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March 30, 2018

Ms. Valerie Joosten Wisconsin Department of Natural Resources Waste Management Engineer 3911 Fish Hatchery Road Fitchburg, WI 53711

Re: Marathon County Solid Waste Landfill – Area B Landfill 2017 Annual Solid Waste Report WDNR License No. 3338, FID No. 737092730

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 B Landfill (Area B) of Marathon County. This Annual Solid Waste Report is being submitted in accordance with the approved plan of operation for Area B.

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 (608) 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 B Landfill – 2017 Annual Solid Waste Report

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 B Landfill 2017 ANNUAL REPORT

WDNR License No. 3338 FID 737092730

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

Solid Waste & Recycling Information Line: 877-270-3989

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marathoncountysolidwaste

# Staff, Consultants & Contractors

Marathon County Solid Waste Department Staff:

- Meleesa Johnson-Director
- David Hagenbucher-Operations Manager
- Jessica Knaup-Scale Operator
- Ron Smith-Environmental Technician
- Julie Groshek-Accounting Specialist
- Chris Wickman-Equipment Maintenance Specialist
- Kevin Steinke-Equipment Operator
- Eric Olson-Equipment Operator
- Dave Vitt-Equipment Operator
- Lindsey Carlson- Limited Term Employee
- Abby Lichtscheidl- Temporary Intern
- Serena Kuczmarski- Temporary Intern
- Allison Fitzlaff- Temporary Intern

Engineering Consultants:

- Mark Torresani, P.E.
   Cornerstone Environmental Group, LLC 8413 Excelsior Drive, Suite 160 Madison, WI 53717
- C. Lee Daigle, P.E.
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- Cyndi Neitzel, P.E.
   Cornerstone Environmental Group, LLC 435 E Mill Street, Suite 15 Plymouth, WI 53073

# **Introduction**

This report provides a summary of site conditions, work conducted at and other activities related to the active Area B Landfill (Area B) during 2017. This report is intended to meet the intent and spirit of the annual reporting requirements found in approved documents for Area B. This document meets the annual reporting requirements of the Wisconsin Department of Natural Resources (WDNR) Plan of Operation Approval dated March 22, 2002, the 2006 plan modification for the expansion of Phase IV and the 2013 Modification to the Monitoring Plan (for Groundwater, Lysimeters and Leachate Collection).

## Area B Background

Marathon County Solid Waste Department (MCSWD) owns, operates and manages the Area B Landfill (Area B). The 32 acre facility opened in 1993 and has an amended design capacity of 2,508,000 cubic yards. Approximately 5 acres has final cover. The site is located along the north side of Hwy 29, in the town of Ringle, Wisconsin and north of the closed Area A Landfill.



# Summary of Landfill Activities in 2017

As of December 31, 2017, Area B has a remaining estimated site capacity of 2,632 cubic yards. From 1994 to early 2014, MCSWD retained an independent contractor to conduct operations. MCSWD began internal operations of the landfill with its own staff and equipment in May 2014. Operational duties typically include, but are not limited to full-time administrative management, active fill area management and scale operations (when accepting wastes), site operational oversight and trouble-shooting and other maintenance and conditionally regulated duties such as:

- 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 using calcium chloride was applied to both interior landfill roads and gravel site roads
- Preventative maintenance on gas system and leachate pumping system
- Cover maintenance including repair of leachate seeps

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 and reporting, and contracted leachate hauling.

# Waste Disposal Activities

During 2017, approximately 3,522 tons of waste was accepted in Area B that was disposed in the top of Phase IV area. Included in this sum were the following waste categories (reported in tons):

•	Category 6-All other wastes	3,517	tons
•	Category 25-Construction/demolition	5	tons

There were no issues or problems in handling the wastes delivered.

# Special Wastes

Area B is licensed to accept waste that would be considered non-hazardous special wastes. This includes contaminated soils. Special waste tonnages disposed at the site, provided in the tons reported to the state as identified above, included approximately 3,517 tons of contaminated soil (C-Soil). Special wastes were placed in Area B during 2017 primarily to prepare the site for closure which is anticipated to occur in 2019.

MCSWD pre-screens all special wastes via a Special Waste Profile form. Customers desiring to deliver non-standard wastes must complete the form and provide to it MCSWD staff for review and approval. The generator of waste, or their agent, must complete the form and also have a variety of select laboratory tests conducted on the special waste prior to a decision being made on acceptance. The MCSWD Special Waste Analytical Protocol and Acceptance Criteria delineates parameter thresholds the waste material must meet in order to qualify as a non-hazardous special waste. No special wastes are accepted without first completing this process. Records are retained on site. In 2017, the site had no non- approved wastes.

# Settlement Monitoring

Very little settlement occurred in Area B during 2017 at the location of the Settlement Points. The below tables summarize the Area B settlement monitoring points for the period of September 21, 2016 to October 31, 2017.

