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):

Municipal Engineering Services Co., PA

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

Name: Jonathan Pfohl Phone: (919)772-5393

E-mail: jpfohl@mesco.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Lenoir County Active C&D Landfill and Closed Unlined MSWLF	2949 Hodges Farm Road LaGrange, NC 28501	54-03	.1600	January 7, 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 Analysis For 7 Wells per CAP
☐ 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

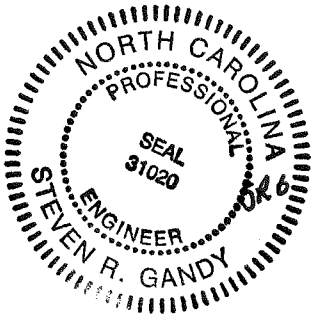
To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis 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.

Steven R. Gandy, Ph.D., P.E. | Senior Project Manager | (919) 772-5393

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

Affix NC Licensed/ Professional Geologist Seal

Signature | Date: 5/31/16



P.O. Box 97, Garner, NC 27529

Facility Representative Address

C-0281

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

Revised 6/2009

Semi-Annual Water Quality Monitoring Report with Corrective Action Update

Prepared for

Lenoir County Active C&D and Closed MSWLF
LaGrange, North Carolina

January 2016

Permit Number: 54-03
MESCO Project Number: G15015.0

P.O. Box 97
Garner, NC 27529
License No. C-0281

Municipal Engineering Services Company, P.A.
Garner and Boone, North Carolina

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SOLID WASTE MANAGEMENT
Municipal Services
Engineering Company, P.A.
SITE PLANNING/SUBDIVISIONS
SUBSURFACE UTILITY ENGINEERING (SUE)

May 31, 2016

Ms. Jaclynne Drummond
Solid Waste Section (SWS)
NC Department of Environmental Quality (NCDEQ)
2090 US Highway 70
Swannanoa, NC 28778

Subject: **Semi-Annual Water Quality Monitoring Report with Corrective Action Update**
Lenoir County Active C&D and Closed MSWLF
Permit No. 54-03
MESCO Project No. G15015.0
Event Date: January 7, 2016

Dear Ms. Drummond:

Introduction

On behalf of Lenoir County, Municipal Engineering Services Company, P.A. (MESCO) is pleased to present this *Semi-Annual Water Quality Monitoring Report with Corrective Action Update* for the winter 2016 event performed at the Lenoir County active construction and demolition (C&D) and closed municipal solid waste landfill (MSWLF). NCDENR Solid Waste Rule 15A NCAC 13B.1632 requires that Lenoir County provide this report to the NC Solid Waste Section (SWS) on a semi-annual basis. This report documents the quality of the ground and surface waters during this monitoring event performed on January 7, 2016. Laboratory analytical results indicate that the only constituent detected above applicable regulatory Standards was total mercury in MW-9. Corrective action via monitored natural attenuation (MNA) continues to be implemented with updated information presented herein.

Background

The Lenoir County Active Construction and Demolition (C&D) Landfill and Closed Unlined Sanitary Municipal Solid Waste Landfill (MSWLF) is located on Hodges Farm Road (SR 1524), La Grange, Lenoir County, North Carolina and operates under permit #54-03. Prior to operation as a C&D landfill, the site operated as an unlined MSWLF. Part of the southern portion of the MSWLF ceased receiving waste prior to October 1994 and was closed with a 24 inch soil cover. The remainder of the MSWLF closed prior to October 1998, with an 18-inch cohesive soil cap having a permeability of 1 x 10-5 cm/sec, and 18 inches of erosive layer, as part of the *Lenoir County Transition Plan.* The C&D landfill operates on top of the capped MSWLF, and both units are monitored together. Lenoir County's Subtitle D MSWLF, located on a contiguous property to the southeast is currently monitored separately under permit 54-09. A topographic map showing the facility location is included as **Figure 1**.

Water quality has been monitored at this facility on at least a semi-annual basis since 1994 and any data comparisons were made to all historical data believed to be reported. Municipal Engineering Services Company, P.A. (MESCO) submitted an *Assessment and Corrective Action* (*ACM*) report dated August 30, 2007. MESCO then developed a *Corrective Action Plan* (*CAP*) (DIN6843) on February 13, 2009. In response to improved water quality and changing geochemical conditions, the CAP was revised on April 30, 2009 *(CAP-Rev. 1) (*DIN 8710). Groundwater remediation using monitored natural attenuation (MNA) was initiated on July 29, 2009 and has continued on a semi-annual basis.

(*CAER*) (DIN 13653) on April 12, 2011. Although the *CAER* demonstrated that water quality conditions have improved and there is adequate evidence that groundwater natural attenuation is occurring, the SWS *CAER* review response (DIN 15524) dated November 22, 2011 denied the proposed discontinuation of corrective action. The *Groundwater and Surface Water Sampling & Analysis Plan* (*SAP*) Revision 2 (*SAP-Rev.2*) (DIN 16358) was submitted by MESCO on March 23, 2012 at the request of the SWS. The SWS requested *SAP-Rev.2* specifies full Appendix II monitoring of all groundwater samples once every five years which was performed on June 25, 2012 and continuation of annual Appendix II monitoring of MW-3 which was performed during the previous July 2015 event. Groundwater remediation through MNA is required to continue until the SWS authorizes a change.

As specified within rule 15A NCAC 13B.1632(i) and the SWS Environmental Monitoring Report Form, this report contains sampling procedures, field and laboratory results, corrective action update, groundwater and surface water characterization, and findings. Detections compared to Standards tables, hydrogeologic properties table, MNA parameters table, histograms of historical detections, potentiometric map, field parameters, laboratory analytical reports with quality assurance/quality control data and chains-of-custody (C-O-C) are also included in this report.

Sampling Procedures

Environment 1 (E1) of Greenville, NC, reportedly performed this monitoring event in accordance with the semi-annual monitoring schedule prescribed by the NC Solid Waste Section (SWS) rules/regulations as promulgated in 15A NCAC 13B.1600. E1 personnel reportedly conducted the sampling utilizing portable monitoring methodology in accordance with the approved Sampling & Analysis Plan (SAP) contained in the *CAP-Rev. 1*. Water and dissolved gas samples were collected from six downgradient groundwater monitoring wells (MW-3, MW-4, MW-6, MW-9, MW-11, MW-12), and the hydraulically upgradient background well (MW-1). Surface water samples were reportedly collected from SW-3 located upstream and SW-1 downstream of the facility. Quality control measures included submittal and analysis of an equipment blank (EB), field blank (FB) and travel blank (TB). Monitoring locations are shown in **Figure 2**.

A summary detailing the construction of the water monitoring wells is presented on **Table 1.** Static water levels in each well were measured electronically prior to purging. Additional static water level readings were recorded from two supplementary monitoring wells (MW-8 and MW-10) to improve potentiometric contouring. E1 documentation indicates samples were transported under C-O-C protocols and analyzed within the specified hold times for each method.

Field Parameter Data

E1 quantified the field parameters static water depth, pH, specific conductivity, temperature, turbidity, oxidation reduction potential (ORP) and dissolved oxygen (DO), which is presented in the laboratory analysis report in **Appendix A**.

Laboratory Results

E1 reportedly analyzed all of the water samples for at least the constituents listed in Appendix I of 40 CFR 258 and total mercury (an Appendix II constituent). Additionally, all groundwater samples were analyzed for the MNA performance parameter list specified by SWS. Microseeps Inc. of Pittsburgh, PA performed analysis for the MNA parameters volatile fatty acids, methane/ethene/ethane, and dissolved hydrogen. A sampling and analysis table summarizing the locations, targeted constituents, and methods is presented on **Table 2**.

Water samples were analyzed to the laboratory-established Method Detection Limits (MDL), which are at or below current Solid Waste Section Limits (SWSL). **Table 3** summarizes constituents detected in groundwater and surface water samples above the current SWSL, Groundwater Protection Standards (GWP), North Carolina Groundwater Standards (2L), the applicable Class C North Carolina Surface Water Standards (2B) or Maximum Contaminant Levels (MCL) also known as "Federal Primary Drinking Water Standards". **Table 4** summarizes all Appendix II detections (defined in this report as not also listed in Appendix I) above the MDL.

Quality Control Samples

Five out of fifteen total metals were detected in low "j-qualified" concentrations in the quality control blanks (EB and FB). Although the field and/or laboratory induced artifact contamination was identified it is unlikely the data set for the landfill has been influenced by false positives or high bias.

Groundwater Samples

Total mercury was detected in sample MW-9 at 1.2 µg/L which is above the applicable NC Groundwater compliance Standard (1.0 µg/L) but below the Federal Primary Drinking Water Standard (2.0 µg/L).

Surface Water Samples

No contaminants were detected above the MDL in either of the surface water samples collected upstream or downstream of the facility.

Groundwater Characterization

A single-day potentiometric map of the surficial aquifer was created using groundwater elevation data reported during this event (**Figure 2).** Flow direction trends in a general northeasterly direction towards Falling Creek. Groundwater flow rates via modified Darcy's equation ranged from approximately 6 ft/yr in MW-3 to 133 ft/yr in MW-11 and averaged 45 ft/yr. Groundwater flow rates and directions are included in **Table 5.** Flow directions and gradients are generally consistent with historical observations.

