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 x222

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)
Harnett County - Dunn Erwin Landfill	NC State Road 1724/449 Daniel's Road, Dunn, NC	43-02	.0500	April 21-22, 2016

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
☐ 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 x222

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

Signature — 6/29/16 Date

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 2275 GEOLOGIST MADELINE GERMAN 6/29/16

14 N Boylan Ave, 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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April 2016 Groundwater Monitoring Report

Harnett County Dunn-Erwin Landfill
NC Solid Waste Permit No. 43-02

Prepared for:

Harnett County Solid Waste Department
P.O. Box 940
Lillington, North Carolina 27546

June 2016

Prepared by:

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

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April 2016 Groundwater Monitoring Report

Harnett County Dunn-Erwin Landfill
NC Solid Waste Permit 43-02

Prepared For:

Harnett County Solid Waste Department
Lillington, North Carolina

S+G Project No. Harnett-DE 13-2

NORTH CAROLINA LICENSED SEAL 2275 GEOLOGIST MADELINE GERMAN

6/20/16

Madeline German, P.G.
Project Geologist

Joan A. Smyth, P.G.
Senior Hydrogeologist

June 2016

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

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Harnett County Dunn-Erwin Landfill
NC Solid Waste Permit No. 43-02

April 2016 Groundwater Monitoring Report

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1.0 INTRODUCTION

The Harnett County Dunn-Erwin Landfill is located at NC State Road 1724/449 Daniel's Road, Dunn, North Carolina. The facility contains an active C&D landfill, active LCID landfill and closed unlined MSW landfill under Solid Waste Permit #43-02. Solid Waste Management Rule 15A NCAC 13B .0544 requires semi-annual groundwater monitoring with reports submitted to NCDENR. A transfer station also operates at this location under SWS permit #43-07T.

This report presents the results from the semi-annual monitoring event conducted April 21-22, 2016. Included in this report are a field procedure summary, laboratory analyses, summary tables, graphs and groundwater characterization.

2.0 SITE HYDROGEOLOGY

According to the 1985 North Carolina Geological Map the landfill is situated in the Coastal Plain Physiographic Province. The Dunn–Erwin area in Harnett County is underlain by the cretaceous age Middendorf formation that is primarily light gray sand, sandstone and mudstone which acts as a confining unit. The Middendorf formation was deposited in a deltaic system and varies from 15m to over 100m thick[1].

Groundwater depths historically range from 5 ft to 25 ft below ground surface (bgs) across the facility. Groundwater generally flows west toward Steward Creek and south to an unnamed tributary of Stewart Creek. There are minor seasonal variations in the flow pattern, but overall flow direction is consistent.

3.0 SAMPLING LOCATIONS

The sampling event, performed by Smith Gardner, Inc. (S+G) personnel, utilized the groundwater monitoring network that includes thirteen monitoring wells (MW-1, MW-2, MW-4, MW-9, MW-10, MW-16, MW-32, MW-33, MW-34, MW-35, MW-53, MW-56 and MW-57) located around the landfill perimeter, three piezometers (PZ-41, GP-28 and GP-30W) and four surface water sampling points (SW-1, SW-2, SW-3 and SW-4) up and downstream of the landfill. SW-4 was unable to be sampled during this event because it was dry.

Figure 1 illustrates sampling locations. Available well logs 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

1 Sohl, Norman F. and Owens, James P. "Cretaceous Stratigraphy of the Carolina Coastal Plain". The Geology of the Carolinas. University of Tennessee Press, 1991. p191-220.

Water Quality Monitoring Plan[2]. Each well was gauged to determine groundwater depth and then purged three to five well volumes or until dry. Groundwater depths and elevations are presented in **Table 1**.

Samples were collected by S+G personnel in laboratory prepared containers for the specified analytical procedures. Groundwater samples and quality control blanks 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, turbidity 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 remain consistent with previously reported sampling events.

5.2 Laboratory Analysis

Samples were transported to Environment 1, Inc., (Greenville, NC) a North Carolina certified laboratory (Wastewater ID: 10). Analysis included Appendix I metals and VOCs for monitoring network locations. The Pace Analytical Lab Microseeps was subcontracted by Environment 1 to perform the methane analysis. All analysis this event was performed using Solid Waste Section (SWS) approved methods as reported on the laboratory report included in **Appendix B**.

5.3 Laboratory Results

Analytical results were compared to the NCDWM Solid Waste Section Quantitation Limits (SWSLs), 15A NCAC 2L.0200 (2LStandard), SWS Groundwater Protection (GWP) Standards and Federal Maximum Contaminant Levels (MCL). Surface water results were compared with the NCAC 2B Standard for Class C waters (2B Standards).

Most constituents were reported either below the Method Detection Limit (MDL) or were non-quantifiable values, which are noted as "J-values". "J-values" are defined by the lab as between the MDL and SWSL.

Time versus concentration graphs are presented in **Appendix C** for the constituents detected above their respective 2L or GWP Standards this event.

2 Water Quality Monitoring Plan, Harnett County Dunn Erwin Landfill, Smith Gardner, Inc., October 2013.

5.3.1 Inorganic Constituents

Three inorganic constituents were detected at or above their 2L Standards for this event:

- Chromium (MW-10 and GP-30W);
- Iron (MW-2, MW-10, MW-53 and GP-28); and
- Lead (MW-16 and GP-30W).

Inorganic detections are summarized in **Table 3**.

5.3.2 Organic Constituents

The following five constituents were detected at concentrations above their respective 2L Standards:

- 1,1-Dichloroethane (GP-28W);
- Benzene (MW-53, MW-57 and GP-28W);
- Methylene Chloride (MW-53 and GP-28W);
- Tetrachloroethene (GP-28W); and
- Vinyl Chloride (PZ-41S)

Organic detections are provided in **Table 4**.

5.3.3 Surface Water Results

Surface water sample analysis indicated no inorganic or organic constituents were detected above 2B Standards for Class C waters.

6.0 GROUNDWATER CHARACTERIZATION

A potentiometric surface map was prepared from groundwater data for this sampling event. The data indicates that groundwater is flowing generally south and southwest towards Stewarts Creek, its tributary and associated wetlands that bisect the site. This is consistent with groundwater flow patterns previously reported for the site. The potentiometric surface map is attached as **Figure 1**.

Groundwater flow velocities during the sampling event were calculated for monitoring wells using the equation:

$$V = Ki/n$$

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

Groundwater flow velocities ranged from 0.25ft/day (MW-9) to 1.46 x 10^{-5} ft/day (MW-16). These calculated flow velocities are included in **Table 5**.

7.0 CORRECTIVE ACTION

The facility has been in Corrective Action since 2009. In accordance with the Corrective Action Plan[3] phytoremediation was implemented at the edge of the unlined MSW landfill. The trees range from approximately 3 to 5 feet in height, with trunks about two inches thick.

In November 2013, a Request for Corrective Action Evaluation[4], which summarized recent water quality improvements at the compliance boundary and requested a two year evaluation period prior to implementation of additional remedial strategies, was approved by NCDENR. In accordance with this request S+G has evaluated water quality at the site over the past two years. Monitoring locations MW-9 and MW-10 addressed in the CAP continue to remain unimpacted by VOCs; however low levels of VOCs are still detected in MW-53 and GWP-28W. Select MNA parameters analyzed this event are presented in **Table 6**. A detailed summary of sampling results over the past two years will be included in the Corrective Action Evaluation Summary Report which will be submitted under separate cover.

8.0 CONCLUSIONS

In general, detected constituents from this event are consistent with historical analytical data. VOC detections above the 2L Standard were reported in samples from wells MW-53, MW-57 and PZ-41S which are located within the 250 foot compliance boundary. VOC detections above 2L were also reported in samples from GP-28W, which is located beyond the 250 ft. compliance boundary.

As stated above, a review of the corrective action for this facility will be submitted under separate cover. The facility will continue semi-annual monitoring with the next event scheduled for October 2016. A summary report will be submitted to NCDEQ following laboratory sample analysis.

3 C.T.Clayton, Sr., P.E. Revised Corrective Action Plan, October 9, 2009.

4 Smith Gardner, Inc. Revised Request for Corrective Action Evaluation, November 8, 2013.

FIGURES

April 2016 Groundwater Monitoring Report
Harnett County Dunn-Erwin Landfill
NC Solid Waste Permit No. 43-02

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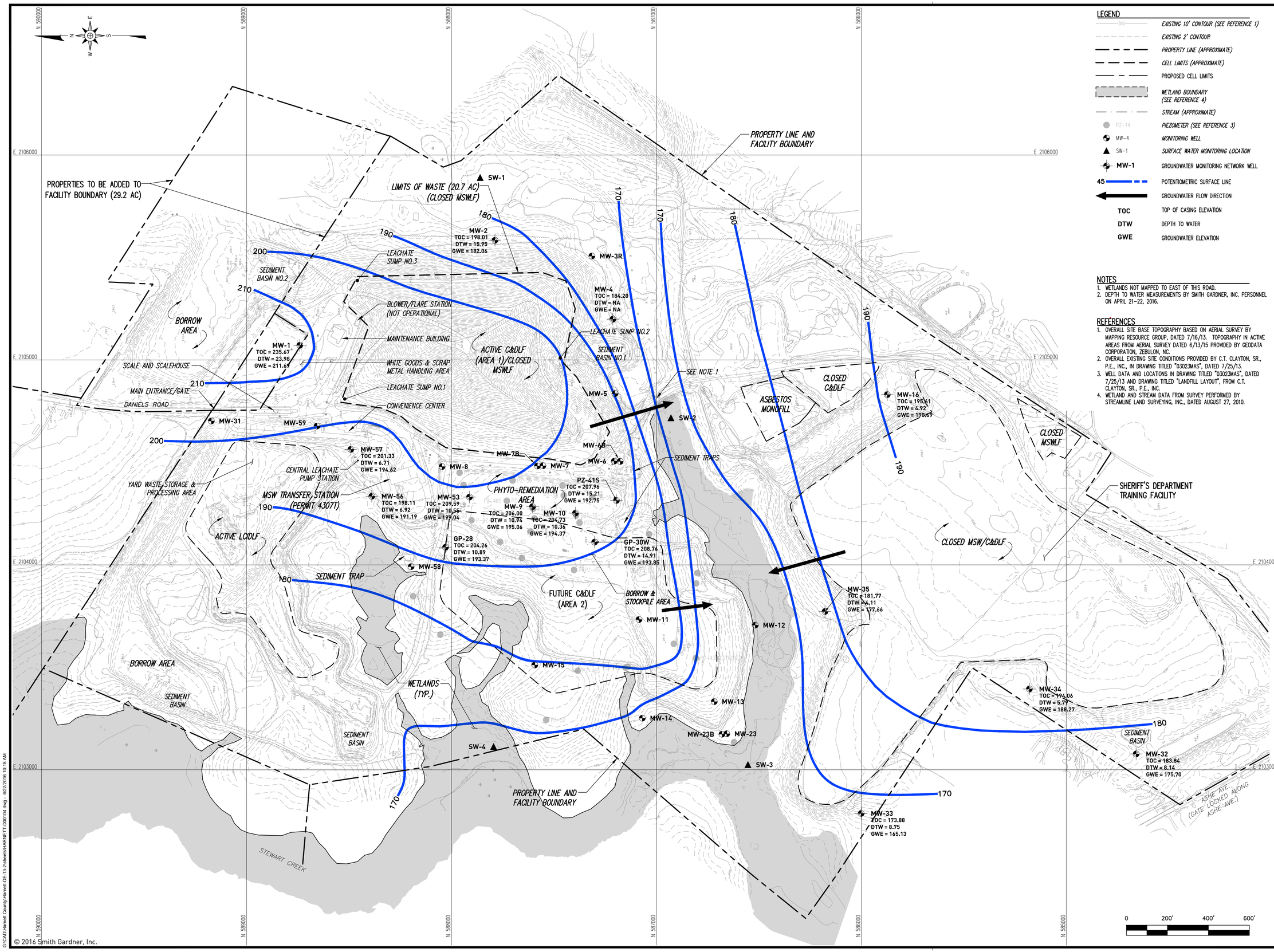

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LEGEND

310	EXISTING 10' CONTOUR (SEE REFERENCE 1)
	EXISTING 2' CONTOUR
	PROPERTY LINE (APPROXIMATE)
	CELL LIMITS (APPROXIMATE)
	PROPOSED CELL LIMITS
	WETLAND BOUNDARY (SEE REFERENCE 4)
	STREAM (APPROXIMATE)
PZ-14	PIEZOMETER (SEE REFERENCE 3)
MW-4	MONITORING WELL
SW-1	SURFACE WATER MONITORING LOCATION
MW-1	GROUNDWATER MONITORING NETWORK WELL
45	POTENTIOMETRIC SURFACE LINE
	GROUNDWATER FLOW DIRECTION
TOC	TOP OF CASING ELEVATION
DTW	DEPTH TO WATER
GWE	GROUNDWATER ELEVATION

NOTES

1. WETLANDS NOT MAPPED TO EAST OF THIS ROAD.
2. DEPTH TO WATER MEASUREMENTS BY SMITH GARDNER, INC. PERSONNEL ON APRIL 21–22, 2016.

