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Marathon County Solid Waste Department

172900 State Highway 29

Ringle, WI 54471

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Site Supervisor:	715-446-3101 X102
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Solid Waste & Recycling Info Line	877-270-3989 toll-free

March 27, 2020

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

Re: Marathon County Solid Waste – Area A Landfill #2892 FID 737054890

Dear Ms. Hronek:

Please accept this submittal of the 2019 Annual Solid Waste Report for the Area A landfill 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 hard copies and emailed PDF copies are being distributed to the WDNR staff as noted below.

Should you have any questions or comments regarding this Annual Solid Waste Report, please do not hesitate to contact me at (715) 445- 3101.

Thank you,



Dave Hagenbucher

Solid Waste Operations Manager
Marathon County Solid Waste Dept
172900 State Highway 29
Ringle, Wisconsin 54471
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CC: C. Lee Daigle, PE – Tetra Tech Senior Project Manager
Nathan Collier – WDNR Spooner Service Center (1 hard copy and 1 electronic copy)
John Morris – WDNR Eau Claire Service Center (1 hard copy and 1 electronic copy)



Marathon County Solid Waste Department

Area A Landfill

2019 ANNUAL REPORT

WDNR License No. 2892

FID 737054890

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Solid Waste Scale Master	Jessica Kubichek
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Waste Specialist	Dave Vitt
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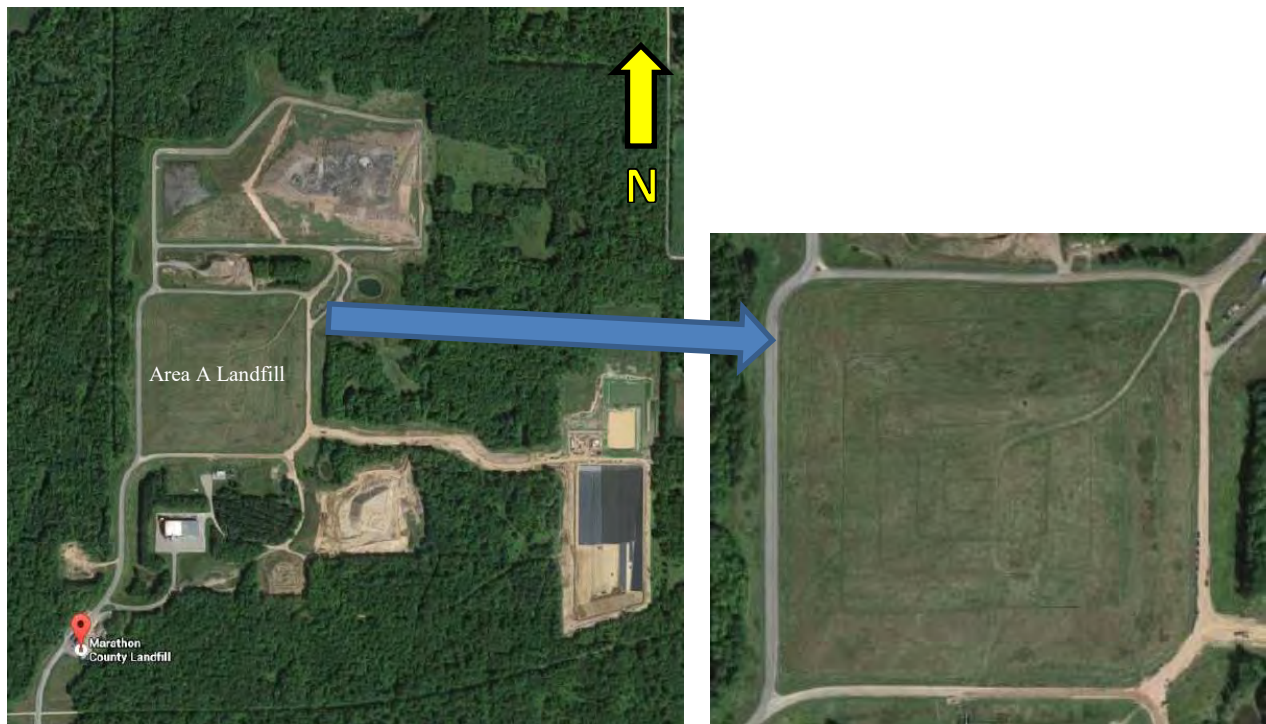
Introduction

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 focus of the annual reporting and monitoring requirements found in all approved documentation for Area A and the modified monitoring requirements found in the 2013 Plan 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 2019

Area A is a closed landfill and, as such, did not accept waste during 2019. 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, leachate pump maintenance and repairs, 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.

Landfill Maintenance

Leachate line jetting was conducted in June of 2019. Jetting on this landfill has been challenging due to the fact that much of the existing infrastructure has been impacted by waste settlement, age, and deterioration. PVC was initially used for leachate collection piping at the bottom of Area A; we now use HDPE on all leachate piping. Regardless of the challenges, Northern Pipe out of Green Bay has successfully worked with this site to meet all the necessary requirements to keep these lines open and functioning as intended.



Area A – Left side in the foreground.

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, valves, and multiple controls, 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 Area A 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. Condensate from Area A flows by gravity through the gas header pipe and into a condensate knockout just outside the gas building. This condensate then drains by gravity to Area A Tank 1 to the east of the gas building.

Landfill gas emissions from the entire MCSWD property, including 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. These sensors are located on the main header line pipe leading into the gas recovery building and includes gas collected from Area A, Area B and BRRDF landfills. Data is recorded and stored on a computerized system. This data is used for reporting and operating purposes.

The Marathon County GCCS operated 98.31% of the year and approximately 8,611.74 hours of operation. The average aggregated flow rate for the site GCCS was approximately 664.33 standard cubic feet per minute (scfm). Methane and oxygen concentrations of landfill gas averaged, by volume, 48.7% for methane and 1.0% oxygen. Total gas collected from the site in 2019 was 379,820,134.73 standard cubic feet (scf). From the total gas collected at the site, 30,137,124.25 scf was used for production of electricity and 349,683,010.47 scf was sent to the flare. The table below summarizes the aggregated flow, combustion location, and vacuum of the GCCS at the site.

2019 MARATHON COUNTY GCCS DATA (INCLUDES AREA A, AREA B & BRRDF)

Month	Average CFM	Total CFM	CFM to Electric	CFM to Flare
Jan	469.87	31,074,896.25	10,100,040.05	20,974,856.20
Feb	468.78	27,377,343.11	8,476,124.60	18,901,218.51
Mar	520.44	29,244,410.46	6,012,000.23	23,232,410.22
Apr	581.56	29,051,175.86	3,927,714.23	25,123,461.62
May	665.95	29,759,679.84	31,727.17	29,727,952.67
Jun	694.42	30,015,041.54	15,953.36	29,999,088.18
Jul	672.9	30,038,221.55	91.96	30,038,129.59
Aug	672.94	30,042,858.49	2,781.34	30,040,077.16
Sep	766.38	33,111,328.85	3,497.19	33,107,831.66
Oct	813.48	36,313,769.15	0.26	36,313,768.89
Nov	845.18	36,512,866.46	1,050.27	36,511,816.19
Dec	800.01	37,278,543.17	1,566,143.59	35,712,399.58
TOTAL	664.33	379,820,134.73	30,137,124.25	349,683,010.47

Below is a chart listing average monthly vacuum, methane (CH₄), and oxygen (O₂) concentrations of the site GCCS (combined Area A, Area B and BRRDF landfill gas).

2019 GCCS Vacuum and Concentrations	Ave Vacuum (negative inches water column)	Ave CH₄%	Ave O₂%
January	26.64	50.2	0.9
February	24.66	50.5	1.0
March	22.38	53.5	0.8
April	25.09	51.0	1.1
May	24.92	52.2	0.8
June	26.66	52.8	0.7
July	25.45	50.8	0.6
August	25.27	22.3	1.1
September	26.73	52.0	1.1
October	26.98	51.3	1.2
November	26.48	48.3	1.5
December	27.01	49.4	1.5
Average	25.69	48.7	1.0

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 2019 Semi-annual Report and July to December 2019 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 20, 2019. 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 flame ionization detector (FID) is used while the MCSWD’s environmental technician walked a serpentine pattern across the surface of the landfill. Documentation of the annual SEM of Area A is provided in Attachment A.

Soil Gas Monitoring

During 2019, the soil gas probes were monitored quarterly for relative pressure, methane (CH₄), oxygen (O₂), and soil gas pressure. In 2019, these monitoring results indicated no gas migration.

First Quarter Probe Data (February 7, 2019):

Gas Probe	Location	Methane (%CH ₄ by Vol.)	Oxygen (%O ₂ by Vol.)	Pressure (inch W.C.)	Notes:
[Depth in feet]					
Lic. 2892	WDNR Parm Code #	85547	85550	46389	
Area A Probe IDs					WDNR ID No.
G-1R [10']	E Area A	0	14.8	0.09	700
G-3R [15']	N Area A	0	20.7	0.05	704
G-4R [5']	W Area A	0	20.8	0	709
G-9 [9']	W Area A	0	20.8	0	720
G-11 [10']	S Area A	0	21.3	0	724
G-12 [10']	S Area A	0	19.2	0.01	726

Second Quarter Probe Data (May 7, 2019):

Gas Probe	Location	Methane (%CH ₄ by Vol.)	Oxygen (%O ₂ by Vol.)	Pressure (inch W.C.)	Notes:
[Depth in feet]					
Lic. 2892	WDNR Parm Code #	85547	85550	46389	
Area A Probe IDs					WDNR ID No.
G-1R [10']	E Area A	0	21.7	-0.03	700
G-3R [15']	N Area A	0	21.8	0	704
G-4R [5']	W Area A	0	18.2	0	709
G-9 [9']	W Area A	0	21.3	-0.01	720
G-11 [10']	S Area A	0	21.5	0	724
G-12 [10']	S Area A	0	21.4	-0.01	726

Third Quarter Probe Data (September 4, 2019):

Gas Probe	Location	Methane (%CH ₄ by Vol.)	Oxygen (%O ₂ by Vol.)	Pressure (inch W.C.)	Notes:
[Depth in feet]					
Lic. 2892	WDNR Parm Code #	85547	85550	46389	
Area A Probe IDs					WDNR ID No.
G-1R [10']	E Area A	0	21.3	-0.09	700
G-3R [15']	N Area A	0	21.7	-0.06	704
G-4R [5']	W Area A	0	20.2	0	709
G-9 [9']	W Area A	0	19.7	0	720
G-11 [10']	S Area A	0	21.7	-0.05	724
G-12 [10']	S Area A	0	21.8	-0.06	726

Fourth Quarter Probe Data (October 14, 2019):

Gas Probe	Location	Methane (%CH ₄ by Vol.)	Oxygen (%O ₂ by Vol.)	Pressure (inch W.C.)	Notes:
[Depth in feet]					
Lic. 2892	WDNR Parm Code #	85547	85550	46389	
Area A Probe IDs					WDNR ID No.
G-1R [10']	E Area A	0	20.1	-0.02	700
G-3R [15']	N Area A	0	20.3	-0.01	704
G-4R [5']	W Area A	0	17.2	0	709
G-9 [9']	W Area A	0	16.9	0	720
G-11 [10']	S Area A	0	20.3	0	724
G-12 [10']	S Area A	0	18.1	0	726

Gas Sampling Data

On October 9, 2019 MCSWD's environmental technician with the assistance from Tetra Tech, used a summa canister to collect a sample of landfill gas for VOC analysis. 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 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 capacity.

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

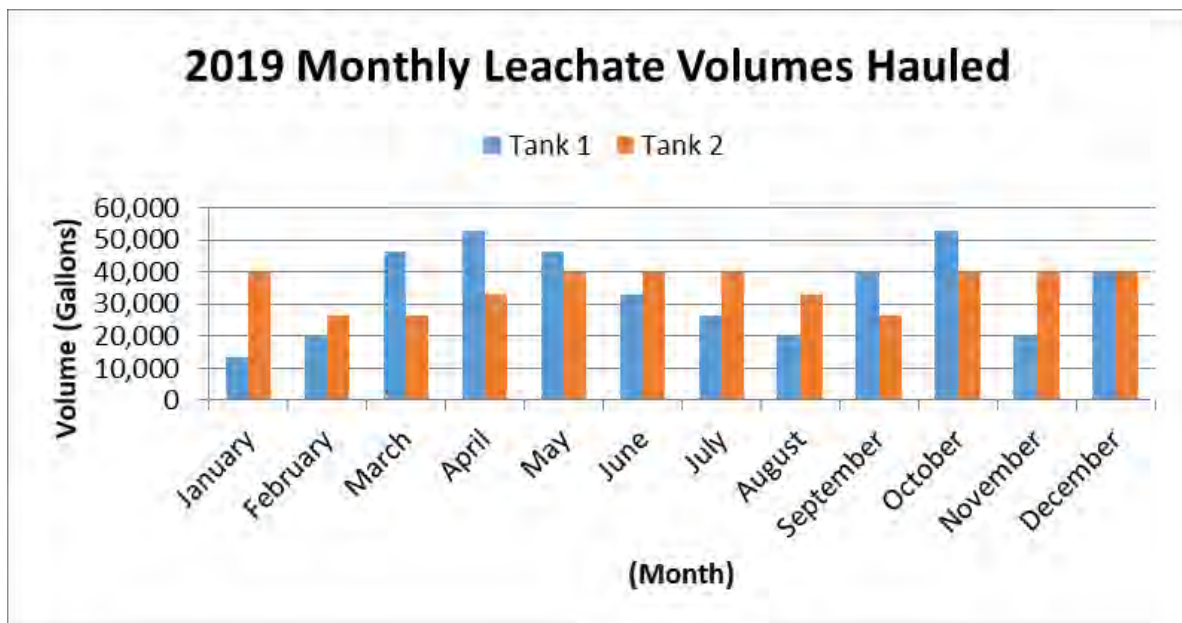
Leachate collected in 2019 was transported to either the Domtar, Inc. WWTF in Rothschild, Wisconsin, Stevens Point Wastewater Utility in Stevens Point, Wisconsin, or the Wausau Wastewater Treatment Facility at the Dept. of Public Works in Wausau, Wisconsin. Leachate is pumped into the WWTF and treated 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 staff or other tank and pump specialists when required.

Leachate Volume:

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

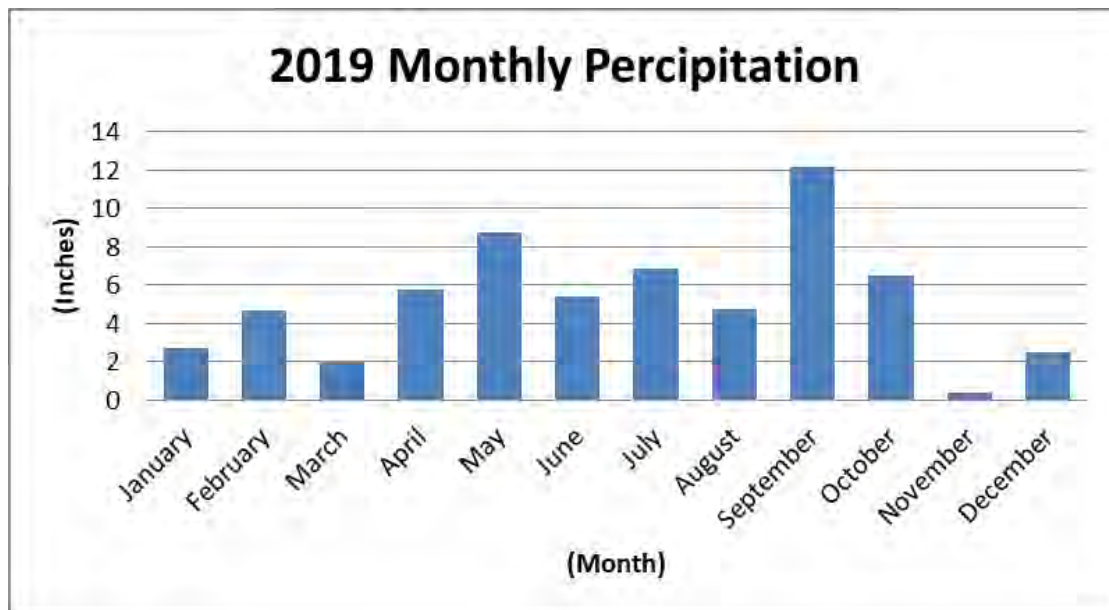
2019	Tank 1	Tank 2
January	13,200	39,600
February	19,800	26,400
March	46,200	26,400
April	52,800	33,000
May	46,200	39,600
June	33,000	39,600
July	26,400	39,600
August	19,800	33,000
September	39,600	26,400
October	52,800	39,600
November	19,800	39,600
December	39,600	39,600
Total	409,200	422,400



Precipitation:

2019 Precipitation (inches)	
January	2.7
February	4.7
March	2
April	5.8
May	8.75
June	5.4
July	6.9
August	4.75
September	12.2
October	6.5
November	0.4
December	2.47
Total	62.57

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



Leachate Collection Piping

On June 10th and 11th, 2019 Northern Pipe, Inc. of Green Bay, Wisconsin, water jetted the Area A leachate lines with a total of 3,000 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. Northern Pipe televised the Area A leachate lines in June of 2018 after jetting was completed. Hard deposits were encountered midway from both ends of cleanout access point 1 which prevented the entire pipe from being jetted. An obstruction was noted for cleanout access point 7 which prevented the entire pipe from being jetted as well. There were additional challenges at these same locations again in 2019 as jetting was conducted. No other issues were noted. Attachment C includes the jetting report from Northern Pipe for Area A.

The condition of manhole 1S is poor and was identified more than ten years ago and has been periodically discussed with the WDNR since that time. Possible solutions to making improvements to this manhole have been evaluated but implementation could pose a higher risk of environmental contamination over no action. Accessing this manhole would require exposing and puncturing the final cover as well as the base liner. It has been determined that since liquid levels in the landfill have not changed over time, the condition of manhole 1S does not pose a serious risk to the functionality of the leachate collection system in Area A landfill. Additional information on this issue has been included in previous annual reports since it was first identified.

Leachate Sampling

Leachate sampling and analytical analysis from Area A Tanks 1 and 2 was conducted in April and October 2019 by Northern Lake Services (NLS). VOCs and metals were sampled semi-annually and semi-volatile organics were sampled and tested in October only. Sampling results show a variety of compounds present that are consistent with previous sampling results. 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 2019 are summarized below.