Corrective Action Update

Groundwater remediation measures using MNA per *CAP-Rev. 1* continue to be implemented at the facility. Semi-annual MNA monitoring of seven wells was initiated on July 29, 2009 and has consistently been performed for the full suite of SWS recommended parameters for eleven consecutive semi-annual events. The most recent MNA data is presented in **Table 6.** Since VOCs were not detected MNA screening models were not generated for this event.

Findings

Mercury was detected in sample MW-9 in excess of it's respective 2L Standard but within it's own historically identified range (**Figure 3**). We recommend and have requested that E1 test MW-9 for both total and dissolved mercury during the summer of 2016 event to determine if dissolved (mobile) mercury levels are elevated. Additionally, we have requested that during the next event that E1 also test surface water point SW-1 for mercury to determine it's levels downstream of MW-9.

Contamination is not suspected to have migrated beyond the compliance boundary and natural attenuation of the low level contaminants appears to be occurring; therefore, the contingency remediation techniques outlined in the *CAP* are not planned to be initiated at this time.

Closing

Water quality monitoring and corrective action is planned to continue with the next event scheduled for June 2016. Please contact us with any questions by phone at (919) 772-5393 or by email at jpfohl@mesco.com.

Sincerely,
MUNICIPAL ENGINEERING SERVICES CO., P.A.

Jonathan Pfohl
Environmental Specialist

Steven R. Gandy, Ph.D, P.E.
Senior Project Manager

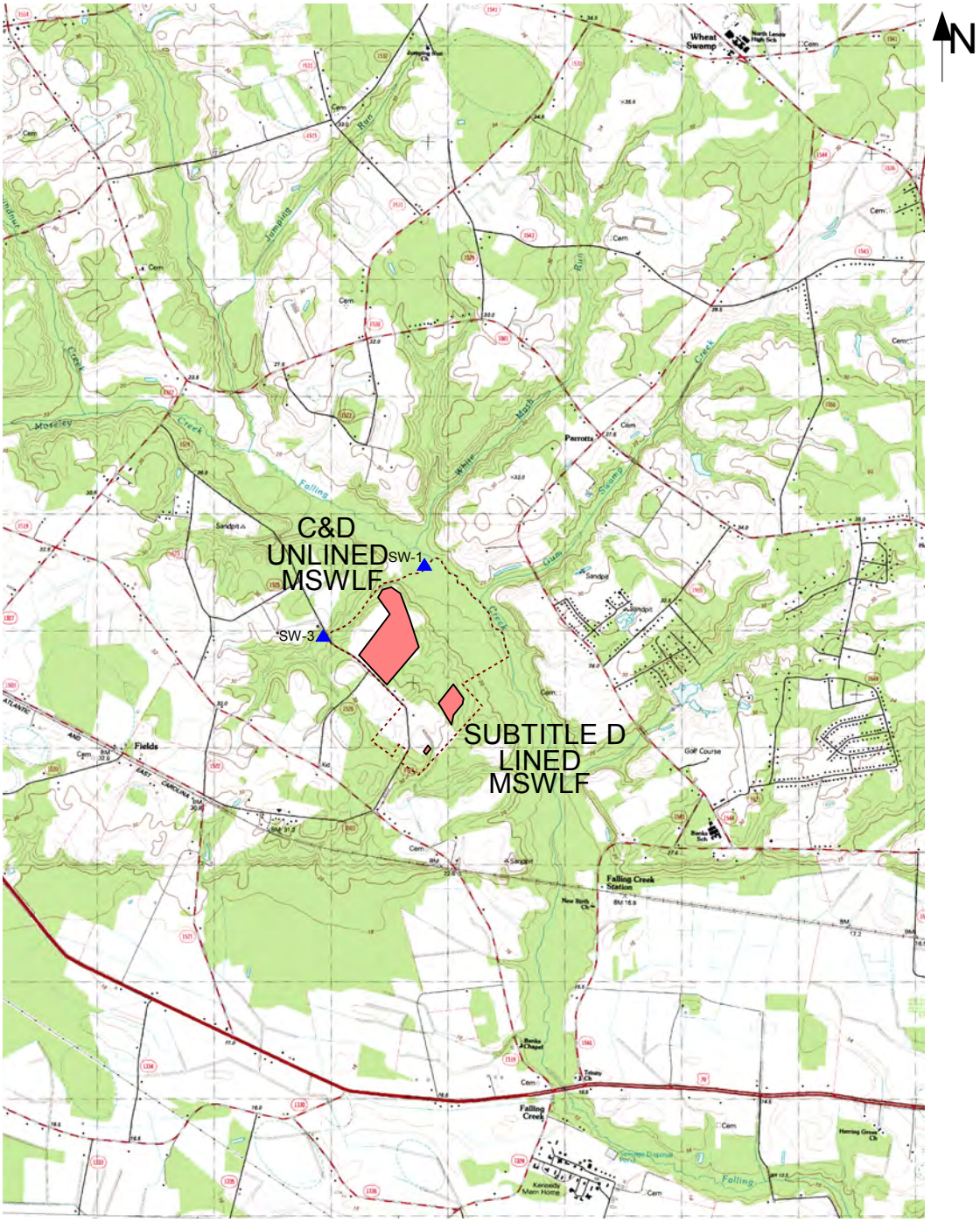
Enclosures

cc: Mr. Tom Miller
Lenoir County

Ms. Christine Ritter
NC SWS

Figures

Topographic Map with Site Location
Lenoir County Landfill Facility



2949 Hodges Farm Rd (SR1524)
LaGrange, NC 28501
Lat:35-17-07.4269
Long:-77-42-32.7453
Northing:561295.59
Easting:2385220.32

QUADRANGLE LEGEND

ROAD CLASSIFICATION

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U. S. Route
State Route

FIGURE 1

SW-3
(Upstream)

SW-1
(Downstream)

DENSE TREES

DENSE TREES

HODGES FARM ROAD (S.R. 1524)

TRANSFER STATION

WHITE GOODS PAD

OFFICES

FUEL

MAINT. SHOP

SCALES

MAIL

ESTIMATED EXTENT OF WASTE

MW-6
78.26

MW-11
67.09

MW-10
63.95

MW-12
63.16

MW-8

MW-9
57.30

MW-9
Mercury - 1.2 ug/l

MW-3
59.23

MW-4
64.00

MW-1
84.59

WASTE FILLED PRIOR TO 1991

CLOSED MSW LANDFILL
COHESIVE CAPPED IN 1998

ACTIVE C&D AREA

WASTE FILLED PRIOR TO OCT. 9, 1994

58 60 62 64 66 68 70 72 74 76 78 80 82 84

LEGEND

- EXISTING TOPOGRAPHIC CONTOURS (250)
- EXISITING ROAD/PATH
- EXISTING PROPERTY LINE
- CLOSED MSWLF, ESTIMATED EXTENT OF WASTE
- GENERAL UPPERMOST GROUNDWATER DIRECTION
- 66 — POTENTIOMETRIC GROUNDWATER CONTOUR
- MW-9 56.23 — MONITORING WELL
- P — GAS PASSIVE EXTRACTION WELL
- GENERAL UPPERMOST GROUNDWATER FLOW DIRECTION

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

Groundwater Levels and Detections Above 2L Standards
January 7, 2016

WELL #	TOP OF CASING ELEVATION (FT AMSL)	DEPTH TO WATER (FT BTOC)	GROUNDWATER POTENTIOMETRIC ELEVATION (FT AMSL)	MERCURY (UG/L)
15A NCAC 2L Groundwater Quality Standard				1.0
MW-1	98.34	13.75	84.59	
MW-3	63.87	4.64	59.23	
MW-4	68.03	4.03	64.00	
MW-6	85.56	7.30	78.26	
MW-8	88.29	22.68*	65.61*	NS
MW-9	62.40	5.10	57.30	1.2
MW-10	87.15	23.20	63.95	NS
MW-11	78.26	11.17	67.09	
MW-12	77.46	14.30	63.16	

NS = Not Sampled
* = Believed to be inaccurate due to error in water depth measurement

FIGURE 2

Municipal Engineering Services Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
LICENSE NUMBER: C-0281