REFERENCES

1. OVERALL SITE BASE TOPOGRAPHY BASED ON AERIAL SURVEY BY MAPPING RESOURCE GROUP, DATED 7/16/13. TOPOGRAPHY IN ACTIVE AREAS FROM AERIAL SURVEY DATED 6/13/15 PROVIDED BY GEODATA CORPORATION, ZEBULON, NC.
2. OVERALL EXISTING SITE CONDITIONS PROVIDED BY C.T. CLAYTON, SR., P.E., INC., IN DRAWING TITLED "03023MAS", DATED 7/25/13.
3. WELL DATA AND LOCATIONS IN DRAWING TITLED "03023MAS", DATED 7/25/13 AND DRAWING TITLED "LANDFILL LAYOUT", FROM C.T. CLAYTON, SR., P.E., INC.
4. WETLAND AND STREAM DATA FROM SURVEY PERFORMED BY STREAMLINE LAND SURVEYING, INC., DATED AUGUST 27, 2010.

PREPARED FOR:

HARNETT COUNTY
SOLID WASTE DEPARTMENT
LILLINGTON
NORTH CAROLINA

PREPARED BY:

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PROJECT TITLE:

DUNN-ERWIN LANDFILL
GROUNDWATER MONITORING

DRAWING TITLE:

POTENTIOMETRIC
GROUNDWATER
SURFACE MAP
APRIL 2016

DESIGNED: M.M.G.	PROJECT NO: HARNETT-DE 13-2
DRAWN: T.R.S.	SCALE: AS SHOWN
APPROVED:	DATE: JUNE 2016
FILENAME: HARNETT-D00104	
SHEET NUMBER:	DRAWING NUMBER: FIG.1

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TABLES

April 2016 Groundwater Monitoring Report
Harnett County Dunn-Erwin Landfill
Solid Waste Permit No. 43-02

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SMITH+GARDNER

By:MG
Date: 5/26/2016

Table 1
Groundwater Well Details & Elevations
Harnett County Dunn-Erwin Landfill
April 21-22, 2016

Monitoring Location	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)	Water Table Elevation (ft. amsl)	Screen Interval (ft. bgs)	Screen Geology
MW-1	NA	35.36716	78.64757	2	66*	211.47	235.67	23.98	211.69	NA	NA
MW-2	9/23/1994	35.36453	78.64586	2	30	183.91	198.01	15.95	182.06	15-30	silty clay
MW-4	9/23/1994	35.36296	78.64716	2	20	177.73	184.20	NM	-	9-19	mottled clay
MW-9	NA	35.36404	78.65022	2	14.05*	195.45	206.00	10.94	195.06	NA	NA
MW-10	3/8/2001	35.36347	78.65033	2	23	194.78	204.73	10.36	194.37	8-23	NA
MW-16	NA	35.35928	78.64841	2	24.6*	192.88	195.61	4.92	190.69	NA	NA
MW-32	NA	35.35596	78.65430	2	43*	178.64	183.84	8.14	175.70	NA	NA
MW-33	NA	35.35965	78.65526	2	24*	168.88	173.88	8.75	165.13	NA	NA
MW-34	NA	35.35739	78.65324	2	19*	192.06	194.06	5.79	188.27	NA	NA
MW-35	NA	35.36013	78.65195	2	38*	181.37	181.77	4.11	177.66	NA	NA
MW-53	6/30/2010	35.36489	78.65006	2	15	197.79	209.59	10.55	199.04	5-15	sand/clay with sand
MW-56	6/29/2010	35.36620	78.65004	2	16	193.81	198.11	6.92	191.19	4-14	clayey sand
MW-57	6/29/2010	35.36648	78.64927	2	14	196.23	201.33	6.71	194.62	4-14	silty sand with clay
PZ-41	NA	35.36292	78.65012	NA	18.5	192.81	207.96	15.21	192.75	13.5-18.5	NA
GP-28	NA	35.36521	78.65088	NA	15.5*	197.06	204.26	10.89	193.37	NA	NA
GP-30W	10/17/2002	35.36321	78.65080	1	20	194.19	208.76	14.91	193.85	6-16	silty sand

NOTE:

1.) Top of Casing Elevations from the Groundwater Monitoring report April 2013, prepared by C.T. Clayton, Sr., P.E. Inc., 4/20/2013
2.) * Well Depth measured in field October 2014
3.) Groundsurface elevation interpreted from from topography in CAD
4.) NA = Not Available
5.) Depth to Water in MW-4 was not recorded this event

SMITH+GARDNER

By: MG
Date: 5/26/2016

Table 2
Field Parameters
Harnett County Dunn-Erwin Landfill
April 21-22, 2016

Monitoring Location	pH (std units)	Specific Conductivity (umhos/cm)	Temperature (°C)	Turbidity (NTU)
MW-1	5.38	40	19.7	22.5
MW-2	4.56	66	22.7	13.9
MW-4	4.53	63	20.3	26.8
MW-9	5.81	490	18.7	116
MW-10	5.27	39	24.3	18.5
MW-16	4.82	40	17.4	100
MW-32	6.05	185	18.4	24.7
MW-33	4.80	60	18.1	37.7
MW-34	5.71	344	15.3	107
MW-35	4.94	60	18.3	23
MW-53	5.41	236	21.1	10.9
MW-56	4.59	68	17.9	267
MW-57	5.12	150	21.4	92.9
PZ-41	5.17	71	21.7	142
GP-28	4.64	92	16.0	96.2
GP-30W	4.99	39	22.4	279
SW-1	5.80	60	19.3	18.2
SW-2	5.65	60	20.1	18.6
SW-3	6.44	110	19.6	31.5

NOTE:
1) Field data collected by S+G personnel
2) SW-4 was unable to be sampled this event because it was dry.

SMITH+GARDNER

By: AL
Date: 6/15/2016

Table 3
Detected Inorganic Constituents
Harnett County Dunn Erwin Landfill
April 21-22, 2016

Monitoring Location	MDL	SWSL	2L or GWP* Standard	MCL	2B Standard	MW-1	MW-2	MW-4	MW-9	MW-10	MW-16	MW-53	MW-56	MW-57	GP-28W	GP-30W	PZ-41S	MW-32	MW-33	MW-34	MW-35	SW-1	SW-2	SW-3
Antimony	0.05	6	1 *	6	640	<0.05	<0.05	0.12 J	0.13 J	0.14 J	0.05 J	0.08 J	0.06 J	0.05 J	0.33 J	0.21 J	0.23 J	0.05 J	0.05 J	0.05 J	<0.05	0.07 J	<0.05	<0.05
Arsenic	0.66	10	10	10	10	<0.66	<0.66	<0.66	0.88 J	1.7 J	<0.66	4.0 J	1.4 J	2.2 J	0.89 J	2.2 J	1.8 J	<0.66	1.3 J	0.95 J	<0.66	2.2 J	1.3 J	3.5 J
Barium	0.02	100	700	2000	2000000	30.0 J	56.7 J	103	23.0 J	48.1 J	90.0 J	83.5 J	66.9 J	331	93.1 J	43.8 J	66.4 J	81.8 J	58 J	273	38.8 J	33.9 J	27.0 J	44.3 J
Beryllium	0.04	1	4 *	4	6.5	0.85 J	2	3	0.13 J	0.76 J	3	0.28 J	0.80 J	0.88 J	0.41 J	0.19 J	0.15 J	0.06 J	3	1	2	<0.04	<0.04	<0.04
Cadmium	0.05	1	2	5	2	0.44 J	<0.05	<0.05	<0.05	0.12 J	0.18 J	<0.05	0.05 J	<0.05	0.26 J	0.08 J	0.06 J	0.24 J	0.08 J	<0.05	<0.05	0.16 J	0.12 J	<0.05
Chromium, total	0.06	10	10	100	50	<0.06	0.06 J	<0.06	3.6 J	**16**	6.8 J	<0.06	2.4 J	1.8 J	9.6 J	**25**	3.3 J	0.32 J	1.5 J	0.94 J	0.60 J	0.67 J	0.82 J	0.85 J
Cobalt	0.04	10	1 *	NE	270	0.34 J	1.3 J	3.2 J	0.53 J	1.6 J	1.9 J	1.5 J	0.96 J	5.6 J	1.1 J	1.1 J	8.8 J	0.18 J	1 J	9.4 J	0.43 J	0.70 J	0.27 J	1.1 J
Copper	0.07	10	1000	1300	7	0.58 J	1.0 J	1.7 J	2.1 J	14	8.1 J	1.6 J	3.0 J	3.8 J	6.1 J	8.6 J	8.1 J	0.68 J	3.1 J	1.9 J	2.1 J	1.3 J	0.93 J	1.3 J
Iron	10.79	300	300	300	1000	NA	**1276**	NA	NA	**14130**	NA	**33750**	NA	NA	**29275**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.06	10	15	15	25	0.31 J	0.86 J	0.65 J	2.3 J	15	**19**	0.92 J	5.9J	3.5 J	13	9.9 J	NA	0.18 J	2.5 J	1.2 J	2.2 J	0.82 J	0.50 J	1.0 J
Mercury	0.04	0	1	2	0	NA	<0.04	NA	0.38	0.81	NA	0.24	NA	NA	0.07 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.06	50	100	NE	88	0.60 J	1.7 J	3.2 J	0.67 J	3.1 J	2.2 J	1.6 J	1.0 J	4.0 J	2.3 J	2.7 J	NA	0.99 J	1.4 J	2.5 J	1.7 J	1.00 J	0.68 J	0.92 J
Selenium	0.54	10	20	50	5	<0.54	<0.54	1.1 J	<0.54	1.1 J	0.92 J	0.92 J	<0.54	3.3 J	0.81 J	0.95 J	<0.54	<0.54	<0.54	0.68 J	<0.54	<0.54	<0.54	<0.54
Silver	0.06	10	20	NE	0	<0.06	<0.06	<0.06	<0.06	0.06 J	0.10 J	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Thallium	0.05	5.5	0.28*	2	0.24	0.11 J	0.08 J	0.12 J	0.09 J	0.14 J	0.13 J	<0.05	0.26 J	0.17 J	0.13 J	0.16 J	0.1 J	<0.05	<0.05	<0.05	<0.05	0.05 J	<0.05	<0.05
Vanadium	0.36	25	0.3 *	NE	NE	0.42 J	1.3 J	0.38 J	7.8 J	24.5 J	23 J	1.7 J	8.8 J	8.7 J	15 J	22.3 J	9.8 J	0.93 J	4.2 J	3.6 J	3 J	1.4 J	1.4 J	3.6 J
Zinc	1.61	10	1000	5000 [2]	50	3.0 J	12	15	<1.16	17	32	3.2 J	5.3 J	7.6 J	15	11	13	2.4 J	4.3 J	5.4 J	5 J	4.4 J	2.9 J	2.3 J

NOTE:

MDL	-	Method Detection Limit
SWSL	-	Solid Waste Section Quantitation Limits
2L	-	Groundwater Standards (15A NCAC 2L 0200)
GWP	-	Groundwater Protection Standards (noted by *)
MCL	-	Federal Maximum Contaminant Limit
2B	-	NCAC 2B Standard for Class C waters
NE	-	Detection limit not established
Bold	-	Detection above 2L or GWP Standard
J	-	Laboratory defined as deteced but below the reporting limit; therefore the result is an estimated concentration
< MDL	-	Not detected at or above the Method Detection Limit
NA	-	Parameter not analyzed
2	-	National Secondary Drinking Water Regulation

Table units are presented in ug/l.
Analysis by Environment 1 Incorporated, Report dated 6/10/2016. Client ID #6040.

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SMITH+GARDNER

By: AL
Date: 6/15/2016

Table 4
Detected Organic Constituents
Harnett County Dunn Erwin Landfill
April 21-22, 2016

Monitoring Location	MDL	SWSL	2L Standard	MCL	MW-2	MW-10	MW-33	PZ-41S	MW-53	MW-57	GP-28W	GP-30W
1,1-Dichloroethane	0.20	5	6	NE	0.3 J	0.40 J	<0.2	<0.2	4 J	2 J	**12.6**	0.60 J
1,4-Dichlorobenzene	0.39	1	6	75	<0.39	<0.39	<0.39	<0.39	5.1	2.3	1.7	<0.39
Acetone	9.06	100	6000	NE	<9.06	<9.06	<9.06	<9.06	39.1 J	<9.06	<9.06	<9.06
Benzene	0.24	1	1	5	<0.24	<0.24	<0.24	<0.24	**4.5**	**2.5**	**2.8**	<0.24
Carbon Disulfide	0.23	100	700	NE	<0.23	<0.23	<0.23	0.3 J	<0.23	<0.23	<0.23	<0.23
Cis-1,2-Dichlorethene	0.25	5	70	70	<0.25	<0.25	0.30 J	0.6 J	3.20 J	3.60 J	7.2	<0.25
Chlorobenzene	0.30	3	50	100	<0.3	<0.3	<0.3	<0.3	1.90 J	0.40 J	1.2 J	<0.3
Chloroethane	0.48	10	3000	NE	<0.48	<0.48	<0.48	<0.48	1.3 J	<0.48	<0.48	<0.48
Methylene Chloride	0.64	1	5	NE	<0.64	<0.64	<0.64	<0.64	**5.1**	<0.64	**11.3**	<0.64
Tetrachloroethene	0.17	1	0.7	5	<0.17	<0.17	<0.17	<0.17	0.50 J	<0.17	**1.6**	<0.17
Trichloroethene	0.23	1	3	5	<0.23	<0.23	<0.23	<0.23	0.60 J	0.30 J	1.5	<0.23
Toluene	0.23	1	600	1000	<0.23	<0.23	<0.23	<0.23	2.3	<0.23	0.3 J	<0.23
Vinyl Chloride	0.63	1	0.03	2	<0.63	<0.63	<0.63	**1.0**	0.90 J	<0.63	0.90 J	<0.63
Tetrahydrofuran	0.39	NE	NE	NE	<0.39	<0.39	<0.39	<0.39	2.6	<0.39	<0.39	<0.39

NOTE:

MDL - Method Detection Limit
SWSL - Solid Waste Section Quantitation Limits
2L - Groundwater Standards (15A NCAC 2L 0200)
MCL - Federal Maximum Contaminant Limit
Bold - Detection above 2L Standard
J - Concentration detected below the reporting limit; the result is an estimated concentration
<MDL - Not detected at or abovethe Method Detection Limit
NE - Standard Not Established

Table is presented in units of ug/l.
Analysis by Environment 1 Incorporated, Report dated 6/10/2016. Client ID #6040.

