cornerstone
A TETRA TECH COMPANY

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March 30, 2018

Ms. Valerie Joosten
Wisconsin Department of Natural Resources
Waste Management Engineer
2984 Shawano Avenue
Green Bay, WI 54313-6727

Re: Marathon County Solid Waste Landfill – Area A Landfill
2017 Annual Solid Waste Report
WDNR License No. 2892, FID No. 737054890

Dear Ms. Joosten:

On behalf of the Marathon County Solid Waste Department (Marathon County) Cornerstone Environmental Group, LLC (Cornerstone) is submitting one hard copy of the 2017 Annual Solid Waste Report for the Area A Landfill (Area A) of Marathon County. This Annual Solid Waste Report is being submitted in accordance with the approved plan of operation for Area A.

In accordance with your request, two (2) additional copies and the necessary electronic (CD burned) version are also being distributed to pertinent WDNR staff as noted below.

Should you have any questions or comments regarding this Annual Solid Waste Report, do not hesitate to contact me at (630) 633-5849 or Ms. Meleesa Johnson at (715) 466-3101 ext 104.

Sincerely,

Cornerstone Environmental Group, LLC

C. Lee Daigle, P.E.
Project Manager

Enclosure: Marathon County Area A Landfill - 2017 Annual Solid Waste Report

cc: Marathon County Solid Waste Landfill (File Copies)
Nathan Coller – WDNR Spooner Service Center (1 hard copy)
Jill Schoen – WDNR Eau Claire Service Center (1 hard copy and 1 CD)

Marathon County Solid Waste Department
Area A Landfill
2017 ANNUAL REPORT

WDNR License No. 2892
FID 737054890

Marathon County Solid Waste Management Department
R18500 Highway 29
Ringle, WI 54471

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marathoncountysolidwaste

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- Jessica Knaup-Scale Operator
- Ron Smith-Environmental Technician
- Julie Groshek-Accounting Specialist
- Chris Wickman-Equipment Maintenance Specialist
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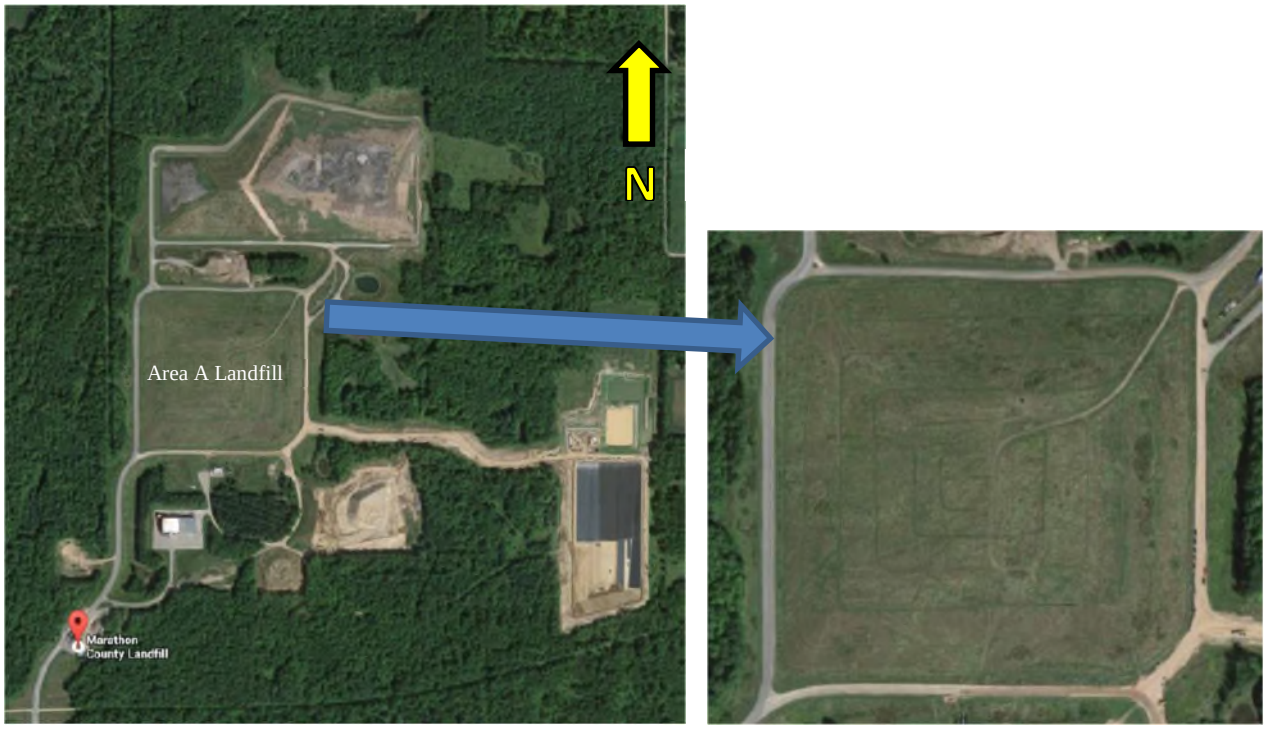
Introduction

This report provides information about site conditions on, work conducted at and other activities related to, the closed Area A Landfill (Area A). This report is intended to meet the intent and spirit of the annual reporting and monitoring requirements found in approved documents for Area A and the modified monitoring requirements found in the 2013 Modification to the Monitoring Plan (for Groundwater, Lysimeters and Leachate Collection).

Area A Background

Area A is a 27.3-acre closed landfill and is owned and operated by Marathon County Solid Waste Department (MCSWD). This facility accepted and disposed of waste from December 1980 until December 1993. In 1994 closure was conducted according to approved methods. During active fill operations a variety of waste materials were accepted including residential and commercial waste, high-volume industrial wastes and other miscellaneous materials.

MCSWD and various contracted firms have and will continue to work collaboratively to ensure post-operations/post-closure activities are conducted in accordance with all required long-term care approvals. This includes, but is not limited to, operation of and maintenance of the following systems: final cover, storm water, landfill gas and condensate, leachate collection, and groundwater monitoring.



Summary of Landfill Activities in 2017

The Area A is a closed landfill and, as such, did not accept waste during 2017. However, as is required by the approved permit, general maintenance and management of the post-closure facility was conducted. This included:

- Monthly visual inspections of the final cover surface
- Inspections of storm water management pathways
- Removal of obstructions or repair to storm water pathways
- Mowing pathways for surface emission monitoring work
- General mowing to control for woody herbaceous growth
- Snow plowing of access roads
- Grading and dust management of access roads
- Preventative maintenance on gas system and leachate pumping system

As needed, MCSWD hired various contractors and/or consultants to perform specific tasks beyond the capabilities of the site staff such as air permit compliance reporting and support, seeding and fertilizing duties, and contracted leachate hauling.

The surface area and final cover are in good condition. There is no damage or compromising of the final cover. There are no slumps or subsidence, other than the normal gradual undulations. No leachate seeps exist. Vegetation consists of dense mixed grasses including rye, fescues and sedges. Some wildflowers, both native and invasive, are evident, but not abundant. The plant growth continues to look acceptable and no bare spots or other problems were noted. Wildlife species such as deer, fox, coyote, rabbits and many types of birds use the ecosystem of Area A for cover and as a source of food. The cover is inspected regularly for damage caused by wildlife and corrected, if needed.

Gas Collection System

Area A is situated near the center of the 574 acre facility boundaries. The landfill is located north of the facility's gas recovery building. An active gas system, consisting of blowers and other equipment, has been extracting landfill gas from this landfill since 1989.

Most of the Area A landfill gas piping was installed during a ten-year period from 1984 through 1993, with additions made in 2003, 2004 and 2009. Landfill gas extracted from the landfill is transferred to the gas recovery building via a large header pipe. Vacuum to the wellfield is regulated by the variable frequency drive (VFD) at the blower station located at the Gas Recovery Building to the south of the site that controls the gas collection and control system (GCCS) at the site.

Landfill gas emissions from Area A are regulated under, and in accordance with, renewed Air Pollution Control Operation Permit 737092730-P20 dated November 2, 2015.

Existing sensing devices measure gas flow rates, pressures and vacuums, as well as methane and oxygen concentrations. Data is recorded and stored on a computerized system. This data is used for reporting and operating purposes.

The landfill gas collection system operated 98.2% of the year and approximately 8,600 hours of operation. The average aggregated flow rate, for both Area A and Area B, was 350.3 standard cubic feet per minute (scfm), of this Area A contributed an average of 35.3 scfm. Methane and oxygen concentrations of landfill gas averaged, by volume, 49.2% for methane and 1.2% oxygen. Total gas

collected from the site in 2017 was 184,101,053 standard cubic feet (scf) and of this total, Area A contributed 18,573,460 scf. From the total gas collected at the site, 1,418,747 scf was used for production of electricity and 182,682,306 scf was sent to the flare. The table below summarizes the aggregated flow, combustion location, and vacuum of the GCCS at the site. The total gas to electrical production and total volume recorded in the table below are slightly higher than the reported values above. The electrical production facility did not operate from January through October 2017. The recorded flows during this period are actually a result of the recirculation of the gas that passes through the flow meter at the closed isolation valve to the electrical production facility, during startups and shutdowns of the flare.