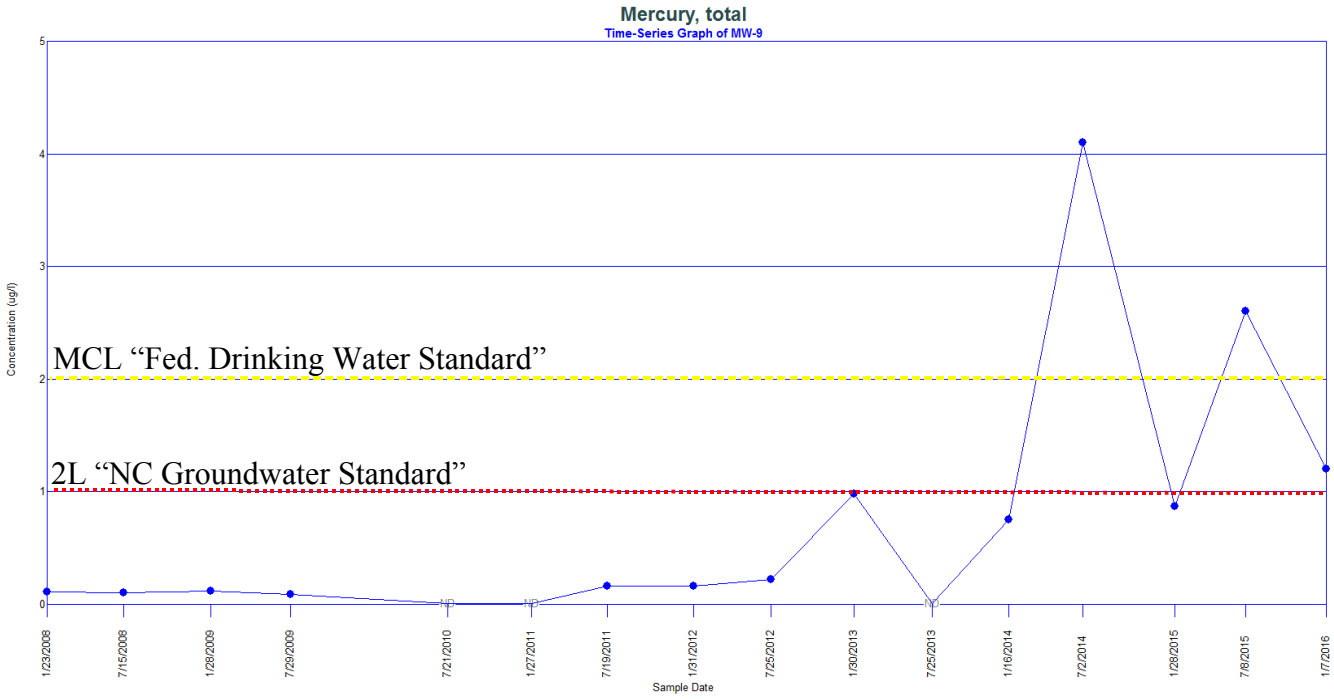
ACTIVE C&D LANDFILL and CLOSED MSW LANDFILL
LENOIR COUNTY
NORTH CAROLINA

POTENTIOMETRIC MAP OF UPPERMOST AQUIFER w/ DETECTIONS ABOVE 2L STANDARDS

DESCRIPTION	REV.	BY	DATE

SCALE: SEE BAR SCALE
DATE: 3/9/2016
DRWN. BY: R. MOSS
CHKD. BY: S. GANDY
PROJECT NUMBER: G15015.0
DRAWING NO.: FIGURE 2
SHEET NO.: 1 OF 1

Figure 3
Time-Series Graph of Mercury at MW-9
January 23, 2008- January 7, 2016



ND Represented by ½ Detection Limit

Tables

Table 1
Groundwater Monitoring Well Construction Table
January 7, 2016

Monitoring Well	Date Installed	Well Diameter	Total Well Depth	Top of Screen Depth	Screen Length	Geology of Screened Interval	Top of Casing Elevation	Ground Elevation	Groundwater Elevation	Depth to Water	Latitude	Longitude
		(inches)	(ft bgs)	(ft bgs)	(ft)		(ft amsl)	(ft amsl)	(ft amsl)	(ft btoc)		
MW-1	10/7/80	2	40	na	na	Silty Sand	98.34	na	84.59	13.75	N35° 17' 29.98"	W77° 42' 37.63"
MW-3	9/26/91	2	12	2	10	Silty Sand	63.87	60.71	59.23	4.64	N35° 17' 51.39"	W77° 42' 25.53"
MW-4	9/25/91	2	15	5	10	Silty Sand	68.03	65.86	64.00	4.03	N35° 17' 44.60"	W77° 42' 23.26"
MW-6	5/27/92	2	17	7	10	Silty Sand	85.56	84.93	78.26	7.30	N35° 17' 38.82"	W77° 42' 48.13"
MW-8	8/24/94	2	31.5	16.5	15	Silt	88.29	85.39	65.61	22.68	N35° 17' 47.26"	W77° 42' 38.63"
MW-9	8/25/94	2	19.8	4.8	15	Sandy Clay	62.40	56.55	57.30	5.10	N35° 17' 59.03"	W77° 42' 32.15"
MW-10	8/24/94	2	31.5	16.5	15	Sandy Silt	87.15	84.04	73.95	13.20	N35° 17' 49.91"	W77° 42' 35.62"
MW-11	3/31/99	2	36	26	10	Sand	78.26	75.36	67.09	11.17	N35° 17' 48.26"	W77° 42' 39.65"
MW-12	3/31/99	2	35	25	10	Sand	77.46	74.65	63.16	14.30	N35° 17' 52.37"	W77° 42' 35.08"

NOTE:
bgs = below ground surface
amsl= above mean sea level
btoc = below top of casing (PVC well casing)
na = not available. Not shown on well construction record or boring log

Table 2
Sampling and Analysis Summary
January 7, 2016

	App. I		App. II		MNA														Field Parameter						
	VOCs	Metals, Total	VOCs	Total Mercury	VFA	Hydrogen	Methane/Ethene/Ethane	Dissolved CO2	Alkalinity	Sulfate	Sulfide	Chloride	TOC	COD	BOD	Iron, total	Iron, Ferrous	Nitrate	Dissolved Oxygen (DO)	Oxidation Reduction Potential (ORP)	Static Depth to Water	Temperature	Conductivity	pH	Turbidity
	Lab EPA 8260B	Lab EPA200.8	Lab EPA 8260B	Lab 245.1	AM23G	AM20GAX	AM20GAX	SM4500CO2C	2320B-97	4500SO42E97	4500S2D-00	4500CLB-97	5310C-00	H8000-79	5210B-01	EPA200.7	3500FEB-97	353.2 R2-93	SM4500OG	SM2580B		SM2550B	SM2510B	SM4500HB	SM2130-B
MW-1	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-3	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-4	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-6	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-8	Exempt from water quality sampling only water level elevation required																				x				
MW-9	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-10	Exempt from water quality sampling only water level elevation required																				x				
MW-11	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-12	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
SW-1	x	x																	x	x		x	x	x	x
SW-3	x	x																	x	x		x	x	x	x
EB		x	x	x																					
FB		x	x																						
TB			x																						

App I & II= Appendix Lists from current 40 CFR 258

Table 3
Detections Above Established SWSL, GWP, 2L, 2B or MCL (Appendix I)
January 7, 2016

Sample ID	Parameter Name [1]	Sample Date	Result	Unit	MDL [2]	SWSL [3]	2L [4]	2B [5]	GWP [6]	MCL [7]	Preliminary Cause [8]
MW-1	Barium, total	1/07/16	179	ug/L	0.01	100	700			1300	
MW-1	Zinc, total	1/07/16	29	ug/L	0.2	10	1000			5000	
MW-3	Zinc, total	1/07/16	27	ug/L	0.2	10	1000			5000	
MW-6	Zinc, total	1/07/16	14	ug/L	0.2	10	1000			5000	
MW-9	Zinc, total	1/07/16	31	ug/L	0.2	10	1000			5000	
MW-9	Barium, total	1/07/16	212	ug/L	0.01	100	700			1300	
MW-11	Zinc, total	1/07/16	10	ug/L	0.2	10	1000			5000	
MW-12	Barium, total	1/07/16	121	ug/L	0.01	100	700			1300	

1 Table contains constituents detected at or above SWSL, 2L, 2B, GWP or MCL

[2] MDL = Method Detection Limit

[3] SWSL = Solid Waste Section Reporting Limit

[4] 2L = North Carolina 15A NCAC 2L Groundwater Quality Standard

[5] 2B = North Carolina 15 NCAC 2B Surface Water Quality Standard for this Specific Stream Classification

[6] GWP = Groundwater Protection Standard

[7] MCL = Primary Drinking Water Standard (not currently applicable for regulatory comparisons)

[8] Preliminary Cause = Refers to a preliminary analysis of the cause and/or source of a detection over the respective 2L/2B Standard.
A definitive source of the detection was not determined as part of this report. Preliminary cause only listed pursuant to instructions

BOLD = Concentration > 2L, 2B, GWP or MCL Standard

Table 4
Detections Above MDL (Appendix II Exclusive)
January 7, 2016

Sample ID	Parameter Name [1]	Sample Date	Result	Unit	MDL [2]	SWSL [3]	2L [4]	GWP [5]	MCL [6]	Preliminary Cause [7]
MW-9	Mercury, total	1/7/16	1.2	ug/l	0.05	0.2	**1**		2	
MW-11	Mercury, total	1/7/16	0.74	ug/l	0.05	0.2	1		2	

[1] Table contains detected App II exclusive constituents (Not also included on App I list)

[2] MDL = Method Detection Limit

[3] SWSL = Solid Waste Section Reporting Limit

[4] 2L = North Carolina 15A NCAC 2L Groundwater Quality Standard

[5] GWP = Groundwater Protection Standard

[6] MCL = Primary Drinking Water Standard (not currently applicable for regulatory comparisons)

[7] Preliminary Cause = Refers to a preliminary analysis of the cause and/or source of a detection over the respective 2L/2B Standard.
A definitive source of the detection was not determined as part of this report.