SMITH+GARDNER

By: MG
Date: 6/22/2016

Table 5
Groundwater Velocity Calculations
Harnett County Dunn Erwin Landfill
April 21-22, 2016

Monitoring Location	Water Table Elevation (ft. amsl)	Hydraulic Conductivity (cm/sec)	Estimated Porosity	Hydraulic Gradient (ft./ft.)	Groundwater Velocity (cm/sec)	Groundwater Velocity (ft/day)
MW-1	211.69	7.90E-07	0.28	0.0260	7.34E-08	2.08E-04
MW-2	182.06	3.50E-05	0.28	0.0242	3.03E-06	8.59E-03
MW-4	-	1.20E-05	0.28	-	-	-
MW-9	195.06	8.60E-04	0.28	0.0291	8.93E-05	0.25
MW-10	194.37	3.00E-06	0.28	0.0213	2.28E-07	6.47E-04
MW-16	190.69	7.30E-08	0.28	0.0197	5.14E-09	1.46E-05
MW-32	175.70	2.90E-06	0.28	0.0319	3.30E-07	9.35E-04
MW-33	165.13	4.10E-06	0.28	0.0513	7.51E-07	2.13E-03

NOTE:

1) Hydraulic Conductivity values from Withers and Ravenel "Evaluation of Groundwater Flow and Direction", November 1994 except MW-9 and MW-10 which were obtained from ENSOL "Results of
2) Porosity values estimated from McWorter and Sunada (1977) (http://web.ead.anl.gov/resrad/datacoll/porosity.htm)
3) Velocity Calculated from V=K*i/n
   V = velocity
   K = Hydraulic Conductivity
   i = Gradient
   n = Porosity
4) Hydraulic Gradient Measured from April 2016 Potentiometric Surface

SMITH+GARDNER

Table 6

MNA Parameter Summary

Harnett County Dunn Erwin Landfill

April 21-22, 2016

By: MG

Date: 6/21/2016

	MDL	SWSL	MW-2	MW-53	MW-9	MW-10	GP-28	GP-30W	PZ-41S
Dissolved Oxygen (mg/L)	NE	NE	NA	4.27	2.51	5.62	NA	6.02	3.61
Oxygen Reduction Potential (mv)	NE	NE	NA	37.9	35.8	121.8	NA	168.3	131.9
Alkalinkity, mg/l	1	NE	<1	60	NA	7	<1	NA	NA
Nitrate Nitrogen as N, mg/l	0.04	10	<0.04	1.43 J	NA	0.14 J	3.28 J	NA	NA
Total Organic Carbon, mg/l	0.1	NE	<0.1	7.85	NA	2.32	8.31	NA	NA
Chloride, mg/l	5	NE	8	40	NA	5	23	NA	NA
Methane, ug/l	0.037	NE	5.9	NA	NA	57	8700	NA	NA

NOTE:

MDL	-	Method Detection Limit
SWSL	-	Solid Waste Section Quantitation Limits
LOQ	-	Limit of Quantitation indicated by Gulf Coast Analytical Laboratories, LLC (GCAL).
J	-	Laboratory defined detection less than the RL for Prism samples and between the MDL and LOQ for GCAL samples.
NE	-	Not Established
BOLD	-	Above SWSL
U	-	Parameter analyzed for but not detected
N/A	-	Not Applicable

Analysis by Environment 1 Incorporated, Report dated 6/10/2106. Client ID #6040.
And Microseeps, Pace Workorder #18871

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Appendix A

Well Logs

April 2016 Groundwater Monitoring Report
Harnett County Dunn-Erwin Landfill
Solid Waste Permit No. 43-02

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

WELL COMPLETION RECORD

MW-2

COMPLETE ALL INFORMATION REQUESTED BELOW FOR EACH WELL INSTALLED, AND RETURN FOR TO THE N.C. DEPARTMENT OF HUMAN RESOURCES, SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH. PO BOX 2091, RALEIGH, NORTH CAROLINA 27602

NAME OF SITE: DUNN-ERWIN LANDFILL	PERMIT NO.
ADDRESS: P.O. BOX 759, LILLINGTON NC 27549	OWNER (print): HARNETT Co.
DRILLING CONTRACTOR: PATTERSON EXPLORATION SERVICES	REGISTRATION NO.: 351

Casing Type: PVC **dia.** 2 **in.** **Grount Depth:** from 0 to 13 ft. - dia. ____ in.
Casing Depth: from 0 to 15 ft. dia. ____ in. **Bentonite Seal:** from 13 to 14 ft. - dia. ____ in.
Screen Type: PVC **dia.** 2 **in.** **Sand & Gravel/PK:** from 14 to 30 ft. - dia. ____ in.
Screen Depth: from 15 to 30 ft. dia. ____ in. **Total Well Depth:** 30 ft.

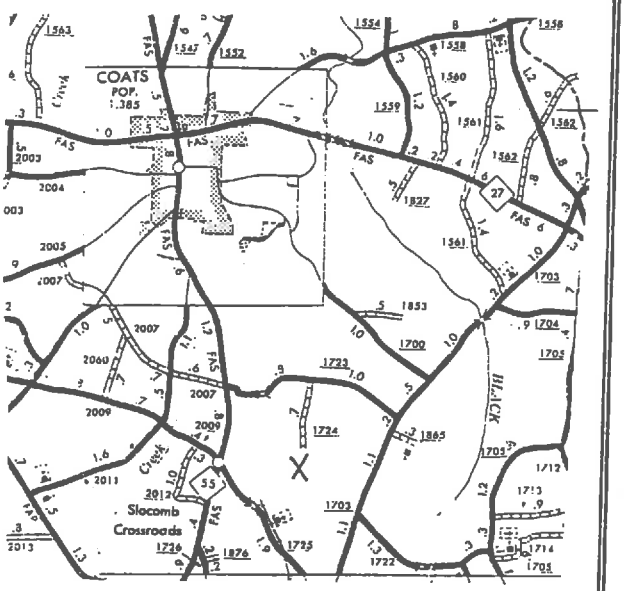
Static Water Level: 24.5 **feet from top of casing** **Date Measured** 9-23-94

YIELD **(gpm):** <1.0 **Method of Testing:** BAILING **Casing is** 2 **feet above land surface**

DRILLING LOG

DEPTH FROM	TO	FORMATION DESCRIPTION
0	3	SANDY CLAY
3	30	GRAY SILTY CLAY

LOCATION SKETCH



Remarks:

Date: 9-29-94 **Signature:** James Izzell

f:\James

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY	
QUAD. NO.	SERIAL NO.
Lat.	Long. RO
Minor Basin	
Basin Code	
Header Ent.	GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: PATTERSON EXPLORATION SERVICES

DRILLER REGISTRATION NUMBER: 351

STATE WELL CONSTRUCTION PERMIT NUMBER:

MW-2

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: COATS County: HARNETT
   DUNN-ERWIN LANDFILL - S.R. 1724
   (Road, Community, or Subdivision and Lot No.)
2. OWNER HARNETT COUNTY
   ADDRESS P.O. BOX 759
   (Street or Route No.)
   LILLINGTON NC 27546
   City or Town State Zip Code
3. DATE DRILLED 9-23-94 USE OF WELL MONITORING
4. TOTAL DEPTH 30'
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: 24.5' FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 2 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): <1.0 METHOD OF TEST BAILING
10. WATER ZONES (depth): 22'-30'
11. CHLORINATION: Type _____ Amount _____
12. CASING:

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	0	15	2	SCH 40	PVC

13. GROUT:

	Depth From	Depth To	Material	Method
	0	~~14~~ 13	NEAT CEMENT	
	13	14	BENTONITE	

14. SCREEN:

	Depth From	Depth To	Diameter	Slot Size	Material
	15	30	2 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

15. SAND/GRAVEL PACK:

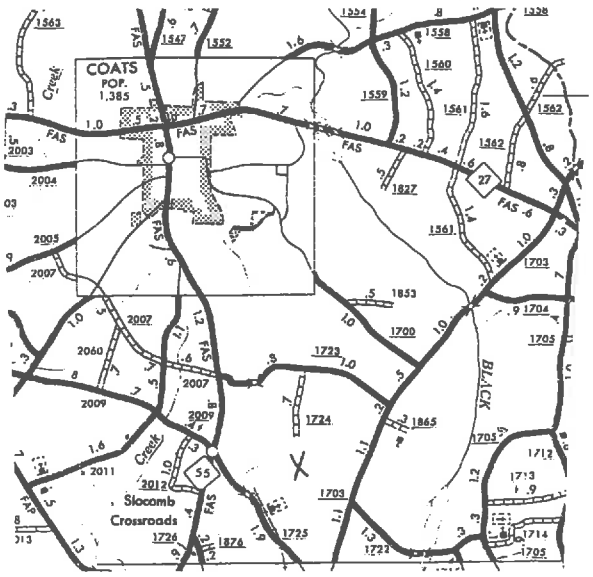
	Depth From	Depth To	Size	Material
	14	30		SAND

16. REMARKS:

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0'	3'	SANDY CLAY
3'	30'	GRAY SILTY CLAY

If additional space is needed use back of form

LOCATION SKETCH



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.

James C Izzell 9-29-94

SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

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

WELL COMPLETION RECORD

MW - 4

COMPLETE ALL INFORMATION REQUESTED BELOW FOR EACH WELL INSTALLED, AND RETURN FOR TO THE N.C. DEPARTMENT OF HUMAN RESOURCES, SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH. PO BOX 2091, RALEIGH, NORTH CAROLINA 27602

NAME OF SITE: DUNN-ERWIN LANDFILL	PERMIT NO.
ADDRESS: P.O. BOX 759, LILLINGTON NC 27549	OWNER (print): HARNETT CO.
DRILLING CONTRACTOR: PATTERSON EXPLORATION SERVICES	REGISTRATION NO.: 351

Casing Type: PVC **dia.** 2 **in.** **Grount Depth:** **from** 0 **to** 7 **ft. - dia.** ____ **in.**
Casing Depth: **from** 0 **to** 9 **ft. dia.** ____ **in.** **Bentonite Seal:** **from** 7 **to** 8 **ft. - dia.** ____ **in.**
Screen Type: PVC **dia.** 2 **in.** **Sand & Gravel/PK:** **from** 8 **to** 20 **ft. - dia.** ____ **in.**
Screen Depth: **from** 9 **to** 19 **ft. dia.** ____ **in.** **Total Well Depth:** 20 **ft.**

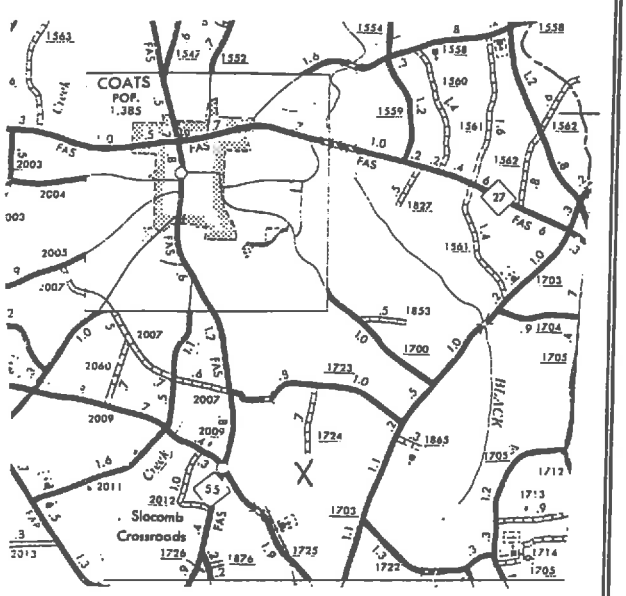
Static Water Level: 4.75 **feet from top of casing** **Date Measured** 9-23-94

YIELD **(gpm):** <1.0 **Method of Testing:** BAILING **Casing is** 2 **feet above land surface**

DRILLING LOG

DEPTH FROM	DEPTH TO	FORMATION DESCRIPTION
0	3	SAND & GRAVEL
3	6	SILTY CLAY - TAN
6	20	SILTY CLAY - GRAY

LOCATION SKETCH



Remarks: ____

Date: 9-29-94 **Signature:** James Bizzell

f:\James

North Carolina - Department of Environment, Health, and Natural Resources
Division of Environmental Management - Groundwater Section
P.O. Box 29535 - Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY	
QUAD. NO.	SERIAL NO.
Lat.	Long. RO
Minor Basin	
Basin Code	
Header Ent.	GW-1 Ent.