Settlement Points 9-21-16					
	Elevation				
Hub	North	East	Ground	Тор	
North	8000.80	15699.86	1402.28	1404.77	
South	7598.07	15500.03	1400.69	1403.86	

Settlement Points 10-31-17					
			Elevation		
Hub	North	East	Ground	Тор	
North	8000.45	15699.49	1401.71	1404.13	
South	7598.16	15499.88	1400.80	1403.92	

# Landfill Maintenance

A leachate seep that was first detected in late 2016 at the transition area between the final cover and intermediate cover boundary line was repaired. Two stone filled trenches (also referred to as french drains) were installed late 2016 and into 2017 to direct the leachate to the lined area of the landfill and ultimately, the leachate collection system. The stone trenches were covered with a geotextile fabric and 2 to 3 feet of clean soil to prevent odor migration through the stone. The areas surrounding the trenches were regraded and revegetated and has shown no further evidence of a leachate seep occurring in 2017. Approximately 3 acres of Area B was hydroseeded during 2017 for erosion control. More information on the leachate seep repair can be found in the *Response to July 20, 2017 Compliance Inspection for Marathon County Bluebird Ridge Recycling and Disposal Facility and Marathon County Area B Landfill* submitted by MCSWD to the WDNR on September 12, 2017, which documented the leachate seep repair and the location of the stone trenches.

## Gas Collection System

Area B, located on the northern portion of the entire 574 acre facility (and north of the closed Area A Landfill), has an active landfill gas extraction system consisting of gas collectors and transfer piping, blower to move the gas collected and end-use equipment (described below). The landfill gas extraction system has been operational since the late 1990s. Landfill gas emissions from Area B are regulated in accordance with Air Pollution Control Operation Permit No. 737092730-P20 dated November 2, 2015.

The gas wells located in Area B consist of vertical and horizontal gas extraction wells, connected via a sub-header system within the footprint of the landfill. The landfill gas extracted from the landfill is transferred to the on-site landfill gas recovery building (located south of the Area A Landfill) via a header pipe to an landfill gas to energy plant or to a flare. Vacuum applied to the wellfield is regulated by the variable frequency drive (VFD) blower station that controls the gas collection and control system (GCCS). A map of the Area B GCCS, following improvements made in 2015, is provided in Attachment A.

Existing sensing devices measure gas flow rates, pressure, vacuum and methane and oxygen concentrations. Data is recorded and stored on a computerized data collection system. This data is used for operating and reporting 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 B contributed an average of 315.0 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 B contributed 165,549,384 scf. From the total gas collected at the site, 1418,747 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.

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	

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

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

2017	CH4 %	02 %	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 extraction system operated nearly continuously. Any shutdowns, whether for planned maintenance or unplanned events were reported to the WDNR Air Management staff. The January to June 2017 Semi-annual Report and July to December 2017 Semi-annual Report for the facility include descriptions of the startup, shutdown and malfunction events associated with the GCCS, single control device and the continuous monitoring system.

# **Surface Emission Monitoring**

Surface emission monitoring (SEM) of Area B was conducted on March 15, 2017, May 30, 2017, September 7, 2017, and November 3, 2017. One (1) exceedance was detected during the third quarter SEM event and no (0) exceedances were detected during the first, second or fourth quarter SEMs. MCSWD corrected the third quarter exceedance by placing additional soil cover over the area of concern and re-monitoring the areas within 10 and 30 days of the initial exceedance, as required by the facility's Air Pollution Control Operating Permit. Both the 10 day and 30 day re-monitoring events indicate that after the 30-day re-monitoring event the surface emissions were below the required 500 parts per million (ppm) above background.

For all SEM events, a flame ionization detector (FID) is used, with MCSWD's environmental technician walking a serpentine pattern across the surface of the landfill. Results of the monitoring are maintained in site files.

# 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.

Gas Probe	Location	Methane	Oxygen	Pressure	Notoci
[Depth in feet]		(%CH4 by Vol.)	(%02 by Vol.)	(inch W.C.)	Notes:
Lic. 3338	WDNR Parm #	85547	85550	46389	WDNR ID No.
Area B Probes					
G-5 [26']	S Area B	0	20.3	0	700
G-6 [30']	W Area B	0	17.8	-0.01	704
G-7 [20']	N Area B	0	20.8	0	709
G-8 [15']	E Area B	0	19.3	0	720

First Ouarter Probe Data (February 16, 2017):

Second Quarter Probe Data (May 26, 2017):

Gas Probe	Location	Methane	Oxygen	Pressure	Notoci
[Depth in feet]		(%CH4 by Vol.)	(%02 by Vol.)	(inch W.C.)	Notes:
Lic. 3338	WDNR Parm #	85547	85550	46389	WDNR ID No.
Area B Probes					
G-5 [26']	S Area B	0	20.8	0	700
G-6 [30']	W Area B	0	19.4	0	704
G-7 [20']	N Area B	0	20.9	-0.01	709
G-8 [15']	E Area B	0	19.3	0	720

Third Quarter Probe Data (August 14, 2017):

Gas Probe	Location	Methane	Oxygen	Pressure	Notoci
[Depth in feet]		(%CH4 by Vol.)	(%02 by Vol.)	(inch W.C.)	Notes:
Lic. 3338	WDNR Parm #	85547	85550	46389	WDNR ID No.
Area B Probes					
G-5 [26']	S Area B	0	10.5	0.03	700
G-6 [30']	W Area B	0	16.5	0.01	704
G-7 [20']	N Area B	0	17.0	0.02	709
G-8 [15']	E Area B	0	16.4	0.01	720

# Fourth Quarter Probe Data (November 2, 2017):

Gas Probe	Location	Methane	Oxygen	Pressure	Notos
[Depth in feet]		(%CH4 by Vol.)	(%02 by Vol.)	(inch W.C.)	Notes:
Lic. 3338 WDNR Parm #		85547	85550	46389	WDNR ID No.
Area B Probes					
G-5 [26']	S Area B	0	21.8	-0.08	700
G-6 [30']	W Area B	0	21.4	-0.01	704
G-7 [20']	N Area B	0	22.1	0	709
G-8 [15']	E Area B	0	22.1	-0.01	720

# **Gas Condensate Sampling Data**

In accordance with the monitoring plan, gas condensate was sampled and analyzed in April and October 2017. A summary of the tested analytes are provided in the table below and include detected volatile organic compounds (VOC's) which were sampled for in April.

