Dare County C&D Landfill
Facility Permit No. 28-03
Semi-Annual Sampling Report
(February 2016 Sampling Event)

CDM Smith

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):

Consultant - CDM Smith Inc.

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

Name: Mathew F. Colone Phone: 919-325-3569

E-mail: colonemf@cdmsmith.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Dare County C&D Landfill	1603 Cub Road Manns Harbor, NC 27953	28-03	.0500	February 29, 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) _____
☐ 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.

Mathew F. Colone — Facility Representative Name (Print)
Consultant — Title
(919) 325-3569 — (Area Code) Telephone Number

Signature
4/27/2016 — Date
Affix NC Licensed Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1851 GEOLOGIST MATHEW F. COLONE
4/29/2016

5400 Glenwood Ave, Suite 400, Raleigh, NC 27612
Facility Representative Address

F-0412
NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

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April 27, 2016

Ms. Jaclynne Drummond
North Carolina Department of
Environmental Quality
Division of Waste Management
Solid Waste Section
2090 U.S. 70 Highway
Swannanoa, North Carolina 28778

Subject: February 2016 Semi-Annual Groundwater Sampling Report
Dare County C&D Landfill
Dare County, North Carolina
Facility Permit No. 28-03

Dear Ms. Drummond:

CDM Smith Inc., on behalf of Dare County, is submitting an electronic copy of the February 2016 semi-annual groundwater sampling event report. This letter report presents the results of the most recent semi-annual sampling event that was completed at the Dare County C&D Landfill and constitutes the first semi-annual sampling event for 2016. The approved groundwater monitoring network consists of 13 wells (i.e. MW-1, -2, -3, -8, -9, -10, -11, -12, -13, -14, -15, -16, and -17) and three surface water sampling locations (i.e. SW-1, -2, and -3). Field activities and sampling results are discussed below.

Field Activities

Groundwater and surface water samples from the Dare County C&D Landfill were collected on February 29, 2016, by Environment One, Inc. (Environment One). Monitoring wells and surface water sample locations are shown on **Figure 1**. Well construction details for the monitoring wells are provided in **Table 1**.

Groundwater elevations were measured at each well prior to sampling using an electronic water level indicator with an accuracy of 0.01 feet. These groundwater elevations as presented in **Table 2** were used to construct a potentiometric surface map for this sampling event. The potentiometric contours are presented on Figure 1.

Each monitoring well was measured for pH, conductivity, temperature, turbidity, dissolved oxygen, and oxidation-reduction potential (ORP) prior to sampling. The same water quality parameters were

measured at the surface water sample locations with the exception of ORP. The water quality parameters at the time samples were collected are presented in Table 2.

Sampling Results

Environment One located in Greenville, North Carolina, analyzed the groundwater and surface water samples for North Carolina Appendix I volatile organic compounds by U.S. Environmental Protection Agency (EPA) Method 8260B, metals by EPA Methods 200.7, 200.8, and Standard Method (SM) 3113B, mercury by EPA Method 245.1, alkalinity by SM 2320B, chloride and sulfate by SM 4500, and total dissolved solids (TDS) by SM 2540C. In accordance with Solid Waste Section guidelines, the analytical results were reported to the laboratory specific method detection limit (MDL) and are quantifiable at or below Solid Waste Section Limits (SWSLs). All monitoring wells and surface water sample locations for the C&D Landfill had detections of analytes above the MDL but below SWSLs. These detections were qualified with "J" flags, which indicate an estimated concentration.

The following list presents the analytes detected above the MDL at each sample location. No "J" flag detections are provided. Underlined analytes exceeded the 15A NCAC 02L .0202 (NC 2L) Groundwater Quality Standard, Groundwater Protection Standard, or the 15A NCAC 02B Surface Water Quality Standard for Class C Waters. A complete summary of all detected and estimated concentrations for the February 2016 sampling event is presented in **Table 3**. Analytical results for TDS are provided in Table 2. The laboratory analytical report is provided in **Appendix A**.

MW-1

Inorganics:	Alkalinity, <u>Chloride</u>
Metals:	<u>Iron</u>, <u>Manganese</u>
Volatile Organic Compounds:	None Detected

MW-2

Inorganics:	Alkalinity, Chloride
Metals:	<u>Iron</u>, <u>Manganese</u>
Volatile Organic Compounds:	None Detected

MW-3

Inorganics:	Alkalinity, Chloride
Metals:	<u>Iron</u>, <u>Manganese</u>
Volatile Organic Compounds:	None Detected

MW-8

Inorganics:	Alkalinity, Chloride
Metals:	Barium, Iron, Manganese, Zinc
Volatile Organic Compounds:	None Detected

MW-9

Inorganics:	Alkalinity, Chloride
Metals:	Arsenic, Iron, Vanadium, Zinc
Volatile Organic Compounds:	None Detected

MW-10

Inorganics:	Alkalinity, Chloride
Metals:	Arsenic, Iron, Manganese
Volatile Organic Compounds:	None Detected

MW-11

Inorganics:	Alkalinity, Chloride
Metals:	Iron, Manganese
Volatile Organic Compounds:	None Detected

MW-12

Inorganics:	Alkalinity, Chloride
Metals:	Iron
Volatile Organic Compounds:	None Detected

MW-13

Inorganics:	Alkalinity, Chloride
Metals:	Iron, Manganese
Volatile Organic Compounds:	None Detected

MW-14

Inorganics:	Alkalinity, Chloride
Metals:	Arsenic, Iron, Manganese
Volatile Organic Compounds:	None Detected

MW-15

Inorganics:	Alkalinity, Chloride
Metals:	Arsenic, Iron, Manganese, Zinc
Volatile Organic Compounds:	None Detected

MW-16

Inorganics:	Alkalinity, Chloride
Metals:	Barium, Iron, Manganese
Volatile Organic Compounds:	None Detected

MW-17

Inorganics:	Alkalinity, Chloride
Metals:	Iron, Zinc
Volatile Organic Compounds:	None Detected

SW-1

Inorganics:	Alkalinity, Chloride
Metals:	Iron, Lead
Volatile Organic Compounds:	None Detected

SW-2

Inorganics:	Alkalinity, Chloride
Metals:	Iron, Lead, Manganese
Volatile Organic Compounds:	None Detected

SW-3

Inorganics:	Alkalinity, Chloride
Metals:	Iron, Lead, Manganese
Volatile Organic Compounds:	None Detected

"J" flags were not included in the previous list, but several locations had "J" flag detections that exceeded the standards. The "J" flag constituents above the standards along with their locations are listed below.

Cobalt:	MW-9, -11, and -17
Vanadium:	MW-1, -2, -3, -8, -10, -11, -12, -13, -14, -15, -16, and -17

No analytes were detected in the trip blank. The equipment blank had "J" flag detections of beryllium, chromium, iron, and nickel below their respective NC 2L Standard. Duplicate samples collected from MW-12 had analytes detected at similar concentrations to the parent samples.

The semi-annual groundwater monitoring program will be continued by Dare County. The second semi-annual sampling event for 2016 is tentatively scheduled for August.

If you have any questions or require further explanation, do not hesitate to call me at (919) 325-3569.

Very truly yours,

Mathew F. Colone, P.G.
CDM Smith Inc.

Attachments

cc: Edward Mann, Dare County

Table 1
Monitoring Well Construction Summary
Dare County C&D Landfill

Facility Permit Number	Monitoring Well Code	Completion Date	Drilling Method	Northing	Easting	Aquifer Monitoring Interval	Top of Casing Elevation (feet msl)	Ground Surface Elevation (feet msl)	Borehole Depth (feet bgs)	Screen Interval (feet bgs)	Top of Filter Pack (feet bgs)	Top of Seal (feet bgs)	Casing Diameter (inches)
28-03	GW-1	11/28/1994	HSA	775459.46	2943423.17	Surficial	3.13	1.58	10.0	10.0-20.0	8.0	7.0	2.0
28-03	GW-2	11/29/1994	HSA	774812.63	2943476.21	Surficial	3.17	1.4	20.0	10.0-20.0	8.0	7.0	2.0
28-03	GW-3	11/29/1994	HSA	774246.50	2943544.29	Surficial	4.18	1.82	20.0	10.0-20.0	8.0	7.0	2.0
28-03	GW-8	11/28/1994	HSA	775276.96	2942765.21	Surficial	4.55	2.90	20.0	10.0-20.0	8.0	7.0	2.0
28-03	GW-9	8/14/2002	HSA	772578.01	2942615.36	Surficial	3.59	0.90	20.0	2.0-20.0	1.5	1.0	2.0
28-03	GW-10	8/13/2002	HSA	772873.78	2943188.48	Surficial	6.02	2.70	20.0	2.0-20.0	2.0	1.0	2.0
28-03	GW-11	8/12/2002	HSA	773027.15	2943464.85	Surficial	6.41	2.74	20.0	2.0-20.0	2.0	1.0	2.0
28-03	GW-12	8/13/2002	HSA	773495.49	2943656.65	Surficial	2.8	0.33	20.0	3.0-20.0	1.5	1.0	2.0
28-03	GW-13	1/24/2006	Mud Rotary	774019.56	2942163.28	Surficial	3.09	0.7	20.0	5.0-20.0	3.0	1.0	2.0
28-03	GW-14	1/24/2006	Mud Rotary	773577.80	2942224.90	Surficial	3.06	0.52	20.0	5.0-20.0	3.0	1.0	2.0
28-03	GW-15	1/24/2006	Mud Rotary	772922.37	2942289.76	Surficial	3.24	0.85	20.0	5.0-20.0	3.0	1.0	2.0
28-03	GW-16	9/1/2010	HSA	775129.98	2942464.11	Surficial	5.56	3.5	20.0	5.0-20.0	3.0	1.0	2.0
28-03	GW-17	9/1/2010	HSA	772722.10	2942873.18	Surficial	2.85	0.8	20.0	5.0-20.0	3.0	1.0	2.0