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: PATTERSON EXPLORATION SERVICES

DRILLER REGISTRATION NUMBER: 351

STATE WELL CONSTRUCTION PERMIT NUMBER:

MW-4

1. WELL LOCATION: (Show sketch of the location below)
   Nearest Town: COATS County: HARNETT
   DUNN-ERWIN LANDFILL - S.R. 1724
   (Road, Community, or Subdivision and Lot No.)
2. OWNER HARNETT COUNTY
   ADDRESS P.O. BOX 759
   (Street or Route No.)
   LILLINGTON NC 27546
   City or Town State Zip Code
3. DATE DRILLED 9-23-94 USE OF WELL MONITORING
4. TOTAL DEPTH 20'
5. CUTTINGS COLLECTED YES [ ] NO [X]
6. DOES WELL REPLACE EXISTING WELL? YES [ ] NO [X]
7. STATIC WATER LEVEL Below Top of Casing: 4.75 FT.
   (Use "+" if Above Top of Casing)
8. TOP OF CASING IS 2 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): <1.0 METHOD OF TEST BAILING
10. WATER ZONES (depth): 12'-20'
11. CHLORINATION: Type _____ Amount _____
12. CASING:

Depth From	To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
0	9		2"	SCH 40	PVC

13. GROUT:

Depth From	To	Ft.	Material	Method
0	7		NEAT CEMENT	
7	8		BENTONITE	

14. SCREEN:

Depth From	To	Ft.	Diameter	Slot Size	Material
9	19		2 in.	.010 in.	PVC
			in.	in.	
			in.	in.	

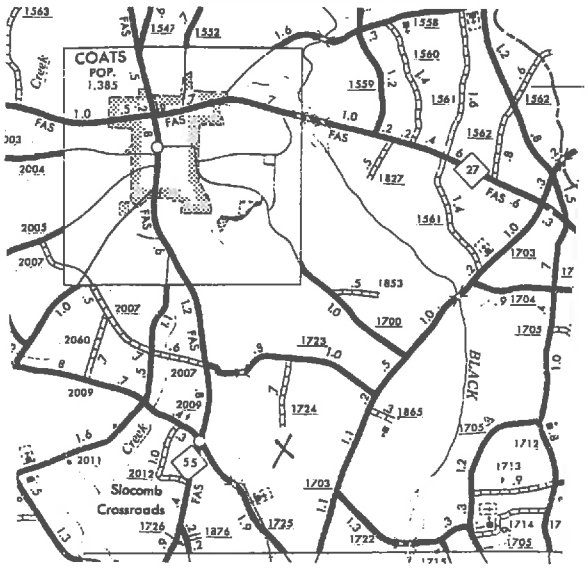
15. SAND/GRAVEL PACK:

Depth From	To	Ft.	Size	Material
8	20			SAND

DEPTH From	To	DRILLING LOG Formation Description
0'	3'	SAND & GRAVEL
3'	6'	SILTY CLAY - TAN
6'	20'	SILTY CLAY - GRAY

If additional space is needed use back of form

LOCATION SKETCH



16. REMARKS:

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.

James Izzell 9-29-94

SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

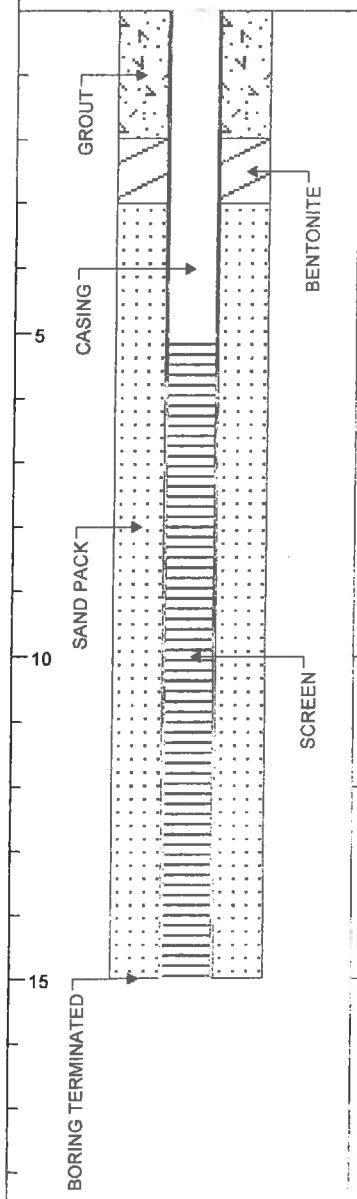
Project: Dunn-Erwin Landfill | BORING: MW-53 | Page: 1 of 1

Drilling Co.: J&L Drilling Co. | Date Started: 6-28-10

Drilling Method: Truck Mounted HSA | Date Completed: 6-28-10

Location: DELF | Logged By: RLS

Surface Elev.: 207.18 | TOC Elev.: 209.59 | Project #: 3002B



ELEVATION	DESCRIPTION	N-VALUE	USCS SYMBOL	MOISTURE
206.680	**TOPSOIL** Brown			
	Silty SAND Orange	19	SM	Moist
		16		
		13		Moist
201.180	**SAND w/Pebbles** Orange-Yellow	37	GW	Moist
		39		
197.180	**SAND** White, coarse	41	SW	Moist
195.180	**CLAY w/ some Sand** Yellow-Brown with some Gray	22	CL	
192.180				

Boring Log and Well Construction Details

C.T. Clayton, Sr., P.E., Inc.
46 W. Washington St.
Coats, NC 27521
Phone: 910-897-7070
Fax: 910-897-6767

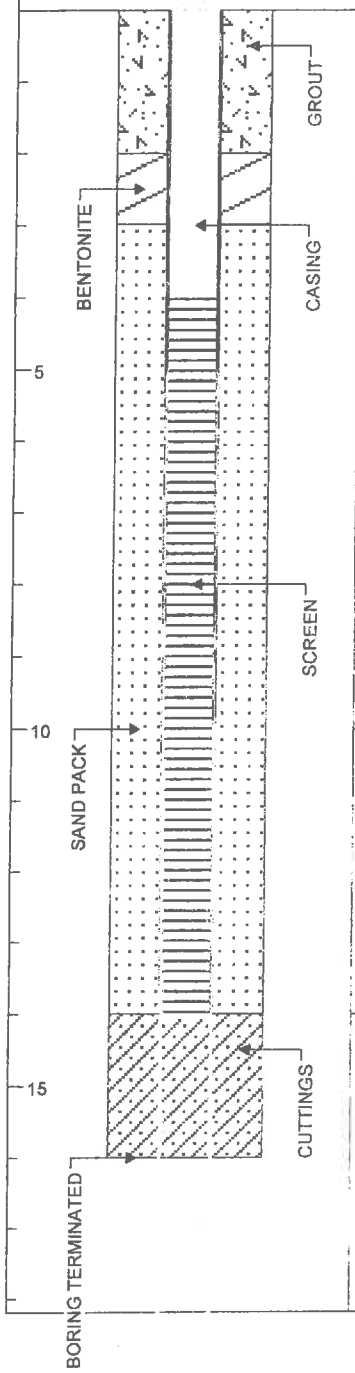
Project: Dunn-Erwin Landfill | BORING: MW-56 | Page: 1 of 1

Drilling Co.: J&L Drilling Co. | Date Started: 6-29-10

Drilling Method: Truck Mounted HSA | Date Completed: 6-29-10

Location: DELF | Logged By: RLS

Surface Elev.: 195.59 | TOC Elev.: 198.11 | Project #: 3002B



ELEVATION	DESCRIPTION	N-VALUE	USCS SYMBOL	MOISTURE
	TOPSOIL Brown	13		
194.090				
193.590	**SAND** Brown		SW	Moist
	Clayey SAND Brown, Orange, Gray Mottled	9		
		17	SC	Wet
189.590				
	Silty SAND Gray-Orange W/ Mica	11		
		28	SM	Moist
185.590				
	Clayey SAND Orange-Gray some Organics. From 12' mostly Gray with no Organics	34		
		49	SC	Moist
181.590				
		52		

Boring Log and Well Construction Details

C.T. Clayton, Sr., P.E., Inc.
46 W. Washington St.
Coats, NC 27521
Phone: 910-897-7070
Fax: 910-897-6767

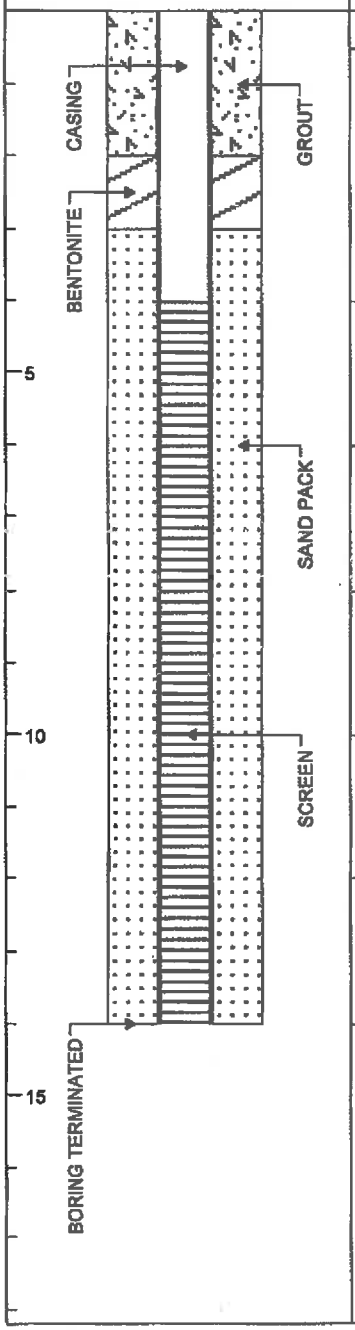
Project: Dunn-Erwin Landfill | BORING: MW-57 | Page: 1 of 1

Drilling Co.: J&L Drilling Co. | Date Started: 6-29-10

Drilling Method: Truck Mounted HSA | Date Completed: 6-29-10

Location: DELF | Logged By: RLS

Surface Elev.: 198.88 | TOC Elev.: 201.33 | Project #: 3002B



ELEVATION	DESCRIPTION	N-VALUE	USCS SYMBOL	MOISTURE
198.380	**TOPSOIL** Brown			
	Clayey SAND Orange-Red	63	SC	Moist
		20		
194.880	**CLAY** Gray-Brown-Orange Mottled	8	CL	Wet
192.880	**Elastic SILT** Brown-Gray Mottled	16	ML	Moist
190.880	**Silty SAND** Brown-Gray Mottled w/Mica	62	SM	Moist
188.880	**Clayey SAND** Brown-Orange w/Mica	45	SC	
186.880	**SILT** Gray w/Mica	32	ML	Moist
184.880				

Boring Log and Well Construction Details

C.T. Clayton, Sr., P.E., Inc.
46 W. Washington St.
Coats, NC 27521
Phone: 910-897-7070
Fax: 910-897-6767

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Appendix B

Laboratory Analytical Report

April 2016 Groundwater Monitoring Report
Harnett County Dunn-Erwin Landfill
NC Solid Waste Permit No. 43-02

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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#: 6040

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON ,NC 27546

DATE COLLECTED: 04/21/16
DATE REPORTED : 06/10/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-1	MW-2	MW-4	MW-9	MW-10	Analysis Date	Analyst	Method Code
Nitrate Nitrogen as N, mg/l	0.04	10.0		--- U			0.14 J	04/27/16	AKS	353.2 R2-9
Total Organic Carbon, mg/l	0.100	1.0		--- U			2.32	05/03/16	SEJ	5310C-00
Alkalinity (to pH 4.5), mg CaCO3/l	1.0	1.0		--- U			7	04/25/16	KKF	2320B-97
Chloride, mg/l	5.0	5.0		8			5	04/25/16	KDS	4500CLB-97
Antimony, ug/l	0.05	6.0	--- U	--- U	0.12 J	0.13 J	0.14 J	04/28/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0	--- U	--- U	--- U	0.88 J	1.7 J	04/28/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	30.0 J	56.7 J	103	23.0 J	48.1 J	04/28/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.85 J	2	3	0.13 J	0.76 J	04/28/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.44 J	--- U	--- U	--- U	0.12 J	04/28/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	0.34 J	1.3 J	3.2 J	0.53 J	1.6 J	04/28/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	--- U	0.06 J	--- U	3.6 J	16	04/28/16	LFJ	EPA200.8
Copper, ug/l	0.07	10.0	0.58 J	1.0 J	1.7 J	2.1 J	14	04/28/16	LFJ	EPA200.8
Iron, ug/l	10.79	300.0		1276			14130	05/09/16	JMN	3111B-99
Lead, ug/l	0.06	10.0	0.31 J	0.86 J	0.65 J	2.3 J	15	04/28/16	LFJ	EPA200.8
Mercury, ug/l	0.04	0.20		--- U		0.38	0.81	05/06/16	JMN	245.1 R3-9
Nickel, ug/l	0.06	50.0	0.60 J	1.7 J	3.2 J	0.67 J	3.1 J	04/28/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	--- U	--- U	1.1 J	--- U	1.1 J	04/28/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0	--- U	--- U	--- U	--- U	0.06 J	04/28/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	0.11 J	0.08 J	0.12 J	0.09 J	0.14 J	04/28/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	0.42 J	1.3 J	0.38 J	7.8 J	24.5 J	04/28/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	3.0 J	12	15	--- U	17	04/28/16	LFJ	EPA200.8
Sulfide, ug/l	100	1000		--- U			--- U	04/26/16	LFJ	4500S2D-00