MARATHON COUNTY LANDFILL GAS COLLECTION DATA (INCLUDES AREA A AND AREA B)

2017	Average flow (SCFM)	Monthly total volume (SCF)	To Electrical Production (SCF)	To Flare (SCF)	Average Vacuum to Wellfield (Inches WC)
Jan	407.10	18,172,834.79	1,657.69	18,171,177.10	-27.7
Feb	362.65	14,622,012.77	38.59	14,621,974.18	-28.7
March	358.16	15,988,251.40	8.28	15,988,243.12	-28.0
April	344.21	14,869,904.53	6,160.85	14,863,743.68	-29.6
May	331.70	14,807,192.53	5,323.31	14,801,869.22	-26.1
June	308.15	13,311,895.68	7,409.90	13,304,485.78	-25.7
July	345.51	15,423,396.33	0.00	15,423,396.33	-26.4
August	332.41	14,838,706.03	1,192.57	14,837,513.47	-24.8
Sept	324.38	14,013,023.04	0.00	14,013,023.04	-25.9
Oct	375.11	16,744,969.22	0.00	16,744,969.22	-26.2
Nov	381.11	16,463,949.44	5,082.58	16,458,866.87	-25.9
Dec	333.04	14,866,708.41	1,413,664.45	13,453,043.96	-25.7
Totals	--	184,122,844.16	1,440,538.22	182,682,305.94	--

Below is a chart listing average monthly methane (CH4), oxygen (O2) and hydrogen sulfide (H2S) concentrations.

2017	CH4 %	O2 %	H2S vpm
Jan	50.8	0.8	12.57
Feb	51.9	0.7	10.84
March	52.0	0.8	6.56
April	52.3	1.0	5.63
May	52.3	1.0	8.45
June	52.5	0.9	11.04
July	50.5	0.9	8.28
August	47.9	1.2	12.32
Sept	43.7	1.5	18.33
Oct	45.4	2.2	16.19
Nov	44.0	2.7	21.24
Dec	47.2	1.3	13.62
Averages	50.8	0.8	12.57

Gas System Outages

As indicated previously, the gas system operated nearly continuously. Any shutdowns, whether for planned maintenance or unplanned events, resulted in proper and lawful notification to the Wisconsin Department of Natural Resources (WDNR) Air Management staff. The January to June 2017 Semi-annual Report and July to December 2017 Semiannual Report for the facility include descriptions of GCCS and control device shutdown events, GCCS and control device malfunctions, and continuous monitoring device malfunctions.

Surface Emission Monitoring

Surface emission monitoring (SEM) of Area A was conducted on May 30, 2017. No exceedances were detected. Permit compliance condition I.A.9.e allows for annual SEM once "any closed landfill…has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods…" Because MCSWD is allowed to conduct annual SEM monitoring on Area A, a SEM was not conducted in the first, third and fourth quarter.

For the SEM annual event, a photoionization detector (PID) was used and the MCSWD's environmental technician walked a serpentine pattern across the surface of the landfill.

Soil Gas Monitoring

During 2017 the soil gas probes were monitored quarterly for relative pressure, methane (CH4), oxygen (02), and soil gas pressure. In 2017, these monitoring results indicated no gas migration.

First Quarter Probe Data (February 16, 2017):

Gas Probe [Depth in feet]	Location	Methane (%CH4 by Vol.)	Oxygen (%O2 by Vol.)	Pressure (inch W.C.)	Notes:
Lic. 2892	WDNR Parm Code #	85547	85550	46389	
Area A Probe IDs					WDNR ID No.
G-1R [10']	E Area A	0	19.3	0	700
G-3R [15']	N Area A	0	20.2	0	704
G-4R [5']	W Area A	0	19.7	0	709
G-9 [9']	W Area A	0	20.2	0	720
G-11 [10']	S Area A	0	18.5	0	724
G-12 [10']	S Area A	0	19.3	0	726

Second Quarter Probe Data (May 26, 2017):

Gas Probe [Depth in feet]	Location	Methane (%CH4 by Vol.)	Oxygen (%O2 by Vol.)	Pressure (inch W.C.)	Notes:
Lic. 2892	WDNR Parm Code #	85547	85550	46389	
Area A Probe IDs					WDNR ID No.
G-1R [10']	E Area A	0	20.9	-0.04	700
G-3R [15']	N Area A	0	20.8	-0.01	704
G-4R [5']	W Area A	0	19.5	0	709
G-9 [9']	W Area A	0	19.3	0	720
G-11 [10']	S Area A	0	20.8	0	724
G-12 [10']	S Area A	0	20.4	0	726

Third Quarter Probe Data (August 14, 2017):

Gas Probe [Depth in feet]	Location	Methane (%CH4 by Vol.)	Oxygen (%O2 by Vol.)	Pressure (inch W.C.)	Notes:
Lic. 2892	WDNR Parm Code #	85547	85550	46389	
Area A Probe IDs					WDNR ID No.
G-1R [10']	E Area A	0	2.8	0.01	700
G-3R [15']	N Area A	0	18.9	-0.06	704
G-4R [5']	W Area A	0	20.3	0.01	709
G-9 [9']	W Area A	0	20.8	0.01	720
G-11 [10']	S Area A	0	15.4	0.03	724
G-12 [10']	S Area A	0	16.3	0.02	726

Fourth Quarter Probe Data (November 2, 2017):

Gas Probe [Depth in feet]	Location	Methane (%CH4 by Vol.)	Oxygen (%O2 by Vol.)	Pressure (inch W.C.)	Notes:
Lic. 2892	WDNR Parm Code #	85547	85550	46389	
Area A Probe IDs					WDNR ID No.
G-1R [10']	E Area A	0	16.5	-0.02	700
G-3R [15']	N Area A	0	21.9	-0.05	704
G-4R [5']	W Area A	0	21.8	0	709
G-9 [9']	W Area A	0	21.8	0	720
G-11 [10']	S Area A	0	21.7	0	724
G-12 [10']	S Area A	0	21.7	0	726

Gas Sampling Data

On August 29, 2017 MCSWD's environmental technician used a summa canister to collect a sample of landfill gas. The full canister was shipped via express mail services to Air Technology Labs, Inc. (ATL) in City of Industry, California for analyses of volatile organic compounds. The test method used was United States Environmental Protection Agency (EPA) test method TO-15, Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed by Gas Chromatography/ Mass Spectrometry (GC/MS). Results of the testing performed by ATL is provided as Attachment A to this report.

Area A Landfill Gas Wellfield Map:

Leachate Management:

The Area A leachate collection system captures all liquids entering the site and directs to the holding tank system. Leachate is collected through a series of perforated pipes within the landfill and is delivered to one of two double-walled steel, underground storage tanks. Tank 1 has a 20,000-gallon capacity and Tank 2 has a 25,000-gallon tank.

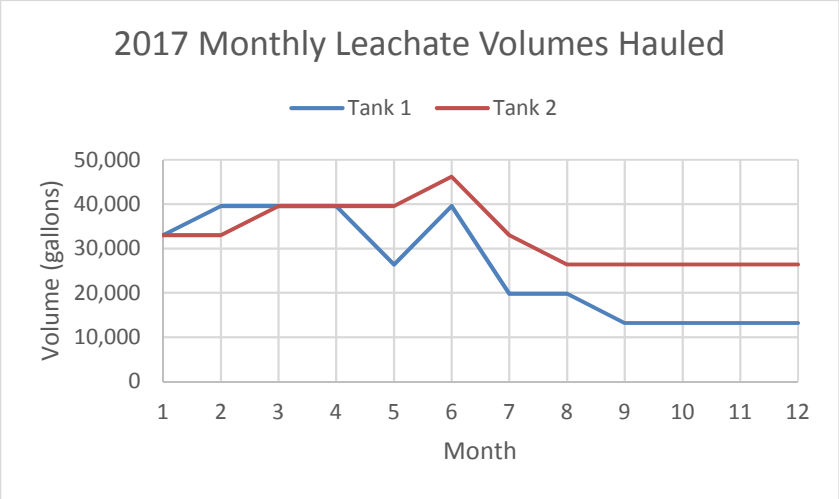
Leachate tank levels are checked daily by the contract operator and throughout the week by the site facility supervisor and environmental technicians. When full, the contract hauler pumps the stored leachate into a 6,600 gallon tanker truck and delivers the material to one of two waste water treatment facilities (WWTF).

Leachate collected in 2017 was transported to either the Domtar, Inc. WWTF in Rothschild, Wisconsin or the Stevens Point Wastewater Utility in Stevens Point, Wisconsin. Leachate is pumped into the WWTF and treated to ensure all effluent meets Wisconsin Pollutant Discharge Elimination System (WPDES) standards prior to discharge into the Wisconsin River.

Preventative maintenance of the leachate storage and pumping system was conducted, as needed, by on-site operations contractor or other tank and pump specialists when required.

