	EPA200.8
Mercury, ug/l	0.06	0.20	--- U					10/09/14	MTM	245.1 R3-9
Nickel, ug/l	0.12	50.0	2.0 J	Missing	3.2 J	2.4 J	0.63 J	10/03/14	LFJ	EPA200.8
Selenium, ug/l	0.16	10.0	2.5 J	Missing	0.60 J	0.68 J	1.4 J	10/03/14	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	Missing	0.04 J	--- U	--- U	10/07/14	LFJ	EPA200.8
Thallium, ug/l	0.13	5.5	--- U	Missing	--- U	--- U	--- U	10/03/14	LFJ	EPA200.8
Vanadium, ug/l	0.06	25.0	1.9 J	Missing	16.7 J	9.1 J	3.2 J	10/03/14	LFJ	EPA200.8
Zinc, ug/l	0.53	10.0	2.2 J	Missing	25	20	1.4 J	10/03/14	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation 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: DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

CLIENT ID: 6038

ANALYST: MAO
DATE COLLECTED: 09/24/14
DATE ANALYZED: 09/27/14
DATE REPORTED: 10/17/14

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-1S	MW-3	MW-4	MW-5
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- 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	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- 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	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- 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	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- 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	--- U	--- U	--- 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	--- U	--- 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	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- 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

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

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858
environment1inc.com
Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6038 **Week:** 39

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH NC 27603

(919) 828-0577

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Alkalinity	Chloride	TDS	Sulfate	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
CHLORINE NEUTRALIZED AT COLLECTION													
pH CHECK (LAB)										12	12	12	12
CONTAINER TYPE, P/G						P	P	P	P	P	G	G	G
CHEMICAL PRESERVATION						A	A	A	A	A	E	E	E
MW-1S	9/24/14	8:23		16.7	8								
MW-2	DRY	— NO	SAMPLE			TAKEN							
MW-3	"	8:52		14.8	3								
MW-4	"	8:43		14.3	3								
MW-5	"	8:35		14.3	3								
MW-6	9/23/14	10:55		15.4	3								
MW-7D	"	10:30		15.0	3								
MW-8	"	10:05		15.2	3								
MW-7S	"	10:26		16.2	3								
MW-9A	"	9:43		15.1	3								

PARAMETERS/TESTS

CHEMICAL PRESERVATION: A - NONE; B - HNO_3; C - H_2SO_4; D - NAOH; E - HCL; F - ZINC ACETATE/NAOH; 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) JORGE MONTEZUMA, CARTER SHORE

SAMPLES RECEIVED IN LAB AT 0.9 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	9/24/14 10:00	[signature]	9/25/14 8:00
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS: MW-2 WAS DRY.

~~ENVIRONMENT 1 LABELED WITH SHARPIE ON BOTTLES MW-3 (INCLUDING 3 WITH WHITE LABELS FOR MW-2), THOUGH ONLY 2 CONTAINERS WERE PROVIDED FOR MW-15, AND CONTAINERS (2) WITH SHARPIE LABELED MW-15 AFTER PROM MW-15~~

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

No. 282036

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#: 6038 A

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 09/24/14
DATE REPORTED : 10/17/14

REVIEWED BY:

PARAMETERS	MDL	Leachate SWSL		Analysis Date	Analyst	Method Code
BOD, mg/l	2.0	2.0	16	09/25/14	TRB	5210B-01
COD, mg/l	20.0	20.0	672	09/30/14	TRB	H8000-79
Nitrate Nitrogen as N, mg/l	0.04	10.0	0.14 J	09/26/14	AKS	353.2 R2-93
Total Phosphorus as P, mg/l	0.002	0.02	0.19	09/29/14	ALB	365.4-74
Sulfate, mg/l	5.0	250.0	16.3 J	09/26/14	TRB	4500SO42E97
Antimony, ug/l	0.12	6.0	0.94 J	10/03/14	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	2.4 J	10/03/14	LFJ	EPA200.8
Barium, ug/l	0.12	100.0	56.0 J	10/03/14	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.05 J	10/03/14	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	--- U	10/03/14	LFJ	EPA200.8
Cobalt, ug/l	0.12	10.0	1.4 J	10/03/14	LFJ	EPA200.8
Copper, ug/l	0.10	10.0	3.5 J	10/03/14	LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	1.4 J	10/03/14	LFJ	EPA200.8
Lead, ug/l	0.13	10.0	0.22 J	10/03/14	LFJ	EPA200.8
Nickel, ug/l	0.12	50.0	13.8 J	10/03/14	LFJ	EPA200.8
Selenium, ug/l	0.16	10.0	3.3 J	10/03/14	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	10/07/14	LFJ	EPA200.8
Thallium, ug/l	0.13	5.5	--- U	10/03/14	LFJ	EPA200.8
Vanadium, ug/l	0.06	25.0	10.2 J	10/03/14	LFJ	EPA200.8
Zinc, ug/l	0.53	10.0	3.0 J	10/03/14	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation 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: DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