2017 Gas Condensate Analytical Results					
Parameter	Units	April	October		
Conductivity	umho/cm @25C	7,390	1,270		
pH	S.U.	7.63	8.05		
TSS	mg/L	570	6		
COD	mg/L	260	40		
VOCs					
Acetone	ug/L	4,200	NA		
Methyl Ethyl Ketone	ug/L	1,500	NA		
Naphthalene	ug/L	63	NA		
Tetrahydrofuran	ug/L	2,300	NA		
Toluene	ug/L	130	NA		
Xylene, o-	ug/L	53	NA		
Xylene, m- & p-	ug/L	100	NA		

# **Gas Condensate Volumes**

Gas condensate volumes were monitored and tabulated on a monthly basis. The 2017 gas condensate volumes are noted below:

2017 Area B Gas Condensate Volume Pumped (gallons)					
Month	СКО-1	СКО-2	GC Manhole	GC-1	
January	10,920	6,216	2,100	0	
February	8,148	4,116	2,352	0	
March	8,652	3,864	2,016	0	
April	8,988	3,108	1,848	84	
May	8,904	3,024	2,016	0	
June	8,400	2,352	1,764	0	
July	8,400	2,688	1,764	0	
August	5,880	3,108	1,344	0	
September	5,040	3,108	1,260	0	
October	4,452	3,276	1,092	0	
November	5,376	3,360	1,260	0	
December	4,452	2,856	1,008	0	
Totals	87,612	41,076	19,824	84	

# 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 B to this annual report.

# Leachate System Information

Leachate is collected throughout the Area B landfill with a leachate collection system at the base of the landfill. This includes an aggregate leachate drainage layer and a series of leachate collection trenches and pipes that drain to leachate collection sumps. Leachate gathers in the sumps and is pumped out of the landfill through a side slope riser forcemain to storage tanks. There are three (3) sumps, riser pipes and storage tanks associated with Area B. Pumping from the side slope risers stops when a sensor system inside the storage tank indicates the liquid has reached a certain level. The contracted leachate 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) for disposal.

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.

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 in 2017 is as follows:

2017	Tank 3	Tank 4	Tank 5
January	118,800	303,600	191,400
February	125,400	409,200	257,400
March	171,600	442,200	389,400
April	178,200	567,600	382,800
Мау	191,400	429,000	402,600
June	184,800	323,400	277,200
July	151,800	217,800	244,200
August	132,000	132,000	191,400
September	112,200	132,000	158,400
October	105,600	125,400	151,800
November	105,600	125,400	118,800
December	105,600	125,400	125,400
Total	1,683,000	3,333,000	2,890,800



# Precipitation:

2017	7 Precipitat	ion Monthl	y 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 Line Jetting

On July 12, 2017 Northern Pipe, Inc. of Green Bay, Wisconsin, water jetted the leachate lines of Area B. Jetting was accomplished by accessing each pipe at one end and jetting the full length of pipe. No issues were reported. The jetting required the use of 5,000 gallons of water.



MARATHON COUNTY LANDFIL L LEACHATE PIPE CLEANOUT RECORDS

DATE: July 12, 2017 & 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 B	
CLEANOUT ACCESS POINT	PIPE SIZE	PIPE LENGTH (FT)	FT. JETTED	FT. JETTED	COMMENTS	
1	12"	660	660	-	Jetted from B1E all the way ; No Problems	7/13/2017
2	12"	500	500	-	Jetted from B2S all the way ; No Problems	7/13/2017
3	12"	505	505	-	Jetted from B3S all the way ; No Problems	7/13/2017
4	12"	510	510	-	Jetted from B4S all the way ; No Problems	7/13/2017
5	12"	660	660	-	Jetted from B5S all the way ; No Problems	7/13/2017
6	12"	280	280	-	Jetted from B6W all the way ; No Problems	7/13/2017
7	12"	850	850	-	Jetted from B7S all the way ; No Problems	7/13/2017
8	12"	875	875	-	Jetted from B8S all the way ; No Problems	7/13/2017
9	12"	305	305	-	Jetted from B9E all the way ; No Problems	7/13/2017
10	12"	840	840	-	Jetted from B10S all the way ; No Problems	7/12/2017
11	12"	795	795	-	Jetted from B11S all the way ; No Problems	7/12/2017
12	12"	270	270	-	Jetted from B12S all the way ; No Problems	7/13/2017
13	12"	750	750	-	Jetted from B13S all the way ; No Problems	7/13/2017
14	12"	725	725	-	Jetted from B14S all the way ; No Problems	7/13/2017