BOLD = Concentration >2L, GWP or MCL Standard

Table 5
Hydrologic Properties at Monitoring Well Locations
January 7, 2016

Monitoring Well	Hydraulic Conductivity (cm/sec)	Effective Porosity (%)	Hydraulic Gradient (ft/ft)	Linear Velocity (ft/yr)	Flow Direction	Depth to Groundwater (ft btoc)	Groundwater Potentiometric Elevation (ft amsl)	Screened Interval Lithology
MW-1	4.30E-04	20	0.012	27	N36E	13.75	84.59	Silty Sand
MW-3	1.30E-04	20	0.009	6	N43E	4.64	59.23	Silty Sand
MW-4	5.40E-04	20	0.014	40	N38E	4.03	64.00	Silty Sand
MW-6	-	-	0.014	-	N08E	7.30	78.26	Silty Sand
MW-9	3.80E-04	20	0.005	10	N19E	5.10	57.30	Sandy Clay
MW-11	6.59E-04	20	0.039	133	N24W	11.17	67.09	Sand
MW-12	2.10E-04	20	0.050	55	N11W	14.30	63.16	Sand
Minimum	1.30E-04	20	0.005	6	-	4.03	57.30	-
Average	3.91E-04	20	0.021	45	-	8.61	67.66	-
Maximum	6.59E-04	20	0.050	133	-	14.30	84.59	-

NOTE: 1.Hydraulic conductivity (K) values for MW-1, MW-3, MW-4 and MW-9 were obtained from GAI Consultants (June 1996).
K values for MW-11 and MW-12 were based on slug test results conducted by MESCO in July 1999.
2.Water levels were measured prior to sampling by Environment 1, Inc. on January 7, 2016.
Linear velocity rate (Q) is was calculated via modified Darcy's equation:

where

$$Q = -\frac{K}{n_e} \cdot \frac{dh}{dl}$$

K = hydraulic conductivity
ne = effective porosity
dh = head difference
dl = horizontal distance

Table 6
MNA Parameter Summary
January 7, 2016

Parameters	Method	MDL*	Units	MW-1 1/7/16	MW-3 1/7/16	MW-4 1/7/16	MW-6 1/7/16	MW-9 1/7/16	MW-11 1/7/16	MW-12 1/7/16
VFA – Acetic Acid	AM23G	6	ug/L	16j	22j	32j	15j	31j	40j	62j
VFA – Butyric Acid	AM23G	5	ug/L	<5	<5	9.9j	<5	280	9.3j	8.1j
VFA – Hexanoic Acid	AM23G	10	ug/L	<10	<10	<10	<10	<10	<10	<10
VFA – i-Hexanoic Acid	AM23G	10	ug/L	<10	<10	<10	<10	<10	<10	<10
VFA – i-Pentanoic Acid	AM23G	12	ug/L	<12	<12	<12	<12	<12	<12	<12
VFA – Lactic Acid	AM23G	3	ug/L	14j	76j	14j	11j	12j	6.1j	34j
VFA – Pentaonic Acid	AM23G	6	ug/L	<6	<6	<6	<6	<6	<6	<6
VFA – Propionic Acid	AM23G	1	ug/L	1.5j	1.8j	2.1j	1.5j	2.5j	3j	4.4j
VFA – Pyruvic Acid	AM23G	12	ug/L	<12	<12	<12	<12	<12	<12	<12
Hydrogen	AM20GAX	0.09	nM	3.7	3.1	3.8	1.2	1.3	1.2	3.4
Methane	AM20GAX	0.01	ug/L	230	6.5	1300	1800	410	660	74
Ethene	AM20GAX	0	ug/L	0.02	0.0082j	0.0042j	0.0094j	0.05	0.05	0.05
Ethane	AM20GAX	0	ug/L	0.03	0.0022j	0.0097j	0.08	0.0096j	0.05	0.0094j
CO2-Dissolved	4500CO2C	1000	ug/L	20000	22000	75000	85000	57000	8000	55000
Alkalinity	2320B-97	1000	ug/L	<1000	7000	19000	91000	<1000	<1000	2000
Sulfate	4500SO42E97	5000	ug/L	6500j	6300j	8400j	21900j	15700j	7000j	32600j
Sulfide	4500S2D-00	100	ug/L	<100	<100	106j	<100	<100	<100	<100
Chloride	4500CLB-97	5000	ug/L	13000	<5000	<5000	<5000	48000	8000	44000
TOC	5310C-00	85	ug/L	<85	1270	7280	2580	3080	<85	18800
COD	H8000-79	20000	ug/L	<20000	<20000	26000	<20000	<20000	<20000	50000
BOD	5210B-01	2000	ug/L	<2000	<2000	<2000	3500	<2000	<2000	<2000
Iron, total	3111B-99	8.64	ug/L	121j	10637	13661	19526	449	26j	120j
Iron, Ferrous	3500F5403-EB-97	50	ug/L	<50	<50	8300	16620	<50	<50	<50
Nitrate	353.2 R2-93	40	ug/L	13960	130j	<40	<40	4660j	1640j	<40
Temperature	2550B-00	0	C	16	13	14	15	16	15	16
ORP	2580B	-999	mV	89	121	101	55	119	96	89
DO	4500OG-01	100	ug/L	2220	2560	1870	1420	1290	4310	2390
pH	4500HB-00	0	SU	4.3	5.5	5.5	6.1	4.4	4.8	4.6
Specific Conductance	2510B-97	1	uMhos	194	50	105	276	62	280	280
Turbidity	2130B-01	1	NTU	2.48	61.8	17.3	6.77	4.44	<1	<1

Notes:

VFA = Volatile Fatty Acids

MDL* = Lowest Method Detection Limit for Lab Parameters or Lowest Field Measurement Possible

Constituents Below Quantization Limit are shown as <MDL value

j = The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL),

Adjusted for actual sample preparation data and moisture content, where applicable.

Appendix A
Laboratory Analysis Report
Field Analysis Report
Chains of Custody

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#: 6009

LENOIR CO. LANDFILL (OLD)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON ,NC 28502

DATE COLLECTED: 01/07/16
DATE REPORTED : 02/10/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-1	MW-3	MW-4	MW-6	MW-8	Analysis Date	Analyst	Method Code
PH (field measurement), Units			4.3	5.5	5.5	6.1		01/07/16	BF	4500HB-00
BOD, mg/l	2.0	2.0	--- U	--- U	--- U	3.5		01/08/16	CMC	5210B-01
COD, mg/l	20.0	20.0	--- U	--- U	26	--- U		01/12/16	SEJ	H8000-79
Nitrate Nitrogen as N, mg/l	0.04	10.0	13.96	0.13 J	--- U	--- U		01/13/16	AKS	353.2 R2-9
Total Organic Carbon, mg/l	0.085	1.0	--- U	1.27	7.28	2.58		01/11/16	SEJ	5310C-00
Alkalinity (to pH 4.5), mg CaCO3/l	1.0	1.0	--- U	7	19	91		01/11/16	SDB	2320B-97
Chloride, mg/l	5.0	5.0	13	--- U	--- U	--- U		01/11/16	KDS	4500CLB-97
Sulfate, mg/l	5.0	250.0	6.5 J	6.3 J	8.4 J	21.9 J		01/15/16	SEJ	4500SO4E9
Antimony, ug/l	0.02	6.0	0.08 J	0.63 J	0.11 J	0.22 J		01/14/16	LFJ	EPA200.8
Arsenic, ug/l	0.14	10.0	--- U	0.63 J	4.2 J	2.9 J		01/14/16	LFJ	EPA200.8
Barium, ug/l	0.01	100.0	179	43.9 J	16.2 J	21.9 J		01/14/16	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.33 J	0.06 J	--- U	--- U		01/14/16	LFJ	EPA200.8
Cadmium, ug/l	0.01	1.0	0.18 J	0.27 J	0.02 J	0.06 J		01/14/16	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0	3.9 J	0.44 J	0.38 J	0.40 J		01/14/16	LFJ	EPA200.8
Total Chromium, ug/l	0.12	10.0	--- U	0.70 J	0.48 J	0.38 J		01/14/16	LFJ	EPA200.8
Copper, ug/l	0.02	10.0	0.50 J	1.0 J	0.18 J	0.38 J		01/14/16	LFJ	EPA200.8
Iron, ug/l	8.64	300.0	121 J	10637	13661	19526		01/22/16	LFJ	EPA200.7
Lead, ug/l	0.03	10.0	1.6 J	0.55 J	0.07 J	0.86 J		01/14/16	LFJ	EPA200.8
Mercury, ug/l	0.05	0.20	--- U	--- U	--- U	--- U		01/20/16	JMN	245.1 R3-9
Nickel, ug/l	0.01	50.0	4.8 J	1.5 J	0.75 J	1.2 J		01/14/16	LFJ	EPA200.8
Selenium, ug/l	0.22	10.0	--- U	--- U	--- U	--- U		01/14/16	LFJ	EPA200.8
Silver, ug/l	0.01	10.0	--- U	--- U	--- U	--- U		01/14/16	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	0.04 J	--- U	--- U	--- U		01/14/16	LFJ	EPA200.8
Vanadium, ug/l	0.22	25.0	--- U	0.94 J	2.8 J	1.1 J		01/14/16	LFJ	EPA200.8
Zinc, ug/l	0.20	10.0	29	27	2.1 J	14		01/14/16	LFJ	EPA200.8
Sulfide, ug/l	100	1000	--- U	--- U	106 J	--- U		01/13/16	LFJ	4500S2D-00
Conductivity (at 25c), uMhos/cm	1.0	1.0	194	50	105	276		01/07/16	BF	2510B-97
Dissolved Oxygen, mg/l	0.1	0.1	2.22	2.56	1.87	1.42		01/07/16	BF	4500OG-01
Temperature, °C			16	13	14	15		01/07/16	BF	2550B-00
Iron, Ferrous, ug/l	50.00	300.0	--- U	--- U	8300	16620		01/08/16	SEJ	3500FEB-97
Static Water Level, feet			13.75	4.64	4.03	7.30	22.68	01/07/16	BF	
Well Depth, feet			39.37	15.90	15.78	16.72		01/07/16	BF	
Carbon Dioxide, mg/l	1.0	1.0	20	22	75	85		01/07/16	CMC	4500CO2C
ORP, mv			+89	+121	+101	+55		01/07/16	BF	2580B
Turbidity (Field), NTU	1.0	1.0	2.48	61.8	17.3	6.77		01/07/16	BF	2130B-01

