Dare County C&D Landfill Facility Permit No. 28-03 Semi-Annual Sampling Report

(February 2013 Sampling Event)

Dare County

Report

May 2013

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: 919-787-5620

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 28, 2013

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) 787-5620 — (Area Code) Telephone Number

Signature — Date: 5/10/2013

Affix NC Licensed Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1851 GEOLOGIST MATHEW F. COLONE

5/10/2013

5400 Glenwood Ave, Suite 300, Raleigh, NC 27612
Facility Representative Address

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

Revised 6/2009

CDM Smith

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tel: 919 787-5620
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May 10, 2013

Ms. Jaclynne Drummond
North Carolina Department of Environment and
Natural Resources
Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Subject: February 2013 Semi-Annual Monitoring Sampling Report
Dare County C&D Landfill
Facility Permit No. 28-03

Dear Ms. Drummond:

CDM Smith Inc., on behalf of Dare County, is submitting an electronic copy of the February 2013 semi-annual 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 2013. 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 3 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 28, 2013 by Environment One, Inc. Groundwater elevations were measured at each well prior to sampling and are presented in **Table 1**. These groundwater elevations were used to construct a potentiometric surface map for this sampling event. The potentiometric contours and sampling locations are presented on **Figure 1**. Each well was measured in the field for pH, conductivity, and temperature prior to sampling. The water quality parameters at the time samples were collected are also presented in Table 1.

Sampling Results

Environment One, Inc. in Greenville, North Carolina analyzed the groundwater and surface water samples for the North Carolina Appendix I volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B, metals by EPA Method 200.8 and Standard Method (SM)

3111B and 3113B, alkalinity by SM 2320B, chloride by SM 4500-CLB, sulfate by SM 4500-SO4, and total dissolved solids by SM 2540D. Note that analytical results for total dissolved solids are provided in Table 1. 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 with a majority of the detections below SWSLs. These detections were qualified as estimated or "J" flags.

The following list presents the analytes detected above the MDL at each sample location. No "J" flag detections are provided. Underlined analytes exceeded the North Carolina 2L Standard, Groundwater Protection Standard, or the North Carolina Surface Water Standards for Class C Waters. A complete summary of all detected and estimated concentrations for the February 2013 sampling event is presented in **Table 2**. A copy of the laboratory report is provided in **Appendix A**.

MW-1

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

MW-2

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

MW-3

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

MW-8

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

MW-9

Inorganics:	Alkalinity, Chloride
Metals:	Arsenic, Iron, 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, Sulfate
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:	Arsenic, Barium, Beryllium, Chromium, Iron, Lead, Manganese, Vanadium, Zinc
Volatile Organic Compounds:	None Detected

MW-14

Inorganics:	Alkalinity, Chloride
Metals:	Arsenic, Barium, Beryllium, Chromium, Iron, Lead, Manganese, Vanadium, Zinc
Volatile Organic Compounds:	None Detected

MW-15

Inorganics:	Alkalinity, Chloride
Metals:	Arsenic, Barium, Beryllium, Chromium, Iron, Lead, Manganese, Vanadium, Zinc
Volatile Organic Compounds:	None Detected

MW-16

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

MW-17

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

SW-3

Inorganics:	Alkalinity, Chloride
Metals:	Iron, Manganese, Zinc
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, -13, -14, -15, and -17
Thallium:	MW-13, -14, and -15
Vanadium:	MW-1, -2, -3, -8, -9, -10, -11, -12, -16, and -17

The semi-annual groundwater monitoring program will be continued by Dare County. The second semi-annual sampling event for 2013 will be completed in August.

If you have any questions or require further explanation, do not hesitate to call me at (919) 787-5620.