Leachate	2019	Conductivity	pH
		umho/cm	S.U.
Tank 1	April	2,610	6.87
	October	4040	7.11
Tank 2	April	5210	7.21
	October	5200	7.15

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 2019 and found LS-3 was dry. LS-2, LS-5 and LS-6 were sampled. Sampling results were submitted electronically to the WDNR GEMS database and are consistent with previous sampling results. A summary table of inorganic constituents and detected VOCs from the lysimeter sampling event is provided below:

October 2019 Detection Results:

Lysimeter L-2 NLS ID: 1155485									
Matrix: WW									
Collected: 10/16/19 11:27 Received: 10/16/19									
Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab	
Field color	none detected					10/16/19	NA	721026460	
Field conductivity	280	umho/cm@25C	1			10/16/19	EPA 120.1	721026460	
Field odor	none detected					10/16/19	NA	721026460	
Field pH	7.42	s.u.	1			10/16/19	4500-H+B-2000	721026460	
Field turbidity	none detected					10/16/19	NA	721026460	
Field volume pumped	1.00	gallon	1	0.0*		10/16/19	NA	721026460	
Alkalinity, tot. as CaCO3 (unfiltered)	96	mg/L	1	1.0	2.0	10/21/19	2320 B-1997	721026460	
C.O.D. (unfiltered)	8.6	mg/L	1	1.6	5.2	10/23/19	5220 C-1997	721026460	
Chloride, as Cl (unfiltered)	[27]	mg/L	50	8.5	29	10/22/19	EPA 300.0, Rev 2.1	721026460	
Hardness, tot. recoverable, (calc/unfilt/icp)	120	mg/L	1	0.24*	0.82*	10/21/19	EPA 200.7, Rev 4.4	721026460	
Nitrogen, ammonia as N (unfiltered)	0.092	mg/L	1	0.027	0.090	10/23/19	4500-NH3 G-1997	721026460	
Sodium, tot. recoverable as Na by ICP	6.7	mg/L	1	0.12	0.41	10/21/19	EPA 200.7, Rev 4.4	721026460	
Sulfate, as SO4 (unfiltered)	ND	mg/L	50	2.8	25	10/22/19	EPA 300.0, Rev 2.1	721026460	
Metals digestion - tot. recov.ICP	yes					10/18/19	EPA 200.7	721026460	
VOCs (water) by GC/MS	see attached					10/27/19	EPA 624	721026460	
Lysimeter L-3 NLS ID: 1155486									
Matrix: WW									
Collected: 10/16/19 10:41 Received: 10/16/19									
Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab	
Dry	dry					10/16/19	Field Method	721026460	
Lysimeter L-5 NLS ID: 1155487									
Matrix: WW									
Collected: 10/16/19 11:01 Received: 10/16/19									
Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab	
Field color	natural					10/16/19	NA	721026460	
Field conductivity	845	umho/cm@25C	1			10/16/19	EPA 120.1	721026460	
Field odor	none detected					10/16/19	NA	721026460	
Field pH	6.88	s.u.	1			10/16/19	4500-H+B-2000	721026460	
Field turbidity	moderate, fine, brown					10/16/19	NA	721026460	
Field volume pumped	1.00	gallon	1	0.0*		10/16/19	NA	721026460	
Alkalinity, tot. as CaCO3 (unfiltered)	440	mg/L	5	5.0	10	10/21/19	2320 B-1997	721026460	
C.O.D. (unfiltered)	58	mg/L	1	1.6	5.2	10/23/19	5220 C-1997	721026460	
Chloride, as Cl (unfiltered)	24	mg/L	10	1.7	5.8	10/22/19	EPA 300.0, Rev 2.1	721026460	
Hardness, tot. recoverable, (calc/unfilt/icp)	470	mg/L	1	0.24*	0.82*	10/21/19	EPA 200.7, Rev 4.4	721026460	
Nitrogen, ammonia as N (unfiltered)	0.87	mg/L	1	0.027	0.090	10/23/19	4500-NH3 G-1997	721026460	
Sodium, tot. recoverable as Na by ICP	13	mg/L	1	0.12	0.41	10/21/19	EPA 200.7, Rev 4.4	721026460	
Sulfate, as SO4 (unfiltered)	ND	mg/L	10	0.56	5.0	10/22/19	EPA 300.0, Rev 2.1	721026460	
Metals digestion - tot. recov.ICP	yes					10/18/19	EPA 200.7	721026460	
VOCs (water) by GC/MS	see attached					10/27/19	EPA 624	721026460	
Lysimeter L-6 NLS ID: 1155488									
Matrix: WW									
Collected: 10/16/19 10:44 Received: 10/16/19									
Parameter	Result	Units	Dilution	LOD	LOQ	Analyzed	Method	Lab	
Dry	insufficient sample					10/16/19	Field Method	721026460	

Leachate Level Monitoring

The reported monthly leachate levels are provided below: Please note that data before September was not included. The previous MCSWD Environmental Technician left employment with Marathon County mid-year. The data before September 2019 was misplaced during the transition period.

Marathon County Solid Waste										
Leachate Head Well Monitoring										
Area A	LHW 1	LHW 2	LHW 3	LHW 4 D	LHW 4M	LHW 4S	P5	P6	P7	P8
Pipe Length	56.26	58.53	63.7	67.5	47.65	33.6	67.7	52.25	68.8	59.8
Bottom Ele.				1356	1375.8	1390				
Screen Length	20	20	20	1.5	1.5	1.5				
Date	Depth to Liquid	Depth to Liquid	Depth to Liquid	Depth to Liquid	Depth to Liquid	Depth to Liquid	Depth to Liquid	Depth to Liquid	Depth to Liquid	Depth to Liquid
March	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
June	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
September	29.1	33.3	41.1	44.7	30	Dry	Dry	Dry	Dry	Dry
December	28.1	33	40.7	44.2	31.1	Dry	Dry	Dry	Dry	Dry
LHW - Leachate Head Well - verticle monitoring pipe within Area A waste mass										
P - monitoring pipe along the sideslope										
MNR - Monitoring Not Require										

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

Please refer to the 2016 – 2019 three year groundwater assessment for more detailed information about site groundwater conditions and status. At the beginning of 2019 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.



Groundwater wells were conditioned in November 2019. This included sloping of the ground around them, clear labeling, and lock replacement.

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 groundwater monitoring well exceedance reports submitted to the WDNR for sampling events in April and October 2019 are provided in Attachment D.

Indicator parameters hardness, alkalinity and specific conductance concentrations are exhibiting increasing trends at the BRRDF upgradient well nest R59WT/P. Wells upgradient of R59WT/P include the Area A Landfill wells R13R and R35. Well R35 has also reported well-specific exceedances for specific conductance with an increasing trend in specific conductance concentrations. Well R13R has recorded specific conductance between 1,310 to 1,410 umho/cm during the three year period from 2017 to 2019. The increase in concentrations at the R59WT/P well nest may be associated with the elevated readings for these parameters occurring upgradient of this well nest in the VOC plume.

Area A Groundwater Well Exceedance Table April 2019

Marathon County Solid Waste: Area A Groundwater Monitoring Wells									
Project #	Area A Date	Facility #2892 Well #	Exceedances Parameter	Units	Result	PAL	ES	ACL	Comments
318721	April 2 & 3 2019	Dup 040319	Tetrachloroethylene	ug/L	3.90	0.50	5.00		NR140.10
318721	April 2 & 3 2019	Dup 040319	Trichloroethylene	ug/L	3.80	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R12R	Tetrachloroethylene	ug/L	0.71	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R12R	Trichloroethylene	ug/L	0.63	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R13R	Tetrachloroethylene	ug/L	3.50	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R13R	Trichloroethylene	ug/L	3.40	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R38	Tetrachloroethylene	ug/L	1.20	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R38	Trichloroethylene	ug/L	1.20	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R50P	Tetrachloroethylene	ug/L	0.64	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R35	Conductivity	umho@25C	770.00	510.00			Well

Area A Groundwater Well Exceedance Table October 2019

Marathon County Solid Waste: Area A Groundwater Monitoring Wells									
Project #	Area A Date	Facility #2892 Well #	Exceedances Parameter	Units	Result	PAL	ES	ACL	Comments
333080	October 14 & 15	Dup 101519	Tetrachloroethylene	ug/L	0.63	0.50	5.00		NR140.10
333080	October 14 & 15	Dup 101519	Trichloroethylene	ug/L	7.20	0.50	5.00		NR140.10
333080	October 14 & 15	Dup 101519	Vinyl Chloride	ug/L	0.50	0.02	0.20		NR140.10
333080	October 14 & 15	R13R	Tetrachloroethylene	ug/L	0.74	0.50	5.00		NR140.10
333080	October 14 & 15	R13R	Trichloroethylene	ug/L	7.20	0.50	5.00		NR140.10
333080	October 14 & 15	R13R	Vinyl Chloride	ug/L	0.49	0.02	0.20		NR140.10
333080	October 14 & 15	R38	Tetrachloroethylene	ug/L	0.88	0.50	5.00		NR140.10
333080	October 14 & 15	R38	Trichloroethylene	ug/L	1.30	0.50	5.00		NR140.10
333080	October 14 & 15	R47	Trichloroethylene	ug/L	0.63	0.50	5.00		NR140.10
333080	October 14 & 15	R50P	Tetrachloroethylene	ug/L	0.57	0.50	5.00		NR140.10
333080	October 14 & 15	R35	Conductivity	umho@25C	770.00	510.00			well

Private Well Water Sampling

The private wells identified in the monitoring plan include 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 well exceedance reports submitted to the WDNR for sampling events in April and October 2019 are provided in Attachment E.

The private water supply well samples analyzed in 2019 met the parameters identified in the site's monitoring plan for safe drinking water standards and no exceedances were recorded. During 2018, a low-level (estimated between limit of quantitation and the limit of detection) detection of tetrachloroethene (PCE) and acetone were reported in a sample collected from private well PW-68. This PCE was detected again in April of 2019, but not in October of 2019. Additionally, in 2018 a low-level detection of dichlorofluoromethane was reported in a sample collected from private well PW-27. PW-27 did not have any detects in 2019 in either sampling month.

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

AREA A 2019 ANNUAL SURFACE EMISSION MONITORING REPORT

Marathon County Solid Waste

Surface Emissions Monitoring

Calibration Procedure and Background Determination Report

Landfill name: Marathon County Landfill

Instrument make: Thermo Fisher Scientific, Model: TVA1000B,

S/N: 0115248137

Calibration Procedure

- 1. Install filled hydrogen tank, attach probe/readout device; turn on analyzer and hydrogen supply valve.**
- 2. Wait 4-5 minutes for proper hydrogen flow, then press; 1 = run. The unit will ignite and display readings. If flame out message appears, clear the message, (press exit) wait another minute and repeat step 2. If unit has not been properly calibrated a bad calibration parameter appears – go to step 3 below.**
- 3. Press (exit) until the main menu appears. Calibration can now be performed. For best results, allow unit to warm up for 20 minutes, then press (2=setup).**
- 4. Press (1=calibration), choose manual mode.**
- 5. Press (2=span concentration) Select the FID detector that the span concentration is for, then press the up or down arrows to select the correct unit of measure for the span gas. Enter the span calibration value; 500%CH, and press the enter key.**
- 6. Next Zero the instrument. Press (3=zero) to start this process. Press enter for single detector units. Zero the instrument by using; Air Zero grade. Introduce zero gas into the analyzer through the probe, utilize plastic T bypass pressure valve. Press (enter) to start.**
- 7. Wait for minimal change in values (about 15 seconds). Typically, the sample is stable when the first two digits of the reading do not change for 4-5 seconds. Press (enter) to except, press (1) to save.**

8. Next calibrate with span gas. Press (4=span) Select the detector to be calibrated and press (enter) to start. Follow screen prompts. Wait for readings to stabilize (typically 10-15 seconds). Enter (1) to save.
9. Press (5=RF) to verify proper response factor. Confirm that response factor says RFO: default if not set to this value.
10. Press (EXIT) twice to return to main menu
11. Press (1= Run)

Background Determination Procedure

- ATB
1. Upwind Reading (highest in 30 seconds): 1.65 ppm (1)
 2. Downwind Reading (highest in 30 seconds): 4.83 ppm (2)

Calculate Background Value: $\frac{(1)+(2)}{2} = \underline{3.24}$

2

Performed By: Rons Time: 0800 Date: 5/20/19

BBR (1.) Upwind Reading 0.94 ppm (1)

(2.) Downwind Reading 7.33 ppm (2)

Calculate Background Value $\frac{1+2}{2} = \underline{4.24}$

Marathon County Solid Waste
SEM Calibration Precision Test Record

Landfill Name: Marathon County LF

Monitoring Date: 5/20/19 Performed By Ron Smith

Expiration Date: 9/19 Time 0800

Instrument Make: Thermo Fisher Scientific Model: TVA1000B

S/N: 0115248137

Measurement #1:

Meter Reading for Zero Air: 0.25 ppm(1)

Meter Reading for Calibration Gas: 495 ppm (2)

Measurement #2:

Meter Reading for Zero Air: 0.55 ppm (3)

Meter Reading for Calibration Gas: 494 ppm (4)

Measurement #3:

Meter Reading for Zero Air: 0.63 ppm (5)

Meter Reading for Calibration Gas: 495 ppm (6)

Calculate Precision:

494

(.002)

$$\frac{[500-(2)]+[500-(4)]+[500-(6)]}{3} \times \frac{1}{500} \times \frac{100}{1}$$

$$= \underline{1.12} \% \text{ (must be less than 10\%)}$$

Marathon County Solid Waste

Instrument Response Time Test Record

Landfill Name: Marathon County LF Monitoring Date: 5/20/19

Time: 0800 Instrument Make: Thermo Fisher Scientific

Model: TVA1000B S/N: 0115248137

Measurement #1:

Stabilize Reading Using Calibration Gas: 495 ppm

90% of the Stabilized Reading = 445.50 ppm

Time to reach 90% of stabilized reading after switching from zero air to calibration gas: 3 seconds (1)

Measurement #2:

Stabilize Reading Using Calibration Gas: 494 ppm

90% of the Stabilized Reading = 444.60 ppm

Time to reach 90% of stabilized reading after switching from zero air to calibration gas: 4 seconds (2)

Measurement #3:

Stabilize Reading Using Calibration Gas: 494 ppm

90% of the Stabilized Reading = 444.60 ppm

Time to reach 90% of stabilized reading after switching from zero air to calibration gas: 3 seconds (3)

Calculate Response Time:

(1) + (2) + (3) = 3.33 seconds (must be less than 30 sec)

3
Performed By: Row Smith

Marathon County Solid Waste
Daily Surface Monitoring Log

Area A

Landfill Name: Marathon County Landfill

Performed By: Ron S Date: 5/20/19 Time: 0800

Temperature: 46 Sky: Partly Cloudy Ground: damp

Barometric Pressure: 30.18 Barometric Pressure end: 30.16

Barometric Trend: ↓ Wind: E 5mph

Location of Leak: No Detect

Time: _____ Concentration of leak: _____ (ppm)

Location of leak:

Time: _____ Concentration of leak: _____ (ppm)

Location of leak:

Time: _____ Concentration of leak: _____ (ppm)

Marathon County Solid Waste

Daily Surface Monitoring Log

ArcaB

Landfill Name: Marathon County Landfill

Performed By: Ron S Date: 5/20/19 Time: 0800

Temperature: 46 Sky: Partly cloudy Ground: Damp

Barometric Pressure: 30.18 Barometric Pressure end: 30.16

Barometric Trend: ↓ Wind: E 5mph

Location of Leak: No Detects

Time: _____ Concentration of leak: _____ (ppm)

Location of leak:

Time: _____ Concentration of leak: _____ (ppm)

Location of leak:

Time: _____ Concentration of leak: _____ (ppm)

Marathon County Solid Waste
Daily Surface Monitoring Log

BBR

Landfill Name: Marathon County Landfill

Performed By: Ron S Date: 5/20/19 Time: 0800

Temperature: 46 Sky: Partly Clky Ground: Damp

Barometric Pressure: 30.18 Barometric Pressure end: 30.16

Barometric Trend: ↓ Wind: E 5mph

Location of Leak: No Detects

Time: _____ Concentration of leak: _____ (ppm)

Location of leak:

Time: _____ Concentration of leak: _____ (ppm)

Location of leak:

Time: _____ Concentration of leak: _____ (ppm)

5/30/19
No defects

F-1

(1 of 4)