Total volume (gallons) of leachate collected/transported/treated are as follows:

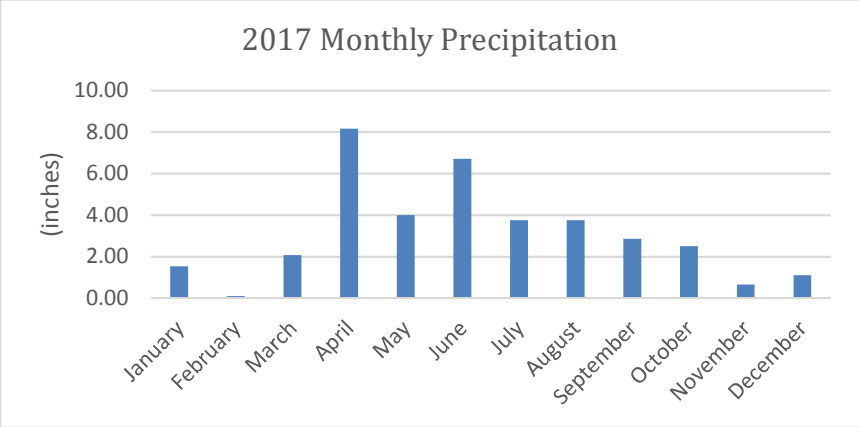
2017	Tank 1	Tank 2
January	33,000	33,000
February	39,600	33,000
March	39,600	39,600
April	39,600	39,600
May	26,400	39,600
June	39,600	46,200
July	19,800	33,000
August	19,800	26,400
September	13,200	26,400
October	13,200	26,400
November	13,200	26,400
December	13,200	26,400
Total	**310,200**	**396,000**



Precipitation:

2017 Precipitation Monthly Totals			
Month	Snow (inches)	Rain (inches)	Precipitation* (inches)
January	15.25		1.53
February	1.00		0.10
March	5.75	1.50	2.08
April	0.50	8.10	8.15
May		4.00	4.00
June		6.70	6.70
July		3.75	3.75
August		3.75	3.75
September		2.85	2.85
October		2.50	2.50
November	1.50	0.50	0.65
December	6.00	0.50	1.10
Total			**37.15**

** Snow converted to liquid precipitation by dividing by 10*



Leachate Collection Piping

On July 13, 2017 Northern Pipe, Inc. of Green Bay, Wisconsin, water jetted the Area A leachate lines with a total of 2,000 gallons of water. Jetting was accomplished by accessing pipes from both ends for cleaning to overlap in the center or jetting the full length from one access point. Hard deposits were encountered at both ends of cleanout access point 1 and an obstruction was noted for cleanout access point 7 which prevented the entire pipe from being jetted within these two leachate lines. No other issues were noted. The results/findings are provided below:

NORTHERN PIPE, INC.
CLEAN - INSPECT - REPAIR

MARATHON COUNTY LANDFIL L
LEACHATE PIPE CLEANOUT RECORDS

DATE: July 13, 2017
CONTRACTOR NAME: Northern Pipe, Inc.
CONTRACTOR PHONE: 920-468-7074
EQUIPMENT USED: #36 Vac-Con w/ 1,200 ft. 3/4" hose

AREA A

CLEANOUT ACCESS POINT	PIPE SIZE	PIPE LENGTH (FT)	FT. JETTED SOUTH	FT. JETTED NORTH	COMMENTS
1	8"	1180	285	480	Jetter stops ; Hard deposits on both sides
2	6"	1040	750	340	Jetter stops on South side ; North side no problems ; Achieved overlap
3	6"	1040	1040	0	Whole line from South ; No problems
4	8"	1180	925	355	Jetter stops on South side ; North side no problems ; Achieved overlap
5	6"	1040	825	315	Jetter stops on South side ; North side no problems ; Achieved overlap
6	6"	1040	600	540	Jetter stops on South side ; North side no problems ; Achieved overlap
7	8"	460	92	0	Jetter stops
Gas Condensate Line		280	280		Line is good

AMOUNT OF WATER USED: 2,000 Gallons of water

Leachate Sampling

Leachate sampling and analytical analysis was conducted in April and October 2017 by Northern Lake Services (NLS). Sampling results of volatile organic compounds, submitted electronically to the WDNR Groundwater and Environmental Monitoring System (GEMS) database, show a wide variety of compounds present. Conductivity and pH values reported in 2017 are summarized below.

Leachate tank sampling conductivity results are as follows:

Leachate	2017	Conductivity umho/cm	pH S.U.
Tank 1	April	3,710	7.20
	October	6,500	7.91
Tank 2	April	5,120	7.04
	October	6,260	7.49

Leachate Level Monitoring

The reported monthly leachate levels are provided below:

2017 LEACHATE HEADWELL AND STORMWATER MONITORING FOR AREA A LANDFILL

Area A - 2017	LHW1	LHW2	LHW3	LHW4D	LHW4M	LHW4S	P5*	P6*	P7*	P8*
Measured Pipe Length to Bottom 2007-8 (ft) (P)	56.26	58.53	63.7	67.50	47.65	33.6	67.7	52.25	68.8	59.8
Bottom of Pipe Elevation				1356.00	1375.8	1390.0				
Screen Length (ft)	20	20	20	1.5	1.5	1.5				
Date:	Depth to Liquid (ft)	Depth to Liquid (ft)	Depth to Liquid (ft)	Depth to Liquid (ft)	Depth to Liquid (ft)	Depth to Liquid (ft)	Depth to Liquid (ft)	Depth to Liquid (ft)	Depth to Liquid (ft)	Depth to Liquid (ft)
1/25/2017	32.6	34.5	45.1	44.4	41.1	Dry	Frozen	Frozen	Frozen	Frozen
2/28/2017	32.9	34.2	48.1	44.2	41.0	Dry	Frozen	Frozen	Frozen	Frozen
3/15/2017	33.0	34.0	45.0	44.1	40.8	Dry	Frozen	Frozen	Frozen	Frozen
4/13/2017	33.1	34.0	44.6	44.1	40.6	Dry	Frozen	Frozen	Frozen	Frozen
5/11/2017	33.2	33.8	44.3	44.2	40.0	Dry	Dry	Dry	Dry	Dry
6/7/2017	33.4	34.0	44.4	44.3	40.1	Dry	Dry	Dry	Dry	Dry
7/14/2017	33.6	34.0	44.6	44.5	40.3	Dry	Dry	Dry	Dry	Dry
8/18/2017	33.8	34.1	44.8	44.7	40.5	Dry	Dry	Dry	Dry	Dry
9/29/2017	33.9	34.2	45.0	45.0	40.6	Dry	Dry	Dry	Dry	Dry
10/4/2017	34.0	34.2	44.9	45.0	40.4	Dry	Dry	Dry	Dry	Dry
11/1/2017	33.6	34.0	44.6	44.5	40.3	Dry	Dry	Dry	Dry	Dry
12/11/2017	33.8	34.1	44.8	44.7	40.5	Dry	Dry	Dry	Dry	Dry

LHW - Leachate Head Well, monitoring pipe within Area A waste mass

*P's are monitoring pipes on the side slopes

SW - Stormwater levels of surface ponds (feet)

	1/25/2017	2/28/2017	3/15/2017	4/13/2017	5/11/2017	6/7/2017	7/14/2017	8/18/2017	9/29/2017	10/4/2017	11/1/2017	12/11/2017
SW1	1.7	-	-	-	-	-	-	-	-	-	-	-
SW2	1.8	-	-	-	-	-	-	-	-	-	-	-
SW3	1.7	-	-	-	-	-	-	-	-	-	-	-

Lysimeters

Four lysimeters (LS-2, LS-3, LS-5 and LS-6) were constructed within the unsaturated zone under the Area A landfill. NLS monitored the lysimeters in October 2017 and found LS-3 was dry. LS-2, LS-5 and LS-6 were sampled. A summary table of detected constituents of the lysimeter sampling event is provided below:

October 2017 Detection Results:

Parameter	Units	Lysimeter 2	Lysimeter 5	Lysimeter 6
Conductivity	umho/cm @25C	706	812	866
pH	S.U.	6.87	6.80	7.00
Alkalinity	mg/L	140	440	500
COD	mg/L	22	63	19
Chloride (as Cl)	mg/L	130	23	30
Hardness	mg/L	330	440	490
Nitrogen, Ammonia as N	mg/L	0.096	0.89	2.4
Sodium (as Na)	mg/L	9.5	12	14
Sulfate (as SO4)	mg/L	6.1	ND	ND
VOCs				
Acetone	ug/L	ND	6.1	ND
Methyl Ethyl Ketone	ug/L	ND	3	ND
Tetrahydrofuran	ug/L	7	93	140
Vinyl Chloride	ug/L	ND	3.5	ND

Hydrogeological Conditions

The near-surface geology at this site consists of glacial sediments that were deposited in an ice marginal environment that led to the formation of an end moraine. Consequently, these deposits vary widely in terms of their grain-size distributions and sorting. On-site borings penetrated mostly gravelly, silty sands (classified as SM and SP-SM type soils), but zones of well-sorted sands (SP) and sandy, clayey silts (CL or CL-ML type soils) were also encountered. The thickness of glacial drift also varies widely, partly because the sediments were deposited in a moraine with hummocky topography, and partly because the underlying bedrock has more than 80 feet of local relief to its upper surface. Depth to bedrock (granitic gneiss, granite, and quartz monzonite) ranges from 35 to nearly 100 feet. (Sand Creek Consultant Report-Groundwater Flow and Plume Dynamics, 12/09)

Groundwater at the Area A locale occurs under water table conditions and is recharged by excess rainfall that infiltrates the land surface. Estimates of recharge near the site are on the order of 10 inches per year. The water table is generally less than 50 feet below grade, occurring within the glacial deposits. (Sand Creek Consultant Report-Groundwater Flow and Plume Dynamics, 12/09)

Groundwater Monitoring & Analysis

At the beginning of 2017 MCSWD had a total of 91 groundwater monitoring wells, with 42 designated for Area A. The groundwater monitoring regimen was conducted according to the February 7, 2013 approved groundwater, lysimeter and leachate monitoring plan.