Notes:

1. HSA - Hollow-stem auger
2. bgs - below ground surface
3. msl - mean sea level
4. Horizontal Control - North American Datum 1983 State Plane Feet North Carolina

Table 2
Water Quality Measurements and Total Dissolved Solids
February 2016 Semi-Annual Sampling Event
Dare County C&D Landfill

		Water Quality Parameters							Groundwater Elevations - 2/29/16		
Facility Permit Number	Monitoring Well Code	pH (S.U.)	Conductivity (µS/cm)	Temperature (degrees Celsius)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mVs)	TDS (mg/L)	TOC Elevation (feet AMSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet AMSL)
28-03	MW-1	6.9	1,535	15	83	6.81	17	2,480	1.61	1.61	0.00
28-03	MW-2	6.9	668	15	42	1.64	-60	542	1.55	2.23	-0.68
28-03	MW-3	6.8	757	14	229	1.67	-19	494	1.74	3.89	-2.15
28-03	MW-8	6.2	4,430	17	153	2.02	32	3,840	2.90	2.12	0.78
28-03	MW-9	5.3	174	18	26	1.72	77	136	4.99	5.30	-0.31
28-03	MW-10	6.2	523	16	29	0.50	46	418	2.87	5.40	-2.53
28-03	MW-11	6.2	330	16	67	1.60	45	174	3.56	5.00	-1.44
28-03	MW-12	5.1	97	15	9	1.09	82	85	2.80	4.40	-1.60
28-03	MW-13	6.8	772	14	155	1.70	-33	563	2.96	3.92	-0.96
28-03	MW-14	6.2	627	14	252	1.10	-1	373	2.96	4.00	-1.04
28-03	MW-15	6.3	320	14	74	1.85	15	224	3.17	4.32	-1.15
28-03	MW-16	6.1	1,903	15	1	1.81	-9	2,410	5.56	5.02	0.54
28-03	MW-17	5.0	185	16	11	0.52	96	142	2.85	4.00	-1.15
Surface Water Sample Locations											
28-03	SW-1	4.9	349	17	8	8.52	--	285			
28-03	SW-2	7.3	562	16	37	9.40	--	408			
28-03	SW-3	6.7	567	14	37	8.46	--	421			

Notes:
1. mg/L - milligrams per liter
2. µS/cm - Microsiemens per centimeter
3. TDS - Total Dissolved Solids
4. AMSL - Above Mean Sea Level
5. TOC - Top of Casing
6. S.U. - Standard Unit
7. mVs - Millivolts
8. NTUs - Nephelometric Turbidity Units
9. -- Not measured

Table 3a
Detected Groundwater Constituents - Metals, Volatile Organic Compounds, and General Chemistry
February 2016 Semi-Annual Sampling Event
Dare County C&D Landfill

			Metals																		Volatile Organic Compounds						General Chemistry		
Facility Permit Number	Monitoring Well Code	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Acetone	Benzene	Carbon Disulfide	Chlorobenzene	Chloromethane	Toluene	Alkalinity	Chloride	Sulfate
North Carolina 2L or Groundwater Protection Standard			1*	10	700	4*	2	10	1*	1,000	300	15	50	1	100	20	20	0.2*	0.3*	1,000	6,000	1	700	50	3	600	NS	250	250
Solid Waste Section Limit			6	10	100	1	1	10	10	10	300	10	50	0.2	50	10	10	5.5	25	10	100	1	100	3	1	1	NE	NE	250
28-03	MW-1	22-Aug-11		2.7J	48.1J	0.10J		1.6J	0.57J	2.5J	46,050	0.60J	552		2.5J	7.3J			3J	3.9J							239	1,070	58.8J
28-03	MW-1	16-Feb-12		2.2J	42.2J	0.09J		1.6J	0.39J	1.9J	49,400	0.47J	578		2J	6.7J			2.3J	1.8J							296	1,000	45.2J
28-03	MW-1	14-Aug-12		1.5J	42.9J	0.13J		0.85J	0.20J	1.9J	46,550		473		2J	5.5J			1J	15							273	906	64.5J
28-03	MW-1	28-Feb-13	0.15J	3.3J	76.9J	0.71J		3.4J	0.81J	3J	99,700	1.5J	526		3.2J	7.5J			6J	6.6J							254	975	61.5J
28-03	MW-1	30-Sep-13	0.11J	2.4J	34.1J	0.06J			0.16J	1.7J	20,540	0.03J	341	0.04J	2.2J	7.1J			3J	2J							276	950	27.3J
28-03	MW-1	17-Feb-14	0.04J	3.9J	18.8J			0.43J	0.25J	2.6J	8,850	0.12J	247		6.3J	15	0.03J		0.26J	1.6J							199	860	39.1J
28-03	MW-1	26-Aug-14		2.3J	42.8J	0.06J		1.2J	0.18J	2.0J	28,125		528		2.2J	11			0.69J	1.6J							250	324	38.9J
28-03	MW-1	27-Feb-15		3.0J	28.6J	0.04J		0.43J	0.16J	2.5J	12,870	0.18J	109		2.4J	9.2J			1.0J	2.8J							186	968	37.7J
28-03	MW-1	26-Oct-15	0.08J	4.2J	35.3J	0.06J		0.26J	0.27J	2.4J	7,760	0.18J	68		4.2J	19	0.01J	0.03J	0.50J	2.2J							174	1,060	34.4J
28-03	MW-1	29-Feb-16	0.14J	3.3J	33.7J	0.10J			0.19J	2.7J	15,571	0.09J	117		3.8J				0.36J								174	1,220	37.1J
28-03	MW-2	22-Aug-11		0.21J	7.8J				0.14J	0.72J	16,160	0.06J	282		1.2J	0.26J			1.4J	2J							388	39	
28-03	MW-2	16-Feb-12		0.32J	12.9J	0.06J		0.94J	0.18J	1.5J	45,400	0.43J	344		0.88J	0.26J			1.9J	2.8J							393	37	
28-03	MW-2	14-Aug-12			8.7J		0.05J		0.12J	1.0J	23,480		262		1.2J				0.39J	11							378	38	10.9J
28-03	MW-2	28-Feb-13	0.31J	0.59J	45.8J	0.20J	0.14J	1.4J	0.15J	10	204,100	3.1J	399		1.5J	0.51J			3.9J	46							353	46	12.6J
28-03	MW-2	30-Sep-13	0.05J	0.22J	8.3J	0.03J			0.13J	0.40J	21,150	0.03J	219	0.04J	1.4J	0.53J			3.3J	1.8J							404	43	16.4J
28-03	MW-2	17-Feb-14		0.10J	8.7J			0.14J	0.18J	0.77J	14,900	0.08J	354		4.4J	1.3J	0.04J		0.50J	2.0J							379	46	10.4J
28-03	MW-2	26-Aug-14			8.0J			0.42J	0.14J	0.44J	12,875		311		1.2J				0.68J	1.3J							368	45	10.4J
28-03	MW-2	27-Feb-15	0.56J	0.24J	10.1J					0.97J	13,130	0.22J	324		1.3J	0.63J			0.86J	6.6J							333	57	
28-03	MW-2	26-Oct-15	0.06J		8.0J	0.03J	0.05J		0.17J	1.7J	11,349	0.30J	199		2.0J	1.1J	0.01J		0.65J	3.3J							312	48	
28-03	MW-2	29-Feb-16			12.3J	0.05J			0.13J	0.63J	26,522	0.07J	364		1.8J	0.97J			0.71J	2.2J							312	60	
28-03	MW-3	22-Aug-11		0.18J	13.0J	0.11J	0.04J		0.18J	0.72J	25,400	0.08J	355		1.2J				1.1J	3.6J							391	35	12.1J
28-03	MW-3	16-Feb-12			10.7J	0.11J	0.04J	0.22J	0.15J	0.28J	25,275	0.07J	398		0.77J				0.71J								408	34	
28-03	MW-3	14-Aug-12			13.8J	0.10J	0.04J	0.28J	0.16J	0.64J	25,325		244		1.6J				0.13J	6.9J							416	38	18.2J
28-03	MW-3	28-Feb-13	0.04J	0.48J	31.1J	0.32J	0.09J	1.0J	0.20J	0.24J	81,850	0.12J	553		1.9J	0.67J			1.5J	2.1J							473	56	108J
28-03	MW-3	30-Sep-13	0.04J	0.49J	15.4J	0.11J			0.15J	0.40J	30,090		373	0.04J	1.7J	0.63J			3.1J	1.6J							478	50	56.4J
28-03	MW-3	17-Feb-14		0.44J	20.5J	0.18J		1.2J	0.25J	0.48J	53,875	0.04J	614		6.3J	2.0J			0.76J	1.9J							448	58	100J
28-03	MW-3	26-Aug-14		0.27J	18.4J	0.11J		1.2J	0.17J	0.23J	20,700		523		1.5J	1.0J			0.38J	0.85J							443	29	77.0J
28-03	MW-3	27-Feb-15	0.18J	0.72J	42.8J	0.26J	0.04J	0.90J	0.18J	0.38J	49,125		625		1.8J	1.4J			1.1J	1.9J							379	75	124J
28-03	MW-3	26-Oct-15	0.06J	0.38J	19.1J	0.12J	0.06J	0.91J	0.25J	0.61J	12,629	0.17J	381		3.0J	2.2J	0.01J		0.59J	2.3J							400	67	98.5J
28-03	MW-3	29-Feb-16			44.8J	0.39J		0.33J	0.17J	0.52J	85,550	0.06J	552		2.0J	0.90J			0.92J								344	55	32.1J
28-03	MW-8	22-Aug-11		4.2J	253	0.74J		4.5J	0.12J	7.7J	31,125	0.11J	101		1.3J			0.05J	8.4J	3.1J							128	2,724	213J
28-03	MW-8	16-Feb-12		3.3J	237	0.5J		3.6J	0.24J	6.0J	24,150	0.16J	166		1.8J	14			5.4J	2.7J							179	2,699	166J
28-03	MW-8	14-Aug-12	0.04J	4.1J	192	0.96J		5.4J	0.15J	5.1J	35,150	0.17J	95		1.6J	16			11.1J	5.2J							157	2,693	191J
28-03	MW-8	28-Feb-13		9J	197	0.47J		3.6J	0.28J	8.0J	20,950		130		1.8J				6.3J	2.4J							177	3,049	191J
28-03	MW-8	30-Sep-13	0.05J	5.2J	215	0.32J		2.8J	0.15J	4.9J	41,480	0.04J	72	0.04J	1.6J	19			4.1J	3.6J							173	2,724	171J
28-03	MW-8	17-Feb-14	0.12J		213	0.24J		2.2J	0.18J	10	7,525	0.31J	179		3.8J				2.2J	7.6J							129	2,700	187J
28-03	MW-8	26-Aug-14		5.2J	239	0.27J		3.5J	0.14J	11	34,150		192		2.1J	25			1.7J	6.6J							144	2,360	140J
28-03	MW-8	27-Feb-15		7J	321	0.52J		2.7J	0.15J	8.8J	20,475	0.43J	206		1.9J				7.0J	10							74	2,620	180J
28-03	MW-8	26-Oct-15	0.12J	8J	23.1J	0.23J		2.1J	0.20J	8.0J	35,883	0.27J	236		2.6J		0.03J	0.05J	1.8J	7.8J							73	53	119J
28-03	MW-8	29-Feb-16			263	0.35J		2.4J	0.17J	8.6J	23,145	0.39J	261	0.06J	2.2J				2.5J	11							129	2,800	133J