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#: 6009

LENOIR CO. LANDFILL (OLD)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON ,NC 28502

DATE COLLECTED: 01/07/16
DATE REPORTED : 02/10/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-9	MW-10	MW-11	MW-12	Analysis Date	Analyst	Method Code
PH (field measurement), Units			4.4		4.8	4.6	01/07/16	BF	4500HB-00
BOD, mg/l	2.0	2.0	--- U		--- U	--- U	01/08/16	CMC	5210B-01
COD, mg/l	20.0	20.0	--- U		--- U	50	01/12/16	SEJ	H8000-79
Nitrate Nitrogen as N, mg/l	0.04	10.0	4.66 J		1.64 J	--- U	01/13/16	AKS	353.2 R2-93
Total Organic Carbon, mg/l	0.085	1.0	3.08		--- U	18.80	01/11/16	SEJ	5310C-00
Alkalinity (to pH 4.5), mg CaCO3/l	1.0	1.0	--- U		--- U	2	01/11/16	SDB	2320B-97
Chloride, mg/l	5.0	5.0	48		8	44	01/11/16	KDS	4500CLB-97
Sulfate, mg/l	5.0	250.0	15.7 J		7.0 J	32.6 J	01/15/16	SEJ	4500SO42E97
Antimony, ug/l	0.02	6.0	--- U		0.05 J	0.06 J	01/14/16	LFJ	EPA200.8
Arsenic, ug/l	0.14	10.0	0.24 J		--- U	0.42 J	01/14/16	LFJ	EPA200.8
Barium, ug/l	0.01	100.0	212		39.6 J	121	01/14/16	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.30 J		0.08 J	0.17 J	01/14/16	LFJ	EPA200.8
Cadmium, ug/l	0.01	1.0	0.18 J		0.12 J	0.33 J	01/14/16	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0	5.3 J		0.26 J	2.5 J	01/14/16	LFJ	EPA200.8
Total Chromium, ug/l	0.12	10.0	--- U		--- U	0.32 J	01/14/16	LFJ	EPA200.8
Copper, ug/l	0.02	10.0	0.21 J		0.65 J	1.1 J	01/14/16	LFJ	EPA200.8
Iron, ug/l	8.64	300.0	449		26 J	120 J	01/22/16	LFJ	EPA200.7
Lead, ug/l	0.03	10.0	0.05 J		0.04 J	0.12 J	01/14/16	LFJ	EPA200.8
Mercury, ug/l	0.05	0.20	1.20		0.74	--- U	01/20/16	JMN	245.1 R3-94
Nickel, ug/l	0.01	50.0	8.2 J		0.82 J	4.1 J	01/14/16	LFJ	EPA200.8
Selenium, ug/l	0.22	10.0	0.85 J		--- U	1.6 J	01/14/16	LFJ	EPA200.8
Silver, ug/l	0.01	10.0	--- U		--- U	--- U	01/14/16	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	0.03 J		0.05 J	--- U	01/14/16	LFJ	EPA200.8
Vanadium, ug/l	0.22	25.0	--- U		--- U	--- U	01/14/16	LFJ	EPA200.8
Zinc, ug/l	0.20	10.0	31		10	8.2 J	01/14/16	LFJ	EPA200.8
Sulfide, ug/l	100	1000	--- U		--- U	--- U	01/13/16	LFJ	4500S2D-00
Conductivity (at 25c), uMhos/cm	1.0	1.0	62		280	280	01/07/16	BF	2510B-97
Dissolved Oxygen, mg/l	0.1	0.1	1.29		4.31	2.39	01/07/16	BF	4500OG-01
Temperature, °C			16		15	16	01/07/16	BF	2550B-00
Iron, Ferrous, ug/l	50.00	300.0	--- U		--- U	--- U	01/08/16	SEJ	3500FEB-97
Static Water Level, feet			5.10	13.20	11.17	14.30	01/07/16	BF	
Well Depth, feet			21.17		35.89	38.76	01/07/16	BF	
Carbon Dioxide, mg/l	1.0	1.0	57		8	55	01/07/16	CMC	4500CO2C
ORP, mv			+119		+96	+89	01/07/16	BF	2580B
Turbidity (Field), NTU	1.0	1.0	4.44		--- U	--- U	01/07/16	BF	2130B-01

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: LENOIR CO. LANDFILL (OLD)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON, NC 28502

CLIENT ID: 6009

ANALYST: MAO
DATE COLLECTED: 01/07/16
DATE ANALYZED: 01/18/16
DATE REPORTED: 02/10/16

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-1	MW-3	MW-4	MW-6	MW-9
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	0.40 J	--- 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

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CLIENT: LENOIR CO. LANDFILL (OLD)
COUNTY OF LENOIR
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CLIENT ID: 6009

ANALYST: MAO
DATE COLLECTED: 01/07/16
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REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-11	MW-12
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, 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: 6009 **Week:** 7

LENOIR CO. LANDFILL (OLD)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON NC 28502

(252) 566-4194

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	Field pH	BOD	COD	Nitrate	TOC	Alkalinity	Chloride	Sulfate	Metals	Sulfide	Conductivity	DO	Temperature	Ferrous Iron	Field Parameter	EPA 8260B
CHLORINE NEUTRALIZED AT COLLECTION																					
pH CHECK (LAB)							<2			<2					>9				<2		
CONTAINER TYPE, P/G						P	P	P	P	P	P	P	P	P	P	P	P	P	P		G
CHEMICAL PRESERVATION						A	A	C	A	C	A	A	A	A	F	A	A	A	E		E
MW-1	1-7-16	1450		16	15	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
MW-3	1-7-16	1200		13	14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
MW-4	1-7-16	1250		14	14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
MW-6	1-7-16	1350		15	14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
MW-8	1-7-16	0930 ~~1100~~	TB		1															G	
MW-9	1-7-16	1100		16	14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
MW-10	1-7-16	0940			1															G	
MW-11	1-7-16	0855		15	14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
MW-12	1-7-16	1007		16	14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

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)
Bobby Fox/Tom Beasley

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Tom Beasley	1-7-16 1610	TB	1/7/16 1625
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

№ 308026

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: 6009 **Week:** 7

LENOIR CO. LANDFILL (OLD)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON NC 28502

(252) 566-4194

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	8260 Dup. 1	8260 Dup. 2	CO2	ORP	Field Parmeter
						G	G	P	P	P
						E	E	A	A	A
MW-1	1-7-16	1450		16	15	G	G	G	G	G
MW-3	1-7-16	1200		13	14	G		G	G	G
MW-4	1-7-16	1250		14	14	G		G	G	G
MW-6	1-7-16	1350		15	14	G		G	G	G
MW-8	1-7-16	0930			1					
MW-9	1-7-16	1100		16	14	G		G	G	G
MW-10	1-7-16	0940			1					
MW-11	1-7-16	0855		15	14	G		G	G	G
MW-12	1-7-16	1007		16	14	G		G	G	G

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

PARAMETERS/TESTS

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

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

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

SAMPLES COLLECTED BY: (Please Print)
Bobby Fox / Tom Beasley

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Tom Beasley	1-7-16 1610		1/7/16 1625
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

№ 308025

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#: 6009 A

LENOIR CO. LANDFILL (OLD)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON ,NC 28502