Per the approved monitoring plan, the groundwater wells within the plan were sampled semi-annually in April and October. Sampling and laboratory analysis was conducted by qualified personnel from Northern Lake Service (NLS) of Crandon, Wisconsin. Results revealed that most of

monitoring wells show no impacts from contaminants and even meet safe drinking water standards. The groundwater samples were analyzed to very low chemical concentrations with many found to be below the laboratory's limit of quantification (LOQ). The groundwater quality measurements were compared to NR 140 Groundwater Preventive Action Limits (PALs) and Enforcement Standards (ESs) and site specific indicator PALs and Alternate Concentration Limits (ACLs) provided in the approved monitoring plan.

Detections with concentrations higher than these limits are reported as exceedances. As in past monitoring events at the Area A site, results of some wells exceeded the PAL and ES standards, particularly for volatile organic compounds (VOCs). Wells that have historically reported VOC concentrations above these limits include: R12R, R13R, R38, R47, and R50P. Continued monitoring and trending will be necessary to track this. No action is planned or required at this time. Groundwater monitoring results and any exceedances were submitted electronically by NLS to the WDNR's Groundwater Environmental Monitoring System (GEMS). Below is a summary of the exceedances from each semi-annual monitoring period. The exceedance reports submitted to the WDNR for sampling events in April and October 2017 are provided in Attachment B.

Area A Groundwater Well Exceedance Table April 2017

Marathon County Solid Waste: Area A Groundwater Monitoring Wells									
	Area A	Facility #2892	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
277948	April 17&18 2017	Dup 041817	Tetrachloroethylene	ug/L	4.10	0.50	5.00		NR140
277948	April 17&18 2017	Dup 041817	Trichloroethylene	ug/L	5.40	0.50	5.00		NR140
277948	April 18 2017	R12R	Tetrachloroethylene	ug/L	1.10	0.50	5.00		NR140
277948	April 18 2017	R12R	Trichloroethylene	ug/L	1.80	0.50	5.00		NR140
277948	April 18 2017	R12R	Vinyl Chloride	ug/L	0.17	0.02	0.20		NR140
277948	April 18 2017	R13R	Tetrachloroethylene	ug/L	4.20	0.50	5.00		NR140
277948	April 18 2017	R13R	Trichloroethylene	ug/L	5.60	0.50	5.00		NR140
277948	April 18 2017	R38	Tetrachloroethylene	ug/L	0.84	0.50	5.00		NR140
277948	April 18 2017	R38	Trichloroethylene	ug/L	1.20	0.50	5.00		NR140
277948	April 18 2017	R47	Tetrachloroethylene	ug/L	0.56	0.50	5.00		NR140
277948	April 18 2017	R47	Trichloroethylene	ug/L	0.81	0.50	5.00		NR140
277948	April 17 2017	R50P	Tetrachloroethylene	ug/L	0.70	0.50	5.00		NR140
277948	April 17 2017	R50P	Trichloroethylene	ug/L	0.54	0.50	5.00		NR140
277948	April 18 2017	R35	Conductivity	umho@25C	630.00	510.00			Well

Area A Groundwater Well Exceedance Table October 2017

Marathon County Solid Waste: Area A Groundwater Monitoring Wells									
	Area A	Facility #2892	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
289162	October 16&17 2017	Dup 101717	Tetrachloroethylene	ug/L	1.60	0.50	5.00		NR140
289162	October 16&17 2017	Dup 101717	Trichloroethylene	ug/L	4.50	0.50	5.00		NR140
289162	October 16&17 2017	R12R	Tetrachloroethylene	ug/L	0.57	0.50	5.00		NR140
289162	October 16&17 2017	R13R	Tetrachloroethylene	ug/L	1.70	0.50	5.00		NR140
289162	October 16&17 2017	R13R	Trichloroethylene	ug/L	4.60	0.50	5.00		NR140
289162	October 16&17 2017	R13R	Vinyl Chloride	ug/L	0.19	0.02	0.20		NR140
289162	October 16&17 2017	R38	Tetrachloroethylene	ug/L	1.00	0.50	5.00		NR140
289162	October 16&17 2017	R38	Trichloroethylene	ug/L	1.50	0.50	5.00		NR140
289162	October 16&17 2017	R47	Tetrachloroethylene	ug/L	0.66	0.50	5.00		NR140
289162	October 16&17 2017	R47	Trichloroethylene	ug/L	1.50	0.50	5.00		NR140
289162	October 16&17 2017	R50P	Tetrachloroethylene	ug/L	0.80	0.50	5.00		NR140
289162	October 16&17 2017	R50P	Trichloroethylene	ug/L	0.56	0.50	5.00		NR140
289162	October 16&17 2017	R35	Conductivity	umho@25C	560.00	510.00			Well

Private Well Water Sampling

The private wells identified in the monitoring plan identify nine wells monitored semi-annually (April and October) and seven monitored annually (October) for specified parameters. Analytical results and explanations, where necessary, were reported to the private well owners. Results of the down-gradient wells having WDNR well ID numbers were submitted electronically to the WDNR's GEMS. The private water supply well samples analyzed in 2017 met the parameters identified in the site's monitoring plan for safe drinking water standards and no exceedances were recorded.

Since 1993, MCSWD has monitored private wells adjacent to and generally within about one mile to the southeast of the landfill property limits. MCSWD annually sends letters to approximately fifty landowners and nearby residents, offering to monitor their private water supply wells in autumn of each year. MCSWD notifies all eligible residents in advance of the monitoring event and schedules private well testing based on owner requests on a first come, first served basis. Not all residents accept the offer.

MCSWD's July 2004 "Private Well Monitoring Program and Contingency Plan for Alternative Water Supplies" explained that water supply wells located south to southeast of Area A will be sampled and tested for VOCs. MCSWD outlined a plan to take precautionary measures and to ensure safe drinking water is provided to homeowners in this group if, in the future, impacted groundwater from the landfill would cause a well's water to have total contaminants at a concentration half of the allowable drinking water maximum contaminant level. The maximum contaminant levels are allowed in drinking water for public water supply systems, so the county's contingency plan is even more protective of human health.

Landfill Gas Monitoring

Landfill gas monitoring was conducted on a monthly basis in accordance with the sites Air Pollution Control Operation Permit 737092730-P20. The results of each monthly monitoring event are provided to both the solid waste and air departments of the WDNR on a monthly basis.

ATTACHMENT A

2017 LANDFILL GAS TO-15 SAMPLE RESULTS

Air TECHNOLOGY Laboratories, Inc.

September 19, 2017

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175
TX Cert T104704450-14-6
EPA Methods TO14A, TO15
UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Marathon County Solid Waste
ATTN: Ron Smith
R18500 E. Highway 29
Ringle, WI 54471

LABORATORY TEST RESULTS

Project Reference: Mainline Landfill Gas; Mainline 1
Lab Number: I090501-01

Enclosed are results for sample(s) received 9/05/17 by Air Technology Laboratories. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Ron Smith on 9/19/17.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

Air TECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME
Standard ☒ 48 hours ☐
Same Day ☐ 72 hours ☐
24 hours ☐ 96 hours ☐
Other:

DELIVERABLES
EDD ☐
EDF ☐
LEVEL 3 ☐
LEVEL 4 ☐

PAGE: OF

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.: Mainline 1
Project Name: Mainline L.F. Gas
Report To: Ron Smith
Company: Marathon Co. S.W
Street: R18500 E. Hwy 29
City/State/Zip: Ringle, Wi
Phone& Fax: 715-446-3339 Ext. 101
e-mail: ron.smith@co.marathon.wi.us

BILLING
P.O. No.: SW 082917
Bill to: Same

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	CONTAINER TYPE	EPA TO15	3C + CO				
I090501-01	Mainline 1 (Landfill Gas)	8/29/17	0838	Gas	C	X	X				
			GD 9/5/17								