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#: 6040

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON ,NC 27546

DATE COLLECTED: 04/21/16
DATE REPORTED : 06/10/16

REVIEWED BY:

PARAMETERS	MDL	Piezometer SWSL #41S	MW-53	MW-56	MW-57	GP-28-W	Analysis Date	Analyst	Method Code
Nitrate Nitrogen as N, mg/l	0.04	10.0	1.43 J			3.28 J	04/27/16	AKS	353.2 R2-9
Total Organic Carbon, mg/l	0.100	1.0	7.85			8.31	05/03/16	SEJ	5310C-00
Alkalinity (to pH 4.5), mg CaCO3/l	1.0	1.0	60			--- U	04/25/16	KKF	2320B-97
Chloride, mg/l	5.0	5.0	40			23	04/25/16	KDS	4500CLB-97
Antimony, ug/l	0.05	6.0	0.23 J	0.08 J	0.06 J	0.05 J	0.33 J	04/28/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0	1.8 J	4.0 J	1.4 J	2.2 J	0.89 J	04/28/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	66.4 J	83.5 J	66.9 J	331	93.1 J	04/28/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.15 J	0.28 J	0.80 J	0.88 J	0.41 J	04/28/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.06 J	--- U	0.05 J	--- U	0.26 J	04/28/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	8.8 J	1.5 J	0.96 J	5.6 J	1.1 J	04/28/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	3.3 J	--- U	2.4 J	1.8 J	9.6 J	04/28/16	LFJ	EPA200.8
Copper, ug/l	0.07	10.0	8.1 J	1.6 J	3.0 J	3.8 J	6.1 J	04/28/16	LFJ	EPA200.8
Iron, ug/l	10.79	300.0	33750					05/10/16	JMN	3111B-99
Iron, ug/l	10.79	300.0				29275		05/09/16	JMN	3111B-99
Lead, ug/l	0.06	10.0	6.4 J	0.92 J	5.9 J	3.5 J	13	04/28/16	LFJ	EPA200.8
Mercury, ug/l	0.04	0.20	0.24				0.07 J	05/06/16	JMN	245.1 R3-9
Nickel, ug/l	0.06	50.0	1.4 J	1.6 J	1.0 J	4.0 J	2.3 J	04/28/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	--- U	0.92 J	--- U	3.3 J	0.81 J	04/28/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0	--- U	--- U	--- U	--- U	--- U	04/28/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	0.10 J	--- U	0.26 J	0.17 J	0.13 J	04/28/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	9.8 J	1.7 J	8.8 J	8.7 J	15.0 J	04/28/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	13	3.2 J	5.3 J	7.6 J	15	04/28/16	LFJ	EPA200.8
Sulfide, ug/l	100	1000		--- U			--- U	04/26/16	LFJ	4500S2D-00

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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#: 6040

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON ,NC 27546

DATE COLLECTED: 04/21/16
DATE REPORTED : 06/10/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	GP-30-W	Trip Blank	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.05	6.0	0.21 J		04/28/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0	2.2 J		04/28/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	43.8 J		04/28/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.19 J		04/28/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.08 J		04/28/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	1.1 J		04/28/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	25		04/28/16	LFJ	EPA200.8
Copper, ug/l	0.07	10.0	8.6 J		04/28/16	LFJ	EPA200.8
Lead, ug/l	0.06	10.0	9.9 J		04/28/16	LFJ	EPA200.8
Nickel, ug/l	0.06	50.0	2.7 J		04/28/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	0.95 J		04/28/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0	--- U		04/28/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	0.16 J		04/28/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	22.3 J		04/28/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	11		04/28/16	LFJ	EPA200.8

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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: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

CLIENT ID: 6040
ANALYST: MAO
DATE COLLECTED: 04/21/16
DATE REPORTED: 06/10/16

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	04/27/16 Piezometer #41S	04/26/16 MW-56	04/27/16 MW-57	04/27/16 GP-28-W	04/27/16 GP-30-W
	Date Analyzed:						
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	1.00	--- U	--- U	0.90 J	--- 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	0.30 J	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	11.30	--- 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	2.00 J	12.60	0.60 J
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	0.60 J	--- U	3.60 J	7.20	--- 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	2.50	2.80	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	0.30 J	1.50	--- 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	1.60	--- 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	0.40 J	1.20 J	--- 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	2.30	1.70	--- 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

CLIENT: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

CLIENT ID: 6040

ANALYST: MAO
DATE COLLECTED: 04/21/16
DATE REPORTED: 06/10/16

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Date Analyzed: 04/27/16 MW-1	04/25/16 MW-2	04/26/16 MW-4	04/26/16 MW-9	04/26/16 MW-10
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	0.30 J	--- U	--- U	0.40 J
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	--- 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	--- 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

CLIENT: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

CLIENT ID: 6040
ANALYST: MAO
DATE COLLECTED: 04/21/16
DATE REPORTED: 06/10/16

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Date Analyzed: 04/27/16 MW-1	04/25/16 MW-2	04/26/16 MW-4	04/26/16 MW-9	04/26/16 MW-10
48. Tetrahydrofuran	0.39	1.0	--- U	--- U	--- U	--- U	--- U

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CLIENT: HARNETT CO. LANDFILL (DUNN/ERWIN)
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LILLINGTON, NC 27546

CLIENT ID: 6040
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DATE COLLECTED: 04/21/16
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REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	04/26/16 MW-53	04/27/16 Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U
2. Vinyl Chloride	0.63	1.0	0.90 J	--- U
3. Bromomethane	0.67	10.0	--- U	--- U
4. Chloroethane	0.48	10.0	1.30 J	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U
7. Acetone	9.06	100.0	39.10 J	--- 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	5.10	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	4.00 J	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	3.20 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	4.50	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U
22. Trichloroethene	0.23	1.0	0.60 J	--- 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	2.30	--- 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	0.50 J	--- 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	1.90 J	--- 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	5.10	--- 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

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: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

CLIENT ID: 6040
ANALYST: MAO
DATE COLLECTED: 04/21/16
DATE REPORTED: 06/10/16

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	04/26/16 MW-53	04/27/16 Trip Blank
48. Tetrahydrofuran	0.39	1.0	2.60	--- U

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

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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GREENVILLE, N.C. 27835-7085

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CLIENT: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

REVIEWED BY:

CLIENT ID: 6040

ANALYST: CHS
DATE COLLECTED: 04/21/16
DATE EXTRACTED: 04/21/16
DATE ANALYZED: 05/31/16
DATE REPORTED: 06/10/16

SEMI-VOLATILE ORGANICS
EPA METHOD 8270D R4(07)

PARAMETERS, ug/l	MDL	SWSL	MW-53
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-Chloro-1-methylethyl)ethe	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 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: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

REVIEWED BY:

CLIENT ID: 6040

ANALYST: CHS
DATE COLLECTED: 04/21/16
DATE EXTRACTED: 04/21/16
DATE ANALYZED: 05/31/16
DATE REPORTED: 06/10/16

SEMI-VOLATILE ORGANICS
EPA METHOD 8270D R4(07)

PARAMETERS, ug/l	MDL	SWSL	MW-53
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

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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: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

REVIEWED BY:

CLIENT ID: 6040

ANALYST: CHS
DATE COLLECTED: 04/21/16
DATE EXTRACTED: 04/21/16
DATE ANALYZED: 05/31/16
DATE REPORTED: 06/10/16

SEMI-VOLATILE ORGANICS
EPA METHOD 8270D R4(07)

PARAMETERS, ug/l	MDL	SWSL	MW-53
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 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: 6040 **Week:** 17

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON NC 27546

(910) 814-6156

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	Nitrate	TOC	Alkalinity	Chloride	Metals	Sulfide	EPA 8260B	8260 Dup. 1	8260 Dup. 2	EPA 8270D	8270D Dup. 1	D Methane
							<2			<2	9		<2	<2			
						P	P	P	P	P	P	G	G	G	G	G	G
						A	C	A	A	A	F	E	E	E	A	A	
MW-1	4/22/16	16:39			4					■		■	■	■			
MW-2		15:37			9	■	■	■	■	■	■	■	■	■			☐
MW-4		15:28			4					■		■	■	■			
MW-9		14:38			4					■		■	■	■			
MW-10		14:55			9	■	■	■	■	■	■	■	■	■			☐
Piezometer #41S		15:20			4					■		■	■	■			
MW-53		14:35			11	■	■	■	■	■	■	■	■	■	■	■	☐
MW-56		16:26			4					■		■	■	■			
MW-57		14:20			4					■		■	■	■			
GP-28-W		16:15			9	■	■	■	■	■	■	■	■	■			☐
GP-30-W		15:10			4					■		■	■	■			

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

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

PARAMETERS/TESTS

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

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

SAMPLES COLLECTED BY: (Please Print) Carter Shore

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	4/22/16 11:00	[signature]	4/22/16 1410
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS: Methane vials for MW-53 were returned empty. OBL.

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

№ 315374

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: 6040 **Week:** 17

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON NC 27546

(910) 814-6156

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	Nitrate	TOC	Alkalinity	Chloride	Metals	Sulfide	EPA 8260B	8260 Dup. 1	8260 Dup. 2	EPA 8270D	8270D Dup. 1
						P	P	P	P	P	P	G	G	G	G	G
						A	C	A	A	A	F	E	E	E	A	A
Trip Blank					2											

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

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

PARAMETERS/TESTS

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

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

SAMPLES COLLECTED BY: (Please Print)
CARTER SHORE

SAMPLES RECEIVED IN LAB AT 62 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
[signature]	4/22/16 11:00	[signature]	4/22/16 2:10
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.

№ 315373

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#: 6040 A

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON ,NC 27546

DATE COLLECTED: 04/22/16
DATE REPORTED : 05/31/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	SW-1	SW-2	SW-3	SW-4	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.05	6.0	0.07 J				04/28/16	LFJ	EPA200.8
Antimony, ug/l	0.05	6.0		--- U	--- U	Missing	04/29/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0	2.2 J				04/28/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0		1.3 J	3.5 J	Missing	04/29/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	33.9 J				04/28/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0		27.0 J	44.3 J	Missing	04/29/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	--- U				04/28/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0		--- U	--- U	Missing	04/29/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.16 J				04/28/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0		0.12 J	--- U	Missing	04/29/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	0.70 J				04/28/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0		0.27 J	1.1 J	Missing	04/29/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	0.67 J				04/28/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0		0.82 J	0.85 J	Missing	04/29/16	,LFJ	EPA200.8
Copper, ug/l	0.07	10.0	1.3 J				04/28/16	LFJ	EPA200.8
Copper, ug/l	0.07	10.0		0.93 J	1.3 J	Missing	04/29/16	LFJ	EPA200.8
Lead, ug/l	0.06	10.0	0.82 J				04/28/16	LFJ	EPA200.8
Lead, ug/l	0.06	10.0		0.50 J	1.0 J	Missing	04/29/16	LFJ	EPA200.8
Nickel, ug/l	0.06	50.0	1.00 J				04/28/16	LFJ	EPA200.8
Nickel, ug/l	0.06	50.0		0.68 J	0.92 J	Missing	04/29/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	--- U				04/28/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0		--- U	--- U	Missing	04/29/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0	--- U				04/28/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0		--- U	--- U	Missing	04/20/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	0.05 J				04/28/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5		--- U	--- U	Missing	04/29/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	1.4 J				04/28/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0		1.4 J	3.6 J	Missing	04/29/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	4.4 J				04/28/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0		2.9 J	2.3 J	Missing	04/29/16	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) 756-0833

CLIENT: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

CLIENT ID: 6040 A

ANALYST: MAO
DATE COLLECTED: 04/22/16
DATE ANALYZED: 04/27/16
DATE REPORTED: 05/31/16

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

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 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: 6040 A **Week: 17**

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON NC 27546

(910) 814-6156

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
						L2	L2	L2	L2
						P	G	G	G
						A	E	E	E
SW-1	4/22/16	9:35			4				
SW-2	↓	9:50			3				
SW-3	↓	9:22			3				
SW-4	DRY				3				