DATE COLLECTED: 01/07/16
DATE REPORTED : 02/10/16

REVIEWED BY: _____

PARAMETERS	MDL	SWSL	SW-1	SW-3	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.3	6.8	01/07/16	BF	4500HB-00
Antimony, ug/l	0.02	6.0	--- U	--- U	01/14/16	LFJ	EPA200.8
Arsenic, ug/l	0.14	10.0	0.40 J	0.26 J	01/14/16	LFJ	EPA200.8
Barium, ug/l	0.01	100.0	67.7 J	80.0 J	01/14/16	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0	0.05 J	--- U	01/14/16	LFJ	EPA200.8
Cadmium, ug/l	0.01	1.0	--- U	--- U	01/14/16	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0	0.37 J	0.26 J	01/14/16	LFJ	EPA200.8
Total Chromium, ug/l	0.12	10.0	0.39 J	0.37 J	01/14/16	LFJ	EPA200.8
Copper, ug/l	0.02	10.0	1.0 J	0.54 J	01/14/16	LFJ	EPA200.8
Lead, ug/l	0.03	10.0	0.31 J	0.26 J	01/14/16	LFJ	EPA200.8
Nickel, ug/l	0.01	50.0	0.84 J	0.53 J	01/14/16	LFJ	EPA200.8
Selenium, ug/l	0.22	10.0	--- U	--- U	01/14/16	LFJ	EPA200.8
Silver, ug/l	0.01	10.0	--- U	--- U	01/14/16	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5	--- U	--- U	01/14/16	LFJ	EPA200.8
Vanadium, ug/l	0.22	25.0	0.35 J	0.30 J	01/14/16	LFJ	EPA200.8
Zinc, ug/l	0.20	10.0	6.8 J	5.2 J	01/14/16	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	145	142	01/07/16	BF	2510B-97
Dissolved Oxygen, mg/l	0.1	0.1	12.32	11.40	01/07/16	BF	4500OG-01
Temperature, °C			9	10	01/07/16	BF	2550B-00
ORP, mv			+78	+60	01/07/16	BF	2580B
Turbidity (Field), NTU	1.0	1.0	4.14	4.99	01/07/16	BF	2130B-01

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: LENOIR CO. LANDFILL (OLD)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON, NC, 28502

CLIENT ID: 6009 A

ANALYST: MAO
DATE COLLECTED: 01/07/16
DATE ANALYZED: 01/18/16
DATE REPORTED: 02/10/16

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	SW-1	SW-3
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, Inc.
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Greenville, NC 27858
environment1inc.com
Phone (252) 756-6208 • Fax (252) 756-0633

CHAIN OF CUSTODY RECORD

CLIENT: 6009 A **Week: 7**

LENOIR CO. LANDFILL (OLD)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON NC 28502

(252) 566-4194

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	Field pH	Metals	Conductivity	DO	Temperature	EPA 8260B	8260 Dup. 1	8260 Dup. 2	ORP	Field Parmeter
						P	P	P	P	P	G	G	G	P	P
						A	A	A	A	A	E	E	E	A	A
SW-1	1-7-16	0925		9	5	G	G	G	G	G	G	G	G	G	G
SW-3	1-7-16	1403		10	5	G	G	G	G	G	G	G	G	G	G

CHLORINE NEUTRALIZED AT COLLECTION

pH CHECK (LAB)

CONTAINER TYPE, P/G

CHEMICAL PRESERVATION

PARAMETERS/TESTS

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

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

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

SAMPLES COLLECTED BY: (Please Print)
Bobby Fox / Tom Beasley

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Tom Beasley	1-7-16 1610		1/7/16 1428
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

№ 308024

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

January 18, 2016

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

RE: **LENOIR COUNTY / 6009**

Pace Workorder: 17892

Dear Steve Jones:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, January 08, 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 01/18/2016
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 25

CERTIFICATE OF ANALYSIS

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).

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

SAMPLE SUMMARY

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID	Sample ID	Matrix	Date Collected	Date Received
178920001	MW1	Water	1/7/2016 14:50	1/8/2016 11:00
178920002	MW1	Bubble Strip	1/7/2016 14:50	1/8/2016 11:00
178920003	MW3	Water	1/7/2016 12:00	1/8/2016 11:00
178920004	MW3	Bubble Strip	1/7/2016 12:00	1/8/2016 11:00
178920005	MW4	Water	1/7/2016 12:50	1/8/2016 11:00
178920006	MW4	Bubble Strip	1/7/2016 12:50	1/8/2016 11:00
178920007	MW6	Water	1/7/2016 13:50	1/8/2016 11:00
178920008	MW6	Bubble Strip	1/7/2016 13:50	1/8/2016 11:00
178920009	MW9	Water	1/7/2016 11:00	1/8/2016 11:00
178920010	MW9	Bubble Strip	1/7/2016 11:00	1/8/2016 11:00
178920011	MW11	Water	1/7/2016 08:55	1/8/2016 11:00
178920012	MW11	Bubble Strip	1/7/2016 08:55	1/8/2016 11:00
178920013	MW12	Water	1/7/2016 10:07	1/8/2016 11:00
178920014	MW12	Bubble Strip	1/7/2016 10:07	1/8/2016 11:00

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

ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920001** Date Received: 1/8/2016 11:00 Matrix: Water

Sample ID: **MW1** Date Collected: 1/7/2016 14:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - MICR								
Analysis Desc: AM23G			Analytical Method: AM23G					
Lactic Acid	**0.014J**	mg/l	0.20	0.0030	1	1/12/2016 02:42	KB	B
Acetic Acid	**0.016J**	mg/l	0.10	0.0060	1	1/12/2016 02:42	KB	B
Propionic Acid	**0.0015J**	mg/l	0.10	0.0010	1	1/12/2016 02:42	KB	
Butyric Acid	**0.0050U**	mg/l	0.10	0.0050	1	1/12/2016 02:42	KB	
Pyruvic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 02:42	KB	
i-Pentanoic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 02:42	KB	
Pentanoic Acid	**0.0060U**	mg/l	0.10	0.0060	1	1/12/2016 02:42	KB	
i-Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 02:42	KB	
Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 02:42	KB	

CERTIFICATE OF ANALYSIS

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

ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920002** Date Received: 1/8/2016 11:00 Matrix: Bubble Strip
Sample ID: **MW1** Date Collected: 1/7/2016 14:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**230**	ug/l	0.050	0.0080	1	1/13/2016 03:46	GT	n
Ethane	**0.027**	ug/l	0.010	0.0010	1	1/13/2016 03:46	GT	n
Ethene	**0.020**	ug/l	0.010	0.0030	1	1/13/2016 03:46	GT	n
Hydrogen	**3.7**	nM	0.60	0.088	1	1/13/2016 03:46	GT	B,n

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

ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920003** Date Received: 1/8/2016 11:00 Matrix: Water

Sample ID: **MW3** Date Collected: 1/7/2016 12:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - MICR								
Analysis Desc: AM23G			Analytical Method: AM23G					
Lactic Acid	**0.076J**	mg/l	0.20	0.0030	1	1/12/2016 03:35	KB	B
Acetic Acid	**0.022J**	mg/l	0.10	0.0060	1	1/12/2016 03:35	KB	B
Propionic Acid	**0.0018J**	mg/l	0.10	0.0010	1	1/12/2016 03:35	KB	
Butyric Acid	**0.0050U**	mg/l	0.10	0.0050	1	1/12/2016 03:35	KB	
Pyruvic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 03:35	KB	
i-Pentanoic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 03:35	KB	
Pentanoic Acid	**0.0060U**	mg/l	0.10	0.0060	1	1/12/2016 03:35	KB	
i-Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 03:35	KB	
Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 03:35	KB	

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

ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920004** Date Received: 1/8/2016 11:00 Matrix: Bubble Strip

Sample ID: **MW3** Date Collected: 1/7/2016 12:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**6.5**	ug/l	0.050	0.0080	1	1/13/2016 03:59	GT	n
Ethane	**0.0022J**	ug/l	0.010	0.0010	1	1/13/2016 03:59	GT	n
Ethene	**0.0082J**	ug/l	0.010	0.0030	1	1/13/2016 03:59	GT	n
Hydrogen	**3.1**	nM	0.60	0.088	1	1/13/2016 03:59	GT	B,n

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920005** Date Received: 1/8/2016 11:00 Matrix: Water
Sample ID: **MW4** Date Collected: 1/7/2016 12:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - MICR								
Analysis Desc: AM23G			Analytical Method: AM23G					
Lactic Acid	**0.014J**	mg/l	0.20	0.0030	1	1/12/2016 04:29	KB	B
Acetic Acid	**0.032J**	mg/l	0.10	0.0060	1	1/12/2016 04:29	KB	B
Propionic Acid	**0.0021J**	mg/l	0.10	0.0010	1	1/12/2016 04:29	KB	
Butyric Acid	**0.0099J**	mg/l	0.10	0.0050	1	1/12/2016 04:29	KB	
Pyruvic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 04:29	KB	
i-Pentanoic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 04:29	KB	
Pentanoic Acid	**0.0060U**	mg/l	0.10	0.0060	1	1/12/2016 04:29	KB	
i-Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 04:29	KB	
Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 04:29	KB	