36%



2017 QUARTERLY AIRSPACE SURVEY RESULTS

SECOND QUARTER

THIRD QUARTER

FOURTH QUARTER

Original Surface Height
Final Surface Height

Original Surface Height
Final Surface Height

Original Surface Height
Final Surface Height

Final Surface Height

Final Surface Height

Final Surface Height

Final Surface Height

Final Surface Height

Final Surface Height

Final Surface Height

Final Surface Height

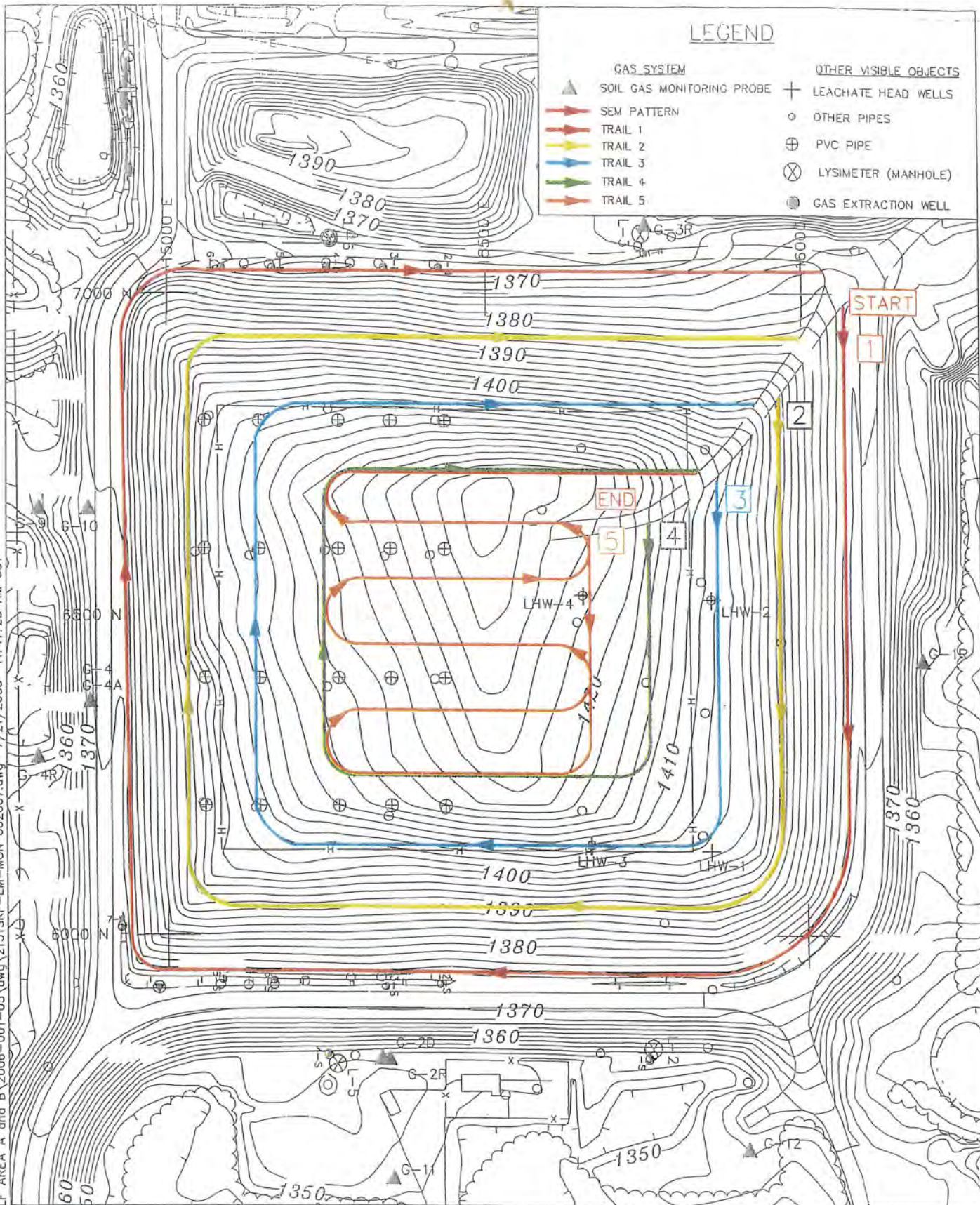
Final Surface Height

Final Surface Height

Final Surface Height

Final Surface Height

P:\BHA Projects\MCLF AREA A and B\2006-001-05\dwg\2131SRF-EM-MON 062007.dwg 7/21/2006 11:47:25 AM CST



LEGEND

GAS SYSTEM

- SOIL GAS MONITORING PROBE
- SEM PATTERN
- TRAIL 1
- TRAIL 2
- TRAIL 3
- TRAIL 4
- TRAIL 5

OTHER VISIBLE OBJECTS

- LEACHATE HEAD WELLS
- OTHER PIPES
- PVC PIPE
- LYSIMETER (MANHOLE)
- GAS EXTRACTION WELL



BECHER-HOPPE ASSOCIATES, INC.
ENGINEERS ARCHITECTS SCIENTISTS
330 Fourth Street, P.O. Box 8030, Worcester, MA 01608-8030
Tel 715-845-8000 • Fax 715-845-8008 • www.bhasoc.com

AREA A LANDFILL
SURFACE EMISSION MONITORING

MARATHON COUNTY
SOLID WASTE DEPARTMENT

DATE
JULY 2006

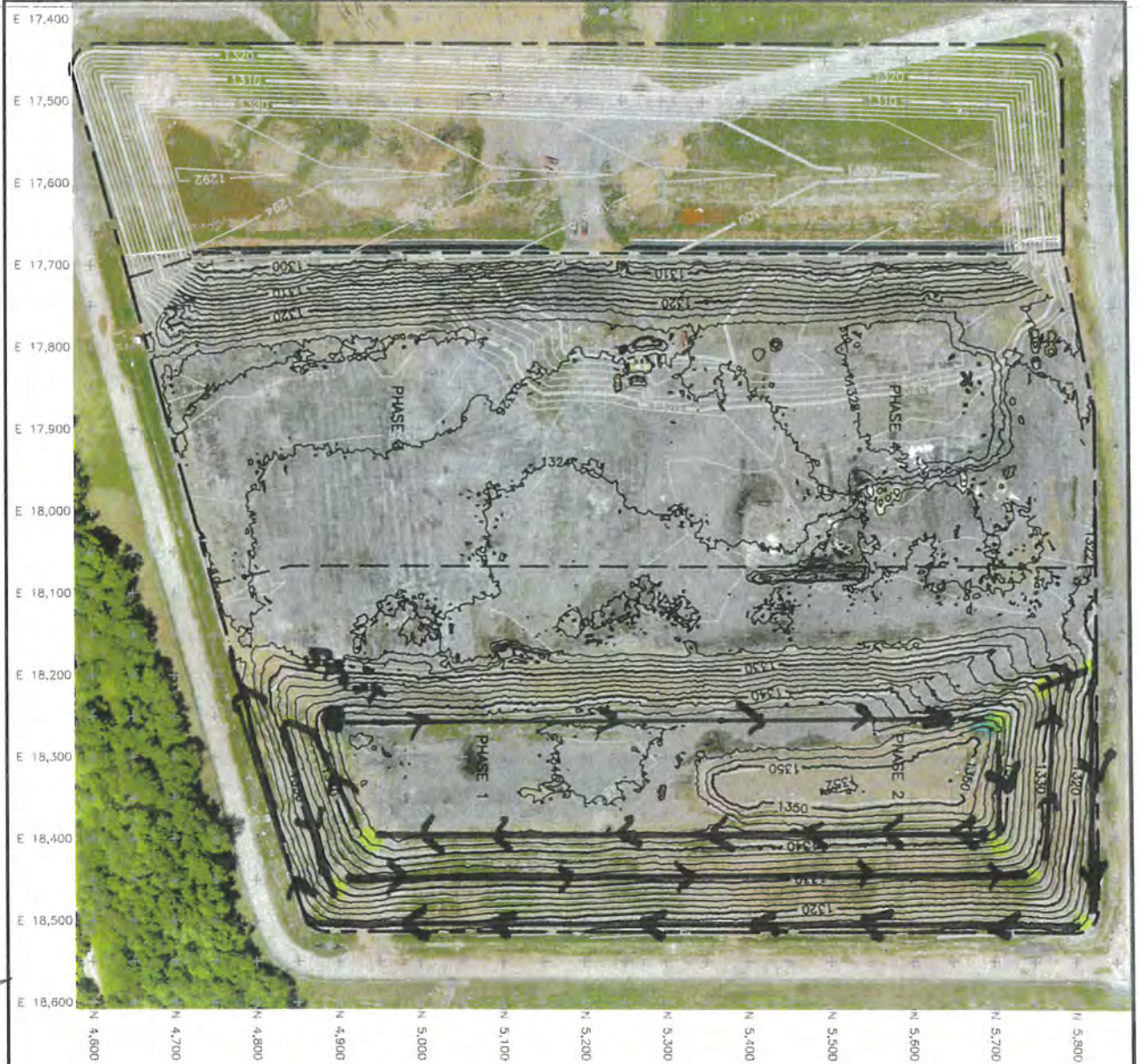
SCALE
1" = 200'

INITIALS
KRS

PROJECT
2006.001.05

5/20/19

No Detects



BBR SEM Trail

2017 QUARTERLY AIRSPACE SURVEY RESULTS			
FIRST QUARTER		SECOND QUARTER	
Original Surface Model: 12-19-16	Final Surface Model: 3-21-17	Original Surface Model: 3-21-17	Final Surface Model: 6-19-17
Total Cut Volume: 5,282 C.Y.	Total Cut Volume: 74,276 C.Y.	Total Cut Volume: 6,918 C.Y.	Total Fill Volume: 62,183 C.Y.
THIRD QUARTER		FOURTH QUARTER	
Original Surface Model: 6-19-17	Final Surface Model: 9-14-17	Original Surface Model: 9-14-17	Final Surface Model: 12-14-17
Total Cut Volume: 6,697 C.Y.	Total Cut Volume: 58,516 C.Y.	Total Cut Volume: 11,395 C.Y.	Total Fill Volume: 52,864 C.Y.

2018 QUARTERLY AIRSPACE SURVEY RESULTS			
FIRST QUARTER		SECOND QUARTER	
Original Surface Model: 12-14-17	Final Surface Model: 3-21-18	Original Surface Model: 3-21-18	Final Surface Model: 6-5-18
Total Cut Volume: 6,191 C.Y.	Total Cut Volume: 56,905 C.Y.	Total Cut Volume: 4,071 C.Y.	Total Fill Volume: 60,357 C.Y.
THIRD QUARTER		FOURTH QUARTER	
Original Surface Model: 6-19-17	Final Surface Model: 9-14-17	Original Surface Model: 9-14-17	Final Surface Model: 12-14-17
Total Cut Volume: 6,697 C.Y.	Total Cut Volume: 58,516 C.Y.	Total Cut Volume: 11,395 C.Y.	Total Fill Volume: 52,864 C.Y.



710 ——— FINAL SURFACE CONTOURS (6-5-18)
 ——— ORIGINAL SURFACE CONTOURS (3-21-18)
 - - - - - LIMIT OF WASTE
 - - - - - PHASE LIMITS

- NOTES:
1. ORIGINAL SURFACE SURVEY PERFORMED BY CQM, INC. ON MARCH 21, 2018.
 2. FINAL SURFACE SURVEY PERFORMED BY CQM, INC. ON JUNE 5, 2018.

EXISTING CONDITIONS			
SCALE: 1"=130'	APPROVED BY: APS	DRAWN BY: WBE	REVIEWED:
DATE: JUNE 2018	MARATHON COUNTY LANDFILL - BLUEBIRD RING, WISCONSIN		
CQM, INC.			FIGURE 1

No Affects
5/20/19

ATTACHMENT B

2019 LANDFILL GAS MAINLINE TO-15 LAB REPORT



November 4, 2019

Tetra Tech
ATTN: Lee Daigle
8413 Excelsior Dr., Suite 160
Madison, WI 53717



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

LABORATORY TEST RESULTS

Project Reference: Marathon County VOC
Project Number: MCLF-2019-VOC
Lab Number: K101506-01/02

Enclosed are results for sample(s) received 10/15/19 by Air Technology Laboratories. Samples were received intact. 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 TNI Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Lee Daigle on 11/01/19.

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,

A handwritten signature in blue ink, appearing to read "Mark Johnson".

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

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

[illegible]

Client: Tetra Tech
Attn: Lee Daigle
Project Name: Marathon County VOC
Project No.: MCLF-2019-VOC
Date Received: 10/15/2019
Matrix: Air

Fixed Gases by EPA METHOD 3C

Lab No.:	K101506-01	K101506-02		
Client Sample I.D.:	Mainline VOC #1	Mainline VOC #2		
Date/Time Sampled:	10/9/19 11:25	10/9/19 11:08		
Date/Time Analyzed:	10/17/19 11:57	10/17/19 12:11		
QC Batch No.:	191017GC8A1	191017GC8A1		
Analyst Initials:	CM	CM		
Dilution Factor:	4.4	4.2		
ANALYTE (Units)	Result	RL	Result	RL
Nitrogen (% v/v)	12	4.4	12	4.2
Oxygen/Argon (% v/v)	ND	2.2	ND	2.1
Carbon Dioxide (% v/v)	37	0.044	37	0.042
Methane (% v/v)	54	0.0044	55	0.0042
Carbon Monoxide (% v/v)	ND	0.0044	ND	0.0042

RL = Reporting Limit

ND = Not detected at or above the RL.

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date

10-31-19

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: Tetra Tech
 Attn: Lee Daigle
 Project Name: Marathon County VOC
 Project No.: MCLF-2019-VOC
 Date Received: 10/15/19
 Matrix: Air
 Reporting Units: ug/L

EPA Method TO15

Lab No.:	K101506-01		K101506-02					
Client Sample I.D.:	Mainline VOC #1		Mainline VOC #2					
Date/Time Sampled:	10/9/19 11:25		10/9/19 11:08					
Date/Time Analyzed:	10/25/19 14:12		10/25/19 14:47					
QC Batch No.:	191025MS2A1		191025MS2A1					
Analyst Initials:	AS		AS					
Dilution Factor:	44		42					
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L				
Dichlorodifluoromethane (12)	1.0	0.22	1.1	0.21				
Chloromethane	ND	0.18	ND	0.17				
1,2-CI-1,1,2,2-F ethane (114)	ND	0.31	0.30	0.29				
Vinyl Chloride	2.4	0.11	3.2	0.11				
Bromomethane	ND	0.17	ND	0.16				
Chloroethane	ND	0.12	0.17	0.11				
Trichlorofluoromethane (11)	0.70	0.25	0.79	0.24				
1,1-Dichloroethene	ND	0.17	ND	0.17				
Carbon Disulfide	0.92	0.68	1.4	0.66				
1,1,2-CI 1,2,2-F ethane (113)	ND	0.34	ND	0.32				
Acetone	4.1	0.52	4.9	0.50				
Methylene Chloride	0.26	0.15	ND	0.15				
t-1,2-Dichloroethene	ND	0.17	0.17	0.17				
1,1-Dichloroethane	0.23	0.18	0.29	0.17				
Vinyl Acetate	ND	0.77	ND	0.74				
c-1,2-Dichloroethene	0.90	0.17	1.2	0.17				
2-Butanone	4.1	0.13	5.3	0.12				
t-Butyl Methyl Ether (MTBE)	ND	0.16	ND	0.15				
Chloroform	ND	0.21	ND	0.21				
1,1,1-Trichloroethane	ND	0.24	ND	0.23				
Carbon Tetrachloride	ND	0.28	ND	0.26				
Benzene	2.0	0.14	2.6	0.13				
1,2-Dichloroethane	0.34	0.18	0.50	0.17				
Trichloroethene	0.43	0.24	0.46	0.23				
1,2-Dichloropropane	ND	0.20	ND	0.19				
Bromodichloromethane	ND	0.29	ND	0.28				
c-1,3-Dichloropropene	ND	0.20	ND	0.19				
4-Methyl-2-Pentanone	1.5	0.18	1.6	0.17				
Toluene	23	0.17	31	0.16				
t-1,3-Dichloropropene	ND	0.20	ND	0.19				



Client: Tetra Tech
 Attn: Lee Daigle
 Project Name: Marathon County VOC
 Project No.: MCLF-2019-VOC
 Date Received: 10/15/19
 Matrix: Air
 Reporting Units: ug/L

EPA Method TO15

Lab No.:	K101506-01		K101506-02					
Client Sample I.D.:	Mainline VOC #1		Mainline VOC #2					
Date/Time Sampled:	10/9/19 11:25		10/9/19 11:08					
Date/Time Analyzed:	10/25/19 14:12		10/25/19 14:47					
QC Batch No.:	191025MS2A1		191025MS2A1					
Analyst Initials:	AS		AS					
Dilution Factor:	44		42					
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L				
1,1,2-Trichloroethane	ND	0.24	ND	0.23				
Tetrachloroethene	0.82	0.30	1.00	0.29				
2-Hexanone	ND	0.18	ND	0.17				
Dibromochloromethane	ND	0.37	ND	0.36				
1,2-Dibromoethane	ND	0.34	ND	0.32				
Chlorobenzene	ND	0.20	ND	0.19				
Ethylbenzene	5.5	0.19	7.9	0.18				
p,&m-Xylene	9.1	0.19	14	0.18				
o-Xylene	3.1	0.19	4.5	0.18				
Styrene	0.22	0.19	0.33	0.18				
Bromoform	ND	0.45	ND	0.44				
1,1,2,2-Tetrachloroethane	ND	0.60	ND	0.58				
Benzyl Chloride	ND	0.23	ND	0.22				
4-Ethyl Toluene	0.75	0.22	1.1	0.21				
1,3,5-Trimethylbenzene	ND	0.43	0.43	0.41				
1,2,4-Trimethylbenzene	ND	0.43	0.58	0.41				
1,3-Dichlorobenzene	ND	0.26	ND	0.25				
1,4-Dichlorobenzene	ND	0.26	ND	0.25				
1,2-Dichlorobenzene	ND	0.26	ND	0.25				
1,2,4-Trichlorobenzene	ND	0.65	ND	0.63				
Hexachlorobutadiene	ND	0.47	ND	0.45				

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: 

Mark Johnson
Operations Manager

Date 10-31-19

The cover letter is an integral part of this analytical report



AirTECHNOLOGY Laboratories, Inc.

TO15 REPORT 2019.6

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

Client: Tetra Tech
 Attn: Lee Daigle
 Project Name: Marathon County VOC
 Project No.: MCLF-2019-VOC
 Date Received: 10/15/19
 Matrix: Air
 Reporting Units: ug/L

EPA Method TO15

Lab No.:	METHOD BLANK							
Client Sample I.D.:	-							
Date/Time Sampled:	-							
Date/Time Analyzed:	10/25/19 9:31							
QC Batch No.:	191025MS2A1							
Analyst Initials:	AS							
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						




Client: Tetra Tech
 Attn: Lee Daigle
 Project Name: Marathon County VOC
 Project No.: MCLF-2019-VOC
 Date Received: 10/15/19
 Matrix: Air
 Reporting Units: ug/L

EPA Method TO15

Lab No.:	METHOD BLANK								
Client Sample I.D.:	-								
Date/Time Sampled:	-								
Date/Time Analyzed:	10/25/19 9:31								
QC Batch No.:	191025MS2A1								
Analyst Initials:	AS								
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: 

Mark Johnson
Operations Manager

Date 10-31-19

The cover letter is an integral part of this analytical report



AirTECHNOLOGY Laboratories, Inc.