AMOUNT OF WATER USED: 5,000 Gallons of water

**Leachate Level Monitoring** Leachate level monitors were evaluated on a monthly basis by the MCSWD's environmental technician. Data from those monitoring events is as follows:

Area	B-2017	LLM-2	LLM-3	LLM-4	LLM-5	LLM-6	LLM-7	LLM-8
Pipe Length to	Elbow (feet)	100	102	95	100	119	115.9	116.8
1 /25 /2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
1/25/2017	Leachate Head	0	0	0	0	0	0	0
2/20/2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2/28/2017	Leachate Head	0	0	0	0	0	0	0
2/15/2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
3/15/2017	Leachate Head	0	0	0	0	0	0	0
4/12/2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
4/13/2017	Leachate Head	0	0	0	0	0	0	0
F /11 /2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	115.7	116.6
5/11/2017	Leachate Head	0	0	0	0	0	0.2	0.2
( 17 12017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	116.7
6///2017	Leachate Head	0	0	0	0	0	0	0.1
7/14/2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
//14/2017	Leachate Head	0	0	0	0	0	0	0
0/10/2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
8/18/2017	Leachate Head	0	0	0	0	0	0	0
0/20/2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
9/29/2017	Leachate Head	0	0	0	0	0	0	0
10/4/2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
10/4/2017	Leachate Head	0	0	0	0	0	0	0
11/1/2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
11/1/2017	Leachate Head	0	0	0	0	0	0	0
12/11/2017	Depth to Liquid	Dry	Dry	Dry	Dry	Dry	Dry	Dry
12/11/2017	Leachate Head	0	0	0	0	0	0	0
LLM - Leachate	Level Monitor							
Notes: If dry at	landfill base, reported	as "Dry" wit	h 0 feet of he	ad and nothin	ng for leachat	e elevation		

# Leachate Sampling

Leachate sampling and analytical analysis was conducted semi-annually in April and October 2017. Sampling results for VOCs show a wide variety of compounds present. Semi-volatile organics are sampled for and tested in October. Full results are available on the WDNR Groundwater and Environmental Monitoring System (GEMS) database and are maintained in site files. Conductivity and pH values reported in 2017 are summarized below.

		Conductivity	рН
Leachate	2017	umho/cm	S.U.
Tank 3	April	8,140	7.15
	October	13,100	7.35
Tank 4	April	7,350	7.05
	October	9,550	7.25
Tank 5	April	8,880	7.58
	October	11,710	7.70

# **Lysimeters**

Northern Lakes Services, Inc. monitored Lysimeter 7 in April and October 2017 with additional monitoring for VOCs taking place in October. There were no VOC detections; therefore, no results are shown. A summary of detected constituents of the sampling is provided below:

2017 Lys	simeter Detection	Results		
		Lysim	eter 7	
Parameter	Units	April	October	
Conductivity	umho/cm @25C	829	865	
рН	S.U.	7.46 7.07		
Alkalinity	mg/L	290 320		
COD	mg/L	13	13	
Chloride (as Cl)	mg/L	75	59	
Hardness	mg/L	250	270	
Sodium (as Na)	mg/L	69	65	
Sulfate (as SO4)	mg/L	32	35	
Boron	mg/L	0.079	0.089	

# **Final Cover**

There are approximately 5 acres of final cover constructed at the Area B Landfill. The existing final cover areas remain in excellent condition. As required by the site's plan of operation, and to ensure the investment in final cover is not compromised, the following activities are conducted throughout the year:

- Monthly visual inspections of the final cap 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 of gas system and leachate pumping system

# Storm Water Management

There are four storm water management diversion and collection areas associated with Area B. Storm water is channeled away from the closed and intermediate cover areas of the landfill and away from exterior roads and flows to one of the sedimentation and retention ponds identified as SR-1 through SR-4. Storm water and retention pond SR-3 is used as a source of water for operational dust control; a tanker truck is filled with water and then applied to the various roadways. An annual stormwater inspection was performed on September 20, 2017. This included the general inspection of ditches associated with Area B. This inspection is maintained in site files.

The basins are observed as a general course of site inspections by MCSWD. Water height, clarity, and turbidity are noted. There has been no need to conduct maintenance on the basins. Storm water grates are also observed with this routine and cleared of materials that may impede the proper flow of storm water.

# **Groundwater Monitoring & Analysis**

At the beginning of 2017, MCSWD had a total of 91 groundwater monitoring wells, with 25 designated for Area B. The groundwater monitoring regimen was conducted according to the February 7, 2013 approved modification to the groundwater and leachate monitoring plan.

Per the approved monitoring plan, the groundwater wells within the plan were sampled semiannually in April and October. Sampling and laboratory analysis was conducted by qualified personnel from Northern Lake Service (NLS) of Crandon, Wisconsin. 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. Results revealed that most of the monitoring wells do not exceed these limits and even meet safe drinking water standards.

Reporting values higher than these limits are reported as exceedances. As in past monitoring events at the Area B site, results at some wells exceeded the PAL and ES standards. The exceedances noted in the tables below include nitrate + nitrite as nitrogen at two downgradient wells which may be attributable to area agricultural practices or runoff from erosion control efforts that include seeding, fertilizing and mulching at and near the Area B landfill. Other exceedances during 2017 monitoring events include hardness at one downgradient well. No corrective action is planned or required at this time. Groundwater monitoring results and any exceedances were submitted electronically by NLS to the WDNR's GEMS database. Below is a summary of the exceedances from each semi-annual monitoring period. The exceedance reports submitted to the WDNR for the April and October 2017 monitoring event are provided in Attachment C.