AUTHORIZATION TO PERFORM WORK: Ron Smith — **COMPANY:** Marathon Co. SW — **DATE/TIME:** 8/29/17 0930
SAMPLED BY: Ron Smith — **COMPANY:** M.C.S.W — **DATE/TIME:** 8/29/17 0839
RELINQUISHED BY: Ron Smith — **DATE/TIME:** 8/29/17 12:25 — **RECEIVED BY:** Becky Besaw — **DATE/TIME:** 8/29/17 12:25
RELINQUISHED BY: FED EX — **DATE/TIME:** 9/5/17 1254 — **RECEIVED BY:** [signature] — **DATE/TIME:** 9/5/17 1254
RELINQUISHED BY: — **DATE/TIME:** — **RECEIVED BY:** — **DATE/TIME:**

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____

COMMENTS
Reported in ug/L - TO15

Tag time 0830 GD 9/5/17

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCL **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other

Rev. 03 - 5/7/09

Client: Marathon County Solid Waste
Attn: Ron Smith
Project Name: Mainline Landfill Gas
Project No.: Mainline 1
Date Received: 09/05/17
Matrix: Air
Reporting Units: ug/L

EPA Method TO15

Lab No.:	I090501-01							
Client Sample I.D.:	Mainline 1							
Date/Time Sampled:	8/29/17 8:30							
Date/Time Analyzed:	9/6/17 17:34							
QC Batch No.:	170906MS2A1							
Analyst Initials:	DT							
Dilution Factor:	21							
ANALYTE	Result ug/L	RL ug/L						
Dichlorodifluoromethane (12)	0.91	0.10						
Chloromethane	ND	0.086						
1,2-Cl-1,1,2,2-F ethane (114)	0.22	0.15						
Vinyl Chloride	0.36	0.053						
Bromomethane	ND	0.081						
Chloroethane	ND	0.055						
Trichlorofluoromethane (11)	ND	0.12						
1,1-Dichloroethene	ND	0.083						
Carbon Disulfide	0.75	0.32						
1,1,2-Cl 1,2,2-F ethane (113)	0.16	0.16						
Acetone	4.5	0.25						
Methylene Chloride	ND	0.072						
t-1,2-Dichloroethene	ND	0.083						
1,1-Dichloroethane	ND	0.084						
Vinyl Acetate	ND	0.37						
c-1,2-Dichloroethene	0.67	0.083						
2-Butanone	4.8	0.061						
t-Butyl Methyl Ether (MTBE)	0.17	0.075						
Chloroform	ND	0.10						
1,1,1-Trichloroethane	ND	0.11						
Carbon Tetrachloride	ND	0.13						
Benzene	2.1	0.066						
1,2-Dichloroethane	0.13	0.084						
Trichloroethene	0.18	0.11						
1,2-Dichloropropane	ND	0.096						
Bromodichloromethane	ND	0.14						
c-1,3-Dichloropropene	ND	0.094						
4-Methyl-2-Pentanone	2.1	0.085						
Toluene	14	0.078						
t-1,3-Dichloropropene	ND	0.094						

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Marathon County Solid Waste**
Attn:	**Ron Smith**
Project Name:	**Mainline Landfill Gas**
Project No.:	**Mainline 1**
Date Received:	**09/05/17**
Matrix:	**Air**
Reporting Units:	**ug/L**

EPA Method TO15

Lab No.:	I090501-01							
Client Sample I.D.:	Mainline 1							
Date/Time Sampled:	8/29/17 8:30							
Date/Time Analyzed:	9/6/17 17:34							
QC Batch No.:	170906MS2A1							
Analyst Initials:	DT							
Dilution Factor:	21							
ANALYTE	**Result ug/L**	**RL ug/L**						
1,1,2-Trichloroethane	ND	0.11						
Tetrachloroethene	0.21	0.14						
2-Hexanone	ND	0.085						
Dibromochloromethane	ND	0.18						
1,2-Dibromoethane	ND	0.16						
Chlorobenzene	0.10	0.096						
Ethylbenzene	4.4	0.090						
p,&m-Xylene	6.0	0.090						
o-Xylene	1.8	0.090						
Styrene	0.15	0.089						
Bromoform	ND	0.22						
1,1,2,2-Tetrachloroethane	ND	0.29						
Benzyl Chloride	ND	0.11						
4-Ethyl Toluene	0.40	0.10						
1,3,5-Trimethylbenzene	ND	0.20						
1,2,4-Trimethylbenzene	0.25	0.20						
1,3-Dichlorobenzene	ND	0.13						
1,4-Dichlorobenzene	ND	0.13						
1,2-Dichlorobenzene	ND	0.13						
1,2,4-Trichlorobenzene	ND	0.31						
Hexachlorobutadiene	ND	0.22						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 9/19/17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Marathon County Solid Waste
Attn: Ron Smith
Project Name: Mainline Landfill Gas
Project No.: Mainline 1
Date Received: 09/05/17
Matrix: Air
Reporting Units: ug/L

EPA Method TO15

Lab No.:	METHOD BLANK
Client Sample I.D.:	-
Date/Time Sampled:	-
Date/Time Analyzed:	9/6/17 16:11
QC Batch No.:	170906MS2A1
Analyst Initials:	DT
Dilution Factor:	0.20

ANALYTE	Result ug/L	RL ug/L
Dichlorodifluoromethane (12)	ND	0.00099
Chloromethane	ND	0.00083
1,2-Cl-1,1,2,2-F ethane (114)	ND	0.0014
Vinyl Chloride	ND	0.00051
Bromomethane	ND	0.00078
Chloroethane	ND	0.00053
Trichlorofluoromethane (11)	ND	0.0011
1,1-Dichloroethene	ND	0.00079
Carbon Disulfide	ND	0.0031
1,1,2-Cl 1,2,2-F ethane (113)	ND	0.0015
Acetone	ND	0.0024
Methylene Chloride	ND	0.00069
t-1,2-Dichloroethene	ND	0.00079
1,1-Dichloroethane	ND	0.00081
Vinyl Acetate	ND	0.0035
c-1,2-Dichloroethene	ND	0.00079
2-Butanone	ND	0.00059
t-Butyl Methyl Ether (MTBE)	ND	0.00072
Chloroform	ND	0.00098
1,1,1-Trichloroethane	ND	0.0011
Carbon Tetrachloride	ND	0.0013
Benzene	ND	0.00064
1,2-Dichloroethane	ND	0.00081
Trichloroethene	ND	0.0011
1,2-Dichloropropane	ND	0.00092
Bromodichloromethane	ND	0.0013
c-1,3-Dichloropropene	ND	0.00091
4-Methyl-2-Pentanone	ND	0.00082
Toluene	ND	0.00075
t-1,3-Dichloropropene	ND	0.00091

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Marathon County Solid Waste**
Attn:	**Ron Smith**
Project Name:	**Mainline Landfill Gas**
Project No.:	**Mainline 1**
Date Received:	**09/05/17**
Matrix:	**Air**
Reporting Units:	**ug/L**

EPA Method TO15

Lab No.:	METHOD BLANK
Client Sample I.D.:	-
Date/Time Sampled:	-
Date/Time Analyzed:	9/6/17 16:11
QC Batch No.:	170906MS2A1
Analyst Initials:	DT
Dilution Factor:	0.20

ANALYTE	Result ug/L	RL ug/L
1,1,2-Trichloroethane	ND	0.0011
Tetrachloroethene	ND	0.0014
2-Hexanone	ND	0.00082
Dibromochloromethane	ND	0.0017
1,2-Dibromoethane	ND	0.0015
Chlorobenzene	ND	0.00092
Ethylbenzene	ND	0.00087
p,&m-Xylene	ND	0.00087
o-Xylene	ND	0.00087
Styrene	ND	0.00085
Bromoform	ND	0.0021
1,1,2,2-Tetrachloroethane	ND	0.0027
Benzyl Chloride	ND	0.0010
4-Ethyl Toluene	ND	0.00098
1,3,5-Trimethylbenzene	ND	0.0020
1,2,4-Trimethylbenzene	ND	0.0020
1,3-Dichlorobenzene	ND	0.0012
1,4-Dichlorobenzene	ND	0.0012
1,2-Dichlorobenzene	ND	0.0012
1,2,4-Trichlorobenzene	ND	0.0030
Hexachlorobutadiene	ND	0.0021

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 9/9/17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 170906MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	9/6/17 16:11		9/6/17 13:29		9/6/17 14:08						
Data File ID:	06SEP009.D		06SEP005.D		06SEP006.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	10.4	104	10.1	101	2.6	70	130	30	Pass
Methylene Chloride	0.0	10.0	11.0	110	10.5	105	4.6	70	130	30	Pass
Trichloroethene	0.0	10.0	10.5	105	10.2	102	2.4	70	130	30	Pass
Toluene	0.0	10.0	9.5	95	9.3	93	2.3	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.0	90	9.1	91	1.2	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 9/9/17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Marathon County Solid Waste
Attn: Ron Smith

Project Name: Mainline Landfill Gas
Project Number: Mainline 1
Date Received: 9/5/2017
Matrix: Vapor

Fixed Gases by EPA METHOD 3C

Lab Number:		I090501-01									
Client Sample ID:		Mainline 1									
Date/Time Collected:		8/29/17 8:30									
Date/Time Analyzed:		9/12/17 12:27									
Analyst Initials:		AS									
QC Batch:		170912GC8A1									
Dilution Factor:		3.0									
ANALYTE	Units	Result	RL								
Nitrogen	% v/v	11	3.0								
Oxygen	% v/v	3.0	1.5								
Carbon Dioxide	% v/v	34	0.030								
Methane	% v/v	49	0.0030								
Carbon Monoxide	% v/v	ND	0.0030								

ND = Not detected at or above reporting limit.
PQL = Practical Quantitation Limit.
TNMOC = Total Non-Methane Organic Carbon.
TNMOC uncorr* = TNMOC concentration in sample without nitrogen/moisture correction.
NA = Nitrogen/moisture correction causes division by zero.