TO15 REPORT 2019_8

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 #: 191025MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	10/25/19 9:31		10/25/19 8:19		10/25/19 8:54						
Data File ID:	25OCT015.D		25OCT013.D		25OCT014.D						
Analyst Initials:	VM		VM		VM						
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	9.5	95	9.6	96	1.1	70	130	30	Pass
Methylene Chloride	0.0	10.0	10.3	103	10.5	105	1.9	70	130	30	Pass
Trichloroethene	0.0	10.0	9.9	99	9.4	94	5.4	70	130	30	Pass
Toluene	0.0	10.0	9.8	98	9.4	94	3.5	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.8	98	9.3	93	5.2	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____

Mark Johnson
Operations Manager

Date: _____

10-31-19

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

ATTACHMENT C

AREA A 2019 LEACHATE LINE JETTING AND TELEVISIONING REPORT

AREA A

CLEANOUT ACCESS POINT	PIPE SIZE	TOTAL LENGTH (FT)	FT JETTED (S)	FT JETTED (N)	TOTAL JETTED	COMMENTS
1	8	1,180	285	540	825	Stops at 285' from South and 540' from North
2	6	1,040	750	340	1,090	Overlap achieved - line is good
3	6	1,040	1,040	-	1,040	Jetted from south, line is good
4	8	1,180	170	1,100	1,270	Stops at 170' from South, overlap achieved from North
5	6	1,040	825	315	1,140	Overlap achieved - line is good
6	6	1,040	600	540	1,140	Overlap achieved - line is good
7	8	460	330	-	330	Stops at 330' from West
Gas Condensate Line		280	-	-	280	Line is good
		7,260			7,115	

3,000 gallons of water used

AREA B

CLEANOUT ACCESS POINT	PIPE SIZE	TOTAL LENGTH (FT)	FT JETTED (E/S)	FT JETTED (W/N)	TOTAL JETTED	COMMENTS
1	12	660	660	-	660	From B1E - line is good
2	12	500	500	-	500	From B2S - line is good
3	12	505	505	-	505	From B3S - line is good
4	12	510	510	-	510	From B4S - line is good
5	12	660	660	-	660	From B5S - line is good
6	12	280	280	-	280	From B6E - line is good
7	12	850	850	-	850	From B7S - line is good
8	12	875	875	-	875	From B8S - line is good
9	12	305	305	-	305	From B9E - line is good
10	12	840	840	-	840	From B10S - line is good
11	12	795	795	-	795	From B11S - line is good
12	12	270	270	-	270	From B12E - line is good
13	12	750	750	-	750	From B13S - line is good
14	12	725	725	-	725	From B14S - line is good
		8,525			8,525	

5,500 gallons of water used

BLUE BIRD RIDGE

CLEANOUT ACCESS POINT	PIPE SIZE	TOTAL LENGTH (FT)	FT JETTED (N)	FT JETTED (S)	TOTAL JETTED	COMMENTS
LCR 12 TO LCR 11	6	1,180	600	600	1,200	Overlap achieved - line is good
LCR 8 TO LCR 9	6	1,144	600	600	1,200	Overlap achieved - line is good
LCR 10 TO LOOP 7	6	650	404	276	680	Overlap achieved - line is good
LCR 4 TO LCR 6	6	1,070	600	600	1,200	Overlap achieved - line is good
LCR 2 TO LCR 3	6	1,020	600	600	1,200	Overlap achieved - line is good
LCR 5 TO LOOP 1	6	395	395	-	395	Overlap achieved - line is good
		5,459			5,875	


2,500 gallons of water used

ATTACHMENT D

EXCEEDANCE REPORTS FOR AREA A GROUNDWATER MONITORING
APRIL AND OCTOBER 2019



marathoncountysolidwaste.org

 [marathoncountysolidwaste](https://www.facebook.com/marathoncountysolidwaste)

Marathon County Solid Waste Department

172900 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

May 22, 2019

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 2019. 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, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

Area A Groundwater Well Exceedance Table April 2019

Marathon County Solid Waste: Area A Groundwater Monitoring Wells									
Project #	Area A Date	Facility #2892 Well #	Exceedances Parameter	Units	Result	PAL	ES	ACL	Comments
318721	April 2 & 3 2019	Dup 040319	Tetrachloroethylene	ug/L	3.90	0.50	5.00		NR140.10
318721	April 2 & 3 2019	Dup 040319	Trichloroethylene	ug/L	3.80	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R12R	Tetrachloroethylene	ug/L	0.71	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R12R	Trichloroethylene	ug/L	0.63	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R13R	Tetrachloroethylene	ug/L	3.50	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R13R	Trichloroethylene	ug/L	3.40	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R38	Tetrachloroethylene	ug/L	1.20	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R38	Trichloroethylene	ug/L	1.20	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R50P	Tetrachloroethylene	ug/L	0.64	0.50	5.00		NR140.10
318721	April 2 & 3 2019	R35	Conductivity	umho@25C	770.00	510.00			Well

The Area A exceedances that were detected during the April 2019 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.

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; NR 635.14(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@nlsilab.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 -02-2019 through APRIL -03-2019
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 -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☐ No. No groundwater standards or explosive gas limits were exceeded.
- ☒ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenbucher
Facility Representative Name (Print)

Solid Waste Manager
Title

715-551-5864
(Area Code) Telephone No.

David Hagenbucher
Signature

05/22/19
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 Mgmt Dept
Marathon County Landfill - Area A
04-01-2019

Lab ID: 721026460
NLS Project: 318721
Collected: 04-01-2019
License: 02892
FID: 737054890


EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
Dup-040319 (074)	Tetrachloroethylene	ug/L	3.9	.5	5	NR140.10
Dup-040319 (074)	Trichloroethylene	ug/L	3.8	.5	5	NR140.10
R12R (049)	Tetrachloroethylene	ug/L	0.71	.5	5	NR140.10
R12R (049)	Trichloroethylene	ug/L	0.63	.5	5	NR140.10
R13R (074)	Tetrachloroethylene	ug/L	3.5	.5	5	NR140.10
R13R (074)	Trichloroethylene	ug/L	3.4	.5	5	NR140.10
R38 (053)	Tetrachloroethylene	ug/L	1.2	.5	5	NR140.10
R38 (053)	Trichloroethylene	ug/L	1.2	.5	5	NR140.10
R50P (068)	Tetrachloroethylene	ug/L	0.64	.5	5	NR140.10
R35 (050)	Conductivity	umho@25C	770	510		well

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES



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 [marathoncountysolidwaste](https://www.facebook.com/marathoncountysolidwaste)

Marathon County Solid Waste Department

172900 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

May 22, 2019

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 2019. 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, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

Area B Groundwater Well Exceedance Table April 2019

Marathon County Solid Waste: Area B Groundwater Monitoring Wells								
	Area B	Facility #3338	Exceedances					
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL
318722	April 2 & 3 2019	Dup 040319	Nitrate+Nitrite	mg/L	2.20	2.00	10.00	
318722	April 2 & 3 2019	R45	Nitrate+Nitrite	mg/L	2.20	2.00	10.00	

The Area B Nitrate/Nitrite levels at well R45 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. Well R45 has indicated a very slight increase in concentration since the previous sampling event in October. The well will continue to be monitored closely to ensure that levels decrease. In effort to ensure that levels decrease, Marathon County will evaluate their erosion control methods in addition to continued observation of well R45. Current site plans include the installation of a final cap on the Area B landfill within the next few years; this will also control erosion and potential runoff issues at the wells around the landfill.

ENVIRONMENTAL MONITORING DATA CERTIFICATION
Form 4400-231(R 1/04)

State of Wisconsin
Department of Natural Resources

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; NR 635.14(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@nlsilab.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 -02-2019 through APRIL -03-2019

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

APRIL -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☐ No. No groundwater standards or explosive gas limits were exceeded.
- ☒ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenbucher
Facility Representative Name (Print)

Solid Waste Manager
Title

715-551-5864
(Area Code) Telephone No.

David Hagenbucher
Signature

05/22/19
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 Mgmt Dept
Marathon County Landfill – Area B
04-01-2019

Lab ID: 721026460
NLS Project: 318722
Collected: 04-01-2019
License: 03338
FID: 737092730


EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
Dup-040319 (208)	Nitrate+Nitrite, dis.	mg/L	2.2	2	10	NR140.10
R45 (208)	Nitrate+Nitrite, dis.	mg/L	2.2	2	10	NR140.10

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES



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Marathon County Solid Waste Department

172900 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

May 22, 2019

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 2019. 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 Collier, Amanda Dehmlow, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

Bluebird Ridge Recycling and Disposal Facility Groundwater Well Exceedance Table
April 2019

Marathon County Solid Waste: Bluebird Ridge Groundwater Monitoring Wells									
Project #	BRRDF	Facility #4228	Exceedances	Units	Result	PAL	ES	ACL	Comments
318859	April 3 & 4 2019	R59P	Alkalinity	mg/L	330.00	230.00			well
318859	April 3 & 4 2019	R59P	Conductivity	umhos@25C	590.00	470.00			well
318859	April 3 & 4 2019	R59P	Hardness	mg/L	360.00	230.00			well
318859	April 3 & 4 2019	R59WT	Alkalinity	mg/L	420.00	230.00			well
318859	April 3 & 4 2019	R59WT	Conductivity	umhos@25C	680.00	470.00			well
318859	April 3 & 4 2019	R59WT	Hardness	mg/L	420.00	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. Over the past few years, Marathon County has utilized 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 be contributing 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 may be a contributing factor. The levels have not changed significantly since the last monitoring event, but this well will continue to be monitored to evaluate the source of the exceedances.

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; NR 635.14(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: lms@nlsfab.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 -03-2019 through APRIL -04-2019

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

APRIL -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☐ No. No groundwater standards or explosive gas limits were exceeded.
- ☒ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenbucher
Facility Representative Name (Print)

Solid Waste Manager
Title

715-551-5864
(Area Code) Telephone No.

David Hagenbucher
Signature

05/22/19
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 Mgmt Dept
Marathon County - BRRDF
04-01-2019**

Lab ID: 721026460
NLS Project: 318859
Collected: 04-01-2019
License: 04228
FID: 337005680

EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
R59P (237)	Alkalinity	mg/L	330	230		well
R59P (237)	Conductivity	umhos@25C	590	470		well
R59P (237)	Hardness	mg/L	360	230		well
R59WT (234)	Alkalinity	mg/L	420	230		well
R59WT (234)	Conductivity	umhos@25C	680	470		well
R59WT (234)	Hardness	mg/L	420	230		well

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES



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Marathon County Solid Waste Department

172900 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

Dec 6, 2019

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 2019. 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, Megan Ballweg, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

Area A Groundwater Well Exceedance Table October 2019

Marathon County Solid Waste: Area A Groundwater Monitoring Wells									
Project #	Area A	Facility #2892	Exceedances						
	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
333080	October 14 & 15	Dup 101519	Tetrachloroethylene	ug/L	0.63	0.50	5.00		NR140.10
333080	October 14 & 15	Dup 101519	Trichloroethylene	ug/L	7.20	0.50	5.00		NR140.10
333080	October 14 & 15	Dup 101519	Vinyl Chloride	ug/L	0.50	0.02	0.20		NR140.10
333080	October 14 & 15	R13R	Tetrachloroethylene	ug/L	0.74	0.50	5.00		NR140.10
333080	October 14 & 15	R13R	Trichloroethylene	ug/L	7.20	0.50	5.00		NR140.10
333080	October 14 & 15	R13R	Vinyl Chloride	ug/L	0.49	0.02	0.20		NR140.10
333080	October 14 & 15	R38	Tetrachloroethylene	ug/L	0.88	0.50	5.00		NR140.10
333080	October 14 & 15	R38	Trichloroethylene	ug/L	1.30	0.50	5.00		NR140.10
333080	October 14 & 15	R47	Trichloroethylene	ug/L	0.63	0.50	5.00		NR140.10
333080	October 14 & 15	R50P	Tetrachloroethylene	ug/L	0.57	0.50	5.00		NR140.10
333080	October 14 & 15	R35	Conductivity	umho@25C	770.00	510.00			well

The Area A exceedances that were detected during the October 2019 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.

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; NR 635.14(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:

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- * 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@nlsilab.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 -14-2019 through OCTOBER -16-2019
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 -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☐ No. No groundwater standards or explosive gas limits were exceeded.
- ☒ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenbucher
Facility Representative Name (Print)

Operations Manager
Title

715 551 5864
(Area Code) Telephone No.

David Hagenbucher
Signature

12/06/19
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) ☒ Email (follow-up only) Other _____

Marathon County Solid Waste Mgmt Dept
Marathon County Landfill - Area A
10-01-2019

Lab ID: 721026460
 NLS Project: 333080
 Collected: 10-01-2019
 License: 02892
 FID: 737054890


EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
Dup-101519 (074)	Tetrachloroethylene	ug/L	0.63	.5	5	NR140.10
Dup-101519 (074)	Trichloroethylene	ug/L	7.2	.5	5	NR140.10
Dup-101519 (074)	Vinyl Chloride	ug/L	0.50	.02	.2	NR140.10
R13R (074)	Tetrachloroethylene	ug/L	0.74	.5	5	NR140.10
R13R (074)	Trichloroethylene	ug/L	7.2	.5	5	NR140.10
R13R (074)	Vinyl Chloride	ug/L	0.49	.02	.2	NR140.10
R38 (053)	Tetrachloroethylene	ug/L	0.88	.5	5	NR140.10
R38 (053)	Trichloroethylene	ug/L	1.3	.5	5	NR140.10
R47 (062)	Trichloroethylene	ug/L	0.63	.5	5	NR140.10
R50P (068)	Tetrachloroethylene	ug/L	0.57	.5	5	NR140.10
R35 (050)	Conductivity	umho@25C	770	510		well

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES



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Marathon County Solid Waste Department

172900 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

Dec 6, 2019

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 2019. 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 Collier, Megan Ballweg, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

Area B Groundwater Well Exceedance Table October 2019

Marathon County Solid Waste: Area B Groundwater Monitoring Wells									
	Area B	Facility #3338	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
332917	October 14 & 15	Dup 10151901	Nitrate+Nitrite	mg/L	2.10	2.00	10.00		NR140.10
332917	October 14 & 15	R27	Nitrate+Nitrite	mg/L	4.80	2.00	10.00		NR140.10
332917	October 14 & 16	R45	Nitrate+Nitrite	mg/L	2.10	2.00	10.00		NR140.11

The Area B Nitrate/Nitrite levels at wells R45 and R27 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. Well R45 has indicated a slight decrease in concentration since the previous sampling event in April 2019. R27 has indicated a slight increase since sampling in October of 2018. Significant precipitation and historic rainfalls also contributed to erosion around Area B, and may be a contributing factor to these exceedances. The wells will continue to be monitored closely to ensure that levels decrease. In an effort to ensure that levels decrease, Marathon County will evaluate their erosion control methods in addition to continued observation of well R45 and well R27. Current site plans include the installation of a final cap on the Area B landfill within the next few years; this will also control erosion and potential runoff issues at the wells around the landfill.

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; NR 635.14(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: **lms@nls-lab.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 -14-2019 through OCTOBER -15-2019

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

OCTOBER -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☐ No. No groundwater standards or explosive gas limits were exceeded.
- ☒ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenbucher	Manager	715 551 5864
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	12/06/19	
Signature	Date	

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

- | | |
|--|-------------------------------------|
| <input type="checkbox"/> Found uploading problems on _____ | Initials _____ |
| <input type="checkbox"/> Notified contact of problems on _____ | Uploaded data successfully on _____ |
| EDD format(s): <input checked="" type="checkbox"/> Diskette <input type="checkbox"/> CD (Initial submittal and follow-up) <input checked="" type="checkbox"/> E-mail (follow-up only) <input type="checkbox"/> Other _____ | |

Marathon County Solid Waste Mgmt Dept
Marathon County Landfill - Area B
10-01-2019

Lab ID: 721026460
 NLS Project: 332917
 Collected: 10-01-2019
 License: 03338
 FID: 737092730


EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
Dup- 10151901 (208)	Nitrate+Nitrite, dis.	mg/L	2.1	2	10	NR140.10
R27 (156)	Nitrate+Nitrite, dis.	mg/L	4.8	2	10	NR140.10
R45 (208)	Nitrate+Nitrite, dis.	mg/L	2.1	2	10	NR140.10

Notes: site = site assigned PAL/ES ; well = well assigned PAL/ES ; NR140.10 = NR140 Public Health PAL/ES ; NR140.12 = NR140 Public Welfare PAL/ES



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 [marathoncountysolidwaste](https://www.facebook.com/marathoncountysolidwaste)

Marathon County Solid Waste Department

172900 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

Dec 6th, 2019

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 2019. 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, Megan Ballweg, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

Bluebird Ridge Recycling and Disposal Facility Groundwater Well Exceedance Table
October 2019

Marathon County Solid Waste: Bluebird Ridge Groundwater Monitoring Wells									
	BRRDF	Facility #4228	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
333066	October 14 & 15	R59P	Alkalinity	mg/L	380.00	230.00			well
333066	October 14 & 15	R59P	Conductivity	umhos@25C	670.00	470.00			well
333066	October 14 & 15	R59P	Hardness	mg/L	430.00	230.00			well
333066	October 14 & 15	R59WT	Alkalinity	mg/L	420.00	230.00			well
333066	October 14 & 15	R59WT	Conductivity	umhos@25C	710.00	470.00			well
333066	October 14 & 15	R59WT	Hardness	mg/L	470.00	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. Over the past few years, Marathon County has utilized 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 be contributing 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 may be a contributing factor. The levels have not changed significantly since the last monitoring event, but this well will continue to be monitored to evaluate the source of the exceedances.

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; NR 635.14(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:

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- * Please type or print legibly.
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- * 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@nls-lab.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 -15-2019 through OCTOBER -16-2019

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

OCTOBER -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☐ No. No groundwater standards or explosive gas limits were exceeded.
- ☒ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenbucher
Facility Representative Name (Print)

Operations Manager
Title

715 551 5864
(Area Code) Telephone No.

David Hagenbucher
Signature

12/06/19
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 Mgmt Dept
Marathon County - BRRDF
10-01-2019

Lab ID: 721026460
 NLS Project: 333066
 Collected: 10-01-2019
 License: 04228
 FID: 337005680

EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
R59P (237)	Alkalinity	mg/L	380	230		well
R59P (237)	Conductivity	umhos@25C	670	470		well
R59P (237)	Hardness	mg/L	430	230		well
R59WT (234)	Alkalinity	mg/L	420	230		well
R59WT (234)	Conductivity	umhos@25C	710	470		well
R59WT (234)	Hardness	mg/L	470	230		well


Notes: site = site assigned PAL/ES ; well = well assigned PAL/ES ; NR140.10 = NR140 Public Health PAL/ES ; NR140.12 = NR140 Public Welfare PAL/ES

ATTACHMENT E

EXCEEDANCE REPORTS FOR AREA A & BRRDF PRIVATE WELL MONITORING APRIL AND OCTOBER 2019



marathoncountysolidwaste.org

 [marathoncountysolidwaste](https://www.facebook.com/marathoncountysolidwaste)

Marathon County Solid Waste Department

172900 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

May 22, 2019

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, 3338 & 4228 (Private Wells)

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of April 2019. There were no exceedances in the private groundwater wells, and therefore an exceedance table has not been provided.

If you have any questions, please contact me.