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ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920006** Date Received: 1/8/2016 11:00 Matrix: Bubble Strip
Sample ID: **MW4** Date Collected: 1/7/2016 12:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**1300**	ug/l	0.050	0.0080	1	1/13/2016 04:11	GT	n
Ethane	**0.0097J**	ug/l	0.010	0.0010	1	1/13/2016 04:11	GT	n
Ethene	**0.0042J**	ug/l	0.010	0.0030	1	1/13/2016 04:11	GT	n
Hydrogen	**3.8**	nM	0.60	0.088	1	1/13/2016 04:11	GT	B,n

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ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920007** Date Received: 1/8/2016 11:00 Matrix: Water

Sample ID: **MW6** Date Collected: 1/7/2016 13:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - MICR								
Analysis Desc: AM23G			Analytical Method: AM23G					
Lactic Acid	**0.011J**	mg/l	0.20	0.0030	1	1/12/2016 05:22	KB	B
Acetic Acid	**0.015J**	mg/l	0.10	0.0060	1	1/12/2016 05:22	KB	B
Propionic Acid	**0.0015J**	mg/l	0.10	0.0010	1	1/12/2016 05:22	KB	
Butyric Acid	**0.0050U**	mg/l	0.10	0.0050	1	1/12/2016 05:22	KB	
Pyruvic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 05:22	KB	
i-Pentanoic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 05:22	KB	
Pentanoic Acid	**0.0060U**	mg/l	0.10	0.0060	1	1/12/2016 05:22	KB	
i-Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 05:22	KB	
Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 05:22	KB	

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ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920008** Date Received: 1/8/2016 11:00 Matrix: Bubble Strip

Sample ID: **MW6** Date Collected: 1/7/2016 13:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**1800**	ug/l	0.050	0.0080	1	1/13/2016 04:24	GT	n
Ethane	**0.082**	ug/l	0.010	0.0010	1	1/13/2016 04:24	GT	n
Ethene	**0.0094J**	ug/l	0.010	0.0030	1	1/13/2016 04:24	GT	n
Hydrogen	**1.2**	nM	0.60	0.088	1	1/13/2016 04:24	GT	B,n

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ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920009** Date Received: 1/8/2016 11:00 Matrix: Water

Sample ID: **MW9** Date Collected: 1/7/2016 11:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - MICR								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**0.012J**	mg/l	0.20	0.0030	1	1/12/2016 06:16	KB	B
Acetic Acid	**0.031J**	mg/l	0.10	0.0060	1	1/12/2016 06:16	KB	B
Propionic Acid	**0.0025J**	mg/l	0.10	0.0010	1	1/12/2016 06:16	KB	
Butyric Acid	**0.28**	mg/l	0.10	0.0050	1	1/12/2016 06:16	KB	
Pyruvic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 06:16	KB	
i-Pentanoic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 06:16	KB	
Pentanoic Acid	**0.0060U**	mg/l	0.10	0.0060	1	1/12/2016 06:16	KB	
i-Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 06:16	KB	
Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 06:16	KB	

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ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920010** Date Received: 1/8/2016 11:00 Matrix: Bubble Strip

Sample ID: **MW9** Date Collected: 1/7/2016 11:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**410**	ug/l	0.050	0.0080	1	1/13/2016 05:08	GT	n
Ethane	**0.0096J**	ug/l	0.010	0.0010	1	1/13/2016 05:08	GT	n
Ethene	**0.048**	ug/l	0.010	0.0030	1	1/13/2016 05:08	GT	n
Hydrogen	**1.3**	nM	0.60	0.088	1	1/13/2016 05:08	GT	B,n

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ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920011** Date Received: 1/8/2016 11:00 Matrix: Water

Sample ID: **MW11** Date Collected: 1/7/2016 08:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - MICR								
Analysis Desc: AM23G			Analytical Method: AM23G					
Lactic Acid	**0.0061J**	mg/l	0.20	0.0030	1	1/12/2016 07:17	KB	B
Acetic Acid	**0.040J**	mg/l	0.10	0.0060	1	1/12/2016 07:17	KB	B
Propionic Acid	**0.0030J**	mg/l	0.10	0.0010	1	1/12/2016 07:17	KB	
Butyric Acid	**0.0093J**	mg/l	0.10	0.0050	1	1/12/2016 07:17	KB	
Pyruvic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 07:17	KB	
i-Pentanoic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 07:17	KB	
Pentanoic Acid	**0.0060U**	mg/l	0.10	0.0060	1	1/12/2016 07:17	KB	
i-Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 07:17	KB	
Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 07:17	KB	

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ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920012** Date Received: 1/8/2016 11:00 Matrix: Bubble Strip

Sample ID: **MW11** Date Collected: 1/7/2016 08:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**660**	ug/l	0.050	0.0080	1	1/13/2016 05:21	GT	n
Ethane	**0.047**	ug/l	0.010	0.0010	1	1/13/2016 05:21	GT	n
Ethene	**0.054**	ug/l	0.010	0.0030	1	1/13/2016 05:21	GT	n
Hydrogen	**1.2**	nM	0.60	0.088	1	1/13/2016 05:21	GT	B,n

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ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920013** Date Received: 1/8/2016 11:00 Matrix: Water

Sample ID: **MW12** Date Collected: 1/7/2016 10:07

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - MICR								
Analysis Desc: AM23G			Analytical Method: AM23G					
Lactic Acid	**0.034J**	mg/l	0.20	0.0030	1	1/12/2016 08:11	KB	B
Acetic Acid	**0.062J**	mg/l	0.10	0.0060	1	1/12/2016 08:11	KB	B
Propionic Acid	**0.0044J**	mg/l	0.10	0.0010	1	1/12/2016 08:11	KB	
Butyric Acid	**0.0081J**	mg/l	0.10	0.0050	1	1/12/2016 08:11	KB	
Pyruvic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 08:11	KB	
i-Pentanoic Acid	**0.012U**	mg/l	0.10	0.012	1	1/12/2016 08:11	KB	
Pentanoic Acid	**0.0060U**	mg/l	0.10	0.0060	1	1/12/2016 08:11	KB	
i-Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 08:11	KB	
Hexanoic Acid	**0.010U**	mg/l	0.20	0.010	1	1/12/2016 08:11	KB	

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ANALYTICAL RESULTS

Workorder: 17892 LENOIR COUNTY / 6009

Lab ID: **178920014** Date Received: 1/8/2016 11:00 Matrix: Bubble Strip

Sample ID: **MW12** Date Collected: 1/7/2016 10:07

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**74**	ug/l	0.050	0.0080	1	1/13/2016 05:33	GT	n
Ethane	**0.0094J**	ug/l	0.010	0.0010	1	1/13/2016 05:33	GT	n
Ethene	**0.053**	ug/l	0.010	0.0030	1	1/13/2016 05:33	GT	n
Hydrogen	**3.4**	nM	0.60	0.088	1	1/13/2016 05:33	GT	B,n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 17892 LENOIR COUNTY / 6009

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.
B	The analyte was detected in the associated blank.

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QUALITY CONTROL DATA

Workorder: 17892 LENOIR COUNTY / 6009

QC Batch: EDON/2770 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 178920001, 178920003, 178920005, 178920007, 178920009, 178920011, 178920013

METHOD BLANK: 39699

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	0.0042J	0.0030	B
Acetic Acid	mg/l	0.014J	0.0060	B
Propionic Acid	mg/l	0.0010U	0.0010	
Butyric Acid	mg/l	0.0050U	0.0050	
Pyruvic Acid	mg/l	0.012U	0.012	
i-Pentanoic Acid	mg/l	0.012U	0.012	
Pentanoic Acid	mg/l	0.0060U	0.0060	
i-Hexanoic Acid	mg/l	0.010U	0.010	
Hexanoic Acid	mg/l	0.010U	0.010	

LABORATORY CONTROL SAMPLE: 39700

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
EDonors						
Lactic Acid	mg/l	2	2.1	103	70-130	B
Acetic Acid	mg/l	2	2.1	106	70-130	B
Propionic Acid	mg/l	2	2.2	109	70-130	
Butyric Acid	mg/l	2	2.1	107	70-130	
Pyruvic Acid	mg/l	2	2.1	104	70-130	
i-Pentanoic Acid	mg/l	2	2.1	105	70-130	
Pentanoic Acid	mg/l	2	2.1	107	70-130	
i-Hexanoic Acid	mg/l	2	2.1	104	70-130	
Hexanoic Acid	mg/l	2	2.0	101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39701 39702 Original: 178670001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	1.1	20	22	22	103	102	70-130	0.98	30	d,B
Acetic Acid	mg/l	49	20	68	67	94	91	70-130	3.2	30	d,B
Propionic Acid	mg/l	48	20	66	66	92	89	70-130	3.3	30	d