Very truly yours,

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

Attachments

cc: Edward Mann, Dare County

Table 1
Water Quality Field Parameters
February 2013 Semi-Annual Sampling Event
Dare County C&D Landfill

		Water Quality Parameters				Groundwater Elevations - 02/28/13		
Facility Permit Number	Monitoring Well I.D.	pH (S.U.)	Conductivity (µS/cm)	Temperature (deg.C)	TDS (mg/L)	TOC Elevation (feet AMSL)	Depth to Groundwater (feet)	Groundwater Elevation (feet AMSL)
28-03	MW-1	6.6	3,190	15	1,940	1.61	1.45	0.16
28-03	MW-2	6.9	754	13	488	1.55	1.81	-0.26
28-03	MW-3	6.7	993	15	758	1.74	2.82	-1.08
28-03	MW-8	6.2	6,350	15	4,520	2.90	2.18	0.72
28-03	MW-9	5.9	222	13	220	4.99	4.05	0.94
28-03	MW-10	6.2	457	15	276	2.87	3.98	-1.11
28-03	MW-11	6.2	725	14	515	3.56	3.79	-0.23
28-03	MW-12	6.2	160	13	117	2.80	2.99	-0.19
28-03	MW-13	6.3	745	13	447	2.96	3.00	-0.04
28-03	MW-14	6.4	593	12	402	2.96	3.00	-0.04
28-03	MW-15	6.5	626	13	430	3.17	3.12	0.05
28-03	MW-16	6.1	7,320	16	4,870	5.56	5.00	0.56
28-03	MW-17	4.8	338	13	236	2.85	2.93	-0.08
Surface Water Sampling Locations								
28-03	SW-1	5.9	736	11	350			
28-03	SW-2	6.6	971	11	680			
28-03	SW-3	6.4	1,006	11	740			

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

Table 2a
Detected Groundwater Constituents - Metals, Volatile Organic Compounds, and Inorganics
February 2013 Semi-Annual Sampling Event
Dare County C&D Landfill

			Metals																		Volatile Organic Compounds						Inorganics		
Facility Permit Number	Monitoring Well I.D.	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 (mg/L)	Chloride (mg/L)	Sulfate (mg/L)
North Carolina 2L Standard			1*	10	700	4*	2	10	1*	1,000	300	15	50	1	100	20	20	0.28*	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			3.0J	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		2.0J	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		2.0J	5.5J			1.0J	15							273	906	64.5J
28-03	MW-1	28-Feb-13	0.15J	3.3J	76.9J	0.71J		3.4J	0.81J	3.0J	99,700	1.5J	526		3.2J	7.5J			6.0J	6.6J							254	975	61.5J
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	2.0J							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-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-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-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-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-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-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

Table 2a
Detected Groundwater Constituents - Metals, Volatile Organic Compounds, and Inorganics
February 2013 Semi-Annual Sampling Event
Dare County C&D Landfill

			Metals																		Volatile Organic Compounds						Inorganics		
Facility Permit Number	Monitoring Well I.D.	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 (mg/L)	Chloride (mg/L)	Sulfate (mg/L)
North Carolina 2L Standard			1*	10	700	4*	2	10	1*	1,000	300	15	50	1	100	20	20	0.28*	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-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-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-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-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

Notes:

1. Metal and volatile organic compound units are in micrograms per liter (parts per billion).
2. Inorganic 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 analyte was not detected
- Concentration exceeds N.C. 2L or Groundwater Protection Standard

Table 2b
Detected Surface Water Constituents - Metals, Volatile Organic Compounds, and Inorganics
February 2013 Semi-Annual Sampling Event
Dare County C&D Landfill

			Metals																		Volatile Organic Compounds						Inorganics		
Facility Permit Number	Surface Water I.D.	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 (mg/L)	Chloride (mg/L)	Sulfate (mg/L)
North Carolina 2B Standard			10*	10*	1,000	6.5	2	50	NS	7**	1,000**	25	200	0.012	88	5	0.06**	NS	NS	50**	NS	51	488	NS	488	11	NS	230**	250
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	5	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-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-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

Notes:

1. Metal and volatile organic compound concentrations are in micrograms per liter (parts per billion).
2. Inorganic concentrations are in milligrams per liter (parts per million).
3. Standards obtained from section 15A NCAC 02B .0211 Fresh Surface Water Quality Standards for Class C Waters.
4. * - Human Health Standard
5. ** - Action Level Standard
6. NS = No Standard
7. J - Indicates the analytical result is an estimated concentration between the method detection limit and the Solid Waste Section Reporting Limit.