# 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	AÇL	Comments			
277947	April 18 2017	R27	Nitrate+Nitrite	mg/L	4.70	2.00	10.00		NR140			

# Area B Groundwater Well Exceedance Table October 2017

		Marathon Cour	nty Solid Waste: Area	B Groundwate	er Monitori	ng 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

# **Private Well Water Sampling**

There are no private wells monitored as part of Area B landfill environmental monitoring.

## 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

# AREA B GAS COLLECTION AND CONTROL SYSTEM MAP



# ATTACHMENT B

# 2017 LANDFILL GAS TO-15 SAMPLE RESULTS

1 of 8 1090501



September 19, 2017



LA Cert #04140 EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-14-6 EPA Methods T014A, T015

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 1Lab 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.

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Предели:         Предили:			Fx: 626-964-5832	Same Day	□ 72 h	ours	EDF	in terms	Sealed Yes	N N
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Received by Use UPS Device JOLOW     8 29 17 12:25     100 methods       LINQUISHED BY     FERTING     Received by     9 5 17 12:25     100 methods       LINQUISHED BY     FERTING     Received by     9 5 17 12:25     100 methods       LINQUISHED BY     FERTING     Received by     9 5 17 12:25     100 methods       LINQUISHED BY     FERTING     Received by     9 5 17 12:25     100 methods       LINQUISHED BY     DATE/TIME     Received by     0 for the methods     1 254       ILIQUISHED BY     DATE/TIME     Received by     0 for the methods     1 254       IETHOD OF TRANSPORT (circle one):     Walk-In     FedEx     UPS     Courier	Read Smith	M.C.S. I	N SA G	RIT OF	39		1634 m 0	0		
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2 of 8

Client:Marathon County Solid WasteAttn:Ron SmithProject Name:Mainline Landfill GasProject No.:Mainline 1Date Received:09/05/17Matrix:Air

Reporting Units: ug/L

	I	EPA Meth		5				
Lab No.:	109050	1090501-01			<u> </u>			]
Client Sample I.D.:	Mainli	ine 1						
Date/Time Sampled:	8/29/17	8:30						
Date/Time Analyzed:	9/6/17	9/6/17 17:34						
QC Batch No.:	170906MS2A1							
Analyst Initials:	DT							
Dilution Factor:	21				L			
ANALYTE	Result ug/L	RL ug/L						
Dichlorodifluoromethane (12)	0.91	0.10						
Chloromethane	ND	0.086					1	
1,2-Cl-1,1,2,2-F ethane (114)	0.22	0.15			1			
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						2
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						

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1090501.xlsx

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

4 of 8 1090501

Client:Marathon County Solid WasteAttn:Ron SmithProject Name:Mainline Landfill GasProject No.:Mainline 1Date Received:09/05/17Matrix:AirReporting Units:ug/L

	]	EPA Me	thod TO1	5				
Lab No.:	109050	1-01	[		1		Γ	
Client Sample I.D.:	Mainl	ine 1						
Date/Time Sampled:	8/29/17	8:30						
Date/Time Analyzed:	9/6/17	17:34					-	
QC Batch No.:	170906N	AS2A1						
Analyst Initials:	D	Г						2
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						
2					I	1		

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:

Mark Johnson **Operations Manager** 

Date <u>9/19/17</u>

The cover letter is an integral part of this analytical report

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1090501.xlsx

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

# Client:Marathon County Solid WasteAttn:Ron SmithProject Name:Mainline Landfill GasProject No.:Mainline 1Date Received:09/05/17Matrix:Air

Reporting Units: ug/L

Λ

		EPA Meth	od TO15					
Lab No.:	METHO	D BLANK	[					
Client Sample I.D.:		-		52				
Date/Time Sampled:		-						
Date/Time Analyzed:	9/6/1'	7 16:11						
QC Batch No.:	170906	5MS2A1						
Analyst Initials:	I	)T						
Dilution Factor:	0	.20						
	Result	RL						
ANALYTE	ug/L	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		8 8	- -			
1,1-Dichloroethene	ND	0.00079				a.		
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						8
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				0		
1,1,1-Trichloroethane	ND	0.0011						
Carbon Tetrachloride	ND	0.0013						
Benzene	ND	0.00064	0				÷.	
1,2-Dichloroethane	ND	0.00081						
Trichloroethene	ND	0.0011						
1,2-Dichloropropane	ND	0.00092	9					
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.