Thank you,

David Hagenbucher
Operations Manager
Marathon County Solid Waste

C.c: Nathan Coller, Amanda Dehmlow, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

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; NR 635.14(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@nlsfab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
Marathon County Area A Private Wells (Semi-annual)	02892		APRIL -04-2019

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

APRIL -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input checked="" type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☒ No. No groundwater standards or explosive gas limits were exceeded.
- ☐ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenbucher
Facility Representative Name (Print)

Sid White Manager
Title

715-551-5864
(Area Code) Telephone No.

David Hagenbucher
Signature

05/22/19
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 Mgmt Dept
Marathon County Area A Private Wells
04-01-2019

Lab ID: 721026460
NLS Project: 318858
Collected: 04-01-2019
License: 02892
FID:

EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments

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; NR 635.14(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@nlsilab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
Marathon County BRRDF Private Wells	04228	337005680	APRIL -04-2019

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

APRIL -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input checked="" type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☒ No. No groundwater standards or explosive gas limits were exceeded.
- ☐ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenbucher
Facility Representative Name (Print)

Solad Waste Manager
Title

715 551 5864
(Area Code) Telephone No.

David Hagenbucher
Signature

05/22/19
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 Mgmt Dept
Marathon County BRRDF Private Wells
04-01-2019

Lab ID: 721026460
NLS Project: 318857
Collected: 04-01-2019
License: 04228
FID: 337005680

EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034
 Printed: 05/01/19 Page 1 of 3
 NLS Project: 318857
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060
 Client: Marathon County Solid Waste Mgmt Dept
 Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County BRRDF Private Wells April 2019

PW11 NLS ID: 1113402

Matrix: GW

Collected: 04/04/19 09:32 Received: 04/05/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field depth to water	4.86	ft.	1			04/04/19 NA	721026460
Field depth to bottom	5.85	ft.	1			04/04/19 NA	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000

MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

R. T. Krueger

Authorized by:
 R. T. Krueger
 President

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. W100034
 Printed: 05/01/19 Page 2 of 3
 NLS Project: 318857
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept
 Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County BRRDF Private Wells April 2019

PW26 NLS ID: 1113403

Matrix: GW

Collected: 04/04/19 09:43 Received: 04/05/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

LOQ = Limit of Quantitation
 1000 ug/L = 1 mg/L
 NA = Not Applicable

Reviewed by:

R. T. Krueger

Authorized by:
 R. T. Krueger
 President

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034
 Printed: 05/01/19 Page 3 of 3
 NLS Project: 318857
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060
 Client: Marathon County Solid Waste Mgmt Dept
 Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County BRRDF Private Wells April 2019

PW8575 NLS ID: 1113404

Matrix: GW

Collected: 04/04/19 10:00 Received: 04/05/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

LOQ = Limit of Quantitation NA = Not Applicable

Reviewed by: 
 Authorized by: R. T. Krueger
 President

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 318857
Project Description: Marathon County BRRDF Private Wells
Project Title: April 2019
Template: SAT3APP3 Printed: 05/01/2019 04:22

Sample: 1113403 PW26 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta, para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	112%		1				S
Toluene-d8 (SURR)	108%		1				S
1-Bromo-4-Fluorobenzene (SURR)	104%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 1113404 PW8575 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43									
ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note		
Benzene	ND	ug/L	1	0.19	0.69	5			
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80			
Bromoform	ND	ug/L	1	0.16	0.56	80			
Bromomethane	ND	ug/L	1	0.22	0.79				
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5			
Chlorobenzene	ND	ug/L	1	0.16	0.56	100			
Chloroethane	ND	ug/L	1	1.5	5.4				
Chloroform	ND	ug/L	1	0.17	0.60	80			
Chloromethane	ND	ug/L	1	0.19	0.68				
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80			
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73				
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43				
Dibromomethane	ND	ug/L	1	0.21	0.73				
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600			
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72				
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75			
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49				
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64				
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5			
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7			
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70			
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100			
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5			
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68				
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51				
Ethylbenzene	ND	ug/L	1	0.30	1.1	700			
Methylene chloride	ND	ug/L	1	0.20	0.70	5			
Naphthalene	ND	ug/L	1	0.29	1.0				
Styrene	ND	ug/L	1	0.16	0.56	100			
ortho-Xylene	ND	ug/L	1	0.16	0.56				
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5			
Toluene	ND	ug/L	1	0.19	0.68	1000			
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200			
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5			
Trichloroethene	ND	ug/L	1	0.24	0.84	5			
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60				
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2			
meta para-Xylene	ND	ug/L	1	0.32	1.1	10000			
MTBE	ND	ug/L	1	0.22	0.76				
Acetone	ND	ug/L	1	4.2	12				
Carbon Disulfide	ND	ug/L	1	0.16	0.58				
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8				
Tetrahydrofuran	ND	ug/L	1	0.97	3.5				
Dibromofluoromethane (SURR)	114%		1						S
Toluene-q8 (SURR)	111%		1						S
1-Bromo-4-Fluorobenzene (SURR)	106%		1						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / BRRDF – Private Wells 1A

NLS Lab #: <u>1113402</u>	Point Name / Homeowner: PW11 William Kasten R222780 Duncan Road, Hatley	DNR ID #: 027	Time Purged: <u>X</u>	Color: <u>X</u>	Odor: <u>X</u>	Turbidity (quant, text, color): <u>X</u>
Date Sampled: <u>4.4.19</u>	Time Sampled: <u>0932</u>	Sample Location: <u>NORTH of HOUSE WELL.</u>				Treated (Y/N): <u>X</u>
Comments: DEPTH OF WATER <u>4.86</u> DEPTH OF BOTTOM <u>5.85</u> 4/13: South house faucet						

NLS Lab #: <u>403</u>	Point Name / Homeowner: PW26 James Glodowski R222470 Duncan Road, Hatley	DNR ID #: 029	Time Purged: <u>2 min</u>	Color: <u>CLEAR</u>	Odor: <u>ND</u>	Turbidity (quant, text, color): <u>ND</u>
Date Sampled: <u>4.4.19</u>	Time Sampled: <u>0943</u>	Sample Location: <u>KITCHEN SINK</u>				Treated (Y/N): <u>N</u>
Comments: As of 11/06: Kitchen Sink (hand dug well, owner may want us to purge little or no water before sampling)						

NLS Lab #: <u>404</u>	Point Name / Homeowner: PW8575 Jerry and Krista Bates R221615 Silk, Ringle	DNR ID #: 367	Time Purged: <u>5 min</u>	Color: <u>CLEAR</u>	Odor: <u>ND</u>	Turbidity (quant, text, color): <u>ND</u>
Date Sampled: <u>4.4.19</u>	Time Sampled: <u>1000</u>	Sample Location: <u>OUTSIDE FAUCET SIDE OF HOUSE</u>				Treated (Y/N): <u>N</u>
Comments: Outside faucet side of house						

NLS Lab #: <u>405</u>	Point Name / Homeowner: Trip Blank	DNR ID #: 999	Time Purged:	Color:	Odor:	Turbidity (quant, text, color):
Date Sampled:	Time Sampled:	Sample Location:				
Comments:						

ANALYTICAL REPORT

WDR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034
 Printed: 05/01/19 Page 1 of 10
 NLS Project: 318858
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060
 Client: Marathon County Solid Waste Mgmt Dept
 Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells April 2019

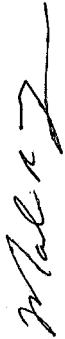
PW25 NLS ID: 1113406

Matrix: GW

Collected: 04/04/19 08:35 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.
 LOQ = Limit of Quantitation NA = Not Applicable
 1000 ug/L = 1 mg/L
 Reviewed by: 
 Authorized by: R. T. Krueger
 President

NORTHERN LAKE SERVICE, INC.
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Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 05/01/19 Page 2 of 10

NLS Project: 318858
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells April 2019

PW68 NLS ID: 1113407

Matrix: GW

Collected: 04/04/19 08:08 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

LOQ = Limit of Quantitation NA = Not Applicable

1000 ug/L = 1 mg/L

Reviewed by:

Authorized by:
R. T. Krueger
President

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 05/01/19 Page 3 of 10
NLS Project: 318858
NLS Customer: 20080
Phone: 715 446 3339
Fax: 715 446 2906

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Project: Marathon County Area A Private Wells April 2019

PW18 NLS ID: 1113408

Matrix: GW

Collected: 04/04/19 08:24 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:

Authorized by:
R. T. Krueger
President

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034
 Printed: 05/01/19 Page 4 of 10
 NLS Project: 318858
 NLS Customer: 20080
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Client: Marathon County Solid Waste Mgmt Dept
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Project: Marathon County Area A Private Wells April 2019

PW19 NLS ID: 1113409

Matrix: GW

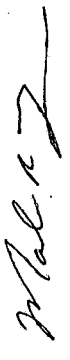
Collected: 04/04/19 07:52 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by: 
 Authorized by:
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ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
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NLS Project: 318858
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells April 2019

PW24 NLS ID: 1113410

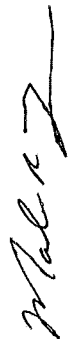
Matrix: GW

Collected: 04/04/19 08:44 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

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Authorized by: R. T. Krueger
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ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
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NLS Project: 318858
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells April 2019

PW17 NLS ID: 1113411

Matrix: GW

Collected: 04/04/19 09:18 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

NA = Not Applicable

LOQ = Limit of Quantitation
1000 ug/L = 1 mg/L

Reviewed by:

Authorized by:
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ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034
Printed: 05/01/19 Page 7 of 10
NLS Project: 318858
NLS Customer: 20080
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Project: Marathon County Area A Private Wells April 2019

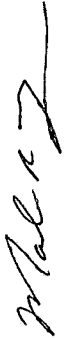
PW64 NLS ID: 1113412

Matrix: GW

Collected: 04/04/19 09:05 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.
LOQ = Limit of Quantitation NA = Not Applicable
1000 ug/L = 1 mg/L
Reviewed by:  Authorized by: R. T. Krueger President

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 05/01/19 Page 8 of 10
NLS Project: 318858
NLS Customer: 20080
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Project: Marathon County Area A Private Wells April 2019

PW88 NLS ID: 1113413

Matrix: GW

Collected: 04/04/19 08:52 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

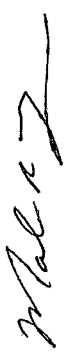
Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000

MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:
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ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034
Printed: 05/01/19 Page 9 of 10

NLS Project: 318858
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells April 2019

PW48 NLS ID: 1113414

Matrix: GW

Collected: 04/04/19 07:10 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					04/04/19 NA	721026460
Field odor	none detected					04/04/19 NA	721026460
Field turbidity	none detected					04/04/19 NA	721026460
VOCs (water) by GC/MS	see attached					04/12/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

LOQ = Limit of Quantitation NA = Not Applicable

1000 ug/L = 1 mg/L

Reviewed by:

Authorized by:
R. T. Krueger
President

ANALYTICAL REPORT

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Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034
Printed: 05/01/19 Page 10 of 10
NLS Project: 318858
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells April 2019

Trip Blank NLS ID: 1113415

Matrix: TB

Collected: 04/04/19 00:00 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
VOCs (water) by GC/MS	see attached					04/12/19 NA	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

NA = Not Applicable

LOQ = Limit of Quantitation
1000 ug/L = 1 mg/L

Reviewed by:

[Signature]

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 318858

Project Description: Marathon County Area A Private Wells

Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 03:51

Sample: 1113406 PW25 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	113%		1				S
Toluene-d8 (SURR)	110%		- 1				S
1-Bromo-4-Fluorobenzene (SURR)	104%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 318858

Project Description: Marathon County Area A Private Wells

Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 03:51

Page 2 of 7

Sample: 1113407 PW68 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	[0.18]	ug/L	1	0.17	0.58	5	J
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	[4.5]	ug/L	1	4.2	12		J
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURRE)	116%		1				S
Toluene-d8 (SURRE)	112%		1				S
1-Bromo-4-Fluorobenzene (SURRE)	106%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 318858

Project Description: Marathon County Area A Private Wells

Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 03:51

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Sample: 1113408 PW18 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
1,2-Dichlorobenzene	ND	ug/L	1	0.21	0.73		
1,2-Dichloropropane	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURRE)	119%		1				S
Toluene-d8 (SURRE)	108%		1				S
1-Bromo-4-Fluorobenzene (SURRE)	108%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 1113409 PW19 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43									
ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note		
Benzene	ND	ug/L	1	0.19	0.69	5			
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80			
Bromoform	ND	ug/L	1	0.16	0.56	80			
Bromomethane	ND	ug/L	1	0.22	0.79				
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5			
Chlorobenzene	ND	ug/L	1	0.16	0.56	100			
Chloroethane	ND	ug/L	1	1.5	5.4				
Chloroform	ND	ug/L	1	0.17	0.60	80			
Chloromethane	ND	ug/L	1	0.19	0.68				
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80			
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73				
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43				
Dibromomethane	ND	ug/L	1	0.21	0.73				
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600			
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72				
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75			
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49				
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64				
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5			
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7			
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70			
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100			
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5			
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68				
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51				
Ethylbenzene	ND	ug/L	1	0.30	1.1	700			
Methylene chloride	ND	ug/L	1	0.20	0.70	5			
Naphthalene	ND	ug/L	1	0.29	1.0				
Styrene	ND	ug/L	1	0.16	0.56	100			
ortho-Xylene	ND	ug/L	1	0.16	0.56				
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5			
Toluene	ND	ug/L	1	0.19	0.68	1000			
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200			
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5			
Trichloroethene	ND	ug/L	1	0.24	0.84	5			
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60				
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2			
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000			
MTBE	ND	ug/L	1	0.22	0.76				
Acetone	ND	ug/L	1	4.2	12				
Carbon Disulfide	ND	ug/L	1	0.16	0.58				
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8				
Tetrahydrofuran	ND	ug/L	1	0.97	3.5				
Dibromofluoromethane (SURR)	113%		1				S		
Toluene-d8 (SURR)	111%		1				S		
1-Bromo-4-Fluorobenzene (SURR)	106%		1				S		

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019
Template: SAT3APP3 Printed: 05/01/2019 03:51

Sample: 1113410 PW24 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	120%		1				S
Toluene-d8 (SURR)	106%		1				S
1-Bromo-4-Fluorobenzene (SURR)	109%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 1113411-PW17 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	120%		1				S
Toluene-d8 (SURR)	110%		1				S
1-Bromo-4-Fluorobenzene (SURR)	107%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019
Template: SAT3APP3 Printed: 05/01/2019 03:51

Sample: 1113412 PW64 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	[5.3]	ug/L	1	4.2	12		J MD
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	116%		1				S
Toluene-d8 (SURR)	105%		1				S
1-Bromo-4-Fluorobenzene (SURR)	106%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.

S = This compound is a surrogate used to evaluate the quality control of a method.

MD = Matrix spike and matrix spike duplicate relative percent difference exceeded QC limits.

Sample: 1113413 PW88 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43									
ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note		
Benzene	ND	ug/L	1	0.24	0.84	5			
Bromodichloromethane	ND	ug/L	1	0.27	0.94	80			
Bromoform	ND	ug/L	1	0.21	0.73	80			
Bromomethane	ND	ug/L	1	0.27	0.96				CC
Carbon Tetrachloride	ND	ug/L	1	0.16	0.55	5			
Chlorobenzene	ND	ug/L	1	0.25	0.87	100			
Chloroethane	ND	ug/L	1	0.93	3.3				
Chloroform	ND	ug/L	1	0.22	0.78	80			
Chloromethane	ND	ug/L	1	0.22	0.78				
Dibromochloromethane	ND	ug/L	1	0.16	0.56	80			
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.18	0.63				
1,2-Dibromoethane	ND	ug/L	1	0.23	0.81				
Dibromomethane	ND	ug/L	1	0.22	0.78				
1,2-Dichlorobenzene	ND	ug/L	1	0.21	0.73	600			
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.70				
1,4-Dichlorobenzene	ND	ug/L	1	0.27	0.95	75			
Dichlorodifluoromethane	ND	ug/L	1	0.17	0.58				
1,1-Dichloroethane	ND	ug/L	1	0.19	0.67				
1,2-Dichloroethane	ND	ug/L	1	0.22	0.78	5			
1,1-Dichloroethene	ND	ug/L	1	0.20	0.69	7			
cis-1,2-Dichloroethene	ND	ug/L	1	0.24	0.84	70			
trans-1,2-Dichloroethene	ND	ug/L	1	0.17	0.60	100			
1,2-Dichloropropane	ND	ug/L	1	0.28	0.98	5			
cis-1,3-Dichloropropene	ND	ug/L	1	0.26	0.91				
trans-1,3-Dichloropropene	ND	ug/L	1	0.19	0.69				
Ethylbenzene	ND	ug/L	1	0.19	0.69	700			
Methylene chloride	ND	ug/L	1	0.24	0.84	5			
Naphthalene	ND	ug/L	1	0.43	1.5				
Styrene	ND	ug/L	1	0.19	0.66	100			
ortho-Xylene	ND	ug/L	1	0.19	0.66				
Tetrachloroethene	ND	ug/L	1	0.22	0.78	5			
Toluene	ND	ug/L	1	0.21	0.74	1000			
1,1,1-Trichloroethane	ND	ug/L	1	0.20	0.69	200			
1,1,2-Trichloroethane	ND	ug/L	1	0.20	0.69	5			
Trichloroethene	ND	ug/L	1	0.32	1.1	5			
Trichlorofluoromethane	ND	ug/L	1	0.20	0.71				
Vinyl chloride	ND	ug/L	1	0.17	0.60	2			
meta,para-Xylene	ND	ug/L	1	0.37	1.3	10000			
MTBE	ND	ug/L	1	0.21	0.73				
Acetone	ND	ug/L	1	4.2	12				
Carbon Disulfide	ND	ug/L	1	0.17	0.59				
Methyl Ethyl Ketone	ND	ug/L	1	0.57	2.0				
Tetrahydrofuran	ND	ug/L	1	0.58	2.0				
Dibromofluoromethane (SURR)	116%		1						S
Toluene-d8 (SURR)	100%		1						S
1-Bromo-4-Fluorobenzene (SURR)	109%		1						S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.
 CC = Continuing calibration verification standard recovery was outside QC limits.
 Bromomethane recovery 74%

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat2000)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 318858