- Concentrations exceeds N.C. 2B Standards for Class C Waters
- Blank cells indicate analyte was not detected

CDM Smith

0 250 500 1,000 Feet

Figure 1: Potentiometric Surface Map

February 2013 Semi-Annual Sampling Event
Construction & Demolition Debris Landfill
Dare County, North Carolina

Appendix A

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: 02/28/13
DATE REPORTED : 04/01/13

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-1	MW-2	MW-3	MW-8	MW-9	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.6	6.9	6.7	6.2	5.9	02/28/13	BF	4500HB-00
Total Alkalinity (to pH 4.5), mg/l	1.0	1.0	254	353	473	177	76	03/04/13	TRB	2320B-97
Chloride, mg/l	5.0	5.0	975					03/01/13	HMB	4500CLB-97
Chloride, mg/l	5.0	5.0		46	56	3049	7	03/05/13	HMB	4500CLB-97
Total Dissolved Residue, mg/l	1.0	1.0	1940	488	758	4520	220	03/02/13	SEJ	2540C-97
Sulfate, mg/l	5.0	250.0	61.5 J	12.6 J	108 J	191 J	35.8 J	03/04/13	TRB	4500SO42E97
Antimony, ug/l	0.02	6.0	0.15 J	0.31 J	0.04 J	--- U	--- U	03/04/13	LFJ	EPA200.8
Arsenic, ug/l	0.13	10.0	3.3 J	0.59 J	0.48 J	9 J	22	03/04/13	LFJ	EPA200.8
Barium, ug/l	0.07	100.0	76.9 J	45.8 J	31.1 J	197	27.3 J	03/04/13	LFJ	EPA200.8
Beryllium, ug/l	0.07	1.0	0.71 J	0.20 J	0.32 J	0.47 J	0.18 J	03/04/13	LFJ	EPA200.8
Cadmium, ug/l	0.03	1.0	--- U	0.14 J	0.09 J	--- U	0.08 J	03/04/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	0.81 J	0.15 J	0.20 J	0.28 J	1.9 J	03/04/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0	3.0 J	10.0	0.24 J	8.0 J	3.3 J	03/04/13	LFJ	EPA200.8
Total Chromium, ug/l	0.18	10.0	3.4 J	1.4 J	1.0 J	3.6 J	7.6 J	03/04/13	LFJ	EPA200.8
Iron, ug/l	15.9	300.0	99700	204100	81850	20950	14470	03/12/13	ADD	3111B-99
Manganese, ug/l	0.13	50.0	526	399	553	130	27 J	03/04/13	LFJ	EPA200.8
Lead, ug/l	0.08	10.0	1.5 J	3.1 J	0.12 J	--- U	5.2 J	03/04/13	LFJ	EPA200.8
Mercury, ug/l	0.02	0.20	--- U	--- U	--- U	--- U	--- U	03/04/13	LFJ	EPA6020A
Nickel, ug/l	0.06	50.0	3.2 J	1.5 J	1.9 J	1.8 J	3.3 J	03/04/13	LFJ	EPA200.8
Selenium, ug/l	0.17	10.0	7.5 J	0.51 J	0.67 J		0.91 J	03/04/13	LFJ	EPA200.8
Selenium, ug/l	0.17	10.0				--- U		03/12/13	MEL	3113B-04
Silver, ug/l	0.10	10.0	--- U	--- U	--- U	--- U	--- U	03/04/13	LFJ	EPA200.8
Thallium, ug/l	0.07	5.5	--- U	--- U	--- U	--- U	0.10 J	03/04/13	LFJ	EPA200.8
Vanadium, ug/l	0.10	25.0	6.0 J	3.9 J	1.5 J	6.3 J	13.9 J	03/04/13	LFJ	EPA200.8
Zinc, ug/l	0.48	10.0	6.6 J	46	2.1 J	2.4 J	10	03/04/13	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	3190	754	993	6350	222	02/28/13	BF	2510B-97
Temperature, °C			15	13	15	15	13	02/28/13	BF	2550B-00
Static Water Level, feet			1.45	1.81	2.82	2.18	4.05	02/28/13	BF	
Well Depth, feet			20.35	20.97	19.95	19.17	22.75	02/28/13	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: 02/28/13
DATE REPORTED : 04/01/13