1090501.xlsx

5 of 8 1090501

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

# Client:Marathon County Solid WasteAttn:Ron SmithProject Name:Mainline Landfill GasProject No.:Mainline 1Date Received:09/05/17Matrix:Air

Reporting Units: ug/L

		EPA Meth	nod TO15		2		
Lab No.:	METHO	D BLANK	1	I			
Client Sample I.D.:		-					
Date/Time Sampled:		-					
Date/Time Analyzed:	9/6/1	7 16:11					
QC Batch No.:	170900	6MS2A1					
Analyst Initials:	I	)T					
Dilution Factor:	0	.20					
	Result	RL					
ANALYTE	ug/L	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:** 

Mark Johnson **Operations Manager** 

Date 9/9/17

6 of 8 I090501

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

1090501.xlsx

## LCS/LCSD Recovery and RPD Summary Report

# QC Batch #: 170906MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		L	CS	LC	CSD					
Date/Time Analyzed:	9/6/17 16:11		9/6/17	13:29	9/6/17	/ 14:08					
Data File ID:	06SEP009.D		06SEI	2005.D	06SEI	P006.D					
Analyst Initials:	DT		D	Т	D	Т		41			
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:** 

Mall. 1 Date: 9/19/17

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 GasProject Number:Mainline 1Date Received:9/5/2017Matrix:Vapor

Fixed Gases by EPA METHOD 3C

Lab Number:		1090501-01					
Client Sample ID:		Mainlin	e 1				
Date/	Fime Collected:	8/29/17 8	:30				
Date/	Fime Analyzed:	9/12/17 1	2:27				2
1	Analyst Initials:	AS					
	QC Batch:	170912GC	28A1				
I	Dilution Factor:	3.0					
ANALYTE	Units	Result	RL		2		
Nitrogen	% v/v	11	3.0			8	
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: \_

2/19/17 Date:

Mark Johnson VV V Operations Manager

MAR-1

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

AirTECHNOLOGY Laboratories, Inc. -

# ATTACHMENT C

# EXCEEDANCE REPORTS FOR AREA B GROUNDWATER MONITORING APRIL AND OCTOBER 2017



marathoncountysolidwaste

# Marathon County Solid Waste Department R18500 E. Hwy 29

R18500 E. Hwy 29 Ringle, WI 54471

Director: Site Supervisor: Administrative Office: Scale Master Solid Waste & Recycling Info Line 715-446-3101 X104 715-446-3101 X102 715-446-3101 X100 715-446-3101 X103 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.

		Marathon Cour	ty Solid Waste: Area	A Groundwate	r Monitori	ng 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	813R	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 April 2017

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

#### ENVIRONMENTAL MONITORING DATA CERTIFICATION

#### Department of Natural Resources

#### 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

		Madison, WI 53	ster Street 3707 - 7921
Monitoring Data Submittal Information			
Name of entity submitting data (laboratory, consultant, Northern Lake Service, Inc.	facility owner):		
Contact for questions about data formatting. Include d	lata preparer's name, telephone n	umber and E-mail add	dress:
Name: Chris Geske	Phone: 715-4	78-2777	
E-mail: lims@nlslab.com			
Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 200
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 n APRIL -2017	nonth(s) of: (e.g., June 2003)		
Groundwater monitoring data from monitoring well Groundwater monitoring data from private water su Leachate monitoring data Notification attached? No. No groundwater standards or explosive gas limits were exceed Yes, a notification of values exceeding a groundwater standard is a groundwater standard and preliminary analysis of the cause and Yes, a notification of values exceeding an explosive gas limit is atta explosive gas limits.	ed. sched. It includes a list of monitoring point significance of any concentration. ached. It includes the monitoring points, date	nitoring data toring data pecify) s, dates, sample values, s, sample values and	
Certification			
To the best of my knowledge, the information report are true and correct. Furthermore, I have attached groundwater standards or explosive gas levels, and concentrations exceeding groundwater standards. David Hagenbucher	rted and statements made on the complete notification of any sa d a preliminary analysis of the c Manager	nis data submittal and mpling values meeti cause and significant 7	d attachements ng or exceeding t of 1/5 - 446 - 3101
Facility Representative Mame (Print)	Øitle		(Area Code) Telephone No.
Daniel Harling	6/1/17		
Signature	Date		
FOR DNR USE ONLY. Check action take Found uploading problems on Notified contact of problems on EDD format(s): Diskette CD (init	en, and record date and your in Initials Uploade ial submittal and follow-up)	itials. Describe on b ed data successfully Elmail (follow-up or	ack side if necessary. on nly) = Other i

# 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		NR140
R50P	Trichloroethylene	ug/L	0.54	.5	5	NR140
R35	Conductivity	umho@25C	630	510		well



marathoncountysolidwaste.org

# Marathon County Solid Waste Department R18500 E. Hwy 29

Ringle, WI 54471

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

#### ENVIRONMENTAL MONITORING DATA CERTIFICATION

De	раг	tmei	٦t	of	Natural	l Re	source	ŝ

Form 4400-231(R 1/04)

金山市在南北沿地市北部市南部16月

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

GEMS Data Submittal Contact - WA/5 Wisconsin Department of Natural Resources P.O. Box 7921 Madison, WI 53707 - 7921