Project Description: Marathon County Area A Private Wells

Project Title: April 2019

Template: SATAPP3 Printed: 05/01/2019 03:53

Sample: 1113414 PW48 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.24	0.84	5	
Bromodichloromethane	ND	ug/L	1	0.27	0.94	80	
Bromoform	ND	ug/L	1	0.21	0.73	80	
Bromomethane	ND	ug/L	1	0.27	0.96		CC
Carbon Tetrachloride	ND	ug/L	1	0.16	0.55	5	
Chlorobenzene	ND	ug/L	1	0.25	0.87	100	
Chloroethane	ND	ug/L	1	0.93	3.3		
Chloroform	ND	ug/L	1	0.22	0.78	80	
Chloromethane	ND	ug/L	1	0.22	0.78		
Dibromochloromethane	ND	ug/L	1	0.16	0.56	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.18	0.63		
1,2-Dibromomethane	ND	ug/L	1	0.23	0.81		
Dibromomethane	ND	ug/L	1	0.22	0.78		
1,2-Dichlorobenzene	ND	ug/L	1	0.21	0.73	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.70		
1,4-Dichlorobenzene	ND	ug/L	1	0.27	0.95	75	
Dichlorodifluoromethane	ND	ug/L	1	0.17	0.58		
1,1-Dichloroethane	ND	ug/L	1	0.19	0.67		
1,2-Dichloroethane	ND	ug/L	1	0.22	0.78	5	
1,1-Dichloroethene	ND	ug/L	1	0.20	0.69	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.24	0.84	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.17	0.60	100	
1,2-Dichloropropane	ND	ug/L	1	0.28	0.98	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.26	0.91		
trans-1,3-Dichloropropene	ND	ug/L	1	0.19	0.69		
Ethylbenzene	ND	ug/L	1	0.19	0.69	700	
Methylene chloride	ND	ug/L	1	0.24	0.84	5	
Naphthalene	ND	ug/L	1	0.43	1.5		
Styrene	ND	ug/L	1	0.19	0.66	100	
ortho-Xylene	ND	ug/L	1	0.19	0.66		
Tetrachloroethene	ND	ug/L	1	0.22	0.78	5	
Toluene	ND	ug/L	1	0.21	0.74	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.20	0.69	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.20	0.69	5	
Trichloroethene	ND	ug/L	1	0.32	1.1	5	
Trichlorofluoromethane	ND	ug/L	1	0.20	0.71		
Vinyl chloride	ND	ug/L	1	0.17	0.60	.2	
meta,para-Xylene	ND	ug/L	1	0.37	1.3	10000	
MTBE	ND	ug/L	1	0.21	0.73		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.17	0.59		
Methyl Ethyl Ketone	ND	ug/L	1	0.57	2.0		
Tetrahydrofuran	ND	ug/L	1	0.58	2.0		
Dibromofluoromethane (SURR)	101%		1				S
Toluene-d8 (SURR)	113%		1				S
1-Bromo-4-Fluorobenzene (SURR)	106%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Bromomethane recovery 74%

Sample: 1113415 Trip Blank Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43									
ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note		
Benzene	ND	ug/L	1	0.24	0.84	5			
Bromodichloromethane	ND	ug/L	1	0.27	0.94	80			
Bromoform	ND	ug/L	1	0.21	0.73	80			
Bromomethane	ND	ug/L	1	0.27	0.96		CC		
Carbon Tetrachloride	ND	ug/L	1	0.16	0.55	5			
Chlorobenzene	ND	ug/L	1	0.25	0.87	100			
Chloroethane	ND	ug/L	1	0.93	3.3				
Chloroform	ND	ug/L	1	0.22	0.78	80			
Chloromethane	ND	ug/L	1	0.22	0.78				
Dibromochloromethane	ND	ug/L	1	0.16	0.56	80			
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.18	0.63				
1,2-Dibromoethane	ND	ug/L	1	0.23	0.81				
Dibromomethane	ND	ug/L	1	0.22	0.78				
1,2-Dichlorobenzene	ND	ug/L	1	0.21	0.73	600			
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.70				
1,4-Dichlorobenzene	ND	ug/L	1	0.27	0.95	75			
Dichlorodifluoromethane	ND	ug/L	1	0.17	0.58				
1,1-Dichloroethane	ND	ug/L	1	0.19	0.67				
1,2-Dichloroethane	ND	ug/L	1	0.22	0.78	5			
1,1,1-Trichloroethane	ND	ug/L	1	0.20	0.69	7			
cis-1,2-Dichloroethene	ND	ug/L	1	0.24	0.84	70			
trans-1,2-Dichloroethene	ND	ug/L	1	0.17	0.60	100			
1,2-Dichloropropane	ND	ug/L	1	0.28	0.98	5			
cis-1,3-Dichloropropene	ND	ug/L	1	0.26	0.91				
trans-1,3-Dichloropropene	ND	ug/L	1	0.19	0.69				
Ethylbenzene	ND	ug/L	1	0.19	0.69	700			
Methylene chloride	ND	ug/L	1	0.24	0.84	5			
Naphthalene	ND	ug/L	1	0.43	1.5				
Styrene	ND	ug/L	1	0.19	0.66	100			
ortho-Xylene	ND	ug/L	1	0.19	0.66				
Tetrachloroethene	ND	ug/L	1	0.22	0.78	5			
Toluene	ND	ug/L	1	0.21	0.74	1000			
1,1,1-Trichloroethane	ND	ug/L	1	0.20	0.69	200			
1,1,2-Trichloroethane	ND	ug/L	1	0.20	0.69	5			
Trichloroethene	ND	ug/L	1	0.32	1.1	5			
Trichlorofluoromethane	ND	ug/L	1	0.20	0.71				
Vinyl chloride	ND	ug/L	1	0.17	0.60	.2			
meta,para-Xylene	ND	ug/L	1	0.37	1.3	10000			
MTBE	ND	ug/L	1	0.21	0.73				
Acetone	ND	ug/L	1	4.2	12				
Carbon Disulfide	ND	ug/L	1	0.17	0.59				
Methyl Ethyl Ketone	ND	ug/L	1	0.57	2.0				
Tetrahydrofuran	ND	ug/L	1	0.58	2.0				
Dibromofluoromethane (SURR)	105%		1				S		
Toluene-d8 (SURR)	113%		1				S		
1-Bromo-4-Fluorobenzene (SURR)	104%		1				S		

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.
CC = Continuing calibration verification standard recovery was outside QC limits.
Bromomethane recovery 74%

NLS Private Well Sampling Form and Chain Of Custody (pg 1 of 3)

SITE: Marathon Co. Solid Waste Management Dept. / Area A – Private Wells

1A

NLS Lab #: 1113-406	Point Name / Homeowner: PW25 Levandoski, Mike R221828 Duncan Road, Hatley	DNR ID #: 353	Time Purged: 5 MIN	Color: CLEAR	Odor: ND	Turbidity (quant, text, color): ND
Date Sampled: 4.4.19	Time Sampled: 0835	Sample Location: FAUCET NORTH SIDE OF HOUSE.				Treated (Y/N) N
Comments: 						
Softener - no Collect from - outside faucet, north side of house						

NLS Lab #: 407	Point Name / Homeowner: PW68 Andraschko, Anthony R221630 Duncan Road, Hatley	DNR ID #: 361	Time Purged: 5 MIN	Color: CLEAR	Odor: ND	Turbidity (quant, text, color): ND
Date Sampled: 4.4.19	Time Sampled: 0808	Sample Location: NORT OUT SIDE FAUCET.				Treated (Y/N) N
Comments: NEW OWNER DEREK PICKLE						
Softener - yes but not in use Collect from - kitchen sink or North outside faucet						

NLS Lab #: 408	Point Name / Homeowner: PW18 Falkowski, Janet R221765 Duncan Road, Hatley	DNR ID #: 350	Time Purged: 5 MIN	Color: CLEAR	Odor: ND	Turbidity (quant, text, color): ND
Date Sampled: 4.4.19	Time Sampled: 0824	Sample Location: EAST OUT SIDE FAUCET BACK OF HOUSE				Treated (Y/N) N
Comments: 						
Softener - no Collect from - kitchen sink or outside back faucet						

NLS Lab #: 409	Point Name / Homeowner: PW19 Jozwiak-Popp, Rose R221561 Duncan Road, Hatley	DNR ID #: 351	Time Purged: 5 MIN	Color: CLEAR	Odor: ND	Turbidity (quant, text, color): ND
Date Sampled: 4.4.19	Time Sampled: 0752	Sample Location: OUT SIDE FAUCET ACROSS DRIVEWAY.				Treated (Y/N) N
Comments: 						
Softener - Yes. Collect from - outside faucet across driveway from house (not softened - should be on year round)						

NLS Private Well Sampling Form and Chain Of Custody (pg 2 of 3)

SITE: Marathon Co. Solid Waste Management Dept. / Area A – Private Wells

2A

NLS Lab #: 410	Point Name / Homeowner: PW24 Kluck, Mark R221950 Duncan Road, Hatley	DNR ID #: 352	Time Purged: 5 MIN	Color: CLEAR	Odor: ND	Turbidity (quant, text, color): ND
Date Sampled: 4.4.19	Time Sampled: 0844	Sample Location: FRONT OF HOUSE OUTSIDE FAUCET				Treated (Y/N) N
Comments:						
Softener – no Collect from – front outside faucet (4/21/10 – owner said front faucet now works and is closer to the well)						

NLS Lab #: 411	Point Name / Homeowner: PW17 Liebe, Neal R174825 Willow Lane, Hatley	DNR ID #: 028	Time Purged: 5 MIN	Color: CLEAR	Odor: ND	Turbidity (quant, text, color): ND
Date Sampled: 4.4.19	Time Sampled: 0918	Sample Location: FRONT OF HOUSE EAST SIDE BY DRIVEWAY				Treated (Y/N) N
Comments:						
Softener – no Collect from – East side of house near driveway						

NLS Lab #: 412	Point Name / Homeowner: PW64 Sheehan, Carol R221524 Duncan Road, Hatley	DNR ID #: 359	Time Purged: 5 MIN	Color: CLEAR	Odor: ND	Turbidity (quant, text, color): ND
Date Sampled: 4.4.19	Time Sampled: 0905	Sample Location: BASEMENT BEFORE SOFTENER				Treated (Y/N) N
Comments:						
Softener – yes Collect from – faucet in basement before softener						

NLS Lab #: 413	Point Name / Homeowner: PW88 Zogata, Aaron R222036 Duncan Road, Hatley	DNR ID #: 365	Time Purged: 5 MIN	Color: ND CLEAR	Odor: ND	Turbidity (quant, text, color): ND
Date Sampled: 4.4.19	Time Sampled: 0852	Sample Location: OUTSIDE FAUCET FRONT OF HOUSE				Treated (Y/N) N
Comments:						
Softener – yes Collect from – outside faucet, front of house						

NLS Private Well Sampling Form and Chain Of Custody (pg 3 of 3)

SITE: Marathon Co. Solid Waste Management Dept. / Area A – Private Wells

3A

NLS Lab #: 414	Point Name / Homeowner: PW48 Marathon Co. Hwy Dept. R222005 Duncan Road, Hatley	DNR ID #: 356	Time Purged: 5 MIN	Color: CLEAR	Odor: ND	Turbidity (quant, text, color): ND
Date Sampled: 4-4-19	Time Sampled: 0710	Sample Location: BATHROOM LOCKER ROOM SINK				Treated (Y/N) N
Comments: Softener – No. Collect from – bathroom/locker room sink						


NLS Lab #: 415	Point Name / Homeowner: Trip Blank	DNR ID #: 999	Time Purged: N/A	Color: N/A	Odor: N/A	Turbidity (quant, text, color): N/A
Date Sampled:	Time Sampled: N/A	Sample Location: N/A				Treated (Y/N) N/A
Comments: 						

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant, text, color):
Date Sampled:	Time Sampled:	Sample Location:				Treated (Y/N)
Comments: 						

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant, text, color):
Date Sampled:	Time Sampled:	Sample Location:				Treated (Y/N)
Comments: 						



marathoncountysolidwaste.org

 [marathoncountysolidwaste](https://www.facebook.com/marathoncountysolidwaste)

Marathon County Solid Waste Department

172900 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

Dec 6, 2019

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, 3338 & 4228 (Private Wells)

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of October 2019. There were no exceedances in the private groundwater wells, and therefore an exceedance table has not been provided.

If you have any questions, please contact me.

Thank you,

David Hagenbucher
Operations Manager
Marathon County Solid Waste

C.c: Nathan Coller, Megan Ballweg, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

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; NR 635.14(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: lms@nls-lab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
Marathon County Area A Private Wells	02892		OCTOBER -16-2019

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
OCTOBER -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input checked="" type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☒ No. No groundwater standards or explosive gas limits were exceeded.
- ☐ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenbucher
Facility Representative Name (Print)

Operations Manager
Title

715 551 5864
(Area Code) Telephone No.

Signature

12/06/19
Date

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

- | | |
|---|-------------------------------------|
| <input type="checkbox"/> Found uploading problems on _____ | Initials _____ |
| <input type="checkbox"/> Notified contact of problems on _____ | Uploaded data successfully on _____ |
| EDD format(s): <input type="checkbox"/> Diskette <input checked="" type="checkbox"/> CD (initial submittal and follow-up) <input type="checkbox"/> E-mail (follow-up only) <input type="checkbox"/> Other _____ | |

Marathon County Solid Waste Mgmt Dept
Marathon County Area A Private Wells
10-01-2019

Lab ID: 721026460
NLS Project: 333074
Collected: 10-01-2019
License: 02892
FID:

EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

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; NR 635.14(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: lms@nlsilab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
Marathon County BRRDF Private Wells	04228	337005680	OCTOBER -16-2019

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

OCTOBER -2019

Type of Data Submitted (Check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Groundwater monitoring data from monitoring wells | <input type="checkbox"/> Gas monitoring data |
| <input checked="" type="checkbox"/> Groundwater monitoring data from private water supply wells | <input type="checkbox"/> Air monitoring data |
| <input type="checkbox"/> Leachate monitoring data | <input type="checkbox"/> Other (specify) _____ |

Notification attached?

- ☒ No. No groundwater standards or explosive gas limits were exceeded.
- ☐ 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 attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards.

David Hagenschuler

Facility Representative Name (Print)

Operations Manager

Title

715 551 5864

(Area Code) Telephone No.

David Hagenschuler

Signature

12/06/19

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 Mgmt Dept
Marathon County BRRDF Private Wells
10-01-2019

Lab ID: 721026460
NLS Project: 333072
Collected: 10-01-2019
License: 04228
FID: 337005680

EXCEEDANCES:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715) 478-2777 Fax: (715) 478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/14/19 Page 1 of 4
NLS Project: 333072
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County BRDF Private Wells October 2019

PW11 NLS ID: 1155378

Matrix: GW

Collected: 10/16/19 14:12 **Received:** 10/16/19

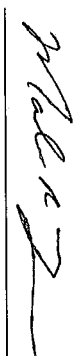
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field depth to water	4.85	ft.	1			10/16/19 NA	721026460
Field depth to bottom	6.82	ft.	1			10/16/19 NA	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
 MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
 1000 ug/L = 1 mg/L
 Shaded results indicate >MCL.

Reviewed by:



Authorized by:
 R. T. Krueger
 President

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbuecher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

Project: Marathon County BRRDF Private Wells October 2019

PW26 NLS ID: 1155379

Matrix: GW
Collected: 10/16/19 13:52 Received: 10/16/19

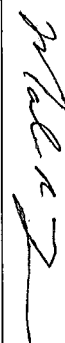
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOOCs (water) by GC/MS	see attached					10/22/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk (*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
1000 ug/L = 1 mg/L
Shaded results indicate >MCL.

Reviewed by:



Authorized by:
R. T. Krueger
President

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/14/19 Page 2 of 4
NLS Project: 333072
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher

Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

Project: Marathon County BRDF Private Wells October 2019

Matrix: GW
PM8575 NLS ID: 1155380

Collected: 10/16/19 12:25 Received: 10/16/19


Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/22/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation NA = Not Applicable
1000 ug/L = 1 mg/L
Shaded results indicate >MCL.

Reviewed by:



Authorized by:
R. T. Krueger
President

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/14/19 Page 3 of 4

NLS Project: 333072
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept

Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

Project: Marathon County BRDF Private Wells October 2019

Trip Blank NLS ID: 1155381

Matrix: TB

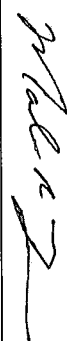
Collected: 10/16/19 00:00 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
VOCS (water) by GC/MS	see attached					10/22/19 EPA 624	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:
R. T. Krueger
President

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/14/19 Page 4 of 4

NLS Project: 333072
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333072

Project Description: Marathon County BRRDF Private Wells

Project Title: October 2019 Template: SAT3APP3 Printed: 11/14/2019 07:19

Sample: 1155379 PWZ6 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromofom	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79	5	
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	100	
Chlorobenzene	ND	ug/L	1	0.16	0.56		
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropene	ND	ug/L	1	0.21	0.73		
1,2-Dibromomethane	ND	ug/L	1	0.12	0.43		
1,2-Dichloroethane	ND	ug/L	1	0.21	0.73	600	
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76		
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	122%		1				S
Toluene-d8 (SURR)	116%		1				S
1-Bromo-4-Fluorobenzene (SURR)	109%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
Customer: Marathon County Solid Waste Mgmt Dept **NLS Project:** 333072
Project Description: Marathon County BRDF Private Wells
Project Title: October 2019 **Template:** SAT3APP3 **Printed:** 11/14/2019 07:19

Sample: 155380 PW8575 Collected: 10/16/19 Analyzed: 10/22/19 Analyses: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79	5	
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	100	
Chlorobenzene	ND	ug/L	1	0.16	0.56		
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Dibromochloromethane	ND	ug/L	1	0.19	0.68		
Dibromomethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromopropane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73	600	
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76		
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	120%		1				S
Toluene-d8 (SURR)	110%		1				S
1-Bromo-4-Fluorobenzene (SURR)	107%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
 Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333072
 Project Description: Marathon County BRDRF Private Wells
 Project Title: October 2019 Template: SAT3APP3 Printed: 11/14/2019 07:19

Sample: 1155381 Trip Blank Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79	5	
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	100	
Chlorobenzene	ND	ug/L	1	0.16	0.56	5.4	
Chloroethane	ND	ug/L	1	1.5	0.60	80	
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromomethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73	600	
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76		
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropene	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	10.291	ug/L	1	0.20	0.70	5	JLB
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84		
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	104%		1				S
Toluene-d8 (SURR)	122%		1				S
1-Bromo-4-Fluorobenzene (SURR)	113%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.

S = This compound is a surrogate used to evaluate the quality control of a method.

LB = Compound is suspected of being a laboratory contaminant.

NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / BRRDF - Private Wells 1A

4/13: South house faucet									
Comments: Depth of water 04.85 Depth of bottom 06.82									
NLS Lab #:	5378	Date Sampled:	10-16-19	Time Sampled:	1412	Point Name / Homeowner:	William Kasten	DNR ID #:	027
				Sample Location:		R222780 Duncan Road, Hatley			
Turbidity (quant, text, color):	—	Odor:	—	Color:	—	Time Purged:	—	Color:	—
Treated (Y/N):	—								

Comments: As of 11/06: K. Hehen Sink (hand dug well, owner may want us to purge little or no water before sampling)									
NLS Lab #:	379	Date Sampled:	10-16-19	Time Sampled:	1352	Point Name / Homeowner:	James Glodowski	DNR ID #:	029
				Sample Location:		R222470 Duncan Road, Hatley			
Turbidity (quant, text, color):	ND	Odor:	ND	Color:	ND	Time Purged:	5 min	Color:	ND
Treated (Y/N):	N	Faucet Side of House							

Comments: Outside faucet side of house									
NLS Lab #:	380	Date Sampled:	10-16-19	Time Sampled:	1225	Point Name / Homeowner:	Jerry and Krista Bates	DNR ID #:	367
				Sample Location:		R221615 Still, Ringle			
Turbidity (quant, text, color):	ND	Odor:	ND	Color:	ND	Time Purged:	5 min	Color:	ND
Treated (Y/N):	N	Front of house							

Comments:									
NLS Lab #:		Date Sampled:		Time Sampled:		Point Name / Homeowner:	Trip Blank	DNR ID #:	999
				Sample Location:					
Turbidity (quant, text, color):		Odor:		Color:		Time Purged:		Color:	
Treated (Y/N):									

Rev 10/18 See reverse side for sample custody information

CLIENT / SITE: Marathon County Solid Waste Management
Department / Annual Private Well Monitoring

Dr. J. H. H. H.

24/1

242

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

Year	U.S. Total (%)	U.S. Whites (%)
1950	10.0	9.5
1960	11.0	10.5
1970	12.0	11.5
1980	13.0	12.5
1990	14.5	13.5
2000	16.0	14.5
2010	17.5	15.5
2020	19.0	16.5
2030	20.5	17.5
2040	21.5	18.5
2050	22.5	19.5

10.01 with pH buffer 7.00 for samples having a high pH. On a routine basis use pH buffers 4.01 and 7.00.

[illegible]

R = Initial Reading; S = Standardized Reading

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Grandon, WI 54520
Ph: (715) 478-2777 Fax: (715) 478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW48 NLS ID: 1155386

Matrix: GW

Collected: 10/16/19 10:55 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/22/19 SW846 8260C	721026460

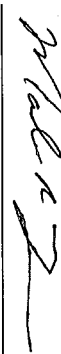
Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
1000 ug/L = 1 mg/L
Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:



Authorized by:
R. T. Krueger
President

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/13/19 Page 1 of 17
NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715) 478-2777 Fax: (715) 478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW88 NLS ID: 1155387

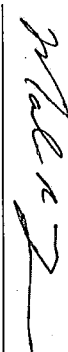
Matrix: GW
Collected: 10/16/19 12:17 **Received:** 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/22/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:
 R. T. Krueger
 President

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034
 Printed: 11/13/19 Page 2 of 17

NLS Project: 333074
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/13/19 **Page** 3 of 17
NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 **Phone:** 715 446 3339

Project: Marathon County Area A Private Wells October 2019

PW24 NLS ID: 1155388

Matrix: GW

Collected: 10/16/19 12:09 **Received:** 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCS (water) by GC/MS	see attached					10/22/19 SW846 8260C	721026460

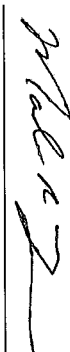
Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
1000 ug/L = 1 mg/L
Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:



Authorized by:
R. T. Krueger
President

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/13/19 Page 4 of 17
NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells October 2019

PW25 NLS ID: 1155389

Matrix: GW

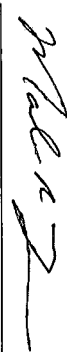
Collected: 10/16/19 12:00 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCS (water) by GC/MS	see attached					10/22/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:
R. T. Krueger
President

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715) 478-2777 Fax: (715) 478-3060

Client: Marathon County Solid Waste Mgmt Dept

Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW18 NLS ID: 1155390

Matrix: GW

Collected: 10/16/19 11:40 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCS (water) by GC/MS	see attached					10/22/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
1000 ug/L = 1 mg/L
Shaded results indicate >MCL.

Reviewed by:

[Signature]

Authorized by:
R. T. Krueger
President

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/13/19 Page 5 of 17

NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715) 478-2777 Fax: (715) 478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW68 NLS ID: 1155391

Matrix: GW

Collected: 10/16/19 11:28 **Received:** 10/16/19

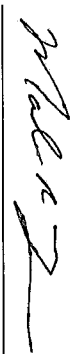
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/22/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

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DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation NA = Not Applicable
1000 ug/L = 1 mg/L
Shaded results indicate >MCL.

Reviewed by:



Authorized by:
R. T. Krueger
President

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034
Printed: 11/13/19 Page 6 of 17

NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept

Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW19 NLS ID: 1155392

Matrix: GW

Collected: 10/16/19 11:20 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

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 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
 MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
 1000 ug/L = 1 mg/L
 Shaded results indicate >MCL.

Reviewed by:

[Signature]

Authorized by:
 R. T. Krueger
 President

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034
 Printed: 11/13/19 Page 7 of 17
 NLS Project: 333074
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW64 NLS ID: 1155393

Matrix: GW

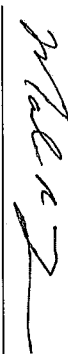
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Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCS (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:
 R. T. Krueger
 President

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. W100034
 Printed: 11/13/19 Page 8 of 17

NLS Project: 333074
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept

Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW27 NLS ID: 1155394

Matrix: GW

Collected: 10/16/19 13:40 Received: 10/16/19

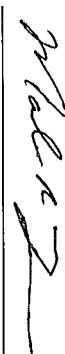
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCS (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
 MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
 1000 ug/L = 1 mg/L
 Shaded results indicate >MCL.

Reviewed by:



Authorized by:
 R. T. Krueger
 President

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034
 Printed: 11/13/19 Page 9 of 17

NLS Project: 333074
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715) 478-2777 Fax: (715) 478-3060

Client: Marathon County Solid Waste Mgmt Dept

Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW65 NLS ID: 1155395

Matrix: GW

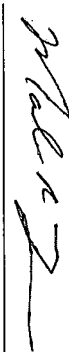
Collected: 10/16/19 13:30 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCS (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:
R. T. Krueger
President

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/13/19 Page 10 of 17

NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Grandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI000034

Printed: 11/13/19 Page 11 of 17

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 **Phone:** 715 446 3339

Project: Marathon County Area A Private Wells October 2019

PW100 NLS ID: 1155396

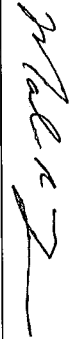
Matrix: GW

Collected: 10/16/19 13:20 **Received:** 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:  Authorized by: R. T. Krueger
 President

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715) 478-2777 Fax: (715) 478-3060

Client: Marathon County Solid Waste Mgmt Dept

Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW80 NLS ID: 1155397

Matrix: GW

Collected: 10/16/19 12:57 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCS (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460

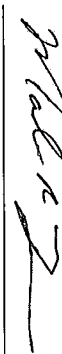
Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
 MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
 1000 ug/L = 1 mg/L
 Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:



Authorized by:
 R. T. Krueger
 President

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034
 Printed: 11/13/19 Page 12 of 17

NLS Project: 333074
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715) 478-2777 Fax: (715) 478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW53 NLS ID: 1155398

Matrix: GW

Collected: 10/16/19 13:06 **Received:** 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460

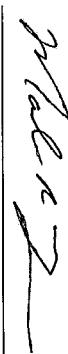
Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

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 MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
 1000 ug/L = 1 mg/L
 Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:



Authorized by:
 R. T. Krueger
 President

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. W100034
 Printed: 11/13/19 Page 13 of 17

NLS Project: 333074
 NLS Customer: 20080
 Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW29 NLS ID: 1155399

Matrix: GW

Collected: 10/16/19 12:45 **Received:** 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460


Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

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MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation
1000 ug/L = 1 mg/L
Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:



Authorized by:
R. T. Krueger
President

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W1000034
Printed: 11/13/19 Page 14 of 17

NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Grandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
 Marathon County Landfill
 R18500 East Highway 29
 Ringle, WI 54471 9754

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034
Printed: 11/13/19 **Page** 15 of 17
NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 **Phone:** 715 446 3339

Project: Marathon County Area A Private Wells October 2019

PW54 NLS ID: 1155400

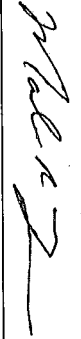
Matrix: GW

Collected: 10/16/19 12:35 **Received:** 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

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Reviewed by:  Authorized by: R. T. Krueger
 President

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Grandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmt Dept
Attn: Dave Hagenbucher
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 R18500 East Highway 29
 Ringle, WI 54471 9754

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/13/19 **Page** 16 of 17
NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 **Phone:** 715 446 3339

Project: Marathon County Area A Private Wells October 2019

PW17 NLS ID: 1155401

Matrix: GW

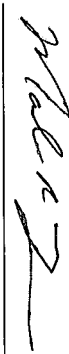
Collected: 10/16/19 14:05 **Received:** 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
Field color	none detected					10/16/19 NA	721026460
Field odor	none detected					10/16/19 NA	721026460
Field turbidity	none detected					10/16/19 NA	721026460
VOCs (water) by GC/MS	see attached					10/28/19 SW846 8260C	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:
 R. T. Krueger
 President

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715) 478-2777 Fax: (715) 478-3060

Client: Marathon County Solid Waste Mgmt Dept

Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

Trip Blank NLS ID: 1155402

Matrix: TB
Collected: 10/16/19 00:00 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed Method	Lab
VOCS (water) by GC/MS	see attached					10/28/19 NA	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:  Authorized by: R. T. Krueger
President

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. W100034
Printed: 11/13/19 Page 17 of 17
NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SAT3APP3 Printed: 11/13/2019 09:36

Sample: 1155386 PW48 Collected: 10/16/19 Analyzed: 10/22/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromomethane	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromomethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84		
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	109%		1				S
Toluene-d8 (SURR)	116%		1				S
1-Bromo-4-Fluorobenzene (SURR)	117%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SAT3APP3 Printed: 11/13/2019 09:36

Sample: 1155387 PW88 Collected: 10/16/19 Analyzed: 10/22/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromomethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURRE)	117%		1				S
Toluene-d8 (SURRE)	114%		1				S
1-Bromo-4-Fluorobenzene (SURRE)	107%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SAT3APP3 Printed: 11/13/2019 09:36

Sample: 1155388 - PW24 Collected: 10/16/19 Analyzed: 10/22/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromomethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
cis-1,2-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
trans-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
1,2-Dichloropropane	ND	ug/L	1	0.15	0.51	100	
cis-1,3-Dichloropropene	ND	ug/L	1	0.24	0.84	5	
trans-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
Ethylbenzene	ND	ug/L	1	0.14	0.51		
Methylene chloride	ND	ug/L	1	0.30	1.1	700	
Naphtthalene	ND	ug/L	1	0.20	0.70	5	
Styrene	ND	ug/L	1	0.29	1.0		
ortho-Xylene	ND	ug/L	1	0.16	0.56	100	
Tetrachloroethene	ND	ug/L	1	0.16	0.56		
Toluene	ND	ug/L	1	0.17	0.58	5	
1,1,1-Trichloroethane	ND	ug/L	1	0.19	0.68	1000	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
Trichloroethene	ND	ug/L	1	0.17	0.59	5	
Trichlorofluoromethane	ND	ug/L	1	0.24	0.84	5	
Vinyl chloride	ND	ug/L	1	0.17	0.60		
meta,para-Xylene	ND	ug/L	1	0.16	0.57	2	
MTBE	ND	ug/L	1	0.32	1.1	10000	
Acetone	ND	ug/L	1	0.22	0.76		
Carbon Disulfide	ND	ug/L	1	4.2	12		
Methyl Ethyl Ketone	ND	ug/L	1	0.16	0.58		
Tetrahydrofuran	ND	ug/L	1	0.50	1.8		
Dibromofluoromethane (SURR)	123%		1	0.97	3.5		S
1-Bromo-4-Fluorobenzene (SURR)	110%		1				S
1-Bromo-2-Fluorobenzene (SURR)	109%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SAT3APP3 Printed: 11/13/2019 09:36

Sample: 1155389 - PW25 Collected: 10/16/19 Analyzed: 10/22/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromomethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	106%		1				S
Toluene-d8 (SURR)	115%		1				S
1-Bromo-4-Fluorobenzene (SURR)	111%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019

Template: SAT3APP3 Printed: 11/13/2019 09:36

Sample: 1155390 - PW18 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromomethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	101%		1				S
Toluene-d8 (SURR)	114%		1				S
1-Bromo-4-Fluorobenzene (SURR)	110%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Page 6 of 6

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019

Template: SAT3APP3 Printed: 11/13/2019 09:36

Sample: 1155391 PW68 Collected: 10/16/19 Analyzed: 10/22/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromomethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	113%		1				S
Toluene-d8 (SURR)	120%		1				S
1-Bromo-4-Fluorobenzene (SURR)	111%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155332 PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromofom	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromomethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	0.38	1.2	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
trans-1,3-Dichloropropene	ND	ug/L	1	0.22	0.74		
Ethylbenzene	ND	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	2.1	6.7		
Acetone	ND	ug/L	1	0.43	1.4		
Carbon disulfide	ND	ug/L	1	0.64	2.0		
Methyl ethyl ketone	ND	ug/L	1	0.83	2.7		
Tetrahydrofuran	ND	ug/L	1				
Dibromofluoromethane (SURR)	89.13%		1				S
Toluene-d8 (SURR)	97.11%		1				S
1-Bromo-4-Fluorobenzene (SURR)	96.31%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAP3 Printed: 11/13/2019 09:38

Sample: 1155393 PW64 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1	600	
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3		
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	0.38	1.2	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
trans-1,3-Dichloropropene	ND	ug/L	1	0.22	0.74		
Ethylbenzene	ND	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	2	
meta para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	0.43	1.4		
Methyl ethyl ketone	ND	ug/L	1	0.64	2.0		
Tetrahydrofuran	ND	ug/L	1	0.83	2.7		S
Dibromofluoromethane (SURR)	82.8%		1				S
Toluene-d8 (SURR)	92.18%		1				S
1-Bromo-4-Fluorobenzene (SURR)	94.99%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)

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Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells
Project Title: October 2019
Template: SATRAPPS Printed: 11/13/2019 09:38

Sample: 1155394 PW27 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromomethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	0.38	1.2	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
trans-1,3-Dichloropropene	ND	ug/L	1	0.22	0.74		
Ethylbenzene	ND	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6		
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	0.43	1.4		
Methyl ethyl ketone	ND	ug/L	1	0.64	2.0		
Tetrahydrofuran	ND	ug/L	1	0.83	2.7		
Dibromofluoromethane (SURR)	85.04%		1				S
Toluene-d8 (SURR)	89.77%		1				S
1-Bromo-4-Fluorobenzene (SURR)	93.24%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155395 PW65 Collected: 10/16/19 Analyzed: 10/28/19 Analyses: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
cis-1,2-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
trans-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
1,2-Dichloropropane	ND	ug/L	1	0.35	1.1	100	
cis-1,3-Dichloropropene	ND	ug/L	1	0.38	1.2	5	
trans-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
Ethylbenzene	ND	ug/L	1	0.22	0.74		
Methylene chloride	ND	ug/L	1	0.43	1.4	700	
Naphthalene	ND	ug/L	1	0.44	1.4	5	
ortho-Xylene	ND	ug/L	1	0.20	0.62		
Styrene	ND	ug/L	1	0.44	1.4		
Tetrachloroethene	ND	ug/L	1	0.25	0.79	100	
Toluene	ND	ug/L	1	0.43	1.4	5	
1,1,1-Trichloroethane	ND	ug/L	1	0.43	1.4	1000	
1,1,2-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
Trichloroethene	ND	ug/L	1	0.46	1.5	5	
Trichlorofluoromethane	ND	ug/L	1	0.50	1.6		
Vinyl chloride	ND	ug/L	1	0.45	1.4		
meta,para-Xylene	ND	ug/L	1	0.13	0.42	.2	
MTBE	ND	ug/L	1	0.89	2.8	10000	
Acetone	ND	ug/L	1	0.44	1.4		
Carbon disulfide	ND	ug/L	1	2.1	6.7		
Methyl ethyl ketone	ND	ug/L	1	0.43	1.4		
Tetrahydrofuran	ND	ug/L	1	0.64	2.0		
Dibromofluoromethane (SURR)	82.78%		1	0.83	2.7		S
Toluene-d8 (SURR)	96.1%		1				S
1-Bromo-4-Fluorobenzene (SURR)	100.15%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)

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Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019

Template: SATRAPPS Printed: 11/13/2019 09:38

Sample: 1155396 - FW100 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoforn	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Dibromochloromethane	ND	ug/L	1	0.42	1.3		
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromomethane	ND	ug/L	1	0.27	0.90		
Dibromomethane	ND	ug/L	1	0.41	1.3		
1,2-Dichlorobenzene	ND	ug/L	1	0.36	1.1		
1,3-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,4-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
Dichlorodifluoromethane	ND	ug/L	1	0.46	1.5	75	
1,1-Dichloroethane	ND	ug/L	1	0.40	1.3		
1,2-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,1-Dichloroethene	ND	ug/L	1	0.41	1.3	5	
cis-1,2-Dichloroethene	ND	ug/L	1	0.48	1.5	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3		
1,2-Dichloropropane	ND	ug/L	1	0.35	1.1	100	
cis-1,3-Dichloropropene	ND	ug/L	1	0.38	1.2	5	
trans-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
Ethylbenzene	ND	ug/L	1	0.22	0.74		
Methylene chloride	ND	ug/L	1	0.43	1.4	700	
Naphtalene	ND	ug/L	1	0.44	1.4	5	
ortho-Xylene	ND	ug/L	1	0.20	0.62		
Styrene	ND	ug/L	1	0.44	1.4		
Tetrachloroethene	ND	ug/L	1	0.25	0.79	100	
Toluene	ND	ug/L	1	0.43	1.4	5	
1,1,1-Trichloroethane	ND	ug/L	1	0.43	1.4	1000	
1,1,2-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
Trichloroethene	ND	ug/L	1	0.46	1.5	5	
Trichlorofluoromethane	ND	ug/L	1	0.50	1.6		
Vinyl chloride	ND	ug/L	1	0.45	1.4		
meta,para-Xylene	ND	ug/L	1	0.13	0.42	2	
MTBE	ND	ug/L	1	0.89	2.8	10000	
Acetone	ND	ug/L	1	0.44	1.4		
Carbon disulfide	ND	ug/L	1	2.1	6.7		
Methyl ethyl ketone	ND	ug/L	1	0.43	1.4		
Tetrahydrofuran	ND	ug/L	1	0.64	2.0		
Dibromofluoromethane (SURR)	ND	ug/L	1	0.83	2.7		S
Toluene-d8 (SURR)	83.76%		1				S
1-Bromo-4-Fluorobenzene (SURR)	92.36%		1				S
	96.57%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155397 PW80 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	0.38	1.2	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
trans-1,3-Dichloropropene	ND	ug/L	1	0.22	0.74		
Ethylbenzene	ND	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	0.43	1.4		
Methyl ethyl ketone	ND	ug/L	1	0.64	2.0		
Tetrahydrofuran	ND	ug/L	1	0.83	2.7		
Dibromofluoromethane (SURR)	79.22%		1				S
Toluene-d8 (SURR)	90.74%		1				S
1-Bromo-4-Fluorobenzene (SURR)	95.35%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPPS Printed: 11/13/2019 09:38