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-10	MW-11	MW-12	SW-1	SW-2	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.2	6.2	6.2	5.9	6.6	02/28/13	BF	4500HB-00
Total Alkalinity (to pH 4.5), mg/l	1.0	1.0	196	141	4	5	96	03/04/13	TRB	2320B-97
Chloride, mg/l	5.0	5.0	8	33	10	145	276	03/05/13	HMB	4500CLB-97
Total Dissolved Residue, mg/l	1.0	1.0	276	515	117	350	680	03/02/13	SEJ	2540C-97
Sulfate, mg/l	5.0	250.0	93.5 J	297	22.7 J	--- U	53.5 J	03/04/13	TRB	4500SO42E97
Antimony, ug/l	0.02	6.0	--- U	--- U	0.19 J	1.7 J	0.49 J	03/04/13	LFJ	EPA200.8
Arsenic, ug/l	0.13	10.0	16	2.6 J	5.5 J	1.8 J	2.3 J	03/04/13	LFJ	EPA200.8
Barium, ug/l	0.07	100.0	20.8 J	38.5 J	38.6 J	13.5 J	35.4 J	03/04/13	LFJ	EPA200.8
Beryllium, ug/l	0.07	1.0	0.13 J	0.11 J	0.29 J	--- U	0.11 J	03/04/13	LFJ	EPA200.8
Cadmium, ug/l	0.03	1.0	0.05 J	0.09 J	0.10 J	--- U	--- U	03/04/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	0.43 J	1.0 J	0.82 J	0.28 J	1.1 J	03/04/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0	2.5 J	1.1 J	2.9 J	1.7 J	3.2 J	03/04/13	LFJ	EPA200.8
Total Chromium, ug/l	0.18	10.0	1.8 J	1.4 J	3.4 J	0.85 J	2.0 J	03/04/13	LFJ	EPA200.8
Iron, ug/l	15.9	300.0	36300	18210	13830	4220	5155	03/12/13	ADD	3111B-99
Manganese, ug/l	0.13	50.0	111	96	48 J	14 J	169	03/04/13	LFJ	EPA200.8
Lead, ug/l	0.08	10.0	5.7 J	0.57 J	4.2 J	35	7.8 J	03/04/13	LFJ	EPA200.8
Mercury, ug/l	0.02	0.20	--- U	--- U	0.02 J	--- U	--- U	03/04/13	LFJ	EPA6020A
Nickel, ug/l	0.06	50.0	2.4 J	3.0 J	2.8 J	0.82 J	3.1 J	03/04/13	LFJ	EPA200.8
Selenium, ug/l	0.17	10.0	0.52 J	0.63 J	0.32 J	0.82 J	2.6 J	03/04/13	LFJ	EPA200.8
Silver, ug/l	0.10	10.0	--- U	--- U	--- U	--- U	--- U	03/04/13	LFJ	EPA200.8
Thallium, ug/l	0.07	5.5	--- U	--- U	--- U	--- U	--- U	03/04/13	LFJ	EPA200.8
Vanadium, ug/l	0.10	25.0	20.6 J	3.4 J	11.7 J	2.2 J	3.2 J	03/04/13	LFJ	EPA200.8
Zinc, ug/l	0.48	10.0	2.9 J	3.4 J	8.3 J	4.8 J	15	03/04/13	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	457	725	160	736	971	02/28/13	BF	2510B-97
Temperature, °C			15	14	13	11	11	02/28/13	BF	2550B-00
Static Water Level, feet			3.98	3.79	2.99			02/28/13	BF	
Well Depth, feet			21.97	20.42	22.65			02/28/13	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
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ID#: 6051

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

DATE COLLECTED: 02/28/13
DATE REPORTED : 04/01/13

REVIEWED BY:

PARAMETERS	MDL	SWSL	SW-3	Trip Blank	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.4		02/28/13	BF	4500HB-00
Total Alkalinity (to pH 4.5), mg/l	1.0	1.0	99		03/04/13	TRB	2320B-97
Chloride, mg/l	5.0	5.0	270		03/05/13	HMB	4500CLB-97
Total Dissolved Residue, mg/l	1.0	1.0	740		03/02/13	SEJ	2540C-97
Sulfate, mg/l	5.0	250.0	43.0 J		03/04/13	TRB	4500SO42E97
Antimony, ug/l	0.02	6.0	0.48 J		03/04/13	LFJ	EPA200.8
Arsenic, ug/l	0.13	10.0	2.2 J		03/04/13	LFJ	EPA200.8
Barium, ug/l	0.07	100.0	36.4 J		03/04/13	LFJ	EPA200.8
Beryllium, ug/l	0.07	1.0	0.12 J		03/04/13	LFJ	EPA200.8
Cadmium, ug/l	0.03	1.0	0.04 J		03/04/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	1.0 J		03/04/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0	4.1 J		03/04/13	LFJ	EPA200.8
Total Chromium, ug/l	0.18	10.0	2.5 J		03/04/13	LFJ	EPA200.8
Iron, ug/l	15.9	300.0	5650		03/12/13	ADD	3111B-99
Manganese, ug/l	0.13	50.0	162		03/04/13	LFJ	EPA200.8
Lead, ug/l	0.08	10.0	8.4 J		03/04/13	LFJ	EPA200.8
Mercury, ug/l	0.02	0.20	--- U		03/04/13	LFJ	EPA6020A
Nickel, ug/l	0.06	50.0	3.1 J		03/04/13	LFJ	EPA200.8
Selenium, ug/l	0.17	10.0	2.2 J		03/04/13	LFJ	EPA200.8
Silver, ug/l	0.10	10.0	--- U		03/04/13	LFJ	EPA200.8
Thallium, ug/l	0.07	5.5	--- U		03/04/13	LFJ	EPA200.8
Vanadium, ug/l	0.10	25.0	4.0 J		03/04/13	LFJ	EPA200.8
Zinc, ug/l	0.48	10.0	10		03/04/13	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	1006		02/28/13	BF	2510B-97
Temperature, °C			11		02/28/13	BF	2550B-00

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

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

PHONE (252) 756-6208
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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

ANALYST: MAO
DATE COLLECTED: 02/28/13
DATE REPORTED: 04/01/13

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	03/04/13 MW-1	03/04/13 MW-2	03/04/13 MW-3	03/04/13 MW-8	03/04/13 MW-9
	Date Analyzed:						
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

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: 02/28/13
DATE REPORTED: 04/01/13

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Date Analyzed: 03/04/13 MW-1	03/04/13 MW-2	03/04/13 MW-3	03/04/13 MW-8	03/04/13 MW-9
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

ANALYST: MAO
DATE COLLECTED: 02/28/13
DATE REPORTED: 04/01/13

REVIEWED BY: _____

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	03/04/13 MW-10	03/04/13 MW-11	03/04/13 MW-12	03/04/13 SW-1	03/04/13 SW-2
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

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: 02/28/13
DATE REPORTED: 04/01/13

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Date Analyzed: 03/04/13 MW-10	03/04/13 MW-11	03/04/13 MW-12	03/04/13 SW-1	03/04/13 SW-2
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

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GREENVILLE, N.C. 27835-7085

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MR. EDWARD L. MANN
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P.O. BOX 1000
MANTEO, NC 27954

CLIENT ID: 6051

ANALYST: MAO
DATE COLLECTED: 02/28/13
DATE REPORTED: 04/01/13

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	03/04/13 SW-3	03/05/13 Trip Blank
1. Chloromethane	0.77	1.0	--- U	--- U
2. Vinyl Chloride	0.63	1.0	--- U	--- U
3. Bromomethane	0.67	10.0	--- U	--- U
4. Chloroethane	0.48	10.0	--- U	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U	--- U
7. Acetone	9.06	100.0	--- U	--- U
8. Iodomethane	0.26	10.0	--- U	--- U
9. Carbon Disulfide	0.23	100.0	--- U	--- U
10. Methylene Chloride	0.64	1.0	--- U	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U	--- U
13. Vinyl Acetate	0.20	50.0	--- U	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U	--- U
15. 2-Butanone	2.21	100.0	--- U	--- U
16. Bromochloromethane	0.27	3.0	--- U	--- U
17. Chloroform	0.25	5.0	--- U	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U	--- U
20. Benzene	0.24	1.0	--- U	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U	--- U
22. Trichloroethene	0.23	1.0	--- U	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U	--- U
24. Bromodichloromethane	0.21	1.0	--- U	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U	--- U
27. Toluene	0.23	1.0	--- U	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U	--- U
30. Tetrachloroethene	0.17	1.0	--- U	--- U
31. 2-Hexanone	1.57	50.0	--- U	--- U
32. Dibromochloromethane	0.24	3.0	--- U	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U	--- U
34. Chlorobenzene	0.30	3.0	--- U	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U	--- U
36. Ethylbenzene	0.21	1.0	--- U	--- U
37. Xylenes	0.68	5.0	--- U	--- U
38. Dibromomethane	0.28	10.0	--- U	--- U
39. Styrene	0.19	1.0	--- U	--- U
40. Bromoform	0.20	3.0	--- U	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U	--- U
46. Acrylonitrile	2.72	200.0	--- U	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U	--- U