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QUALITY CONTROL DATA

Workorder: 17892 LENOIR COUNTY / 6009

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39701 39702 Original: 178670001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Butyric Acid	mg/l	10	20	32	32	109	107	70-130	1.9	30	d
Pyruvic Acid	mg/l	1.4	20	23	23	109	108	70-130	0.92	30	d
i-Pentanoic Acid	mg/l	0.56	20	22	22	107	106	70-130	0.94	30	d
Pentanoic Acid	mg/l	12	20	34	34	110	108	70-130	1.8	30	d
i-Hexanoic Acid	mg/l	0	20	21	21	107	105	70-130	1.9	30	d
Hexanoic Acid	mg/l	1.3	20	22	22	107	105	70-130	1.9	30	d

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QUALITY CONTROL DATA

Workorder: 17892 LENOIR COUNTY / 6009

QC Batch: DISG/5118 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 178920002, 178920004, 178920006, 178920008, 178920010, 178920012, 178920014

METHOD BLANK: 39716

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.0080U	0.0080	n
Ethane	ug/l	0.0010U	0.0010	n
Ethene	ug/l	0.0030U	0.0030	n

METHOD BLANK: 39718

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	0.12J	0.088	B,n

LABORATORY CONTROL SAMPLE & LCSD: 39719 39722

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	8.1	8.2	8.2	102	101	80-120	0.99	20	n
Ethane	ug/l	6.4	6.4	6.4	100	99	80-120	1	20	n
Ethene	ug/l	16	16	16	98	97	80-120	1	20	n

LABORATORY CONTROL SAMPLE & LCSD: 39721 39724

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Hydrogen	nM	24	21	21	85	85	80-120	0	20	B,n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 17892 LENOIR COUNTY / 6009

QUALITY CONTROL PARAMETER QUALIFIERS

B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.
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: 17892 LENOIR COUNTY / 6009

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
178920001	MW1			AM23G	EDON/2770
178920003	MW3			AM23G	EDON/2770
178920005	MW4			AM23G	EDON/2770
178920007	MW6			AM23G	EDON/2770
178920009	MW9			AM23G	EDON/2770
178920011	MW11			AM23G	EDON/2770
178920013	MW12			AM23G	EDON/2770
178920002	MW1			AM20GAX	DISG/5118
178920004	MW3			AM20GAX	DISG/5118
178920006	MW4			AM20GAX	DISG/5118
178920008	MW6			AM20GAX	DISG/5118
178920010	MW9			AM20GAX	DISG/5118
178920012	MW11			AM20GAX	DISG/5118
178920014	MW12			AM20GAX	DISG/5118

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CHAIN-OF-CUSTODY / Analytical Request Document

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

17892

Page: 1 of 1

005981

Section A Required Client Information:

Company: ENVIRONMENT 1
Address: 114 OAKMONT DR, GREENVILLE NC 27858
Email To: SJONESE1@AOL.COM
Phone: 252-756-6208 Fax: 252-756-0673
Requested Due Date/TAT:

Section B Required Project Information:

Report To: STEVE JONES
Copy To:
Purchase Order No.:
Project Name: LENOIR COUNTY
Project Number: 6009

Section C Invoice Information:

Attention:
Company Name: SAME
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NC

Section D Required Client Information

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	TSP	BAK	Zinc Acetate & NaOH	Other	Analysis Test Y/N	HYDROGEN	METHANE/ETHENE/ETHANE	LLVFA	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW1	WT	C			1/7/16	1450		6										X	X	X		
2	MW3	↓	↓			↓	1200		6										X	X	X		
3	MW4	↓	↓			↓	1250		6										X	X	X		
4	MW6	↓	↓			↓	1350		6										X	X	X		
5	MW9	↓	↓			↓	1100		6										X	X	X		
6	MW11	↓	↓			↓	855		6										X	X	X		
7	MW12	↓	↓			↓	1007		6										X	X	X		
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
FACILITY ID# 5403	Tom Beasley / E.1	1/7/16	1610	[signature] / E-1	1/7/16	1610				
	[signature] / E.1	1/7/16	1630	[signature] PACE	1.8.16	1100	1.8	Y	N	

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: TOM BEASLEY
SIGNATURE of SAMPLER: Tom Beasley
DATE Signed (MM/DD/YY): 1/7/16

*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.

Cooler Receipt Form

Client Name: Environmental Project: Lenoir County Lab Work Order: 17892

1 / 6009

A. Shipping/Container Information (circle appropriate response)

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

Tracking Number: 1Z 203 70E01 77 31 386

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: 1.8°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: LY Date: 1.8.16

Project Manager Review: RW Date: 1-8-16

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#: 6010 A

LENOIR CO. LANDFILL (BLANKS)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON ,NC 28502

DATE COLLECTED: 01/06/16
DATE REPORTED : 02/10/16

REVIEWED BY:

PARAMETERS	MDL	Equipment SWSL Blank	Trip Blank	Field Blank	Analysis Date	Analyst	Method Code
Antimony, ug/l	0.02	6.0 --- U			01/14/16	LFJ	EPA200.8
Antimony, ug/l	0.02	6.0		--- U	01/20/16	LFJ	EPA200.8
Arsenic, ug/l	0.14	10.0 --- U			01/14/16	LFJ	EPA200.8
Arsenic, ug/l	0.14	10.0		--- U	01/20/16	LFJ	EPA200.8
Barium, ug/l	0.01	100.0 0.25 J			01/14/16	LFJ	EPA200.8
Barium, ug/l	0.01	100.0		--- U	01/20/16	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0 --- U			01/14/16	LFJ	EPA200.8
Beryllium, ug/l	0.02	1.0		--- U	01/20/16	LFJ	EPA200.8
Cadmium, ug/l	0.01	1.0 --- U			01/14/16	LFJ	EPA200.8
Cadmium, ug/l	0.01	1.0		--- U	01/22/16	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0 --- U			01/14/16	LFJ	EPA200.8
Cobalt, ug/l	0.03	10.0		--- U	01/20/16	LFJ	EPA200.8
Total Chromium, ug/l	0.12	10.0 --- U			01/14/16	LFJ	EPA200.8
Total Chromium, ug/l	0.12	10.0		0.15 J	01/22/16	LFJ	EPA200.8
Copper, ug/l	0.02	10.0 0.28 J			01/14/16	LFJ	EPA200.8
Copper, ug/l	0.02	10.0		0.04 J	01/20/16	LFJ	EPA200.8
Lead, ug/l	0.03	10.0 --- U			01/14/16	LFJ	EPA200.8
Lead, ug/l	0.03	10.0		--- U	01/22/16	LFJ	EPA200.8
Mercury, ug/l	0.05	0.20 --- U			01/08/16	JMN	245.1 R3-94
Nickel, ug/l	0.01	50.0 0.20 J			01/14/16	LFJ	EPA200.8
Nickel, ug/l	0.01	50.0		0.28 J	01/20/16	LFJ	EPA200.8
Selenium, ug/l	0.22	10.0 --- U			01/14/16	LFJ	EPA200.8
Selenium, ug/l	0.22	10.0		--- U	01/20/16	LFJ	EPA200.8
Silver, ug/l	0.01	10.0 --- U			01/14/16	LFJ	EPA200.8
Silver, ug/l	0.01	10.0		--- U	01/20/16	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5 --- U			01/14/16	LFJ	EPA200.8
Thallium, ug/l	0.02	5.5		--- U	01/22/16	LFJ	EPA200.8
Vanadium, ug/l	0.22	25.0 --- U			01/14/16	LFJ	EPA200.8
Vanadium, ug/l	0.22	25.0		0.28 J	01/22/16	LFJ	EPA200.8
Zinc, ug/l	0.20	10.0 1.4 J			01/14/16	LFJ	EPA200.8
Zinc, ug/l	0.20	10.0		0.44 J	01/20/16	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: LENOIR CO. LANDFILL (BLANKS)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON, NC 28502

CLIENT ID: 6010 A

ANALYST: MAO
DATE COLLECTED: 01/06/16
DATE ANALYZED: 01/18/16
DATE REPORTED: 02/10/16

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Equipment Blank	Trip Blank	Field Blank
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	0.21	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
48. Acrolein	40.57	53.0	--- 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: LENOIR CO. LANDFILL (BLANKS)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON, NC 28502

CLIENT ID: 6010 A

ANALYST: MAO
DATE COLLECTED: 01/06/16
DATE ANALYZED: 01/18/16
DATE REPORTED: 02/10/16

REVIEWED BY:

LANDFILL APPENDIX II
EPA METHOD 8260B R1(96)

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

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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: 6010 A **Week:** 7

LENOIR CO. LANDFILL (BLANKS)
COUNTY OF LENOIR
MR. TOM MILLER
P.O. BOX 756
KINSTON NC 28502

(252) 566-4194

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	8260B App. II	8260 App. II 1
						P	G	G
						A	E	E
Equipment Blank	1-6-16	0945			3	G	G	G
Trip Blank	1-6-16				2		G	G
Field Blank	1-6-16	0958			3	G	G	G

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

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

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

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

SAMPLES COLLECTED BY: (Please Print)
Tom Beasley

SAMPLES RECEIVED IN LAB AT 0.2 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Tom Beasley	1-6-16 1520		1/6/16 1650
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

№ 308022