Wontoring Data Submittal mormation	facility suppry		
Northern Lake Service, Inc.	, racinty owner).		·
Contact for questions about data formatting. Include of	data preparer's name, telephone nu	mber and E-mail add	ress:
Name: Chris Geske	Phone: 715-4	78-2777	
E-mail: lims@nlslab.com	······································		· · ·
Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 200
Marathon County Landfill - Area B	03338	737092730	APRIL -17-2017 through APRIL -18-2017
The enclosed results are for sampling required in the r APRIL -2017	month(s) of: (e.g., June 2003)	· · ·	·
Type of Data Submitted (Check all that apply) Groundwater monitoring data from monitoring wel Groundwater monitoring data from private water s Leachate monitoring data	Is Gas mor upply wells Air monit	itoring data oring data pecify)	
<ul> <li>No. No groundwater standards or explosive gas limits were exceed</li> <li>Yes, a notification of values exceeding a groundwater standard is a groundwater standard and preliminary analysis of the cause and Yes, a notification of values exceeding an explosive gas limit is attempt explosive gas limits.</li> </ul>	led. attached. It includes a list of monitoring point i significance of any concentration. ached. It includes the monitoring points, date	s, dates, sample values, s, sample values and	
Certification	learth an teach three an anna an th		<b>n</b>
To the best of my knowledge, the information report are true and correct. Furthermore, I have attached groundwater standards or explosive gas levels, an concentrations exceeding groundwater standards.	nted and statements made on the complete notification of any said d a preliminary analysis of the c	is data submittal and mpling values meetir ause and significant	d attachements ng or exceeding of 715 - 446 - 3101
Facility Representative Name (Print)	Title O		(Area Code) Telephone No.
Ding Hyphilm	6/1/17	· ·	· .
Signature	Date	1. A.	· · · · · · · · · · · · · · · · · · ·
FOR DNR USE ONLY. Check action tak Found uploading problems on Notified contact of problems on EDD format(s): Diskette CD (ini	en, and record date and your in Initials Uploade tial submittal and follow-up)	tials.' Describe on b d data successfully Email (follow-up on	ack side if necessary. on ily) Other

# 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

# Marathon County Solid Waste Department R18500 E. Hwy 29

Ringle, WI 54471

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

	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		

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

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

#### ENVIRONMENTAL MONITORING DATA CERTIFICATION

#### Department of Natural Resources

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
Mara	thon County - BRRDF	04228	337005680	APRIL -18-2017 through APRIL -19-2017
The enclosed result APRIL -2017	s are for sampling required in the n	nonth(s) of: (e.g., June 2003)		
Type of Data Submi	tted (Check all that apply) onitoring data from monitoring well onitoring data from private water so oring data	ls Gas m upply wells Air mo	onitoring data nitoring data (specify)	
Notification attached No. No groundwater Yes, a notification of groundwater stand Yes, a notification of explosive gas timit	1? standards or explosive gas limits were exceed values exceeding a groundwater standard is a tard and preliminary analysis of the cause and values exceeding an explosive gas limit is atta s.	ed. attached. It includes a list of monitoring po significance of any concentration. ached. It includes the monitoring points, d	ints, dates, sample values, ates, sample values and	uu ayaan waxaa ahayaa ahay
Certification	There are a set	n in Marine Anna Anna Anna Anna Anna Anna Anna An		n.,
To the best of my l are true and correc groundwater stand concentrations exc A	knowledge, the information repo t. Furthermore, I have attached lards or explosive gas levels, an ceeding groundwater standards.	rted and statements made on complete notification of any d a preliminary analysis of the	this data submittal and sampling values meetin e cause and significant	l attachements ig or exceeding of
Devid	Hagenbucher	Manager		113-796-3101
Facility Representat	Hon bolo	6/1/17		(Area Code) Telephone No.
Signature		Date		
FOR DI	IR USE ONLY. Check action tak nd uploading problems on	en, and record date and your Initia	initials. Describe on ba	ack side if necessary.
Not Not	fied contact of problems on	Upioa	ideo data successfully o	

EDD format(s): Diskette CD (initial submittal and follow-up) Email (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

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

# Marathon County Solid Waste Department

R18500 E. Hwy 29 Ringle, WI 54471

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

# 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.

		Marathon Cour	nty Solid Waste: Area /	Groundwate	er Monitori	ng Wells			
	Area A	Facility #2892	Exceedances						1
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	Tetrachioroethylene	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

Area A Groundwater Well Exceedance Table October 2017

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.

### ENVIRONMENTAL MONITORING DATA CERTIFICATION Department of Natural Resources 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. 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	1999 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	te st		A. Sar
Name of entity submitting data (laboratory, consultar	it, facility owner):			
Northern Lake Service, Inc.	dete una serve tolonhono n	umber and E mail addr		
Contact for questions about data formatting. Include	data preparer's name, telephone n		655.	
Name: Chris Geske	Pnone: 715-4	10-21(1		
Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July	/ 2-6, 2003
Maration County Landin - Alea A	02092	707004030	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 $(e \sigma_{1})$ lune 2003)		1 maaa.a	
OCTOBER -2017				
The of Data Submitted (Check all that apply)	· · · · · ·	<u></u>		
Type of Data Submitted (Check all that apply)		nitorina data		
Groundwater monitoring data from private water		foring data		
Leschate monitoring data non private water	Offeer (si	necify)		
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Notification attached?	- d- d	• •		•
Yes, a notification of values exceeding a groundwater standard i	eded. s attached. It includes a list of monitoring point	ts, dates, sample values,		
groundwater standard and preliminary analysis of the cause a	nd significance of any concentration.		· ·	· · ·
Yes, a notification of values exceeding an explosive gas limit is a explosive gas limits.	attached. It includes the monitoring points, date	es, sample values and		
Contraction				n.
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concentrations exceeding groundwater standard	S.	0		
David Haarabur har	Manager	· · · · · · · · · · · · · · · · · · ·	15-551-5864	
Facility Representative Name (Print)	Title 0		(Area Code) Telephone No.	
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Dawd ty kink	12/12/17	·		
Signature	Date			
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# State of Wisconsin

Instructions:

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# 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
	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

Marathon County Solid Waste Department R18500 E. Hwy 29

Ringle, WI 54471

Director: Site Supervisor: Administrative Office: Scale Master Solid Waste & Recycling Info Line 715-446-3101 X104 715-446-3101 X102 715-446-3101 X100 715-446-3101 X103 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.