CLIENT ID: 6038 A

ANALYST: MAO
DATE COLLECTED: 09/24/14
DATE ANALYZED: 09/27/14
DATE REPORTED: 10/17/14

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Leachate
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 Quantitation Limits.

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858
environment1inc.com
Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6038 A **Week:** 39

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH NC 27603

(919) 828-0577

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	BOD	COD	Nitrate	T. Phosphorus	Sulfate	Metals	EPA 8260B	8260 Dup. 1
CHLORINE NEUTRALIZED AT COLLECTION													
pH CHECK (LAB)							<2		<2		2	2	2
CONTAINER TYPE, P/G						P	P	P	P	P	P	G	G
CHEMICAL PRESERVATION						A	C	A	C	A	A	E	E
Leachate	9/24/14	9:13		17.5	8								

PARAMETERS/TESTS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE/NAOH
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) JORGE MONTEROMA
CARTER STONE

SAMPLES RECEIVED IN LAB AT 0.8 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	9/24/14 10:28	[signature]	9/25/14 8:12
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

№ 282035

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#: 6038 B

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH ,NC 27603

DATE COLLECTED: 09/23/14
DATE REPORTED : 10/17/14

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-10	MW-11	MW-12	SW-1	SW-2	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.12	6.0	--- U	--- U	0.88 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Arsenic, ug/l	0.10	10.0	0.25 J	0.76 J	0.39 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Barium, ug/l	0.12	100.0	10.2 J	55.9 J	1.4 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.16 J	0.80 J	0.09 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Cadmium, ug/l	0.04	1.0	0.06 J	0.19 J	0.07 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Cobalt, ug/l	0.12	10.0	1.5 J	3.6 J	0.33 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Copper, ug/l	0.10	10.0	3.1 J	38	0.77 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Total Chromium, ug/l	0.14	10.0	3.3 J	14	0.53 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Lead, ug/l	0.13	10.0	0.62 J	5.8 J	0.23 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Nickel, ug/l	0.12	50.0	2.6 J	7.5 J	1.9 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Selenium, ug/l	0.16	10.0	0.51 J	1.1 J	0.94 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Silver, ug/l	0.04	10.0	--- U	0.13 J	--- U	Missing	Missing	10/07/14	LFJ	EPA200.8
Thallium, ug/l	0.13	5.5	--- U	--- U	--- U	Missing	Missing	10/03/14	LFJ	EPA200.8
Vanadium, ug/l	0.06	25.0	9.3 J	76	4.8 J	Missing	Missing	10/03/14	LFJ	EPA200.8
Zinc, ug/l	0.53	10.0	4.8 J	32	0.97 J	Missing	Missing	10/03/14	LFJ	EPA200.8

J = Between MDL and SWSL, U = Below ALL Quantitation 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: DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH, NC 27603

REVIEWED BY:

CLIENT ID: 6038 B

ANALYST: MAO
DATE COLLECTED: 09/23/14
DATE ANALYZED: 09/27/14
DATE REPORTED: 10/17/14

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-10	MW-11	MW-12	Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- 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	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- 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	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- 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	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- 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	--- U	--- U	--- 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	--- U	--- 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	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U	--- U	--- 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

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

Environment[illegible]c.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858
environment1inc.com
Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6038 B **Week:** 39

DAVIDSON COUNTY (LINED)
MS. JOAN SMYTH
SMITH GARDNER, INC.
14 NORTH BOYLAN AVE.
RALEIGH NC 27603

(919) 828-0577

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Metals	EPA 8260B	8260 Dup. 1	8260 Dup. 2
						12	12	12	12
						P	G	G	G
						A	E	E	E
MW-10	9/23/14	9:51		14.1	4	■	■	■	■
MW-11	"	9:34		14.5	3	■	■	■	
MW-12	"	9:24		15.1	3	■	■	■	
SW-1	DRY	NO	SAMPLE		3	TAKEN			
SW-2	DRY	NO	SAMPLE			TAKEN			
Equipment Blank					2		■	■	
Trip Blank					2		■	■	