Table 3a
Detected Groundwater Constituents - Metals, Volatile Organic Compounds, and General Chemistry
February 2016 Semi-Annual Sampling Event
Dare County C&D Landfill

			Metals																		Volatile Organic Compounds						General Chemistry		
Facility Permit Number	Monitoring Well Code	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Acetone	Benzene	Carbon Disulfide	Chlorobenzene	Chloromethane	Toluene	Alkalinity	Chloride	Sulfate
North Carolina 2L or Groundwater Protection Standard			1*	10	700	4*	2	10	1*	1,000	300	15	50	1	100	20	20	0.2*	0.3*	1,000	6,000	1	700	50	3	600	NS	250	250
Solid Waste Section Limit			6	10	100	1	1	10	10	10	300	10	50	0.2	50	10	10	5.5	25	10	100	1	100	3	1	1	NE	NE	250
28-03	MW-9	22-Aug-11		21	35.8J	0.18J	0.16J	6.1J	5.6J	2.8J	194,750	2.6J	162		7.1J	1.0J		0.12J	9.4J	47							38	12	194J
28-03	MW-9	16-Feb-12	0.21J	249	47.4J	0.45J	0.18J	14	3.2J	5.1J	68,075	8.1J	69		3.6J	1.5J	0.07J	0.08J	31	21							11	16	120J
28-03	MW-9	14-Aug-12	0.12J	36	25.3J	0.26J	0.20J	6.4J	3.6J	3.3J	9,725	3.5J	37J	0.02J	4.1J	0.72J		0.21J	11.5J	22							21	16	74.6J
28-03	MW-9	28-Feb-13		22	27.3J	0.18J	0.08J	7.6J	1.9J	3.3J	14,470	5.2J	27J		3.3J	0.91J		0.10J	13.9J	10							76	7	35.8J
28-03	MW-9	30-Sep-13	0.12J	28	21.8J	0.18J	0.17J	4.2J	1.9J	2.9J	24,650	2.2J	27J	0.03J	3.5J	1.4J		0.07J	11.9J	11							57	12	62.1J
28-03	MW-9	17-Feb-14	0.04J	10	23.3J	0.17J	0.13J	6.2J	1.8J	2.6J	6,115	3.4J	36J		3.3J	1.7J		0.05J	9.1J	7.0J							31	7	37.6J
28-03	MW-9	26-Aug-14	0.21J	63	15.2J	0.14J	0.12J	6.1J	2.1J	5.1J	13,115	3.3J	32J		3.2J	2.7J			19.7J	14	14.00J						71	11	32.4J
28-03	MW-9	27-Feb-15		12	28.3J	0.18J	0.15J	7.1J	1.9J	3.2J	7,225	4.4J	33J		3.0J	1.2J			12.1J	11							11	5	124J
28-03	MW-9	26-Oct-15	0.15J	20	15.9J	0.10J	0.18J	5.9J	1.1J	2.7J	5,819	2.6J	18J		2.5J	1.1J	0.03J	0.08J	13.1J	5.8J							72		22.4J
28-03	MW-9	29-Feb-16	0.18J	47	18.8J	0.19J	0.24J	9.4J	2.3J	4.2J	20,859	3.7J	34J	0.08J	3.8J	1.6J		0.07J	31	14							15	13	51.8J
28-03	MW-10	22-Aug-11	0.26J	5.8J	63.1J	0.22J	0.11J	3.9J	0.51J	1.3J	116,250	1.0J	567		2.3J	1.1J		0.05J	7.5J	5.3J							209	34	626
28-03	MW-10	16-Feb-12		10	42.5J	0.25J	0.12J	3.2J	2J	1.4J	68,475	1.3J	617		6.7J	1.1J		0.07J	8.5J	14							45	39	3,365
28-03	MW-10	14-Aug-12	0.10J	11	43.5J	0.10J	0.10J	1.2J	0.79J	1.7J	8,875	1.4J	440		4.2J	0.55J	0.37J		5.7J	6.4J							250	7	584
28-03	MW-10	28-Feb-13		16	20.8J	0.13J	0.05J	1.8J	0.43J	2.5J	36,300	5.7J	111		2.4J	0.52J			20.6J	2.9J							196	8	93.5J
28-03	MW-10	30-Sep-13	0.05J	6.4J	42.7J	0.08J	0.07J	0.81J	0.38J	0.77J	19,340	0.15J	193	0.05J	2.9J	0.90J			7.3J	3.6J							224	10	297
28-03	MW-10	17-Feb-14		3.9J	20.1J		0.06J	0.60J	0.34J	0.68J	7,275	0.09J	188		7.2J	0.78J			1.4J	0.87J							251	5	77.8J
28-03	MW-10	26-Aug-14	0.85J	11	35.1J	0.09J	0.06J	2.2J	0.51J	0.61J	14,145	0.41J	226		2.4J	0.93J			8.2J	3.0J							304	7	103J
28-03	MW-10	27-Feb-15		8J	11.6J		0.05J	0.76J	0.27J	0.22J	16,875		94		1.3J	0.57J			2.8J	0.61J							150	5	63.4J
28-03	MW-10	26-Oct-15	1.1J	13	27.1J	0.11J	0.21J	2.2J	0.51J	1.9J	18,428	1.3J	162	0.07J	3.6J	0.82J	0.06J	0.05J	9.9J	6.5J							185	7	96.0J
28-03	MW-10	29-Feb-16	0.05J	11	18.2J	0.08J	0.07J	1.7J	0.62J	1.2J	35,508	0.93J	144		3.0J	0.70J			4.4J	2.8J							126	22	151J
28-03	MW-11	22-Aug-11		1.7J	50.1J	0.07J	0.10J	2.1J	0.74J	1.3J	18,880	1.4J	257		1.5J	0.41J		0.08J	3.6J	5.6J							93	47	257
28-03	MW-11	16-Feb-12		5.1J	72.4J	0.13J	0.16J	2.2J	2.7J	1.5J	54,125	1.6J	295		3.6J	0.35J		0.04J	4.7J	9J							48	60	376
28-03	MW-11	14-Aug-12	0.06J	5.8J	35.6J	0.11J	0.16J	1.8J	1.3J	1.6J	10,965	1.2J	100		3.0J	0.43J			3.8J	7.3J							83	23	192J
28-03	MW-11	28-Feb-13		2.6J	38.5J	0.11J	0.09J	1.4J	1.0J	1.1J	18,210	0.57J	96		3.0J	0.63J			3.4J	3.4J							141	33	297
28-03	MW-11	30-Sep-13	0.07J	2.6J	39.9J	0.05J	0.07J	0.46J	0.45J	1.6J	8,090	0.30J	93	0.05J	2.6J	0.65J			4.8J	6.2J							123	20	259
28-03	MW-11	17-Feb-14		2.3J	27.6J	0.06J		1.4J	0.64J	0.54J	18,900	0.13J	99		3.0J	0.51J			2.8J								59	12	133J
28-03	MW-11	26-Aug-14	0.24J	3.9J	25.6J	0.11J	0.06J	2.7J	0.96J	1.3J	7,020	0.81J	67		2.0J	0.75J			4.9J	5.9J							98	8	55.8J
28-03	MW-11	27-Feb-15		3.0J	34.4J	0.07J	0.04J	2.0J	0.42J	0.24J	12,775		75		1.6J	0.34J			3.8J	1.5J							64	12	96.7J
28-03	MW-11	26-Oct-15	0.46J	7J	35.0J	0.12J	0.26J	2.8J	2.3J	3.9J	11,337	3.3J	72		3.3J	0.75J	0.03J	0.12J	5.4J	13							83	12	48.9J
28-03	MW-11	29-Feb-16	0.39J	8J	30.6J	0.13J	0.09J	2.1J	1.5J	2.2J	14,571	1.5J	77		2.9J	0.57J		0.09J	5.3J	7.6J							80	20	77.3J
28-03	MW-12	22-Aug-11		5.5J	59.8J	0.10J	0.07J	1.2J	0.54J	0.85J	26,700	0.74J	579		2.3J	0.34J		0.03J	3.7J	6.5J							209	51	
28-03	MW-12	16-Feb-12		3.3J	43.6J	0.1J	0.04J	1.4J	0.93J	0.94J	11,685	1.3J	253		2.2J	0.24J		0.08J	3.6J	4.1J							49	38	14.6J
28-03	MW-12	14-Aug-12		2.9J	45.4J	0.10J	0.09J	0.97J	0.89J	1.1J	25,825	0.53J	367		3.1J	0.24J			2.0J	8.2J							100	27	19.7J
28-03	MW-12	28-Feb-13	0.19J	5.5J	38.6J	0.29J	0.10J	3.4J	0.82J	2.9J	13,830	4.2J	48J	0.02J	2.8J	0.32J			11.7J	8.3J							4	10	22.7J
28-03	MW-12	30-Sep-13	0.05J	1.1J	40.8J	0.11J	0.08J		0.46J	1.3J	474	0.31J	22J	0.04J	1.6J	0.40J		0.04J	3.3J	4.5J							2	25	14.3J
28-03	MW-12	17-Feb-14		0.09J	54.5J	0.06J	0.08J	0.66J	0.67J	1.1J	340	0.30J	57		2.4J	0.52J			0.16J	3.1J							1.0	31	18.0J
28-03	MW-12	26-Aug-14	0.14J	1.6J	42.2J	0.14J	0.07J	1.9J	1.0J	1.4J	4,210	1.5J	88		4.8J	0.52J			3.5J	8.5J							4	24	21.5J
28-03	MW-12	27-Feb-15		0.85J	36.0J	0.11J	0.06J	1.2J	0.39J	1.3J	568	0.92J	39J		1.7J	0.41J			2.4J	5.7J							7	11	11.3J
28-03	MW-12	26-Oct-15	0.17J	1.5J	30.9J	0.12J	0.12J	1.9J	0.81J	1.3J	4,468	1.2J	41J		3.0J	0.75J	0.03J	0.04J	3.2J	7.1J								23	
28-03	MW-12	29-Feb-16	0.06J	0.77J	23.1J	0.10J		1.4J	0.55J	0.86J	3,341	0.68J	37J		2.6J			0.08J	2.0J	3.5J							4	19	5.3J