Department of Natural Resources	· · · · · · · · · · · · · · · · · · ·	Form 4400-231(R 1/04)
Notice: Personally identifiable information collected will talso provide this information to requesters as required un When submitting monitoring data, the owner or operator	be used for program administration ader Wisconsin's Open Records la of the facility, practice or activity is	n and enforcement purposes. The department may w, ss. 19.31 to 19.39, Wis. Stats. s required to notify the Department in writing that a
groundwater standard or an explosive gas level has been 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, resulting from enforcement under ss. 289.97, 291.97 or 2	n attained or exceeded, as specifie Wis. Adm. Code. Failure to repor 299.95, Wis. Stats.	d in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR t may result in fines, forfeitures or other penalties
Instructions: * Prepare one form for each license or moniforing IE	<b>)</b> .	
<ul> <li>Please type or print legibly.</li> <li>Attach a notification of any values that attain or exceed</li> </ul>	d groundwater standards (that is, r	preventive action limits, enforcement standards or
<ul> <li>Attach a notification of any gas values that attain or ex</li> <li>Send the original signed form, any notification, and Ele</li> </ul>	include a preliminary analysis of t ceed explosive gas levels. ectronic Data Deliverable [EDD] to	ne cause and significance of each value. : 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, fa Northern Lake Service, Inc.	icility owner):	· · · · · · · · · · · · · · · · · · ·
Contact for questions about data formatting. Include data	a preparer's name, telephone num Phone: 715-478	iber and E-mail address: 
E-mail: lims@nlslab.com	<u></u>	
Facility Name	License No. / Monitoring ID	Facility ID [FID] Actual sampling dates (e.g., July 2-6, 1
Marathon County Landfill - Area B	03338	737092730 OCTOBER -16-2017 through OCTOBER -17-2017
The enclosed results are for sampling required in the mor CTOBER -2017	nth(s) of: (e.g., June 2003)	
Fype of Data Submitted (Check all that apply)         Image: Constant of the state of the s	ply wells Gas monito	pring data ing data cify)
No. No groundwater standards or explosive gas limits were exceeded.         Yes, a notification of values exceeding a groundwater standard is attact groundwater standard and preliminary analysis of the cause and sign Yes, a notification of values exceeding an explosive gas limit is attached explosive gas limits.	ched. It includes a list of monitoring points, d inificance of any concentration. ed. It includes the monitoring points, dates, s	ates, sample values, ample values and
Certification		
To the best of my knowledge, the information reporte are true and correct. Furthermore, I have attached co groundwater standards or explosive gas levels, and a concentrations exceeding groundwater standards.	d and statements made on this omplete notification of any samp a preliminary analysis of the cau	data submittal and attachements bling values meeting or exceeding ise and significant of
David Hagenbucher	Manager	715-551-5364
acility Representative Name (Print)	Title ()	(Area Code) Telephone No.
Signature	Date	
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ENVIRONMENTAL MONITORING DATA CERTIFICATION

State of Wisconsin

# 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	mg/L	300	290	•	ACL_well
	(calc/filt/trace)					



marathoncountysolidwaste.org

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.

# Marathon County Solid Waste Department R18500 E. Hwy 29

Ringle, WI 54471

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

Bluebird Ridge Recycling an	d Disposal Facility	<u>Groundwater</u>	<u>Well Exceedar</u>	<u>ice Table</u>
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

### 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.

Department of Natural Resources

\* 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		ar mile-takin	
Name of entity submitting data (laboratory, consultant, fa	acility owner):		
Northern Lake Service, Inc.	e recención nome telenhone pi	mbor and E-mail add	
Contact for questions about data formatting. Include dat	a preparer s'hame, telephone m		1633.
Name: Chris Geske	<u>Phone</u> . / 15-4/	0-2111	· · · · · · · · · · · · · · · · · · ·
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Facility Name Marathon County - BRRDF	04228	337005680	OCTOBER -17-2017 through OCTOBER -18-2017
The enclosed results are for sampling required in the mo OCTOBER -2017	onth(s) of: (e.g., June 2003)		
Type of Data Submitted (Check all that apply) Groundwater monitoring data from monitoring wells Groundwater monitoring data from private water sup Leachate monitoring data	pply wells Gas mon Other (sp	itoring data oring data ecify)	
<ul> <li>No. No groundwater standards or explosive gas limits were exceeded</li> <li>Yes, a notification of values exceeding a groundwater standard is atta groundwater standard and preliminary analysis of the cause and si Yes, a notification of values exceeding an explosive gas limit is attach explosive gas limits.</li> </ul>	ched. It includes a list of monitoring points gnificance of any concentration, red. it includes the monitoring points, date	s, dates, sample values, s, sample values and	
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Signature	Date		
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# 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
Prop	Allaliaitu		280	230		woll
R59P 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