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

PARAMETERS/TESTS

A - NONE D - NAOH
B - HNO_3 E - HCL
C - H_2SO_4 F - ZINC ACETATE/NAOH
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) JORGE MONTEZUMA
CARTER SHORE

SAMPLES RECEIVED IN LAB AT 0.4 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	9/24/14 10:00	[signature]	9/25/14 8:16
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:
SW-1 & SW-2 WERE NOT SAMPLED
DUE TO DRY / NO FLOW CONDITIONS.

NO EB Vials returned, vials returned Empty

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

No 282034

This page intentionally left blank.

Appendix C

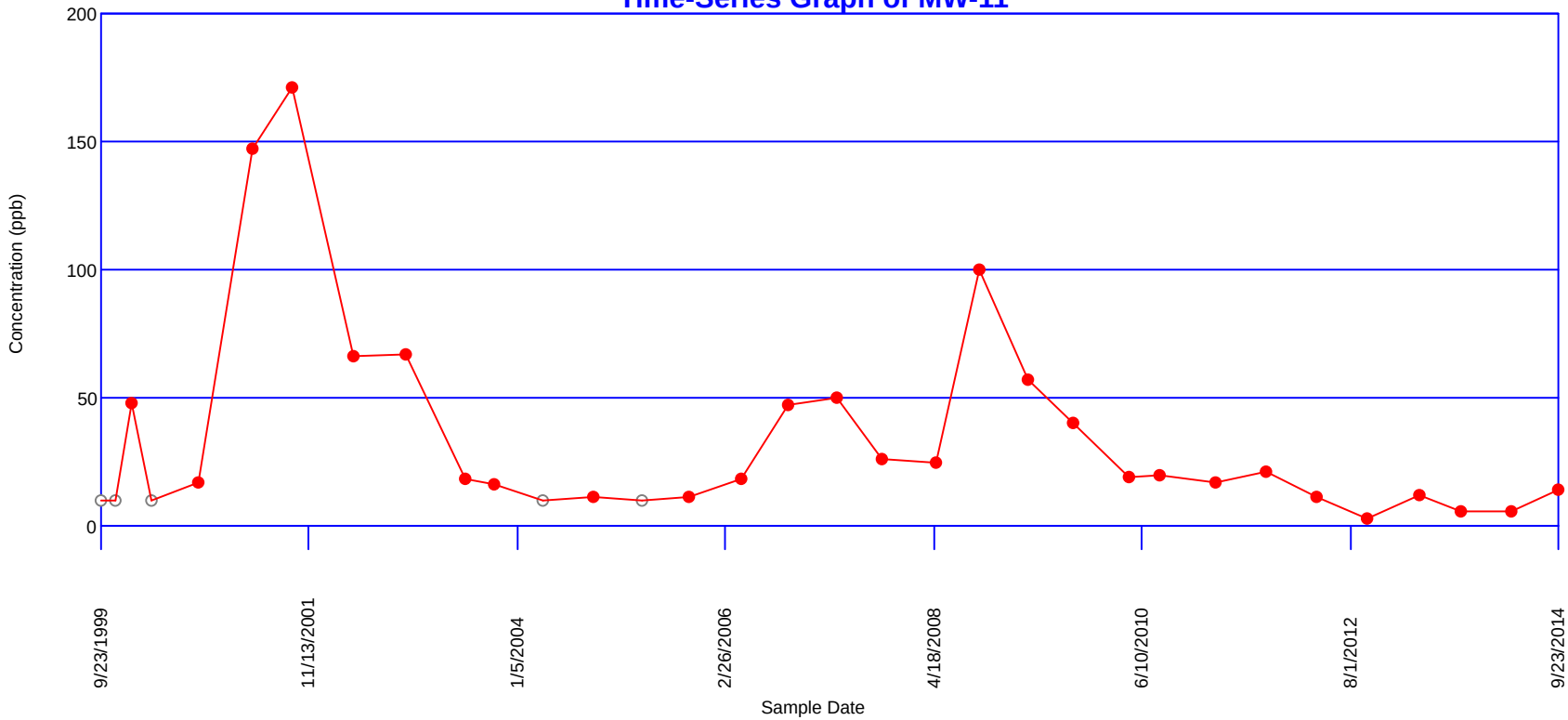
Time vs. Concentration Graphs

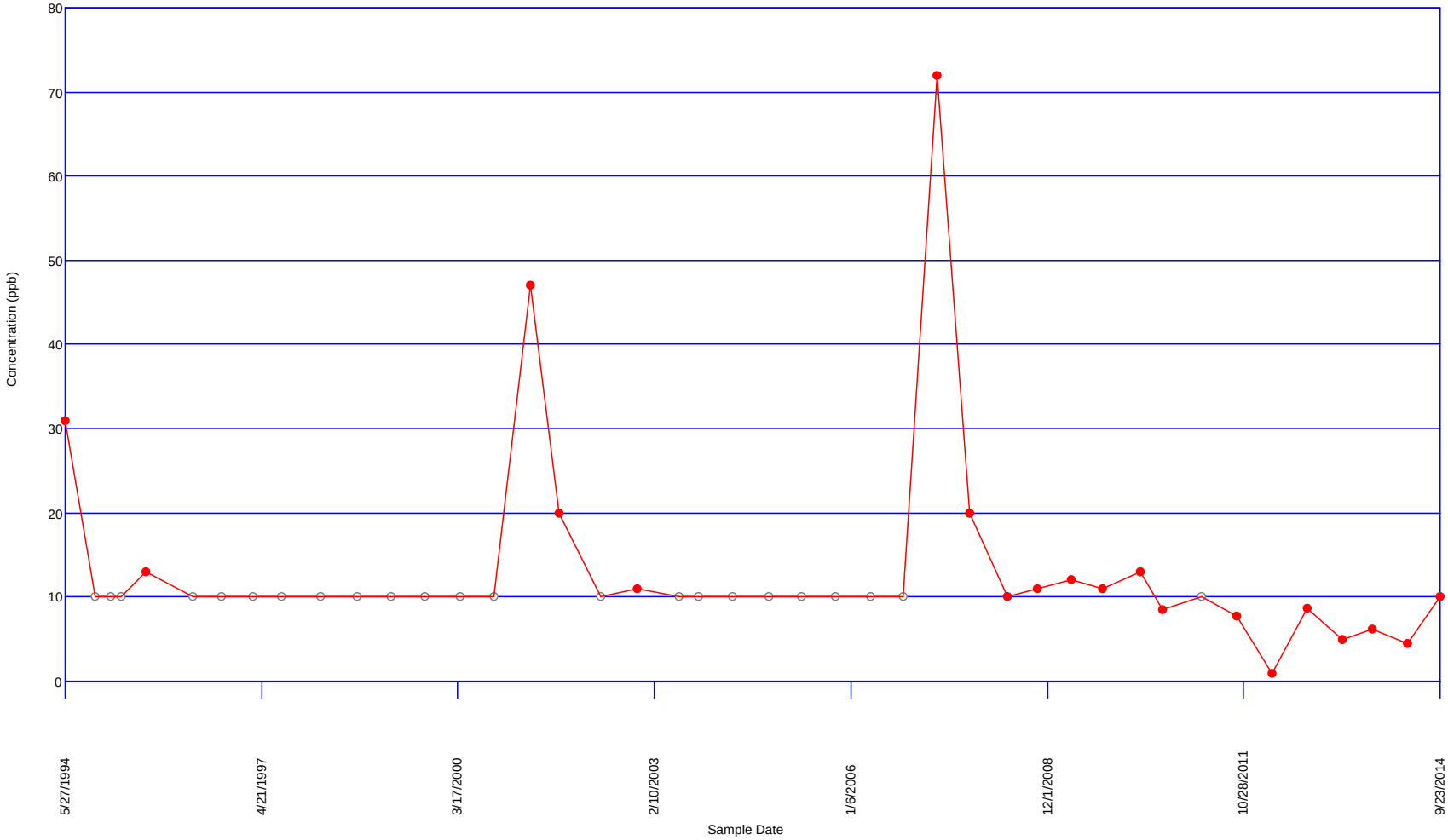
September 2014 Groundwater Monitoring Report
Davidson County Phase 1 Lined Landfill
NC Solid Waste Permit No. 29-06

This page intentionally left blank.

Chromium, total

Time-Series Graph of MW-11



Cobalt, total

Time-Series Graph of MW-8