Reviewed/Approved By: _____ Date: 9/19/17
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

ATTACHMENT B

EXCEEDANCE REPORTS FOR AREA A GROUNDWATER MONITORING APRIL AND OCTOBER 2017

marathoncountysolidwaste.org
marathoncountysolidwaste

Marathon County Solid Waste Department
R18500 E. Hwy 29
Ringle, WI 54471

Director:	715-446-3101 X104
Site Supervisor:	715-446-3101 X102
Administrative Office:	715-446-3101 X100
Scale Master	715-446-3101 X103
Solid Waste & Recycling Info Line	877-270-3989 toll-free

June 2, 2017

Wisconsin Department of Natural Resources
Bureau of Solid Waste Management
GEMS Data Submittal Contact, WA/3
P.O. Box 7921
Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill: License No. 2892 Area A

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of April 2017. An exceedance table has been attached for the Area A landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher
Operations Manager
Marathon County Solid Waste

C.c: Nathan Coller, Sarah Shiel, Eric Syftestad, Meleesa Johnson, Mark Torresani.

Area A Groundwater Well Exceedance Table April 2017

Marathon County Solid Waste: Area A Groundwater Monitoring Wells									
	Area A	Facility #2892	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
277948	April 17&18 2017	Dup 041817	Tetrachloroethylene	ug/L	4.10	0.50	5.00		NR140
277948	April 17&18 2017	Dup 041817	Trichloroethylene	ug/L	5.40	0.50	5.00		NR140
277948	April 18 2017	R12R	Tetrachloroethylene	ug/L	1.10	0.50	5.00		NR140
277948	April 18 2017	R12R	Trichloroethylene	ug/L	1.80	0.50	5.00		NR140
277948	April 18 2017	R12R	Vinyl Chloride	ug/L	0.17	0.02	0.20		NR140
277948	April 18 2017	R13R	Tetrachloroethylene	ug/L	4.20	0.50	5.00		NR140
277948	April 18 2017	R13R	Trichloroethylene	ug/L	5.60	0.50	5.00		NR140
277948	April 18 2017	R38	Tetrachloroethylene	ug/L	0.84	0.50	5.00		NR140
277948	April 18 2017	R38	Trichloroethylene	ug/L	1.20	0.50	5.00		NR140
277948	April 18 2017	R47	Tetrachloroethylene	ug/L	0.56	0.50	5.00		NR140
277948	April 18 2017	R47	Trichloroethylene	ug/L	0.81	0.50	5.00		NR140
277948	April 17 2017	R50P	Tetrachloroethylene	ug/L	0.70	0.50	5.00		NR140
277948	April 17 2017	R50P	Trichloroethylene	ug/L	0.54	0.50	5.00		NR140
277948	April 18 2017	R35	Conductivity	umho@25C	630.00	510.00			Well

The Area A exceedances that were detected during the April 2017 sampling event are consistent with the exceedances that were detected in previous sampling events.

Groundwater contamination was detected southeast of Area A during the late 1980s. By May of 1993, Marathon County completed a groundwater quality investigation and submitted a report to WDNR titled "Marathon County, Area A Landfill – Environmental Contamination Assessment (ECA) report". The ECA report suggested that contaminants may have been released to the environment from one or more of the leachate collection basins and other source locations. Consequently, several improvements were made and both leachate collection basins were removed in 1995. The identified groundwater contaminants of primary concern at this facility are VOCs, specifically the chlorinated aliphatic hydrocarbons (CAHs) and vinyl chloride. Since the remedial work from 1993 to 1996, significant reductions of CAH concentration have been measured near the suspected source zone.

It is the opinion of Marathon County that the exceedances are related to the leachate basins that were removed in 1995. Marathon County will continue to monitor these wells for exceedances as required, and report any anomalies to the WDNR. Marathon County has installed groundwater monitoring wells along State Highway 29, just southeast of the site. If these particular wells begin showing signs of contamination, the County has a contingency plan in place and will respond to protect residents.

State of Wisconsin
Department of Natural Resources

ENVIRONMENTAL MONITORING DATA CERTIFICATION

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

* **Prepare one form for each license or monitoring ID.**
* **Please type or print legibly.**
* Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
* Attach a notification of any gas values that attain or exceed explosive gas levels.
* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste and Materials Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison, WI 53707 - 7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):
Northern Lake Service, Inc.

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

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Landfill - Area A	02892	737054890	APRIL -17-2017 through APRIL -18-2017
Some Area A wells are linked to BRRDF site (Lic. 04228) but reported here.			

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
APRIL -2017

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachements 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 significant of concentrations exceeding groundwater standards.

David Hagenbucher	Manager	715-446-3101
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	6/1/17	
Signature	Date	

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.
- [ ] Found uploading problems on _____ Initials _____
- [ ] Notified contact of problems on _____ Uploaded data successfully on _____

EDD format(s): [ ] Diskette [ ] CD (initial submittal and follow-up) [x] E-mail (follow-up only) Other _____

Marathon County Solid Waste Mgmnt Dept
Area A
04-01-2017

Lab ID: 721026460
NLS Project: 277948
Collected: 04-01-2017
License: 02892
FID: 737054890

EXCEEDANCES:

Well ID	Parameter	Units	Result	PAL / ACL	ES	Comments
Dup 041817	Tetrachloroethylene	ug/L	4.1	.5	5	NR140
Dup 041817	Trichloroethylene	ug/L	5.4	.5	5	NR140
R12R	Tetrachloroethylene	ug/L	1.1	.5	5	NR140
R12R	Trichloroethylene	ug/L	1.8	.5	5	NR140
R12R	Vinyl Chloride	ug/L	0.17	.02	.2	NR140
R13R	Tetrachloroethylene	ug/L	4.2	.5	5	NR140
R13R	Trichloroethylene	ug/L	5.6	.5	5	NR140
R38	Tetrachloroethylene	ug/L	0.84	.5	5	NR140
R38	Trichloroethylene	ug/L	1.2	.5	5	NR140
R47	Tetrachloroethylene	ug/L	0.56	.5	5	NR140
R47	Trichloroethylene	ug/L	0.81	.5	5	NR140
R50P	Tetrachloroethylene	ug/L	0.70	.5	5	NR140
R50P	Trichloroethylene	ug/L	0.54	.5	5	NR140
R35	Conductivity	umho@25C	630	510		well

marathoncountysolidwaste.org
marathoncountysolidwaste

Marathon County Solid Waste Department
R18500 E. Hwy 29
Ringle, WI 54471

Director:	715-446-3101 X104
Site Supervisor:	715-446-3101 X102
Administrative Office:	715-446-3101 X100
Scale Master	715-446-3101 X103
Solid Waste & Recycling Info Line	877-270-3989 toll-free

June 2, 2017

Wisconsin Department of Natural Resources
Bureau of Solid Waste Management
GEMS Data Submittal Contact, WA/3
P.O. Box 7921
Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No. 3338 Area B.

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of April 2017. An exceedance table has been attached for the Area B landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher
Operations Manager
Marathon County Solid Waste

C.c: Nathan Coller, Sarah Shiel, Eric Syftestad, Meleesa Johnson, Mark Torresani

Area B Groundwater Well Exceedance Table April 2017

Marathon County Solid Waste: Area B Groundwater Monitoring Wells									
	Area B	Facility #3338	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
277947	April 18 2017	R27	Nitrate+Nitrite	mg/L	4.70	2.00	10.00		NR140

The Area B Nitrate/Nitrite levels at well R27 can be a result of improper farming practices. Throughout the past 3 years, Area B has had ongoing vegetation management to establish growth on slopes. Seed, fertilizer, and mulch have all been applied in an effort to control erosion. This well has not shown a significant change in concentration since the previous sampling event. The well will continue to be monitored closely to ensure that levels decrease.

State of Wisconsin
Department of Natural Resources

ENVIRONMENTAL MONITORING DATA CERTIFICATION

Form 4400-231(R 1/04)

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Instructions:

* **Prepare one form for each license or monitoring ID.**
* **Please type or print legibly.**
* Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
* Attach a notification of any gas values that attain or exceed explosive gas levels.
* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Wisconsin Department of Natural Resources
  P.O. Box 7921
  Madison, WI 53707 - 7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):
Northern Lake Service, Inc.