Table 3a
Detected Groundwater Constituents - Metals, Volatile Organic Compounds, and General Chemistry
February 2016 Semi-Annual Sampling Event
Dare County C&D Landfill

			Metals																		Volatile Organic Compounds						General Chemistry		
Facility Permit Number	Monitoring Well Code	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Acetone	Benzene	Carbon Disulfide	Chlorobenzene	Chloromethane	Toluene	Alkalinity	Chloride	Sulfate
North Carolina 2L or Groundwater Protection Standard			1*	10	700	4*	2	10	1*	1,000	300	15	50	1	100	20	20	0.2*	0.3*	1,000	6,000	1	700	50	3	600	NS	250	250
Solid Waste Section Limit			6	10	100	1	1	10	10	10	300	10	50	0.2	50	10	10	5.5	25	10	100	1	100	3	1	1	NE	NE	250
28-03	MW-13	18-Oct-11		2.7J	30.0J	0.10J	0.11J	2.5J	0.59J	0.78J	21,100	0.51J	2,672		1.3J	0.59J		0.03J	2.8J	4.9J							296	43	7.9J
28-03	MW-13	16-Feb-12	0.25J	3.8J	31.4J	0.08J	0.08J	1.4J	0.26J	0.27J	40,875	0.31J	351	0.11J	0.93J	0.34J		0.03J	2.5J	1.6J							343	46	12.9J
28-03	MW-13	14-Aug-12		3.4J	28.8J		0.08J	1.2J	0.14J	0.61J	33,860		211		0.85J	0.38J			1.6J	7.7J							253	46	20.0J
28-03	MW-13	28-Feb-13	0.29J	32	122	1	0.40J	20	5.8J	6.3J	200,400	16	379	0.05J	11.7J	1.2J		0.32J	46	140							209	57	52.8J
28-03	MW-13	30-Sep-13	0.24J	2.6J	40.7J	0.08J		0.91J	0.17J	0.54J	76,050	0.11J	329	0.05J	1.1J	1J	0.04J	0.06J	1.9J	1.3J							193	80	218J
28-03	MW-13	17-Feb-14		1.9J	54.2J	0.03J	0.08J	1.2J	0.18J	0.67J	47,825	0.05J	353		3.1J	1.1J	0.04J	0.04J	0.57J	1.2J							159	84	163J
28-03	MW-13	26-Aug-14		0.62J	22.3J			0.47J	0.16J	0.35J	17,438		357		1.4J	0.60J			0.78J	1.9J							373	57	52.9J
28-03	MW-13	27-Feb-15	0.67J	3.2J	78.4J	0.14J	0.34J	1.2J	0.29J	0.78J	67,725	0.68J	426		1.7J	0.66J	0.04J		3.0J	12	13.60J						309	74	115J
28-03	MW-13	27-Oct-15	0.06J	0.55J	23.6J	0.02J	0.06J		0.21J	0.38J	16,200	0.17J	378		2.5J	0.91J			0.72J	2.8J							332	67	117J
28-03	MW-13	29-Feb-16	0.08J	2.5J	86.5J	0.58J	0.14J	0.67J	0.20J	0.62J	122,992	0.23J	484		2.4J	2.4J			2.1J	4.3J							286	74	126J
28-03	MW-14	18-Oct-11		33	76.8J	0.54J	0.26J	6.2J	0.40J	0.57J	74,700	0.63J	188		1.0J	0.50J			12.0J	3.5J							243	38	
28-03	MW-14	16-Feb-12		3.3J	29.3J		0.04J	1.9J	0.2J	0.7J	32,250	0.18J	206		0.88J				1.8J	1.9J							273	36	
28-03	MW-14	14-Aug-12		3.6J	42.3J		0.09J	1.4J	0.15J	0.64J	50,075		220		0.94J	0.26J			1.3J	23							226	39	96.4J
28-03	MW-14	28-Feb-13	0.22J	74	218	2	0.52J	26	6.0J	7.1J	449,500	23	315	0.08J	12.4J	1.2J	0.12J	0.43J	53	129							153	53	175J
28-03	MW-14	30-Sep-13	0.14J	10	66.1J	0.10J	0.05J	3.2J	0.33J	0.71J	96,150	0.53J	186	0.04J	1.1J	0.62J		0.04J	3.4J	3.7J							228	27	253
28-03	MW-14	17-Feb-14		3.7J	82.7J	0.07J	0.09J	2.2J	0.18J	0.68J	93,500	0.15J	403		2.3J	0.67J	0.04J		1.9J	1.8J							167	53	194J
28-03	MW-14	26-Aug-14		12	97.0J	0.17J	0.06J	3.5J	0.34J	0.81J	75,350	0.67J	259		1.2J	0.32J			3.9J	5.0J							164	39	148J
28-03	MW-14	27-Feb-15	0.20J	9J	78.0J	0.12J	0.09J	3.3J	0.49J	0.85J	54,775	0.94J	311		1.6J	0.59J			3.9J	6.1J							118	45	96.1J
28-03	MW-14	27-Oct-15	0.06J	15	90.4J	0.17J	0.10J	3.6J	0.56J	1.0J	80,183	1.4J	219		1.5J	0.536J	0.02J		4.4J	9.5J							60	56	165J
28-03	MW-14	29-Feb-16	0.08J	16	79.4J	0.62J	0.15J	3.6J	0.65J	2.4J	90,632	1.6J	393		2.7J	2.2J			4.7J	9.5J							83	49	141J
28-03	MW-15	18-Oct-11		13	43.0J	0.26J	0.23J	3.5J	1.3J	1.6J	43,025	2.1J	292		2.7J	0.28J		0.05J	4.7J	354							191	29	30.2J
28-03	MW-15	16-Feb-12		5.3J	24.9J	0.07J	0.09J	0.9J	0.33J	0.3J	29,125	0.38J	226		0.62J				1.2J	78							143	30	23.4J
28-03	MW-15	14-Aug-12		11	28.3J	0.11J	0.13J	0.27J	0.12J	0.80J	32,000	0.12J	99		0.86J			0.07J	0.22J	72							92	28	28.3J
28-03	MW-15	28-Feb-13	0.16J	65	223	2	0.58J	28	6.8J	8.0J	281,600	30	354	0.08J	14.2J	1.5J	0.13J	0.39J	63	59							177	47	179J
28-03	MW-15	30-Sep-13	0.08J	13	50.1J	0.13J		0.52J	0.27J	0.57J	38,000	0.11J	110	0.03J	0.92J	0.35J		0.03J	1.1J	98							78	37	26.6J
28-03	MW-15	17-Feb-14		6.0J	23.6J	0.07J	0.06J	1.1J	0.09J	0.54J	31,375	0.05J	160		0.72J				0.58J	24							69	28	25.4J
28-03	MW-15	26-Aug-14	0.13J	11	38.0J	0.17J		1.5J	0.33J	0.49J	26,375	0.49J	116	1.1	1.5J				1.3J	35							64	26	25.1J
28-03	MW-15	27-Feb-15		15	39.5J	0.18J	0.05J	1.1J	0.18J	0.34J	43,625	0.34J	162		0.59J	0.18J			1.7J	36							77	28	39.8J
28-03	MW-15	27-Oct-15	0.02J	5.8J	37.2J	0.10J	0.02J		0.09J	0.21J	19,103		125		0.37J				0.34J	35							137	27	16.0J
28-03	MW-15	29-Feb-16		16	44.3J	0.50J	0.08J	0.96J	0.17J	0.40J	50,674	0.24J	175		0.82J	1.1J			0.66J	40							52	29	30.6J
28-03	MW-16	18-Oct-11	0.15J	3.7J	278	0.48J		3.9J	0.38J	7.6J	29,425	0.22J	89		2.1J				5.5J	3.7J							154	3,099	207J
28-03	MW-16	16-Feb-12		6.6J	283	0.36J		3.2J	0.17J	6.1J	24,175	0.06J	108		1.8J	21			4.7J	1J							163	2,824	255
28-03	MW-16	14-Aug-12	0.12J	8J	472	0.38J		3.1J	0.26J	8.2J	27,313	0.16J	81		2.2J	30		0.07J	4.2J	6.2J							133	3,539	177J
28-03	MW-16	28-Feb-13	0.16J	12	308	0.26J		2.9J	0.37J	9.2J	46,050		307		3.6J	31			3.6J	2.7J							304	2,799	178J
28-03	MW-16	30-Sep-13	0.10J	6.2J	366	0.44J		3.4J	0.21J	7.7J	45,800	0.09J	145	0.03J	1.8J	24		0.03J	4.6J	3.6J							154	3,374	267
28-03	MW-16	17-Feb-14	0.02J	10	200	0.35J		3.3J	0.32J	5.8J	23,675	0.02J	271		5.6J	34			4.7J	0.74J							402	1,120	350
28-03	MW-16	26-Aug-14		3.5J	347	0.22J		3.8J	0.18J	3.8J	71,075		240		2.0J	16			4.2J	1.2J							143	855	128J
28-03	MW-16	27-Feb-15	0.17J	3.1J	219	0.17J		2.5J	0.44J	2.8J	23,900		396		3.7J	8.3J			3.9J	2.9J							529	792	196J
28-03	MW-16	27-Oct-15	0.10J	4.3J	244	0.22J		3.0J	0.32J	2.8J	58,325	0.16J	283	0.06J	3.5J		0.03J		3.6J	4.2J							75	1,380	96.5J
28-03	MW-16	29-Feb-16	0.08J	4.9J	284	0.62J		2.1J	0.24J	4.9J	57,917		265		2.6J				2.8J	2.1J							163	1,360	84.2J