PARAMETERS/TESTS

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

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

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

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

SAMPLES COLLECTED BY: (Please Print)
SPENCER HOLLOMON

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Spencer W. Hollomon	4/22/16 11:00	[signature]	4/22/16 410
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

№ 315372

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#: 6040 C

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON ,NC 27546

DATE COLLECTED: 04/21/16
DATE REPORTED : 05/31/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-32	MW-34	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.05	6.0	0.05 J	0.05 J	04/29/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0	--- U	0.95 J	04/29/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	81.8 J	273	04/29/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.06 J	1	04/29/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.24 J	--- U	04/29/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	0.18 J	9.4 J	04/29/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	0.32 J	0.94 J	04/29/16	,LFJ	EPA200.8
Copper, ug/l	0.07	10.0	0.68 J	1.9 J	04/29/16	LFJ	EPA200.8
Lead, ug/l	0.06	10.0	0.18 J	1.2 J	04/29/16	LFJ	EPA200.8
Nickel, ug/l	0.06	50.0	0.99 J	2.5 J	04/29/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	--- U	0.68 J	04/29/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0	--- U	--- U	04/20/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	--- U	--- U	04/29/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	0.93 J	3.6 J	04/29/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	2.4 J	5.4 J	04/29/16	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: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

CLIENT ID: 6040 C

ANALYST: MAO
DATE COLLECTED: 04/21/16
DATE ANALYZED: 04/27/16
DATE REPORTED: 05/31/16

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-32	MW-34
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	--- U	--- 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	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- 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	0.27	1.0	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- 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	--- U	--- 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

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#: 6040 C

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON ,NC 27546

DATE COLLECTED: 04/22/16
DATE REPORTED : 05/31/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-16	MW-33	MW-35	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.05	6.0	0.05 J	0.05 J	--- U	04/29/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0	--- U	1.3 J	--- U	04/29/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	90.0 J	58.0 J	38.8 J	04/29/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	3	3	2	04/29/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.18 J	0.08 J	--- U	04/29/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	1.9 J	1.0 J	0.43 J	04/29/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	6.8 J	1.5 J	0.60 J	04/29/16	,LFJ	EPA200.8
Copper, ug/l	0.07	10.0	8.1 J	3.1 J	2.1 J	04/29/16	LFJ	EPA200.8
Lead, ug/l	0.06	10.0	19	2.5 J	2.2 J	04/29/16	LFJ	EPA200.8
Nickel, ug/l	0.06	50.0	2.2 J	1.4 J	1.7 J	04/29/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	0.92 J	--- U	--- U	04/29/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0	0.10 J	--- U	--- U	04/20/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	0.13 J	--- U	--- U	04/29/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	23.0 J	4.2 J	3.0 J	04/29/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	32	4.3 J	5.0 J	04/29/16	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: HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON, NC 27546

CLIENT ID: 6040 C

ANALYST: MAO
DATE COLLECTED: 04/22/16
DATE ANALYZED: 04/27/16
DATE REPORTED: 05/31/16

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-16	MW-33	MW-35
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	0.30 J	--- 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 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: 6040 C **Week:** 17

HARNETT CO. LANDFILL (DUNN/ERWIN)
ENGINEERING FACILITIES
C/O MS. AMANDA BADER
P.O. BOX 2773
LILLINGTON NC 27546

(910) 814-6156

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
CHLORINE NEUTRALIZED AT COLLECTION									
pH CHECK (LAB)						L2	L2	L2	L2
CONTAINER TYPE, P/G						P	G	G	G
CHEMICAL PRESERVATION						A	E	E	E
MW-16	4/22/16	10:00			4	■	■	■	■
MW-32	4/21/16	15:53			3	■	■	■	
MW-33	4/22/16 ~~4/21/16~~	10:13			3	■	■	■	
MW-34	4/21/16 ~~4/22/16~~	16:00			3	■	■	■	
MW-35	4/22/16	10:30			3	■	■	■	

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 (SEAL) MAINTAINED DURING SHIPMENT/DELIVERY: (Y) N

SAMPLES COLLECTED BY: (Please Print) SPENCER HOLLOMON

SAMPLES RECEIVED IN LAB AT 6.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Spencer W. Hollomon	4/22/16 11:20	[signature]	4/22/16 1410
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
RELINQUISHED BY (SIG.)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME

COMMENTS:

FORM #5

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.

№ 315371

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

April 28, 2016

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

RE: **HARNETT CO. / 6040**
Pace Workorder: 18871

Dear Steve Jones:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, April 26, 2016. 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,

Ruth Welsh 04/28/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages ____

Report ID: 18871 - 788344

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

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:	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: 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, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 18871 HARNETT CO. / 6040

Lab ID	Sample ID	Matrix	Date Collected	Date Received
188710001	MW2	Water	4/21/2016 15:32	4/26/2016 12:20
188710002	MW10	Water	4/21/2016 14:55	4/26/2016 12:20
188710003	GP28	Water	4/21/2016 16:15	4/26/2016 12:20

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 18871 HARNETT CO. / 6040

Workorder Comments

The container pH for samples 18871 (0003) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS
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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 18871 HARNETT CO. / 6040

Lab ID: **188710001** Date Received: 4/26/2016 12:20 Matrix: Water
Sample ID: **MW2** Date Collected: 4/21/2016 15:32

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**5.9**	ug/l	0.50	0.037	1	4/27/2016 08:51	BW	n

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 18871 HARNETT CO. / 6040

Lab ID: **188710002** Date Received: 4/26/2016 12:20 Matrix: Water
Sample ID: **MW10** Date Collected: 4/21/2016 14:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**57**	ug/l	0.50	0.037	1	4/27/2016 09:02	BW	n

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Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 18871 HARNETT CO. / 6040

Lab ID: **188710003** Date Received: 4/26/2016 12:20 Matrix: Water
Sample ID: **GP28** Date Collected: 4/21/2016 16:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**8700**	ug/l	0.50	0.037	1	4/27/2016 09:12	BW	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 18871 HARNETT CO. / 6040

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20GAx, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 18871 HARNETT CO. / 6040

QC Batch: DISG/5323 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 188710001, 188710002, 188710003

METHOD BLANK: 41533

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.037U	0.037	n

LABORATORY CONTROL SAMPLE & LCSD: 41534 41535

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	690	690	93	93	80-120	0	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 18871 HARNETT CO. / 6040

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 18871 HARNETT CO. / 6040

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
188710001	MW2			AM20GAX	DISG/5323
188710002	MW10			AM20GAX	DISG/5323
188710003	GP28			AM20GAX	DISG/5323

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18871

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

005980

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: ENVIRONMENT 1	Report To: STEVE JONES	Attention:
Address: 114 OAKMONT DR	Copy To:	Company Name:
GREENVILLE, NC 27858		Address: SAME
Email To: SJONES1@AOL.COM	Purchase Order No.:	Pace Quote Reference:
Phone: 252 756 6208 Fax: 252 756 0673	Project Name: HARNETT CO.	Pace Project Manager:
Requested Due Date/TAT:	Project Number: 6040	Pace Profile #:

REGULATORY AGENCY

- [ ] NPDES
- [x] GROUND WATER
- [ ] DRINKING WATER
- [ ] UST
- [ ] RCRA
- [ ] OTHER

Site Location STATE: NC

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	TSP	BAK	Zinc Acetate & NaOH	Other	Analysis Test (Y/N)	D. METHANE ONLY	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW2	ST	G			4/21/16	1532		2										X		
2	MW10	↓	G			↓	1455		2										X		
3	GP28	↓	G			↓	1615		2										X		
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
FACILITY ID# 4302	[signature] / E.1	4/25/16	2:15p	[signature] PAE	4.26.16	1000	2	Y	N	Y

2

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: CARTER SHORE

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Cooler Receipt Form

Client Name: Environment 1 Project: Harrett Co. Lab Work Order: 18871

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx (UPS) USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 1Z2037050175714 79

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 2°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC	✓			
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: CJ Date: 4-26-16

Project Manager Review: TM Date: 4-26-16

F-PAE-Q-009-rev.00, 20 Nov2014

Appendix C

Time vs. Concentration Graphs

April 2016 Groundwater Monitoring Report
Harnett County Dunn-Erwin Landfill
NC Solid Waste Permit No. 43-02

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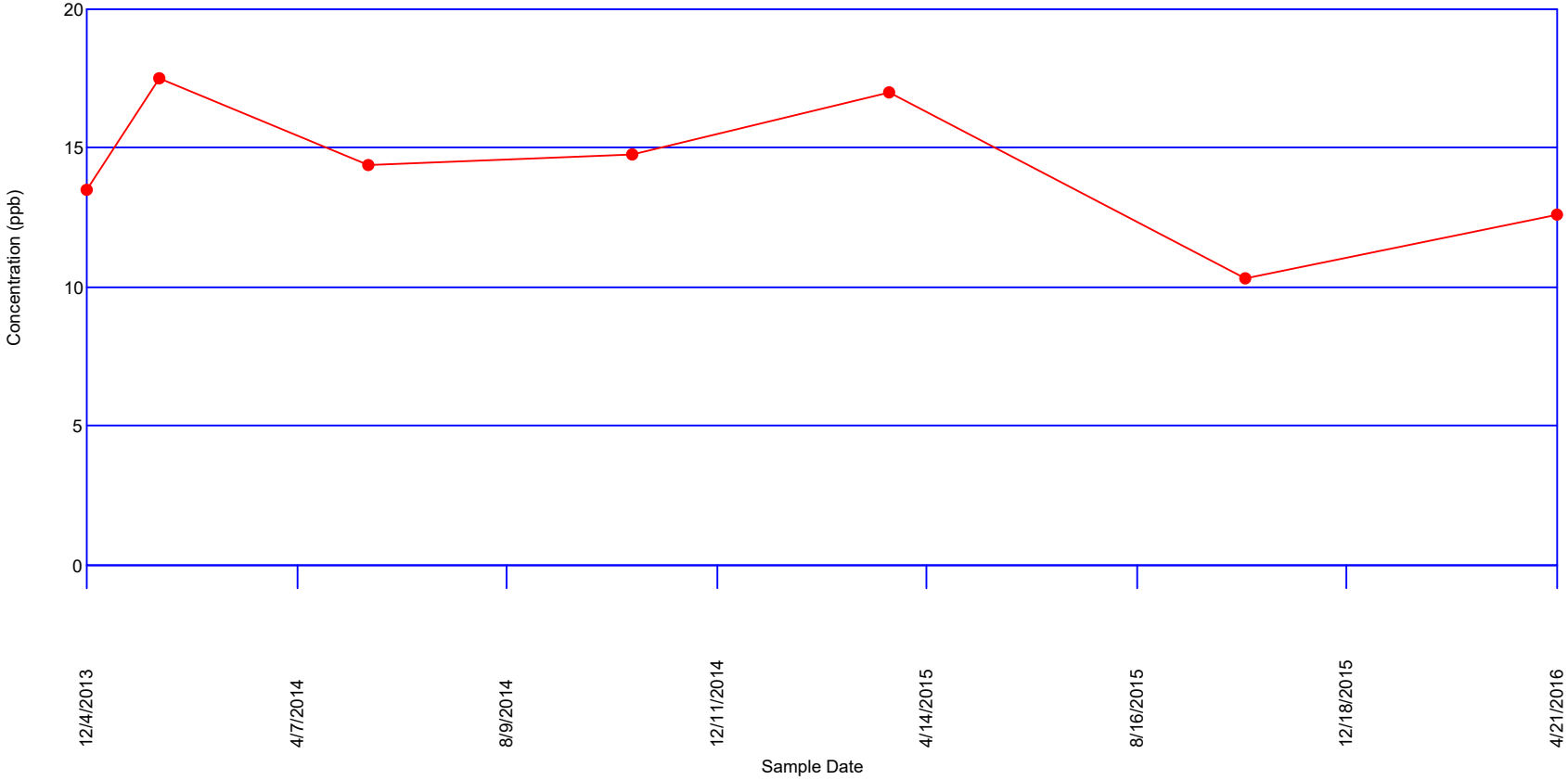
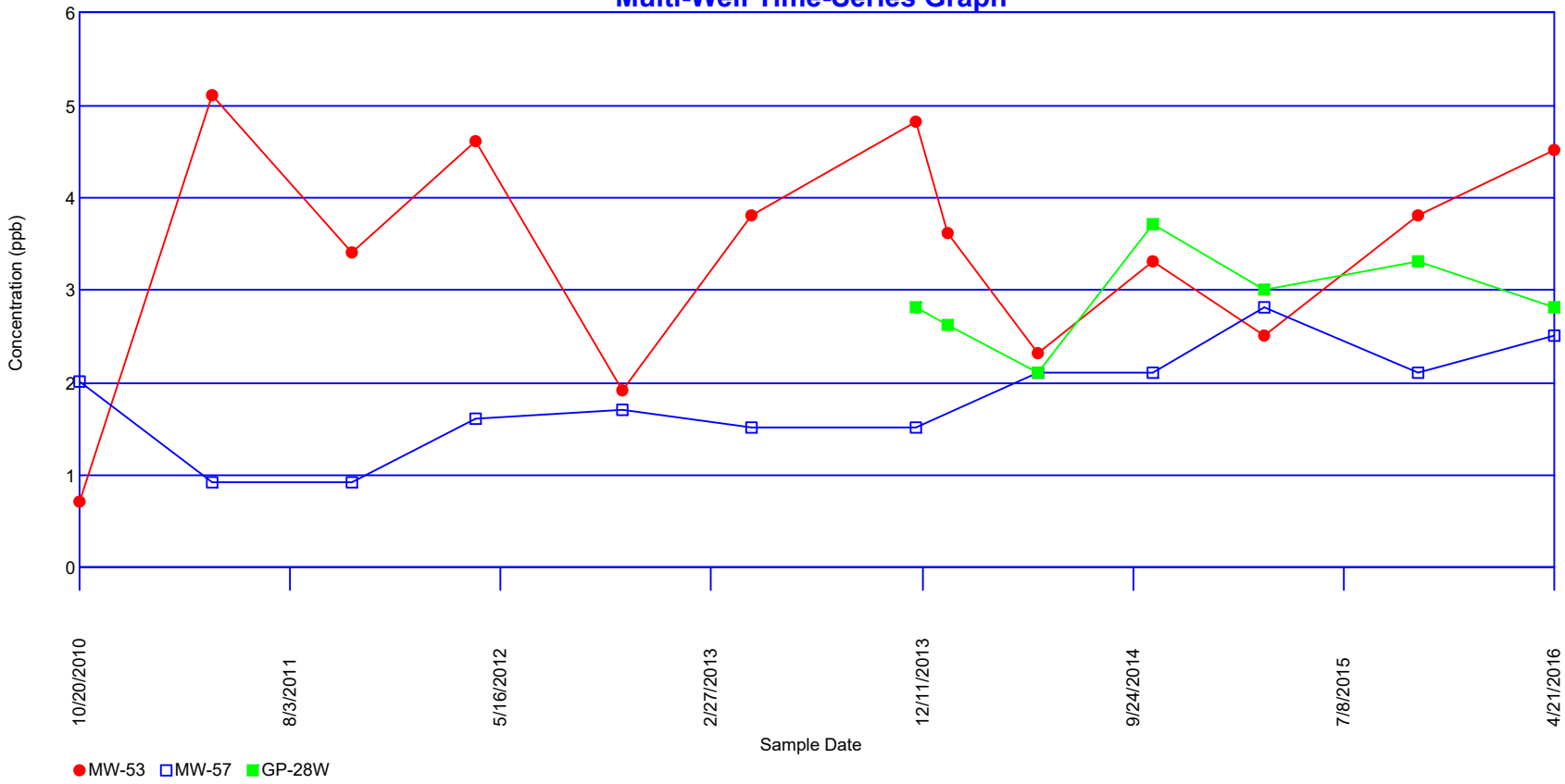
1,1-Dichloroethane