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

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Landfill - Area B	03338	737092730	APRIL -17-2017 through APRIL -18-2017

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
APRIL -2017

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachements 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 significant of concentrations exceeding groundwater standards.

David Hagenbucher	Manager	715-446-3101
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	6/1/17	
Signature	Date	

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Marathon County Solid Waste Mgmnt Dept
Area B
04-01-2017

Lab ID: 721026460
NLS Project: 277947
Collected: 04-01-2017
License: 03338
FID: 737092730

EXCEEDANCES:

Well ID	Parameter	Units	Result	PAL / ACL	ES	Comments
R27	Nitrate+Nitrite, dis.	mg/L	4.7	2	10	NR140

marathoncountysolidwaste.org
marathoncountysolidwaste

Marathon County Solid Waste Department
R18500 E. Hwy 29
Ringle, WI 54471

Director:	715-446-3101 X104
Site Supervisor:	715-446-3101 X102
Administrative Office:	715-446-3101 X100
Scale Master	715-446-3101 X103
Solid Waste & Recycling Info Line	877-270-3989 toll-free

June 2, 2017

Wisconsin Department of Natural Resources
Bureau of Solid Waste Management
GEMS Data Submittal Contact, WA/3
P.O. Box 7921
Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No.4228 BRRDF.

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of April 2017. An exceedance table has been attached for the Bluebird Ridge Landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher
Operations Manager
Marathon County Solid Waste

C.c: Nathan Coller, Sarah Shiel, Eric Syftestad, Meleesa Johnson, Mark Torresani

Bluebird Ridge Recycling and Disposal Facility Groundwater Well Exceedance Table April 2017

Marathon County Solid Waste: Bluebird Ridge Groundwater Monitoring Wells									
	BRRDF	Facility #4228	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
278046	April 18 2017	R59P	Alkalinity	mg/L	250.00	230.00			well
278046	April 18 2017	R59P	Conductivity	umhos@25C	500.00	470.00			well
278046	April 18 2017	R59P	Hardness	mg/L	280.00	230.00			well
278046	April 18 2017	R59WT	Alkalinity	mg/L	270.00	230.00			well
278046	April 18 2017	R59WT	Conductivity	umhos@25C	510.00	470.00			well
278046	April 18 2017	R59WT	Hardness	mg/L	300.00	230.00			well

Groundwater hardness can exhibit natural fluctuation over time. In addition, a typical indicator of hard water can be increased levels of calcium. In the past few years, Marathon County has been utilizing liquid Calcium Chloride solution for dust control on main haul roads. It is a possibility that small amounts of Calcium Chloride may have leached into groundwater due to runoff from haul roads. This solution may also contribute to slight increases in conductivity. In addition to the Calcium Chloride application, this particular well is located within 50 feet of a major soil stockpile. During 2016, this stockpile received over 250,000 cubic yards of soil from the 10 acre cell expansion of the Bluebird Ridge Landfill. R59WT and R59P are directly at the toe of the slope of a 500,000+ cubic yard soil stockpile. The stockpile has been properly vegetated; however, the construction activity is likely a contributing factor. This well will continue to be monitored to evaluate the source of the exceedances.

State of Wisconsin
Department of Natural Resources

ENVIRONMENTAL MONITORING DATA CERTIFICATION

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Instructions:

* **Prepare one form for each license or monitoring ID.**
* **Please type or print legibly.**
* Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
* Attach a notification of any gas values that attain or exceed explosive gas levels.
* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Wisconsin Department of Natural Resources
  P.O. Box 7921
  Madison, WI 53707 - 7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):
Northern Lake Service, Inc.

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

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County - BRRDF	04228	337005680	APRIL -18-2017 through APRIL -19-2017

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
APRIL -2017

Type of Data Submitted (Check all that apply)

- [X] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [X] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachements 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 significant of concentrations exceeding groundwater standards.

David Hagenbucher	Manager	715-446-3101
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	6/1/17	
Signature	Date	

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

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EDD format(s): [ ] Diskette [ ] CD (initial submittal and follow-up) [X] E-mail (follow-up only) Other _____

Marathon County Solid Waste Mgmnt Dept
BRRDF
04-01-2017

Lab ID: 721026460
NLS Project: 278046
Collected: 04-01-2017
License: 04228
FID: 337005680

EXCEEDANCES:

Well ID	Parameter	Units	Result	PAL / ACL	ES	Comments
R59P	Alkalinity	mg/L	250	230		well
R59P	Conductivity	umhos@25C	500	470		well
R59P	Hardness	mg/L	280	230		well
R59WT	Alkalinity	mg/L	270	230		well
R59WT	Conductivity	umhos@25C	510	470		well
R59WT	Hardness	mg/L	300	230		well

marathoncountysolidwaste.org
marathoncountysolidwaste

Marathon County Solid Waste Department
R18500 E. Hwy 29
Ringle, WI 54471

Director:	715-446-3101 X104
Site Supervisor:	715-446-3101 X102
Administrative Office:	715-446-3101 X100
Scale Master	715-446-3101 X103
Solid Waste & Recycling Info Line	877-270-3989 toll-free

December 12, 2017

Wisconsin Department of Natural Resources
Bureau of Solid Waste Management
GEMS Data Submittal Contact, WA/3
P.O. Box 7921
Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill: License No. 2892 Area A

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of October 2017. An exceedance table has been attached for the Area A landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher
Operations Manager
Marathon County Solid Waste

C.c: Nathan Coller, Amanda Dehmlow, Valerie Joosten, Meleesa Johnson, Mark Torresani.

Area A Groundwater Well Exceedance Table October 2017

Marathon County Solid Waste: Area A Groundwater Monitoring Wells									
	Area A	Facility #2892	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
289162	October 16&17 2017	Dup 101717	Tetrachloroethylene	ug/L	1.60	0.50	5.00		NR140
289162	October 16&17 2017	Dup 101717	Trichloroethylene	ug/L	4.50	0.50	5.00		NR140
289162	October 16&17 2017	R12R	Tetrachloroethylene	ug/L	0.57	0.50	5.00		NR140
289162	October 16&17 2017	R13R	Tetrachloroethylene	ug/L	1.70	0.50	5.00		NR140
289162	October 16&17 2017	R13R	Trichloroethylene	ug/L	4.60	0.50	5.00		NR140
289162	October 16&17 2017	R13R	Vinyl Chloride	ug/L	0.19	0.02	0.20		NR140
289162	October 16&17 2017	R38	Tetrachloroethylene	ug/L	1.00	0.50	5.00		NR140
289162	October 16&17 2017	R38	Trichloroethylene	ug/L	1.50	0.50	5.00		NR140
289162	October 16&17 2017	R47	Tetrachloroethylene	ug/L	0.66	0.50	5.00		NR140
289162	October 16&17 2017	R47	Trichloroethylene	ug/L	1.50	0.50	5.00		NR140
289162	October 16&17 2017	R50P	Tetrachloroethylene	ug/L	0.80	0.50	5.00		NR140
289162	October 16&17 2017	R50P	Trichloroethylene	ug/L	0.56	0.50	5.00		NR140
289162	October 16&17 2017	R35	Conductivity	umho@25C	560.00	510.00			Well

The Area A exceedances that were detected during the October 2017 sampling event are consistent with the exceedances that were detected in previous sampling events.

Groundwater contamination was detected southeast of Area A during the late 1980s. By May of 1993, Marathon County completed a groundwater quality investigation and submitted a report to WDNR titled "Marathon County, Area A Landfill – Environmental Contamination Assessment (ECA) report". The ECA report suggested that contaminants may have been released to the environment from one or more of the leachate collection basins and other source locations. Consequently, several improvements were made and both leachate collection basins were removed in 1995. The identified groundwater contaminants of primary concern at this facility are VOCs, specifically the chlorinated aliphatic hydrocarbons (CAHs) and vinyl chloride. Since the remedial work from 1993 to 1996, significant reductions of CAH concentration have been measured near the suspected source zone.

It is the opinion of Marathon County that the exceedances are related to the leachate basins that were removed in 1995. The overall general concentrations reported at wells within the core of the plume are stable to decreasing. Marathon County will continue to monitor these wells for exceedances as required, and report any anomalies to the WDNR. Marathon County has installed groundwater monitoring wells along State Highway 29, just southeast of the site. If these particular wells begin showing signs of contamination, the County has a contingency plan in place and will respond to protect residents.

State of Wisconsin
Department of Natural Resources

ENVIRONMENTAL MONITORING DATA CERTIFICATION

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Instructions:

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* **Please type or print legibly.**
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* Attach a notification of any gas values that attain or exceed explosive gas levels.
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  Wisconsin Department of Natural Resources
  P.O. Box 7921
  Madison, WI 53707 - 7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):
Northern Lake Service, Inc.