Table 3a
Detected Groundwater Constituents - Metals, Volatile Organic Compounds, and General Chemistry
February 2016 Semi-Annual Sampling Event
Dare County C&D Landfill

			Metals																		Volatile Organic Compounds						General Chemistry		
Facility Permit Number	Monitoring Well Code	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Acetone	Benzene	Carbon Disulfide	Chlorobenzene	Chloromethane	Toluene	Alkalinity	Chloride	Sulfate
North Carolina 2L or Groundwater Protection Standard			1*	10	700	4*	2	10	1*	1,000	300	15	50	1	100	20	20	0.2*	0.3*	1,000	6,000	1	700	50	3	600	NS	250	250
Solid Waste Section Limit			6	10	100	1	1	10	10	10	300	10	50	0.2	50	10	10	5.5	25	10	100	1	100	3	1	1	NE	NE	250
28-03	MW-17	18-Oct-11		30	63.5J	1	0.33J	2.9J	3.7J	1.4J	47,875	1.8J	194		7.9J	0.91J		0.03J	8.3J	957								19	287
28-03	MW-17	16-Feb-12		4.1J	36.8J	0.9J	0.21J	1.8J	3.1J	1.1J	7,748	1.4J	98		6.3J	0.51J			2.1J	382								22	372
28-03	MW-17	14-Aug-12		11	43.5J	0.80J	0.19J	2.5J	2.9J	1.1J	30,800	1.5J	89		7.8J	0.69J			6.1J	201							4	23	225J
28-03	MW-17	28-Feb-13	0.04J	1.3J	31.1J	0.36J	0.10J	1.1J	3.8J	1.6J	8,480	1.1J	53		5.9J	0.60J		0.08J	1.9J	103							1	15	140J
28-03	MW-17	30-Sep-13	0.09J	6J	17.3J	0.11J	0.05J	1.6J	0.31J	1.2J	28,450	0.31J	93	0.05J	2.3J	1.3J		0.03J	3.6J	33							61	17	121J
28-03	MW-17	17-Feb-14		0.54J	29.0J	0.18J	0.15J	1.5J	1.3J	2.3J	738	0.52J	43J		3.3J	0.73J			1.2J	88								13	114J
28-03	MW-17	26-Aug-14		5.8J	42.6J	0.14J	0.04J	2.2J	1.5J	1.1J	16,025	1.3J	51		4.1J	0.69J			5.8J	40							13	11	101J
28-03	MW-17	27-Feb-15		1.2J	31.5J	0.15J	0.10J	1.2J	0.88J	1.5J	1,706	1.1J	28J		2.2J	0.40J			2.8J	26							4	7	19.4J
28-03	MW-17	27-Oct-15	1.1J	2.4J	38.8J	0.22J	0.11J	2.3J	0.76J	1.4J	8,445	2.2J	38J	0.05J	1.7J	0.80J	0.06J	0.06J	4.7J	57							2	8	59.5J
28-03	MW-17	29-Feb-16	0.09J	2.8J	44.2J	0.22J	0.06J	2.1J	1.1J	2.5J	10,331	3.8J	35J		2.5J	0.82J			7.1J	45							8	19	75.4J

Notes:

1. Metal and volatile organic compound units are in micrograms per liter (parts per billion).
2. General chemistry units are in milligrams per liter (parts per million).
3. *- Groundwater Protection Standard
4. NE = Not Established
5. NS = No Standard
6. J - Indicates the analytical result is an estimated concentration between the method detection limit and the Solid Waste Section Reporting Limit.

- Blank cell indicates the analyte was not detected
- Concentration exceeds the 15A NCAC 02L.0202 (North Carolina 2L) or Groundwater Protection Standard

Table 3b
Detected Surface Water Constituents - Metals, Volatile Organic Compounds, and General Chemistry
February 2016 Semi-Annual Sampling Event
Dare County C&D Landfill