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

Environment 1, Incorporated

Drinking Water ID: 37715
Wastewater ID: 10

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

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

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: 02/28/13
DATE REPORTED: 04/01/13

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Date Analyzed: 03/04/13 SW-3	03/05/13 Trip Blank
48. Tetrahydrofuran	0.39	1.0	--- 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

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 ☐ _____

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	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2				
CHLORINE NEUTRALIZED AT COLLECTION																					
pH CHECK (LAB)											2				2	2	2				
CONTAINER TYPE, P/G						P	P	P	P	P	P	P	P		G	G	G				
CHEMICAL PRESERVATION						A	A	A	A	A	A	A	A		E	E	E				
MW-1	2-28-13	0840		15	8	G	G	G	G	G	G	G	G	G	G	G	G				
MW-2	2-28-13	1245		13	7	G	G	G	G	G	G	G	G	G	G	G					
MW-3	2-28-13	1200		15	7	G	G	G	G	G	G	G	G	G	G	G					
MW-8	2-28-13	0905		15	7	G	G	G	G	G	G	G	G	G	G	G					
MW-9	2-28-13	1100		13	7	G	G	G	G	G	G	G	G	G	G	G					
MW-10	2-28-13	1115		15	7	G	G	G	G	G	G	G	G	G	G	G					
MW-11	2-28-13	1135		14	7	G	G	G	G	G	G	G	G	G	G	G					
MW-12	2-28-13	1230		13	7	G	G	G	G	G	G	G	G	G	G	G					
SW-1	2-28-13	0940		11	7	G	G	G	G	G	G	G	G		G	G					
SW-2	2-28-13	0955		11	7	G	G	G	G	G	G	G	G		G	G					
SW-3	2-28-13	1035		11	7	G	G	G	G	G	G	G	G		G	G					

PARAMETERS

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

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

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

SAMPLES COLLECTED BY: (Please Print) Bobby Fox

SAMPLES RECEIVED IN LAB AT 0.3 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bobby Fox	2-28-13 1556	[signature]	2/28/13 1402
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

№ 255045

Environment 1, Inc.
P.O. Box 7085, 114 Oakmont Dr.
Greenville, NC 27858

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

CHAIN OF CUSTODY RECORD

CLIENT: 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 ☐ _____

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	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2				
CHLORINE NEUTRALIZED AT COLLECTION																					
pH CHECK (LAB)															12	12					
CONTAINER TYPE, P/G						P	P	P	P	P	P	P	P		G	G	G				
CHEMICAL PRESERVATION						A	A	A	A	A	A	A	A		E	E	E				
Trip Blank	2-28-13				2										C	C					

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

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

CHAIN OF CUSTODY MAINTAINED DURING SHIPMENT/DELIVERY: Y N

SAMPLES COLLECTED BY: (Please Print) Bobby Fox

SAMPLES RECEIVED IN LAB AT 0.3 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bobby Fox	2-28-13 1556	[signature]	2/28/13 1402
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

№ 255044

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: 02/28/13
DATE REPORTED : 04/01/13

REVIEWED BY:

PARAMETERS	MDL	SWSL	MW-13	MW-14	MW-15	MW-16	MW-17	Analysis Date	Analyst	Method Code
PH (field measurement), Units			6.3	6.4	6.5	6.1	4.8	02/28/13	BF	4500HB-00
Total Alkalinity (to pH 4.5), mg/l	1.0	1.0	209	153	177	304	1.0	03/04/13	TRB	2320B-97
Chloride, mg/l	5.0	5.0	57	53	47	2799	15	03/05/13	HMB	4500CLB-97
Total Dissolved Residue, mg/l	1.0	1.0	447	402	430	4870	236	03/02/13	SEJ	2540C-97
Sulfate, mg/l	5.0	250.0	52.8 J	175 J	179 J	178 J	140 J	03/04/13	TRB	4500SO42E97
Antimony, ug/l	0.02	6.0	0.29 J	0.22 J	0.16 J	0.16 J	0.04 J	03/11/13	LFJ	EPA200.8
Arsenic, ug/l	0.13	10.0	32	74	65	12	1.3 J	03/11/13	LFJ	EPA200.8
Barium, ug/l	0.07	100.0	122	218	223	308	31.1 J	03/11/13	LFJ	EPA200.8
Beryllium, ug/l	0.07	1.0	1	2	2	0.26 J	0.36 J	03/11/13	LFJ	EPA200.8
Cadmium, ug/l	0.03	1.0	0.40 J	0.52 J	0.58 J	--- U	0.10 J	03/11/13	LFJ	EPA200.8
Cobalt, ug/l	0.02	10.0	5.8 J	6.0 J	6.8 J	0.37 J	3.8 J	03/11/13	LFJ	EPA200.8
Copper, ug/l	0.06	10.0	6.3 J	7.1 J	8.0 J	9.2 J	1.6 J	03/11/13	LFJ	EPA200.8
Total Chromium, ug/l	0.18	10.0	20	26	28	2.9 J	1.1 J	03/11/13	LFJ	EPA200.8
Iron, ug/l	15.9	300.0	200400	449500	281600	46050	8480	03/12/13	ADD	3111B-99
Manganese, ug/l	0.13	50.0	379	315	354	307	53	03/11/13	LFJ	EPA200.8
Lead, ug/l	0.08	10.0	16	23	30	--- U	1.1 J	03/11/13	LFJ	EPA200.8
Mercury, ug/l	0.02	0.20	0.05 J	0.08 J	0.08 J	--- U	--- U	03/13/13	LFJ	EPA6020A
Nickel, ug/l	0.06	50.0	11.7 J	12.4 J	14.2 J	3.6 J	5.9 J	03/11/13	LFJ	EPA200.8
Selenium, ug/l	0.17	10.0	1.2 J	1.2 J	1.5 J	31	0.60 J	03/11/13	LFJ	EPA200.8
Silver, ug/l	0.10	10.0	--- U	0.12 J	0.13 J	--- U	--- U	03/11/13	LFJ	EPA200.8
Thallium, ug/l	0.07	5.5	0.32 J	0.43 J	0.39 J	--- U	0.08 J	03/13/13	LFJ	EPA200.8
Vanadium, ug/l	0.10	25.0	46	53	63	3.6 J	1.9 J	03/11/13	LAJ	EPA200.8
Zinc, ug/l	0.48	10.0	140	129	59	2.7 J	103	03/19/13	LFJ	EPA200.8
Conductivity (at 25c), uMhos/cm	1.0	1.0	745	593	626	7320	338	02/28/13	BF	2510B-97
Temperature, °C			13	12	13	16	13	02/28/13	BF	2550B-00
Static Water Level, feet			3.00	3.00	3.12	5.00	2.93	02/28/13	BF	
Well Depth, feet			22.41	22.02	22.62	20.11	14.78	02/28/13	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

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: 02/28/13
DATE REPORTED: 04/01/13

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Date Analyzed: 03/05/13 MW-13	03/05/13 MW-14	03/05/13 MW-15	03/12/13 MW-16	03/13/13 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

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: 02/28/13
DATE REPORTED: 04/01/13

REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	MDL	SWSL	Date Analyzed: 03/05/13 MW-13	03/05/13 MW-14	03/05/13 MW-15	03/12/13 MW-16	03/13/13 MW-17
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
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REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	03/13/13 Trip Blank
1. Chloromethane	0.77	1.0	--- U
2. Vinyl Chloride	0.63	1.0	--- U
3. Bromomethane	0.67	10.0	--- U
4. Chloroethane	0.48	10.0	--- U
5. Trichlorofluoromethane	0.24	1.0	--- U
6. 1,1-Dichloroethene	0.17	5.0	--- U
7. Acetone	9.06	100.0	--- U
8. Iodomethane	0.26	10.0	--- U
9. Carbon Disulfide	0.23	100.0	--- U
10. Methylene Chloride	0.64	1.0	--- U
11. trans-1,2-Dichloroethene	0.23	5.0	--- U
12. 1,1-Dichloroethane	0.20	5.0	--- U
13. Vinyl Acetate	0.20	50.0	--- U
14. Cis-1,2-Dichloroethene	0.25	5.0	--- U
15. 2-Butanone	2.21	100.0	--- U
16. Bromochloromethane	0.27	3.0	--- U
17. Chloroform	0.25	5.0	--- U
18. 1,1,1-Trichloroethane	0.19	1.0	--- U
19. Carbon Tetrachloride	0.22	1.0	--- U
20. Benzene	0.24	1.0	--- U
21. 1,2-Dichloroethane	0.27	1.0	--- U
22. Trichloroethene	0.23	1.0	--- U
23. 1,2-Dichloropropane	0.21	1.0	--- U
24. Bromodichloromethane	0.21	1.0	--- U
25. Cis-1,3-Dichloropropene	0.24	1.0	--- U
26. 4-Methyl-2-Pentanone	1.19	100.0	--- U
27. Toluene	0.23	1.0	--- U
28. trans-1,3-Dichloropropene	0.28	1.0	--- U
29. 1,1,2-Trichloroethane	0.25	1.0	--- U
30. Tetrachloroethene	0.17	1.0	--- U
31. 2-Hexanone	1.57	50.0	--- U
32. Dibromochloromethane	0.24	3.0	--- U
33. 1,2-Dibromoethane	0.26	1.0	--- U
34. Chlorobenzene	0.30	3.0	--- U
35. 1,1,1,2-Tetrachloroethane	0.22	5.0	--- U
36. Ethylbenzene	0.21	1.0	--- U
37. Xylenes	0.68	5.0	--- U
38. Dibromomethane	0.28	10.0	--- U
39. Styrene	0.19	1.0	--- U
40. Bromoform	0.20	3.0	--- U
41. 1,1,2,2-Tetrachloroethane	0.26	3.0	--- U
42. 1,2,3-Trichloropropane	0.43	1.0	--- U
43. 1,4-Dichlorobenzene	0.39	1.0	--- U
44. 1,2-Dichlorobenzene	0.32	5.0	--- U
45. 1,2-Dibromo-3-Chloropropane	0.34	13.0	--- U
46. Acrylonitrile	2.72	200.0	--- U
47. trans-1,4-Dichloro-2-Butene	0.42	100.0	--- U

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

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DARE CO. PUBLIC WORKS
P.O. BOX 1000
MANTEO, NC 27954

CLIENT ID: 6051 A

ANALYST: MAO
DATE COLLECTED: 02/28/13
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REVIEWED BY:

VOLATILE ORGANICS
EPA METHOD 8260B R1(96)

PARAMETERS, ug/l	Date Analyzed: MDL	SWSL	03/13/13 Trip Blank
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

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 ☐ _____

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	Temperature	Field Parameter	EPA 8260B	8260 Dup. 1	8260 Dup. 2
CHLORINE NEUTRALIZED AT COLLECTION																	
pH CHECK (LAB)											12				12	12	12
CONTAINER TYPE, P/G						P	P	P	P	P	P	P	P		G	G	G
CHEMICAL PRESERVATION						A	A	A	A	A	A	A	A		E	E	E
PARAMETERS																	
MW-13	2-28-13	1310		13	8	G	G	G	G	G	G	G	G	G	G	G	G
MW-14	2-28-13	1330		12	7	G	G	G	G	G	G	G	G	G	G	G	
MW-15	2-28-13	1355		13	7	G	G	G	G	G	G	G	G	G	G	G	
MW-16	2-28-13	0925		16	7	G	G	G	G	G	G	G	G	G	G	G	
MW-17	2-28-13	1010		13	7	G	G	G	G	G	G	G	G	G	G	G	
Trip Blank					2										G	G	

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

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

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

SAMPLES COLLECTED BY: (Please Print) Bobby Fox

SAMPLES RECEIVED IN LAB AT 0.3 °C

RELINQUISHED BY (SIG.) (SAMPLER)	DATE/TIME	RECEIVED BY (SIG.)	DATE/TIME
Bobby Fox	2-28-13 1556	[signature]	2/28/13 402
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

№ 255043

CDM Smith

cdmsmith.com