Time-Series Graph of GP-28W



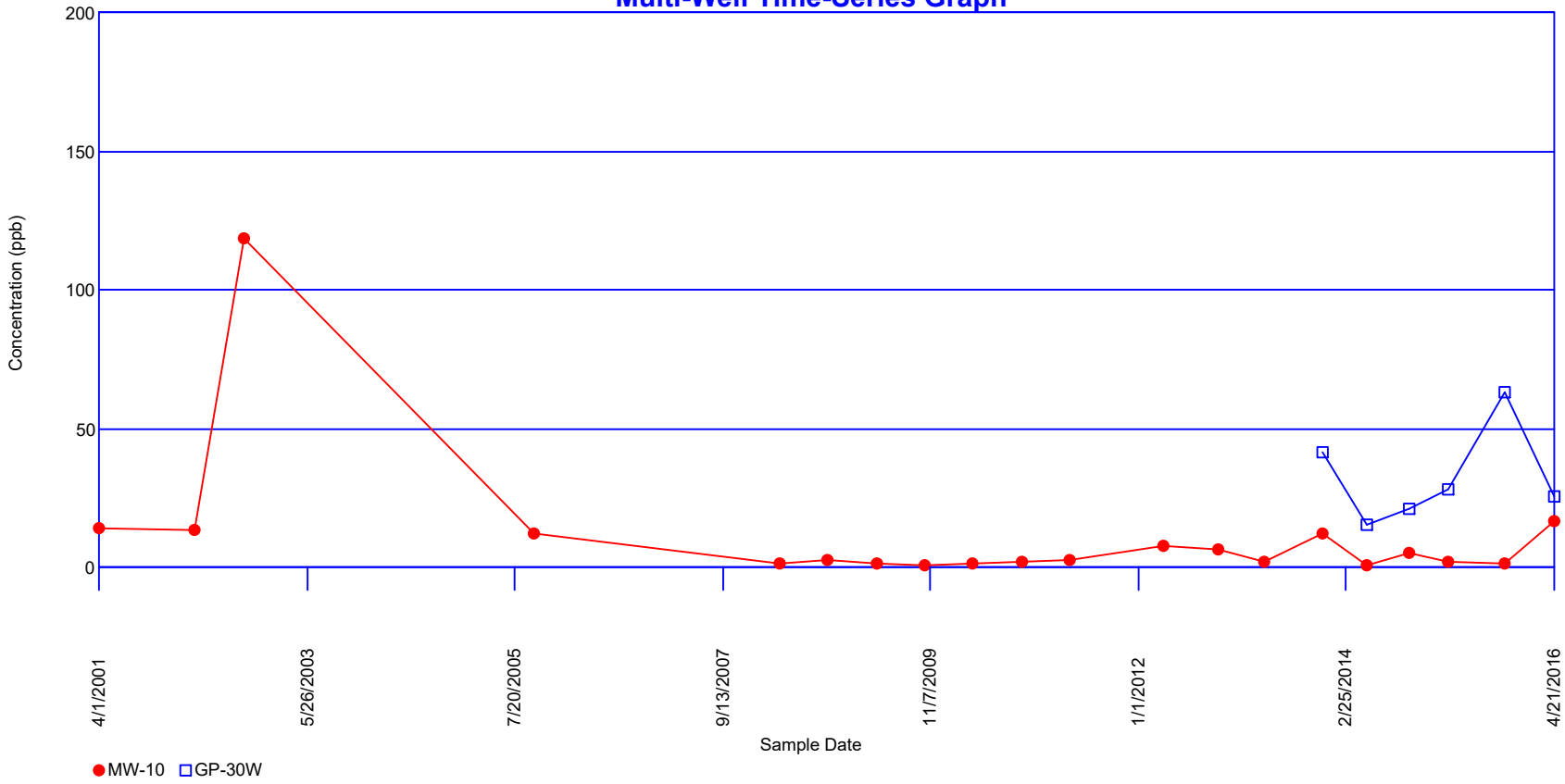
Benzene

Multi-Well Time-Series Graph



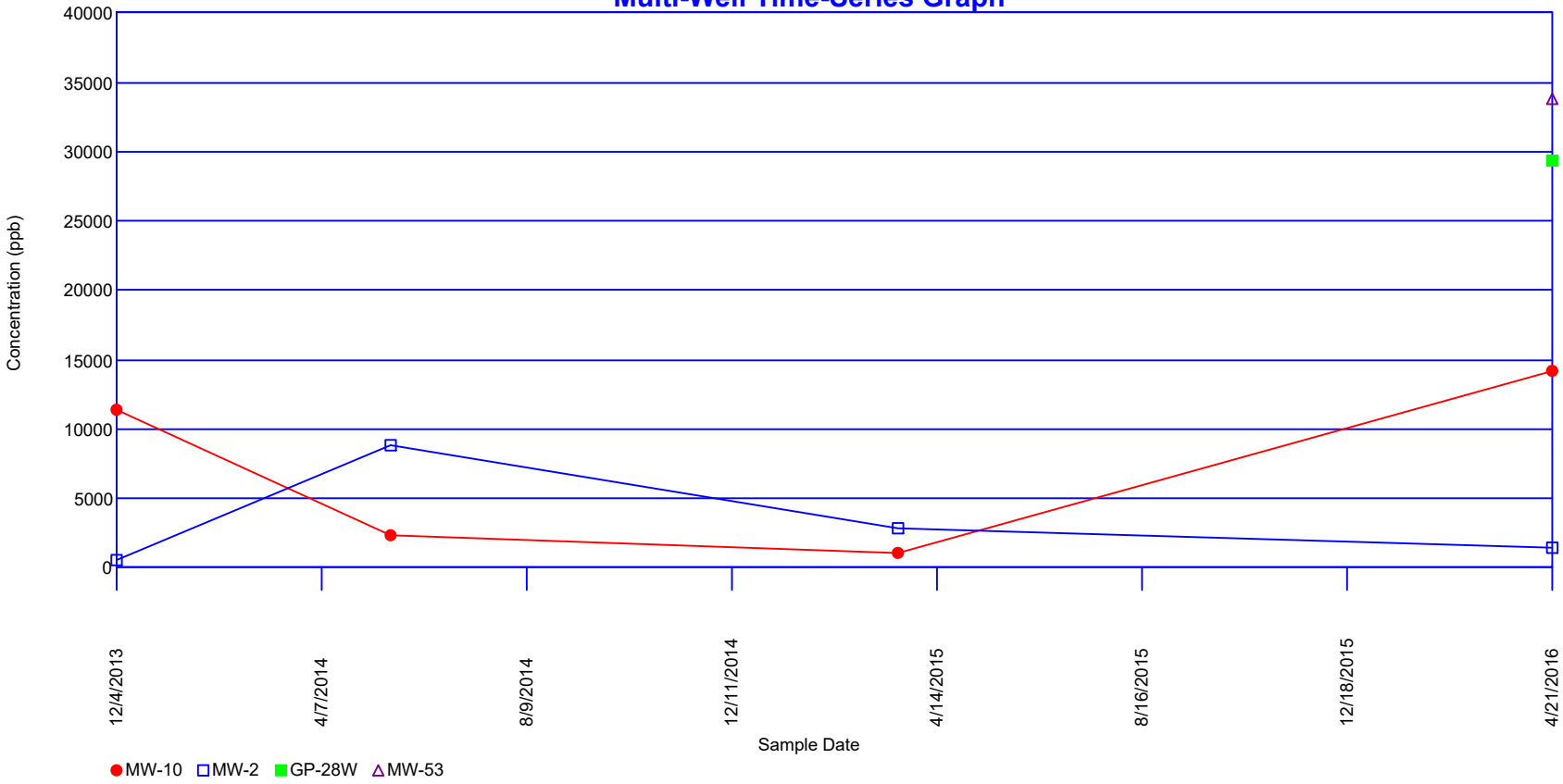
Chromium, total

Multi-Well Time-Series Graph



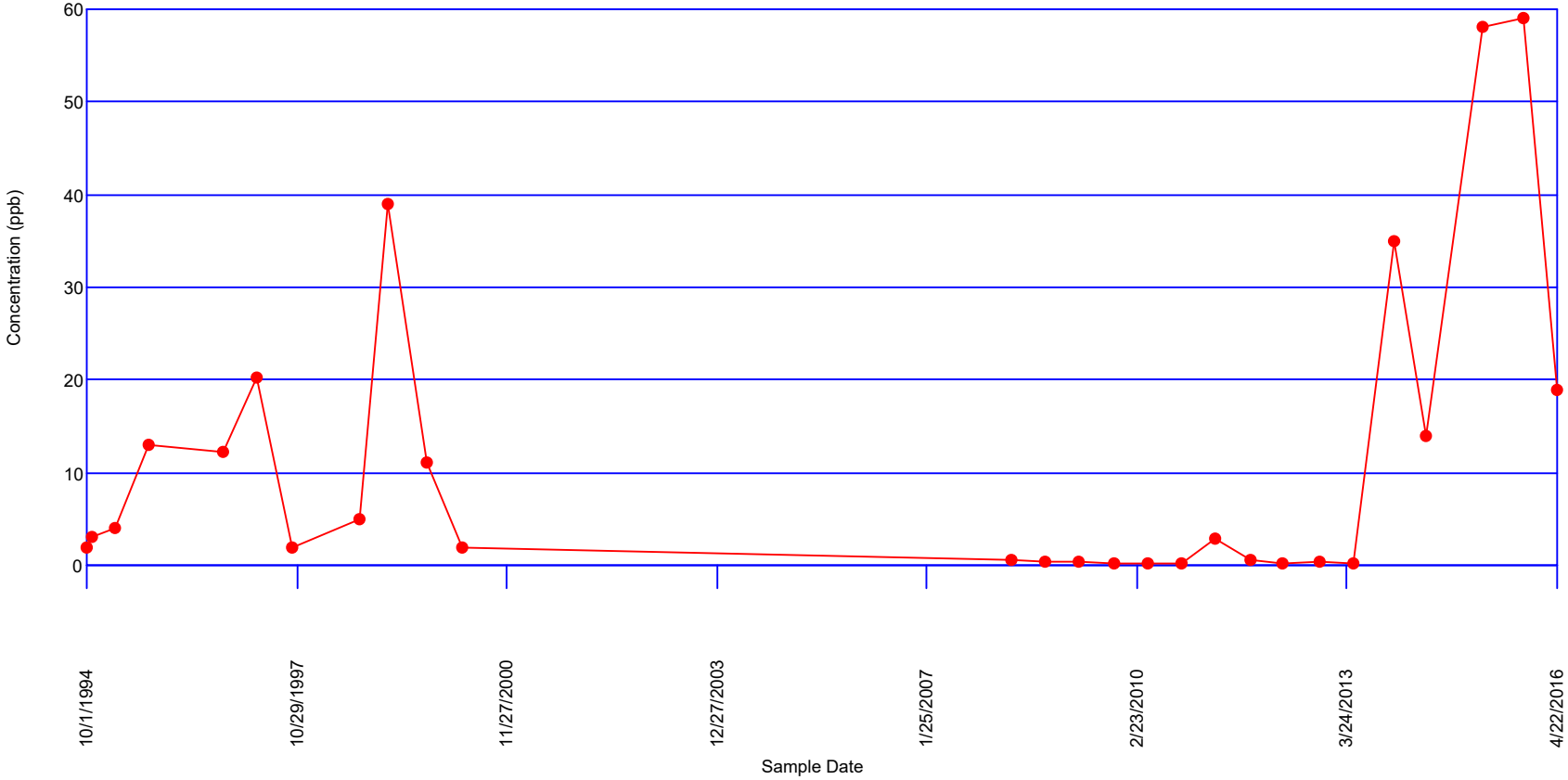
Iron, total

Multi-Well Time-Series Graph



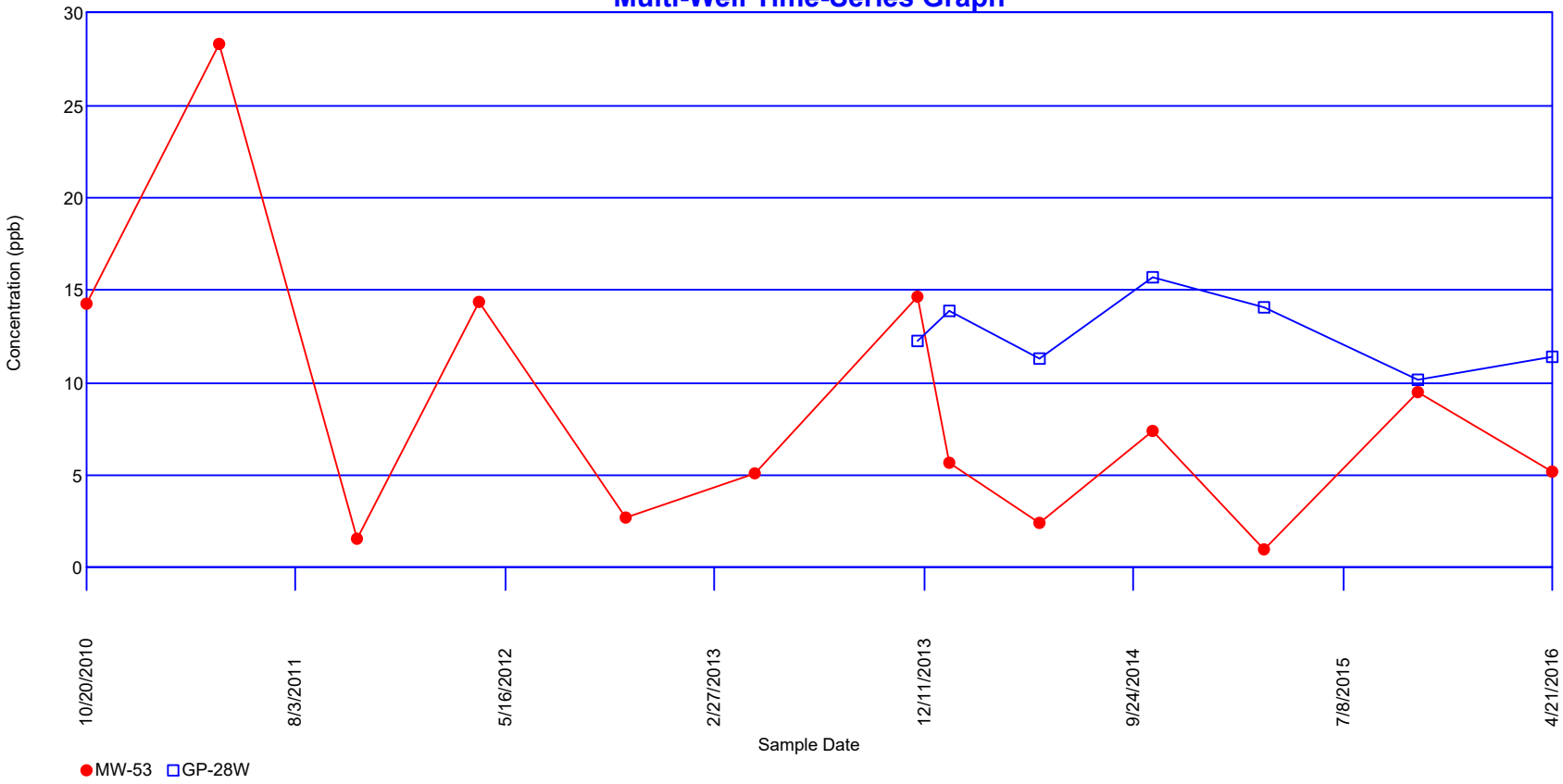