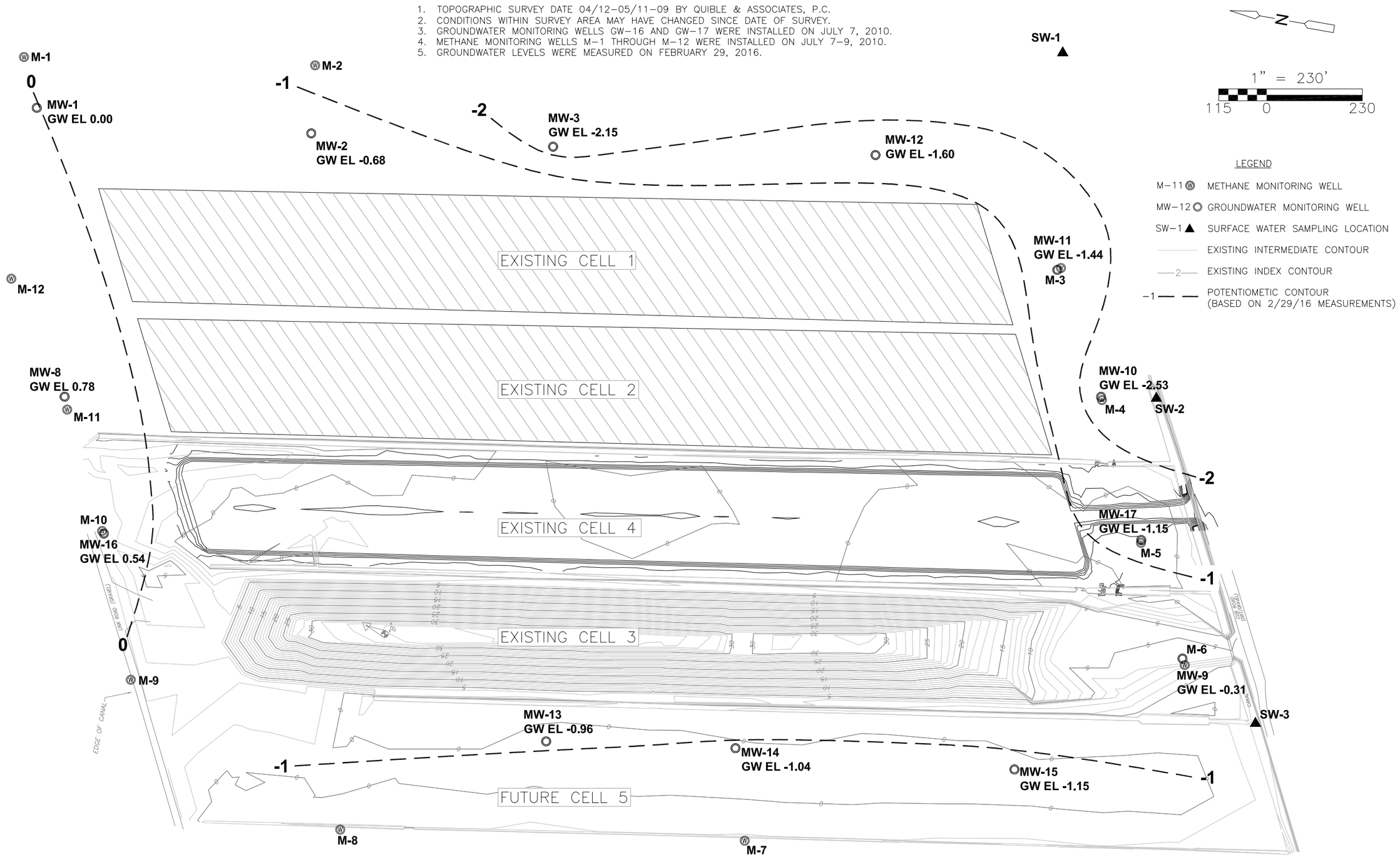
			Metals																		Volatile Organic Compounds						General Chemistry		
Facility Permit Number	Surface Water Code	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Acetone	Benzene	Chlorobenzene	Chloromethane	1,4-Dichlorobenzene	Toluene	Alkalinity	Chloride	Sulfate
North Carolina 2B Freshwater Aquatic Life or Human Health Standard			640*	10	200,000*	6.5	0.15	24	4*	2.7	NS	0.54	NS	0.012	16	5	0.06	0.47*	NS	36	2,000	51*	140	96*	100	11	NS	230**	NS
Solid Waste Section Limit			10	10	100	1	1	10	10	10	300	10	50	0.2	50	10	10	5.5	25	10	100	1	3	1	1	1	1	NE	250
28-03	SW-1	22-Aug-11		2.8J	23.7J			0.17J	0.54J	1.4J	274J	0.19J	635		2.5J	2.0J			2.9J	2.4J							214	392	76.3J
28-03	SW-1	16-Feb-12		2.1J	93J			0.19J	1.0J	2.1J	403	0.17J	201		3.9J	7.2J			0.72J	0.92J							158	935	170J
28-03	SW-1	14-Aug-12		2.3J	65.1J				0.64J	2.2J	651	0.38J	225		3.4J	5.9J			0.59J	4.7J							143	717	158J
28-03	SW-1	28-Feb-13	1.7J	1.8J	13.5J			0.85J	0.28J	1.7J	4,220	35	14J		0.82J	0.82J			2.2J	4.8J							5	145	
28-03	SW-1	30-Sep-13	0.09J	2.5J	31.8J	0.09J		0.77J	0.31J	1.7J	832	0.31J	201	0.03J	2.8J	3.1J			2.8J	2J							224	304	30.2J
28-03	SW-1	17-Feb-14	0.41J	2.1J	25.5J	0.07J		3.0J	0.66J	2.0J	3,580	8.7J	145		3.4J	3.3J			2.3J	4.4J							92	208	38.8J
28-03	SW-1	26-Aug-14	0.14J	2.7J	25.7J	0.07J		1.2J	0.36J	1.5J	2,426	8.6J	101		2.5J	3.5J			3.3J	2.9J							177	294	39.1J
28-03	SW-1	27-Feb-15	0.44J	2.1J	32.5J	0.27J	0.05J	3.9J	1.4J	3.3J	5,885	6.9J	197		3.3J	1.3J			7.7J	12							129	165	61.6J
28-03	SW-1	27-Oct-15	0.18J	2.4J	26.6J	0.17J		1.5J	0.44J	1.3J	3,277	2.4J	192		2.3J	1.8J			4.3J	2.6J							152	175	49.4J
28-03	SW-1	29-Feb-16	0.27J	0.70J	24.2J	0.08J		1.2J	0.22J	1.7J	2,914	21	25J		0.88J	1.6J			1.0J	5.1J							12	153	8.9J
28-03	SW-2	18-Oct-11	0.21J	3.5J	53.3J			0.70J	0.74J	3.3J	2,396	13	153		2.7J	7.4J			0.94J	9.4J							91	1,170	127J
28-03	SW-2	16-Feb-12		2.9J	97.3J			0.95J	1.4J	2.9J	2,968	4.9J	274		4.4J	6.5J			1.2J	7.6J							143	935	165J
28-03	SW-2	14-Aug-12	0.14J	3.0J	56.0J			0.93J	0.62J	2.0J	2,389	4.3J	116		3.0J	4.2J			0.80J	5.4J							128	549	150J
28-03	SW-2	28-Feb-13	0.49J	2.3J	35.4J	0.11J		2.0J	1.1J	3.2J	5,155	7.8J	169		3.1J	2.6J			3.2J	15							96	276	53.5J
28-03	SW-2	30-Sep-13	0.08J	2.1J	33.8J	0.07J		0.70J	0.28J	1.9J	1,358	0.73J	94	0.03J	2.6J	3.3J			1.8J	2.1J							203	372	22.3J
28-03	SW-2	17-Feb-14	0.33J	1.4J	23.1J	0.04J		3.1J	0.50J	2.6J	4,080	5.6J	133		3.0J	2.6J			2.0J	5.8J							93	192	56.1J
28-03	SW-2	26-Aug-14	0.17J	2.3J	26.7J	0.05J		1.1J	0.27J	1.5J	1,293	2.4J	36J		2.7J	3.7J			2.2J	3.3J							175	292	20.7J
28-03	SW-2	27-Feb-15	0.68J	3.6J	32.1J	0.21J	0.05J	4.6J	1.1J	4.0J	4,195	6.4J	161		3.2J	1.3J			5.8J	16							132	145	57.6J
28-03	SW-2	27-Oct-15	0.20J	2.5J	29.4J	0.16J		1.8J	0.35J	1.6J	3,543	5.5J	81		2.3J	2.4J			3.5J	3.5J							146	195	52.5J
28-03	SW-2	29-Feb-16	0.30J	1.4J	21.1J	0.29J		3.2J	0.75J	1.9J	4,021	13	93		2.9J	1.8J			3.7J	4.6J							103	94	23.3J
28-03	SW-3	22-Aug-11		4.5J	44.1J			0.53J	0.93J	3.3J	1,142	2.8J	106		3.2J	6.3J			3.2J	5.2J							178	965	117J
28-03	SW-3	16-Feb-12		2.7J	94.4J			0.64J	0.9J	2.2J	924	2.1J	249		3.8J	8.1J			0.72J	2.9J							159	910	153J
28-03	SW-3	14-Aug-12	0.17J	2.9J	55.4J			0.86J	0.60J	1.9J	2,274	3.6J	117		2.9J	4.6J			0.60J	4.8J							116	567	144J
28-03	SW-3	28-Feb-13	0.48J	2.2J	36.4J	0.12J	0.04J	2.5J	1.0J	4.1J	5,650	8.4J	162		3.1J	2.2J			4.0J	10							99	270	43.0J
28-03	SW-3	30-Sep-13	0.10J	4.3J	48.7J	0.16J		1.8J	0.97J	3.2J	9,640	6.8J	398	0.04J	3.4J	3.2J			4.9J	11							202	342	22.1J
28-03	SW-3	17-Feb-14	0.11J	2.1J	21.1J	0.03J		2.0J	0.43J	2.9J	2,198	2.2J	89		2.7J	4.7J			1.2J	4.0J							129	318	29.6J
28-03	SW-3	26-Aug-14	0.21J	2.7J	27.3J	0.07J		1.3J	0.31J	1.7J	1,883	4.2J	43J	0.45	2.3J	3.7J			2.1J	4.0J							173	290	39.9J
28-03	SW-3	27-Feb-15	0.68J	3.7J	31.5J	0.22J	0.06J	4.6J	1.1J	4.0J	4,060	6.4J	156		3.1J	1.4J			5.9J	19							121	140	69.5J
28-03	SW-3	27-Oct-15	0.23J	2.2J	28.3J	0.11J		1.6J	0.36J	1.7J	3,879	5.7J	74		2.2J	1.8J			3.8J	4.5J							142	199	24.8J
28-03	SW-3	29-Feb-16	0.30J	2.0J	22.7J	0.36J	0.05J	4.1J	0.86J	2.0J	4,773	15	119		3.2J	2.2J			4.2J	5.5J							110	92	33.1J

Notes:
1. Metal and volatile organic compound concentrations are in micrograms per liter (parts per billion).
2. General chemistry concentrations are in milligrams per liter (parts per million).
3. Standards obtained from 15A NCAC 02B (North Carolina 2B) Surface Water Standards for Class C Waters or are National Criteria per the U.S. Environmental Protection Agency (March 2016)
4. * - Human Health Standard
6. NS = No Standard NE = Not Established
7. J - Indicates the analytical result is an estimated concentration between the method detection limit and the Solid Waste Section Reporting Limit

- Blank cell indicates the analyte was not detected
- Concentration exceeds the North Carolina 2B Freshwater Aquatic Life or Human Health Standard for Class C Waters

NOTES:

1. TOPOGRAPHIC SURVEY DATE 04/12–05/11–09 BY QUIBLE & ASSOCIATES, P.C.
2. CONDITIONS WITHIN SURVEY AREA MAY HAVE CHANGED SINCE DATE OF SURVEY.
3. GROUNDWATER MONITORING WELLS GW–16 AND GW–17 WERE INSTALLED ON JULY 7, 2010.
4. METHANE MONITORING WELLS M–1 THROUGH M–12 WERE INSTALLED ON JULY 7–9, 2010.
5. GROUNDWATER LEVELS WERE MEASURED ON FEBRUARY 29, 2016.



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: P. STOUT
DRAWN BY: A. WEISPFENNING
SHEET CHK'D BY: D. FORBES
CROSS CHK'D BY:
APPROVED BY: M. COLONE
DATE: APRIL 2016