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

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Landfill - Area A	02892	737054890	OCTOBER -16-2017 through OCTOBER -17-2017
Some Area A wells are linked to BRRDF site (Lic. 04228) but reported here.			

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
OCTOBER -2017

Type of Data Submitted (Check all that apply)

- [X] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [X] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachements 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 significant of concentrations exceeding groundwater standards.

David Hagenbucher	Manager	715-551-5864
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	12/12/17	
Signature	Date	

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

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- EDD format(s): [ ] Diskette [ ] CD (initial submittal and follow-up) [E] mail (follow-up only) Other _____

Marathon County Solid Waste Mgmnt Dept
Area A
10-01-2017

Lab ID: 721026460
NLS Project: 289162
Collected: 10-01-2017
License: 02892
FID: 737054890

EXCEEDANCES:

Well ID	Parameter	Units	Result	PAL / ACL	ES	Comments
Dup 101717	Tetrachloroethylene	ug/L	1.6	.5	5	NR140
Dup 101717	Trichloroethylene	ug/L	4.5	.5	5	NR140
R12R	Tetrachloroethylene	ug/L	0.57	.5	5	NR140
R13R	Tetrachloroethylene	ug/L	1.7	.5	5	NR140
R13R	Trichloroethylene	ug/L	4.6	.5	5	NR140
R13R	Vinyl Chloride	ug/L	0.19	.02	.2	NR140
R38	Tetrachloroethylene	ug/L	1.0	.5	5	NR140
R38	Trichloroethylene	ug/L	1.5	.5	5	NR140
R47	Tetrachloroethylene	ug/L	0.66	.5	5	NR140
R47	Trichloroethylene	ug/L	1.5	.5	5	NR140
R50P	Tetrachloroethylene	ug/L	0.80	.5	5	NR140
R50P	Trichloroethylene	ug/L	0.56	.5	5	NR140
R35	Conductivity	umho@25C	560	510		well

marathoncountysolidwaste.org
marathoncountysolidwaste

Marathon County Solid Waste Department
R18500 E. Hwy 29
Ringle, WI 54471

Director:	715-446-3101 X104
Site Supervisor:	715-446-3101 X102
Administrative Office:	715-446-3101 X100
Scale Master	715-446-3101 X103
Solid Waste & Recycling Info Line	877-270-3989 toll-free

December 12, 2017

Wisconsin Department of Natural Resources
Bureau of Solid Waste Management
GEMS Data Submittal Contact, WA/3
P.O. Box 7921
Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No. 3338 Area B.

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of October 2017. An exceedance table has been attached for the Area B landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher
Operations Manager
Marathon County Solid Waste

C.c: Nathan Coller, Amanda Dehmlow, Valerie Joosten, Meleesa Johnson, Mark Torresani.

Area B Groundwater Well Exceedance Table October 2017

Marathon County Solid Waste: Area B Groundwater Monitoring Wells									
	Area B	Facility #3338	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
289160	October 16&17 2017	R27	Nitrate+Nitrite	mg/L	4.30	2.00	10.00		NR140
289160	October 16&17 2017	R52	Nitrate+Nitrite	mg/L	2.00	2.00	10.00		NR140
289160	October 16&17 2017	R52	Hardness tot. CaCO3	mg/L	300.00	290.00			well

The Area B Nitrate/Nitrite levels at wells R27 and R52 can be a result of improper farming practices. Throughout the past few years, Area B has had ongoing vegetation management to establish growth on slopes. Seed, fertilizer, and mulch have all been applied in an effort to control erosion. R27 has not shown a significant change in concentration since the previous sampling event. The well will continue to be monitored closely to ensure that levels decrease. R52 will also continue to be monitored as required, and report any significant changes to the WDNR.

State of Wisconsin
Department of Natural Resources

ENVIRONMENTAL MONITORING DATA CERTIFICATION

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Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):
Northern Lake Service, Inc.

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

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Landfill - Area B	03338	737092730	OCTOBER -16-2017 through OCTOBER -17-2017

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
OCTOBER -2017

Type of Data Submitted (Check all that apply)

- [X] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [X] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachements 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 significant of concentrations exceeding groundwater standards.

David Hagenbucher	Manager	715-551-5864
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	12/12/17	
Signature	Date	

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] Found uploading problems on _____ Initials _____
- [ ] Notified contact of problems on _____ Uploaded data successfully on _____

EDD format(s): [ ] Diskette [ ] CD (initial submittal and follow-up) [ ] E-mail (follow-up only) Other _____

Marathon County Solid Waste Mgmnt Dept
Area B
10-01-2017

Lab ID: 721026460
NLS Project: 289160
Collected: 10-01-2017
License: 03338
FID: 737092730

EXCEEDANCES:

Well ID	Parameter	Units	Result	PAL / ACL	ES	Comments
R27	Nitrate+Nitrite, dis.	mg/L	4.3	2	10	NR140
R52	Nitrate+Nitrite, dis.	mg/L	2.0	2	10	NR140
R52	Hardness, tot. recoverable as CaCO3 (calc/filt/trace)	mg/L	300	290		ACL_well

marathoncountysolidwaste.org
marathoncountysolidwaste

Marathon County Solid Waste Department
R18500 E. Hwy 29
Ringle, WI 54471

Director:	715-446-3101 X104
Site Supervisor:	715-446-3101 X102
Administrative Office:	715-446-3101 X100
Scale Master	715-446-3101 X103
Solid Waste & Recycling Info Line	877-270-3989 toll-free

December 12, 2017

Wisconsin Department of Natural Resources
Bureau of Solid Waste Management
GEMS Data Submittal Contact, WA/3
P.O. Box 7921
Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No.4228 BRRDF.

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of October 2017. An exceedance table has been attached for the Bluebird Ridge Landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher
Operations Manager
Marathon County Solid Waste

C.c: Nathan Coller, Amanda Dehmlow, Valerie Joosten, Meleesa Johnson, Mark Torresani.

Bluebird Ridge Recycling and Disposal Facility Groundwater Well Exceedance Table October 2017

Marathon County Solid Waste: Bluebird Ridge Groundwater Monitoring Wells									
	BRRDF	Facility #4228	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
289255	October 17&18 2017	R59P	Alkalinity	mg/L	280.00	230.00			well
289255	October 17&18 2017	R59P	Conductivity	umhos@25C	530.00	470.00			well
289255	October 17&18 2017	R59P	Hardness	mg/L	310.00	230.00			well
289255	October 17&18 2017	R59WT	Alkalinity	mg/L	330.00	230.00			well
289255	October 17&18 2017	R59WT	Conductivity	umhos@25C	620.00	470.00			well
289255	October 17&18 2017	R59WT	Hardness	mg/L	360.00	230.00			well
289255	October 17&18 2017	R68P	Hardness	mg/L	260.00	230.00			well

Groundwater hardness can exhibit natural fluctuation over time. In addition, a typical indicator of hard water can be increased levels of calcium. In the past few years, Marathon County has been utilizing liquid Calcium Chloride solution for dust control on main haul roads. It is a possibility that small amounts of Calcium Chloride may have leached into groundwater due to runoff from haul roads. This solution may also contribute to slight increases in conductivity. In addition to the Calcium Chloride application, this particular well is located within 50 feet of a major soil stockpile. During 2016, this stockpile received over 250,000 cubic yards of soil from the 10 acre cell expansion of the Bluebird Ridge Landfill. R59WT and R59P are directly at the toe of the slope of a 500,000+ cubic yard soil stockpile. The stockpile has been properly vegetated; however, the construction activity is likely a contributing factor. This well will continue to be monitored to evaluate the source of the exceedances.

State of Wisconsin
Department of Natural Resources

ENVIRONMENTAL MONITORING DATA CERTIFICATION

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

* **Prepare one form for each license or monitoring ID.**
* **Please type or print legibly.**
* Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
* Attach a notification of any gas values that attain or exceed explosive gas levels.
* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Wisconsin Department of Natural Resources
  P.O. Box 7921
  Madison, WI 53707 - 7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):
Northern Lake Service, Inc.

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

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County - BRRDF	04228	337005680	OCTOBER -17-2017 through OCTOBER -18-2017

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
OCTOBER -2017

Type of Data Submitted (Check all that apply)

- [X] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
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Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	Manager	715-551-5864

Signature	Date
David Hagenbucher	12/12/17

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

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EDD format(s): [ ] Diskette [ ] CD (initial submittal and follow-up) [E] E-mail (follow-up only) Other _____

Marathon County Solid Waste Mgmnt Dept
BRRDF
10-01-2017

Lab ID: 721026460
NLS Project: 289255
Collected: 10-01-2017
License: 04228
FID: 337005680

EXCEEDANCES:

Well ID	Parameter	Units	Result	PAL / ACL	ES	Comments
R59P	Alkalinity	mg/L	280	230		well
R59P	Conductivity	umhos@25C	530	470		well
R59P	Hardness	mg/L	310	230		well
R59WT	Alkalinity	mg/L	330	230		well
R59WT	Conductivity	umhos@25C	620	470		well
R59WT	Hardness	mg/L	360	230		well
R68P	Hardness	mg/L	260	250		well