Lead, total

Time-Series Graph of MW-16



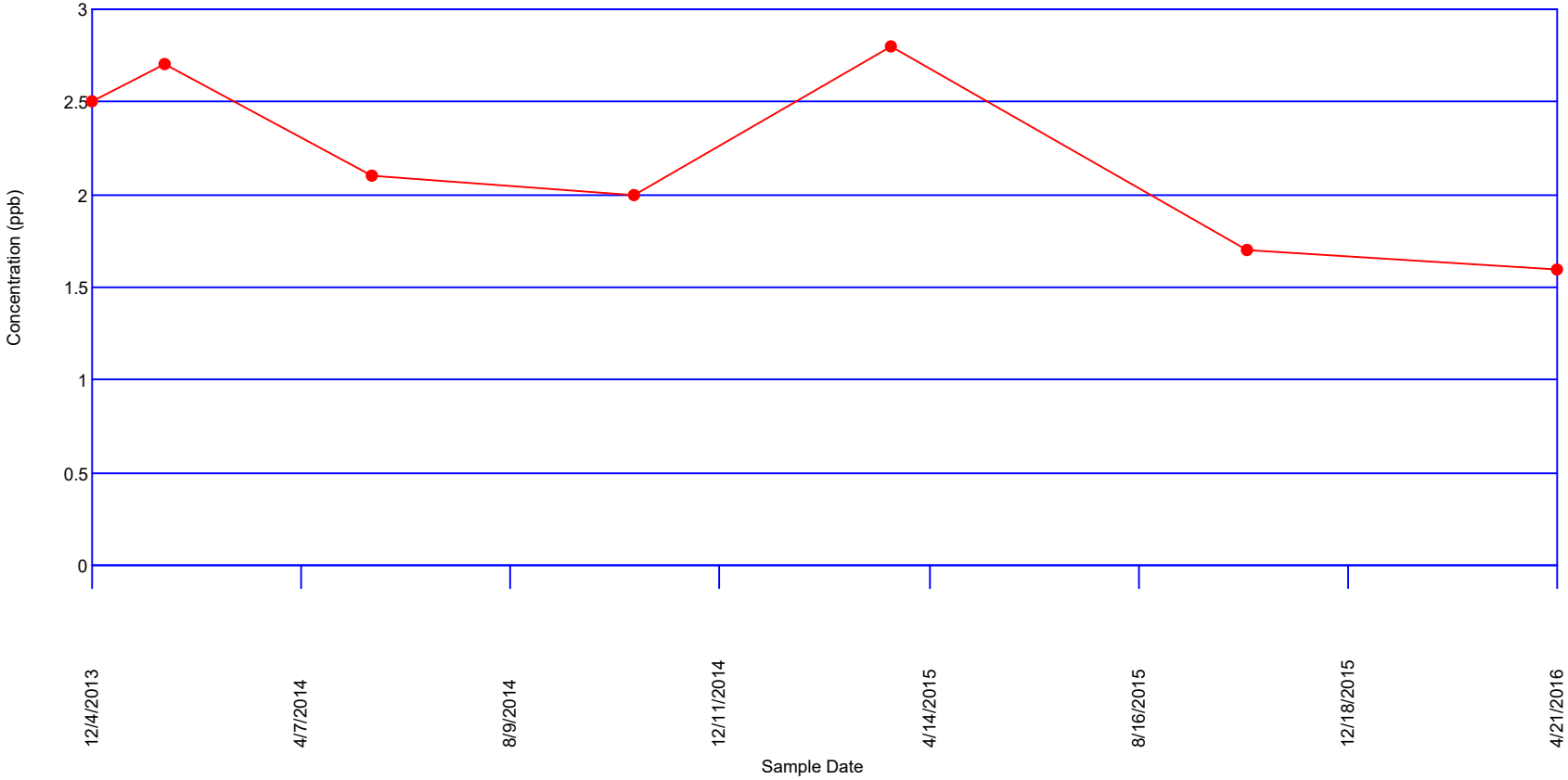
Dichloromethane (Methylene chloride)

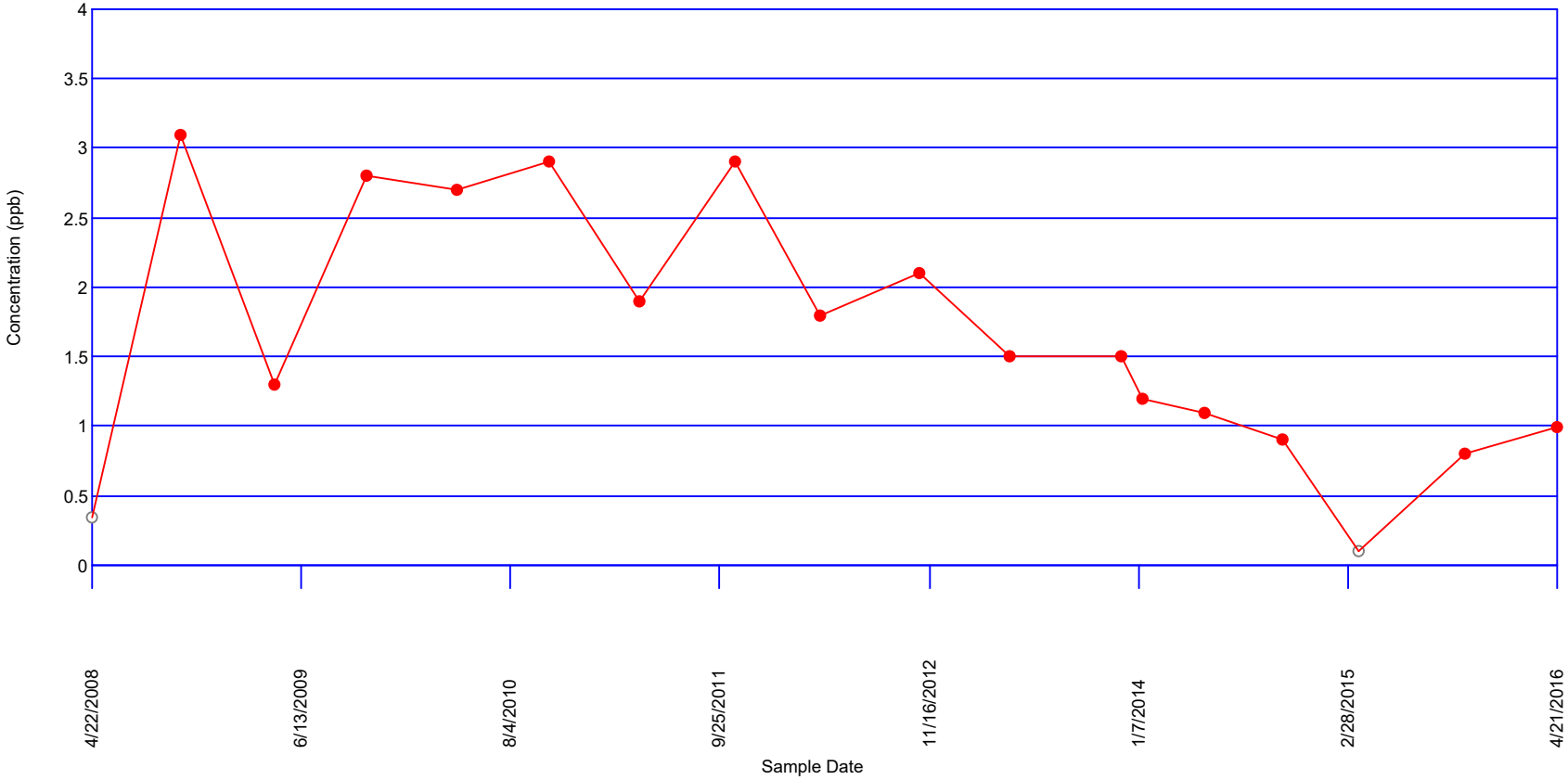
Multi-Well Time-Series Graph



Tetrachloroethene (-ethylene)

Time-Series Graph of GP-28W



Vinyl chloride

Time-Series Graph of PZ-41S