CDM Smith
5400 Glenwood Ave, Suite 400
Raleigh, NC 27612
Tel: (919) 325-3500

DARE COUNTY
NORTH CAROLINA

CONSTRUCTION & DEMOLITION DEBRIS LANDFILL

POTENTIOMETRIC SURFACE MAP

PROJECT NO. 17952–110439
FILE NAME: DARE C&D S16.DWG
SHEET NO.
1

Appendix A

Environment 1, Incorporated

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

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

Drinking Water ID: 37715
Wastewater ID: 10

ID#: 6051

DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO ,NC 27954

DATE COLLECTED: 02/29/16
DATE REPORTED : 04/05/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-1	MW-2	MW-3	MW-8	MW-9	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.9	6.9	6.8	6.2	5.3	02/29/16	BF	4500HB-00
Alkalinity (to pH 4.5), mg CaCO3/l	1.0	1.0	174	312	344	129	15	03/11/16	SDB	2320B-97
Chloride, mg/l	5.0	5.0	1220	60	55	2800	13	03/07/16	KKF	4500CLB-9
Total Dissolved Residue, mg/l	1.0	1.0	2480	542	494	3840	136	03/01/16	SDB	2540C-97
Sulfate, mg/l	5.0	250.0	37.1 J	--- U	32.1 J	133 J	51.8 J	03/02/16	SEJ	4500SO42E
Antimony, ug/l	0.05	6.0	0.14 J	--- U	--- U	--- U	0.18 J	03/16/16	LFJ	EPA200.8
Arsenic, ug/l	0.48	10.0	3.3 J	--- U	--- U			03/16/16	LFJ	EPA200.8
Arsenic, ug/l	0.48	10.0				--- U	47	03/30/16	MTM	3113B-04
Barium, ug/l	0.02	100.0	33.7 J	12.3 J	44.8 J	263	18.8 J	03/16/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.10 J	0.05 J	0.39 J	0.35 J	0.19 J	03/16/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	--- U	--- U	--- U	--- U	0.24 J	03/16/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	0.19 J	0.13 J	0.17 J	0.17 J	2.3 J	03/16/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	--- U	--- U	0.33 J	2.4 J	9.4 J	03/16/16	LFJ	EPA200.8
Copper, ug/l	0.07	10.0	2.7 J	0.63 J	0.52 J	8.6 J	4.2 J	03/16/16	LFJ	EPA200.8
Iron, ug/l	5.23	300.0	15571	26522	85550	23145	20859	03/23/16	LFJ	EPA200.7
Manganese, ug/l	0.22	50.0	117	364	552	261	34 J	03/22/16	LFJ	EPA200.7
Lead, ug/l	0.03	10.0	0.09 J	0.07 J	0.06 J	0.39 J	3.7 J	03/16/16	LFJ	EPA200.8
Mercury, ug/l	0.04	0.20	--- U	--- U	--- U			03/04/16	MTM	245.1 R3-
Mercury, ug/l	0.04	0.20				0.06 J	0.08 J	03/14/16	JHN	245.1 R3-
Nickel, ug/l	0.06	50.0	3.8 J	1.8 J	2.0 J	2.2 J	3.8 J	03/16/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	--- U			--- U		03/31/16	MTM	3113B-04
Selenium, ug/l	0.54	10.0		0.97 J	0.90 J		1.6 J	03/16/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0	--- U	--- U	--- U	--- U	--- U	03/16/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	--- U	--- U	--- U	--- U	0.07 J	03/16/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	0.36 J	0.71 J	0.92 J	2.5 J	31	03/16/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	--- U	2.2 J	--- U	11	14	03/16/16	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	1535	668	757	4430	174	02/29/16	BF	2510B-97
Dissolved Oxygen, mg/l	0.1	0.1	6.81	1.64	1.67	2.02	1.72	02/29/16	BF	4500OG-01
Temperature, °C			15	15	14	17	18	02/29/16	BF	2550B-00
Static Water Level, feet			1.61	2.23	3.89	2.12	5.30	02/29/16	BF	
Well Depth, feet			20.35	20.97	19.95	19.17	22.75	02/29/16	BF	
ORP, mv			+17	-60	-19	+32	+77	02/29/16	BF	2580B
Turbidity (Field), NTU	1.0	1.0	83.2	41.5	229	153	25.6	02/29/16	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#: 6051

DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO ,NC 27954

DATE COLLECTED: 02/29/16
DATE REPORTED : 04/05/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-10	MW-11	MW-12	Duplicate	Equipment Blank	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.2	6.2	5.1			02/29/16	BF	4500HB-00
Alkalinity (to pH 4.5), mg CaCO3/l	1.0	1.0	126	80	4			03/11/16	SDB	2320B-97
Chloride, mg/l	5.0	5.0	22	20	19			03/07/16	KKF	4500CLB-9
Total Dissolved Residue, mg/l	1.0	1.0	418	174	85			03/01/16	SDB	2540C-97
Sulfate, mg/l	5.0	250.0	151 J	77.3 J	5.3 J			03/02/16	SEJ	4500SO42E
Antimony, ug/l	0.05	6.0	0.05 J	0.39 J				03/16/16	LFJ	EPA200.8
Antimony, ug/l	0.05	6.0			0.06 J	0.10 J	--- U	03/28/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0	11	8 J				03/16/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0			0.77 J	0.71 J	--- U	03/28/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	18.2 J	30.6 J				03/16/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0			23.1 J	23.6 J	--- U	03/28/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.08 J	0.13 J				03/16/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0			0.10 J	0.35 J	0.10 J	03/28/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.07 J	0.09 J				03/16/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0			--- U	0.07 J	--- U	03/28/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	0.62 J	1.5 J				03/16/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0			0.55 J	0.58 J	--- U	03/28/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	1.7 J	2.1 J				03/16/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0			1.4 J	1.4 J	0.12 J	03/28/16	LFJ	EPA200.8
Copper, ug/l	0.07	10.0	1.2 J	2.2 J				03/16/16	LFJ	EPA200.8
Copper, ug/l	0.07	10.0			0.86 J	0.83 J	--- U	03/28/16	LFJ	EPA200.8
Iron, ug/l	5.23	300.0	35508	14571	3341	3283	25 J	03/23/16	LFJ	EPA200.7
Manganese, ug/l	0.22	50.0	144	77	37 J	35 J	--- U	03/22/16	LFJ	EPA200.7
Lead, ug/l	0.03	10.0	0.93 J	1.5 J				03/16/16	LFJ	EPA200.8
Lead, ug/l	0.03	10.0			0.68 J	0.72 J	--- U	03/28/16	LFJ	EPA200.8
Mercury, ug/l	0.04	0.20	--- U	--- U	--- U	--- U	--- U	03/14/16	JMN	245.1 R3-
Nickel, ug/l	0.06	50.0	3.0 J	2.9 J				03/16/16	LFJ	EPA200.8
Nickel, ug/l	0.06	50.0			2.6 J	2.7 J	0.16 J	03/28/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	0.70 J	0.57 J				03/16/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0			--- U	1.3 J	--- U	03/28/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0	--- U	--- U				03/16/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0			--- U	--- U	--- U	03/28/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	--- U	0.09 J				03/16/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5			0.08 J	0.14 J	--- U	03/28/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	4.4 J	5.3 J				03/16/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0			2.0 J	1.9 J	--- U	03/28/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	2.8 J	7.6 J				03/16/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0			3.5 J	3.3 J	--- U	03/28/16	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	523	330	97			02/29/16	BF	2510B-97
Dissolved Oxygen, mg/l	0.1	0.1	0.50	1.60	1.09			02/29/16	BF	4500OG-01
Temperature, °C			16	16	15			02/29/16	BF	2550B-00
Static Water Level, feet			5.40	5.00	4.40			02/29/16	BF	

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#: 6051

DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO ,NC 27954

DATE COLLECTED: 02/29/16
DATE REPORTED : 04/05/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-10	MW-11	MW-12	Duplicate	Equipment Blank	Analysis Date	Analyst	Method Code
Well Depth, feet			21.97	20.42	22.62			02/29/16	BF	
ORP, mv			+46	+45	+82			02/29/16	BF	2580B
Turbidity (Field), NTU	1.0	1.0	28.6	66.7	9.14			02/29/16	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: DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO, NC 27954

CLIENT ID: 6051

ANALYST: MAO
DATE COLLECTED: 02/29/16
DATE ANALYZED: 03/10/16
DATE REPORTED: 04/05/16

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-1	MW-2	MW-3	MW-8	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	--- 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
48. Tetrahydrofuran	0.39	1.0	--- 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: DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO, NC 27954

CLIENT ID: 6051

ANALYST: MAO
DATE COLLECTED: 02/29/16
DATE ANALYZED: 03/10/16
DATE REPORTED: 04/05/16

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-10	MW-11	MW-12	Duplicate	Equipment Blank
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- 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
48. Tetrahydrofuran	0.39	1.0	--- 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: DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO, NC 27954

CLIENT ID: 6051

ANALYST: MAO
DATE COLLECTED: 02/29/16
DATE ANALYZED: 03/10/16
DATE REPORTED: 04/05/16

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Trip Blank
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	--- U
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	--- U
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	--- U
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	--- U
37. Xylenes	0.68	5.0	--- U
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U
48. Tetrahydrofuran	0.39	1.0	--- 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: 6051 **Week: 9**

DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO NC 27954

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

	Field pH	Alkalinity	Chloride	TDS	Sulfate	Metals	Conductivity	DO	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2	ORP	Field Parameter
CHLORINE NEUTRALIZED AT COLLECTION															
pH CHECK (LAB)						<2					<2	<2	<2		
CONTAINER TYPE, P/G	P	P	P	P	P	P	P	P	P		G	G	G	P	P
CHEMICAL PRESERVATION	A	A	A	A	A	A	A	A	A		E	E	E	A	A

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

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	Alkalinity	Chloride	TDS	Sulfate	Metals	Conductivity	DO	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2	ORP	Field Parameter
MW-1	2-29-16	1225		15	9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
MW-2	2-29-16	1157		15	8	C	C	C	C	C	C	C	C	C	C	C	C		C	C
MW-3	2-29-16	1130		14	8	C	C	C	C	C	C	C	C	C	C	C	C		C	C
MW-8	2-29-16	1045		17	8	C	C	C	C	C	C	C	C	C	C	C	C		C	C
MW-9	2-29-16	1305		18	8	C	C	C	C	C	C	C	C	C	C	C	C		C	C
MW-10	2-29-16	1355		16	8	C	C	C	C	C	C	C	C	C	C	C	C		C	C
MW-11	2-29-16	1425	-	16	8	C	C	C	C	C	C	C	C	C	C	C	C		C	C
MW-12	2-29-16	1445		15	8	C	C	C	C	C	C	C	C	C	C	C	C		C	C
Duplicate	2-29-16	1493		15	3						C					C	C			
Equipment Blank	2-29-16	0755			3						C					C	C			
Trip Blank	2-29-16				2											C	C			

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
Bobby Fox	2-29-16 1725	[signature]	2/29/16 5:25pm
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.

№ 309281

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#: 6051 A

DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO ,NC 27954

DATE COLLECTED: 02/29/16
DATE REPORTED : 04/05/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-13	MW-14	MW-15	MW-16	MW-17	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.8	6.2	6.3	6.1	5.0	02/29/16	BF	4500HB-00
Alkalinity (to pH 4.5), mg CaCO3/l	1.0	1.0	286	83	52	163	8	03/11/16	SDB	2320B-97
Chloride, mg/l	5.0	5.0	74	49	29	1360	19	03/07/16	KKF	4500CLB-9
Total Dissolved Residue, mg/l	1.0	1.0	563	373	224		142	03/01/16	SDB	2540C-97
Sulfate, mg/l	5.0	250.0	126 J	141 J	30.6 J	84.2 J	75.4 J	03/02/16	SEJ	4500SO42E
Antimony, ug/l	0.05	6.0	0.08 J	0.08 J	--- U	0.08 J	0.09 J	03/28/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0	2.5 J	16	16	4.9 J	2.8 J	03/28/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	86.5 J	79.4 J	44.3 J	284	44.2 J	03/28/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.58 J	0.62 J	0.50 J	0.62 J	0.22 J	03/28/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	0.14 J	0.15 J	0.08 J	--- U	0.06 J	03/28/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	0.20 J	0.65 J	0.17 J	0.24 J	1.1 J	03/28/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	0.67 J	3.6 J	0.96 J	2.1 J	2.1 J	03/28/16	LFJ	EPA200.8
Copper, ug/l	0.07	10.0	0.62 J	2.4 J	0.40 J	4.9 J	2.5 J	03/28/16	LFJ	EPA200.8
Iron, ug/l	5.23	300.0	122992	90632	50674	57917	10331	03/23/16	LFJ	EPA200.7
Manganese, ug/l	0.22	50.0	484	393	175	265	35 J	03/22/16	LFJ	EPA200.7
Lead, ug/l	0.03	10.0	0.23 J	1.6 J	0.24 J	--- U	3.8 J	03/28/16	LFJ	EPA200.8
Mercury, ug/l	0.04	0.20	--- U	--- U	--- U	--- U	--- U	03/14/16	JMN	245.1 R3-
Nickel, ug/l	0.06	50.0	2.4 J	2.7 J	0.82 J	2.6 J	2.5 J	03/28/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	2.4 J	2.2 J	1.1 J		0.82 J	03/28/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0				--- U		04/04/16	MTM	3113B-04
Silver, ug/l	0.06	10.0	--- U	--- U	--- U	--- U	--- U	03/28/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	--- U	--- U	--- U	--- U	--- U	03/28/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	2.1 J	4.7 J	0.66 J	2.8 J	7.1 J	03/28/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	4.3 J	9.5 J	40	2.1 J	45	03/28/16	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	772	627	320	1903	185	02/29/16	BF	2510B-97
Dissolved Oxygen, mg/l	0.1	0.1	1.70	1.1	1.85	1.81	0.52	02/29/16	BF	4500OG-01
Temperature, °C			14	14	14	15	16	02/29/16	BF	2550B-00
Static Water Level, feet			3.92	4.00	4.32	5.02	4.00	02/29/16	BF	
Well Depth, feet			22.41	22.02	22.62	20.11	14.78	02/29/16	BF	
ORP, mv			-33	-1	+15	-9	+96	02/29/16	BF	2580B
Turbidity (Field), NTU	1.0	1.0	155	252	73.9	1.39	10.5	02/29/16	BF	2130B-01
Total Dissloved Solids, mg/l	1.0	1.0				2410		03/03/16	SDB	2540C-97

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#: 6051 A

DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO ,NC 27954

DATE COLLECTED: 02/29/16
DATE REPORTED : 04/05/16

REVIEWED BY:

PARAMETERS	MDL	SWSL	SW-1	SW-2	SW-3	Analysis Date	Analyst	Method Code
PH (field measurement), Units			4.9	7.3	6.7	02/29/16	BF	4500HB-00
Alkalinity (to pH 4.5), mg CaCO3/l	1.0	1.0	12	103	110	03/11/16	SDB	2320B-97
Chloride, mg/l	5.0	5.0	153	94	92	03/07/16	KKF	4500CLB-97
Total Dissolved Residue, mg/l	1.0	1.0	285	408	421	03/01/16	SDB	2540C-97
Sulfate, mg/l	5.0	250.0	8.9 J	23.3 J	33.1 J	03/02/16	SEJ	4500SO42E97
Antimony, ug/l	0.05	6.0	0.27 J	0.30 J	0.30 J	03/28/16	LFJ	EPA200.8
Arsenic, ug/l	0.66	10.0	0.70 J	1.4 J	2.0 J	03/28/16	LFJ	EPA200.8
Barium, ug/l	0.02	100.0	24.2 J	21.1 J	22.7 J	03/28/16	LFJ	EPA200.8
Beryllium, ug/l	0.04	1.0	0.08 J	0.29 J	0.36 J	03/28/16	LFJ	EPA200.8
Cadmium, ug/l	0.05	1.0	--- U	--- U	0.05 J	03/28/16	LFJ	EPA200.8
Cobalt, ug/l	0.04	10.0	0.22 J	0.75 J	0.86 J	03/28/16	LFJ	EPA200.8
Total Chromium, ug/l	0.06	10.0	1.2 J	3.2 J	4.1 J	03/28/16	LFJ	EPA200.8
Copper, ug/l	0.07	10.0	1.7 J	1.9 J	2.0 J	03/28/16	LFJ	EPA200.8
Iron, ug/l	5.23	300.0	2914	4021	4773	03/23/16	LFJ	EPA200.7
Manganese, ug/l	0.22	50.0	25 J	93	119	03/22/16	LFJ	EPA200.7
Lead, ug/l	0.03	10.0	21	13	15	03/28/16	LFJ	EPA200.8
Mercury, ug/l	0.04	0.20	--- U	--- U	--- U	03/14/16	JMN	245.1 R3-94
Nickel, ug/l	0.06	50.0	0.88 J	2.9 J	3.2 J	03/28/16	LFJ	EPA200.8
Selenium, ug/l	0.54	10.0	1.6 J	1.8 J	2.2 J	03/28/16	LFJ	EPA200.8
Silver, ug/l	0.06	10.0	--- U	--- U	--- U	03/28/16	LFJ	EPA200.8
Thallium, ug/l	0.05	5.5	--- U	--- U	--- U	03/28/16	LFJ	EPA200.8
Vanadium, ug/l	0.36	25.0	1.0 J	3.7 J	4.2 J	03/28/16	LFJ	EPA200.8
Zinc, ug/l	1.61	10.0	5.1 J	4.6 J	5.5 J	03/28/16	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	349	562	567	02/29/16	BF	2510B-97
Dissolved Oxygen, mg/l	0.1	0.1	8.52	9.40	8.46	02/29/16	BF	4500OG-01
Temperature, °C			17	16	14	02/29/16	BF	2550B-00
Turbidity (Field), NTU	1.0	1.0	8.28	37.3	36.5	02/29/16	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: DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO, NC 27954

CLIENT ID: 6051 A

ANALYST: MAO
DATE COLLECTED: 02/29/16
DATE ANALYZED: 03/10/16
DATE REPORTED: 04/05/16

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	MW-13	MW-14	MW-15	MW-16	MW-17
1. Chloromethane	0.77	1.0	--- U	--- U	--- U	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U	--- U	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U	--- U	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U	--- U	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U	--- U	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U	--- U	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U	--- U	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U	--- U	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U	--- U	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U	--- U	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U	--- U	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U	--- U	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U	--- U	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U	--- U	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U	--- U	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U	--- U	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U	--- U	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U	--- U	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U	--- U	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U	--- U	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U	--- U	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U	--- U	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U	--- U	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U	--- U	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U	--- U	--- 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
48. Tetrahydrofuran	0.39	1.0	--- 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
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CLIENT: DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO, NC 27954

CLIENT ID: 6051 A

ANALYST: MAO
DATE COLLECTED: 02/29/16
DATE ANALYZED: 03/10/16
DATE REPORTED: 04/05/16

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	9.30 J	--- 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
48. Tetrahydrofuran	0.39	1.0	--- 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: 6051 A **Week:** 9

DARE COUNTY (C&D SITE)
MR. EDWARD L. MANN
DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO NC 27954

DISINFECTION: ☐ CHLORINE ☐ UV ☐ NONE ☐ _____

	Field pH	Alkalinity	Chloride	TDS	Sulfate	Metals	Conductivity	DO	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2	ORP	Field Parameter
CHLORINE NEUTRALIZED AT COLLECTION															
pH CHECK (LAB)						<2					<2	<2	<2		
CONTAINER TYPE, P/G	P	P	P	P	P	P	P	P	P		G	G	G	P	P
CHEMICAL PRESERVATION	A	A	A	A	A	A	A	A	A		E	E	E	A	A

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

SAMPLE LOCATION	COLLECTION DATE	COLLECTION TIME	TOTAL CHLORINE, mg/l OR ug/l AT COLLECTION	TEMPERATURE, °C AT COLLECTION	# OF CONTAINERS	Field pH	Alkalinity	Chloride	TDS	Sulfate	Metals	Conductivity	DO	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2	ORP	Field Parameter
MW-13	2-29-16	0945		14	9	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
MW-14	2-29-16	0915		14	8	G	G	G	G	G	G	G	G	G	G	G	G		G	G
MW-15	2-29-16	0815		14	8	G	G	G	G	G	G	G	G	G	G	G	G		G	G
MW-16	2-29-16	1020		15	8	G	G	G	G	G	G	G	G	G	G	G	G		G	G
MW-17	2-29-16	1332		16	8	G	G	G	G	G	G	G	G	G	G	G	G		G	G
SW-1	2-29-16	1500		17	8	G	G	G	G	G	G	G	G	G		G	G			G
SW-2	2-29-16	1310		16	8	G	G	G	G	G	G	G	G	G		G	G			G
SW-3	2-29-16	1252		14	8	G	G	G	G	G	G	G	G	G		G	G			G

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

CHAIN OF CUSTODY (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
Bobby Fox	2-29-16 1725	[signature]	2/29/16 825pm
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

№ 309280

CDM Smith

cdmsmith.com