Sample: 1155398 PWS3 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	0.38	1.2	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
trans-1,3-Dichloropropene	ND	ug/L	1	0.22	0.74		
Ethylbenzene	ND	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	2	
meta para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	0.43	1.4		
Methyl ethyl ketone	ND	ug/L	1	0.64	2.0		
Tetrahydrofuran	ND	ug/L	1	0.83	2.7		
Dibromofluoromethane (SURR)	81.84%		1				S
Toluene-d8 (SURR)	92.55%		1				S
1-Bromo-4-Fluorobenzene (SURR)	94.75%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (Varsat2200)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155399 PWZ9 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1	600	
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3		
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	0.38	1.2	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
trans-1,3-Dichloropropene	ND	ug/L	1	0.22	0.74		
Ethylbenzene	ND	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	2	
meta para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	0.43	1.4		
Methyl ethyl ketone	ND	ug/L	1	0.64	2.0		
Tetrahydrofuran	ND	ug/L	1	0.83	2.7		
Dibromofluoromethane (SURR)	81.74%		1				S
Toluene-d8 (SURR)	90.18%		1				S
1-Bromo-4-Fluorobenzene (SURR)	95.57%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)

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Customer: Marathon County Solid Waste Mgmt Dept NL-S Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019

Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155400 PW54 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Dibromochloromethane	ND	ug/L	1	0.42	1.3		
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromomethane	ND	ug/L	1	0.27	0.90		
Dibromomethane	ND	ug/L	1	0.41	1.3		
1,2-Dichlorobenzene	ND	ug/L	1	0.36	1.1		
1,3-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,4-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
Dichlorodifluoromethane	ND	ug/L	1	0.46	1.5	75	
1,1-Dichloroethane	ND	ug/L	1	0.40	1.3		
1,2-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,1-Dichloroethene	ND	ug/L	1	0.41	1.3	5	
cis-1,2-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
trans-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
1,2-Dichloropropane	ND	ug/L	1	0.35	1.1	100	
cis-1,3-Dichloropropene	ND	ug/L	1	0.38	1.2	5	
trans-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
Ethylbenzene	ND	ug/L	1	0.22	0.74		
Methylbenzene chloride	ND	ug/L	1	0.43	1.4	700	
Naphthalene	ND	ug/L	1	0.44	1.4	5	
ortho-Xylene	ND	ug/L	1	0.20	0.62		
Styrene	ND	ug/L	1	0.44	1.4		
Tetrachloroethene	ND	ug/L	1	0.25	0.79	100	
Toluene	ND	ug/L	1	0.43	1.4	5	
1,1,1-Trichloroethane	ND	ug/L	1	0.43	1.4	1000	
1,1,2-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
Trichloroethene	ND	ug/L	1	0.46	1.5	5	
Trichlorofluoromethane	ND	ug/L	1	0.50	1.6	5	
Vinyl chloride	ND	ug/L	1	0.45	1.4		
meta,para-Xylene	ND	ug/L	1	0.13	0.42	2	
MTBE	ND	ug/L	1	0.89	2.8	10000	
Acetone	ND	ug/L	1	0.44	1.4		
Carbon disulfide	ND	ug/L	1	2.1	6.7		
Methyl ethyl ketone	ND	ug/L	1	0.43	1.4		
Tetrahydrofuran	ND	ug/L	1	0.64	2.0		
Dibromofluoromethane (SURL)	ND	ug/L	1	0.83	2.7		S
Toluene-d8 (SURL)	83.59%		1				S
1-Bromo-4-Fluorobenzene (SURL)	92.04%		1				S
	99.18%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)

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Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019

Template: SATRAPPS Printed: 11/13/2019 09:38

Sample: 1155401 PW17 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Dibromochloromethane	ND	ug/L	1	0.42	1.3		
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromomethane	ND	ug/L	1	0.27	0.90		
Dibromomethane	ND	ug/L	1	0.41	1.3		
1,2-Dichlorobenzene	ND	ug/L	1	0.36	1.1		
1,3-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,4-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
Dichlorodifluoromethane	ND	ug/L	1	0.46	1.5	75	
1,1-Dichloroethane	ND	ug/L	1	0.40	1.3		
1,2-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,1-Dichloroethene	ND	ug/L	1	0.41	1.3	5	
cis-1,2-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
trans-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
1,2-Dichloropropane	ND	ug/L	1	0.35	1.1	100	
cis-1,3-Dichloropropene	ND	ug/L	1	0.38	1.2	5	
trans-1,3-Dichloropropene	ND	ug/L	1	0.20	0.66		
Ethylbenzene	ND	ug/L	1	0.22	0.74		
Methylene chloride	ND	ug/L	1	0.43	1.4	700	
Napthalene	ND	ug/L	1	0.44	1.4	5	
ortho-Xylene	ND	ug/L	1	0.20	0.62		
Styrene	ND	ug/L	1	0.44	1.4		
Tetrachloroethene	ND	ug/L	1	0.25	0.79	100	
Toluene	ND	ug/L	1	0.43	1.4	5	
1,1,1-Trichloroethane	ND	ug/L	1	0.43	1.4	1000	
1,1,2-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
Trichloroethene	ND	ug/L	1	0.46	1.5	5	
Trichlorofluoromethane	ND	ug/L	1	0.50	1.6		
Vinyl chloride	ND	ug/L	1	0.45	1.4		
meta,para-Xylene	ND	ug/L	1	0.13	0.42	2	
MTBE	ND	ug/L	1	0.89	2.8	10000	
Acetone	ND	ug/L	1	0.44	1.4		
Carbon disulfide	ND	ug/L	1	2.1	6.7		
Methyl ethyl ketone	ND	ug/L	1	0.43	1.4		
Tetrahydrofuran	ND	ug/L	1	0.64	2.0		
Dibromofluoromethane (SRR)	80.59%		1	0.83	2.7		S
Toluene-d8 (SRR)	87.83%		1				SRS
1-Bromo-4-Fluorobenzene (SRR)	96.08%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

SR = Surrogate recovery was outside QC limits.

Toluene-d8 recovered below QC limits.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat2000)

Customer: Marathon County Solid Waste Mgmt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATAPP3 Printed: 11/13/2019 09:39

Sample: 1155402 Trip: Blank Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.24	0.84	5	
Bromodichloromethane	ND	ug/L	1	0.27	0.94	80	
Bromoform	ND	ug/L	1	0.21	0.73	80	
Bromomethane	ND	ug/L	1	0.27	0.96		
Carbon Tetrachloride	ND	ug/L	1	0.16	0.55	5	
Chlorobenzene	ND	ug/L	1	0.25	0.87	100	
Chloroethane	ND	ug/L	1	0.93	3.3		
Chloroform	ND	ug/L	1	0.22	0.78	80	
Dibromomethane	ND	ug/L	1	0.22	0.78		
Dibromochloromethane	ND	ug/L	1	0.16	0.56	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.18	0.63		
1,2-Dibromomethane	ND	ug/L	1	0.23	0.81		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.78	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.21	0.73		
1,4-Dichlorobenzene	ND	ug/L	1	0.20	0.70		
Dichlorodifluoromethane	ND	ug/L	1	0.27	0.95	75	
1,1-Dichloroethane	ND	ug/L	1	0.17	0.58		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.67	5	
1,1-Dichloroethene	ND	ug/L	1	0.22	0.78		
cis-1,2-Dichloroethene	ND	ug/L	1	0.20	0.69	7	
trans-1,2-Dichloroethene	ND	ug/L	1	0.24	0.84	70	
1,2-Dichloropropane	ND	ug/L	1	0.17	0.60	100	
cis-1,3-Dichloropropene	ND	ug/L	1	0.28	0.98	5	
trans-1,3-Dichloropropene	ND	ug/L	1	0.26	0.91		
Ethylbenzene	ND	ug/L	1	0.19	0.69		
Methylene chloride	ND	ug/L	1	0.19	0.69	700	
Napthalene	[0.29]	ug/L	1	0.24	0.84	5	JLB
Styrene	ND	ug/L	1	0.43	1.5		
ortho-Xylene	ND	ug/L	1	0.19	0.66	100	
Tetrachloroethene	ND	ug/L	1	0.19	0.66		
Toluene	ND	ug/L	1	0.22	0.78	5	
1,1,1-Trichloroethane	ND	ug/L	1	0.21	0.74	1000	
1,1,2-Trichloroethane	ND	ug/L	1	0.20	0.69	200	
Trichloroethene	ND	ug/L	1	0.20	0.69	5	
Trichlorofluoromethane	ND	ug/L	1	0.32	1.1	5	
Vinyl chloride	ND	ug/L	1	0.20	0.71		
meta,para-Xylene	ND	ug/L	1	0.17	0.60	2	
MTBE	ND	ug/L	1	0.37	1.3	10000	
Acetone	ND	ug/L	1	0.21	0.73		
Carbon Disulfide	ND	ug/L	1	4.2	12		
Methyl Ethyl Ketone	ND	ug/L	1	0.17	0.59		
Tetrahydrofuran	ND	ug/L	1	0.57	2.0		
Dibromofluoromethane (SURR)	112%	ug/L	1	0.58	2.0		S
Toluene-d8 (SURR)	121%		1				S
1-Bromo-4-Fluorobenzene (SURR)	98%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.

S = This compound is a surrogate used to evaluate the quality control of a method.

LB = Compound is suspected of being a laboratory contaminant.

NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / Area A - Private Wells (page 1 of 5)

IA

Softener - no Collect from - bathroom/locker room sink											
Comments:											
NLS Lab #:	1155386	Date Sampled:	10.16.19	Time Sampled:	1055	Sample Location:	BATH ROOM SINK LOCKER ROOM			Treated (Y/N):	N
Point Name / Homeowner:	PW48	Marathon Co. Highway Dept.	222005 Duncan Road, Hayley	DNR ID #:	356	Time Purged:	5 min	Color:	clear	Odor:	ND
Turbidity (quant, text, color):	ND										

Softener - yes Collect from - outside faucet, front of house											
Comments:											
NLS Lab #:	387	Date Sampled:	10.16.19	Time Sampled:	1217	Sample Location:	Front of house			Treated (Y/N):	N
Point Name / Homeowner:	PW88	Christensen Troy	R22036 Duncan Road, Hayley	DNR ID #:	365	Time Purged:	5 min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):	ND										

Softener - no Collect from - front outside faucet (4/21/10 - owner said front faucet now works and is closer to the well)											
Comments:											
NLS Lab #:	388	Date Sampled:	10.16.19	Time Sampled:	1209	Sample Location:	FRONT FAUCET			Treated (Y/N):	N
Point Name / Homeowner:	PW24	Kluck, Mark	R221950 Duncan Road, Hayley	DNR ID #:	352	Time Purged:	5 min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):	ND										

Softener - no Collect from - outside faucet, north side of house											
Comments:											
NLS Lab #:	389	Date Sampled:	10.16.19	Time Sampled:	1200	Sample Location:	OUTSIDE FAUCET NO SIDE OF HOUSE			Treated (Y/N):	N
Point Name / Homeowner:	PW25	Levandowski, Mike	R221828 Duncan Road, Hayley	DNR ID #:	353	Time Purged:	5 min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):	ND										

See reverse side for sample custody information

Rev 10/18

copy 3 Kimbally SCHWIDT (NEW OWNERS)

NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / Area A - Private Wells (page 2 of 5)

2A

Softener - no Collect from - kitchen sink or outside back faucet									
Comments:									
NLS Lab #:	390	Date Sampled:	10-16-19	Time Sampled:	1140	Sample Location:		OUTSIDE BACK FAUCET	
Point Name / Homeowner:	Falkowski, Janet	DNR ID #:	350	Time Purged:	5 min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):		ND							
Treated (Y/N):		N							

Softener - yes but not in use Collect from - kitchen sink or North outside faucet									
Comments:									
NLS Lab #:	391	Date Sampled:	10-16-19	Time Sampled:	1128	Sample Location:		NORTH OUTSIDE FAUCET	
Point Name / Homeowner:	Andrasczko, Anthony	DNR ID #:	361	Time Purged:	5 min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):		ND							
Treated (Y/N):		N							

Softener - Yes. Collect from - outside faucet across driveway from house (not softened - should be on year round									
Comments:									
NLS Lab #:	392	Date Sampled:	10-16-19	Time Sampled:	1120	Sample Location:		OUTSIDE FAUCET Across Drive way	
Point Name / Homeowner:	Jozwiak-Popp, Rose	DNR ID #:	351	Time Purged:	5 min	Color:	Clear	Odor:	ND
Turbidity (quant, text, color):		ND							
Treated (Y/N):		N							

Softener - yes Collect from - faucet in basement before softener									
Comments:									
NLS Lab #:	393	Date Sampled:	10-16-19	Time Sampled:	1110	Sample Location:		BASEMENT FAUCET	
Point Name / Homeowner:	Sheehan, Carol	DNR ID #:	359	Time Purged:	5 min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):		ND							
Treated (Y/N):		N							

See reverse side for sample custody information

NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / Area A - Private Wells (page 3 of 5)

3A

Softener - no Collect from - outside faucet, south side of house									
Comments:									
NLS Lab #:	394	Date Sampled:	10-16-19	Time Sampled:	1340	Sample Location:		OUTSIDE FAUCET - South side of house	
Point Name / Homeowner:	Fraaza, Ivan	DNR ID #:	354	Time Purged:	5min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):		ND							
Treated (Y/N):		N							

Softener - no Collect from - outside front faucet									
Comments:									
NLS Lab #:	395	Date Sampled:	10-16-19	Time Sampled:	1330	Sample Location:		Front of house	
Point Name / Homeowner:	Finlan, Andy	DNR ID #:	360	Time Purged:	5min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):		ND							
Treated (Y/N):		N							

Softener - No Collect from - outside faucet, back west side of apartments (1 well shared by both apartments in duplex)									
Comments:									
NLS Lab #:	396	Date Sampled:	10-16-19	Time Sampled:	1320	Sample Location:		Back of house	
Point Name / Homeowner:	Fraaza, Brandon	DNR ID #:	366	Time Purged:	5min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):		ND							
Treated (Y/N):		N							

Softener - no Collect from - outside faucet, west side of house									
Comments:									
NLS Lab #:	397	Date Sampled:	10-16-19	Time Sampled:	1257	Sample Location:		Front of house	
Point Name / Homeowner:	Gaedtke, Heath	DNR ID #:	364	Time Purged:	5min	Color:	ND	Odor:	ND
Turbidity (quant, text, color):		ND							
Treated (Y/N):		N							

See reverse side for sample custody information

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NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / Area A - Private Wells (page 4 of 5)

4A

NLS Lab #: 398		Date Sampled: 10-17-19	Comments: (NEW FAUCET NOT SOFTENED) OUTSIDE	
Point Name / Homeowner: Buchkowski, Michael	DNR ID #: 357	Time Purged: 5 min	Color: ND	Odor: ND
Sample Location: R221771 Silk Road, Ringle		Time Sampled: 1306	Side of House Facing Road	
Treated (Y/N): N				

NLS Lab #: 399		Date Sampled: 10-16-19	Comments: DOES NOT WORK COLLECTED FROM FAUCET IN BACK OF HOUSE	
Point Name / Homeowner: Porter, James	DNR ID #: 355	Time Purged: 5 min	Color: ND	Odor: ND
Sample Location: R221704 Silk Road, Ringle		Time Sampled: 1245	OUTSIDE FAUCET SO SIDE OF HOUSE	
Treated (Y/N): N				

NLS Lab #: 400		Date Sampled: 10-16-19	Comments: LEAVE FAUCET ON A LONG WHILE WATER WILL EVENUALLY ARRIVE	
Point Name / Homeowner: Baur, Daniel	DNR ID #: 358	Time Purged: 5 min	Color: ND	Odor: ND
Sample Location: R221657 Silk, Ringle		Time Sampled: 1235	Back of House So Side	
Treated (Y/N): N				

NLS Lab #: 401		Date Sampled: 10-16-19	Comments: FRONT FAUCET IS FINE	
Point Name / Homeowner: Liebe, Neal	DNR ID #: 028	Time Purged: 5 min	Color: ND	Odor: ND
Sample Location: R174825 Willow Lane, Hatley		Time Sampled: 1405		
Treated (Y/N): N				

See reverse side for sample custody information

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Softener - no Collect from - back outside faucet (front faucet by brick deck broken - per owner 4/21/10)

Softener - yes Collect from - outside faucet, south side of house

Softener - yes Collect from - basement well entry (only unsoftened point)

NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / Area A – Private Wells (page 5 of 5)

5A

Comments:									
Date Sampled:		Time Sampled:		Sample Location:		Treated (Y/N):			
NLS Lab #:		Point Name / Homeowner:		DNR ID #:		Time Purged:		Color:	
				999				Odor:	
								Turbidity (quant, text, color):	

Comments:									
Date Sampled:		Time Sampled:		Sample Location:		Treated (Y/N):			
NLS Lab #:		Point Name / Homeowner:		DNR ID #:		Time Purged:		Color:	
								Odor:	
								Turbidity (quant, text, color):	

Comments:									
Date Sampled:		Time Sampled:		Sample Location:		Treated (Y/N):			
NLS Lab #:		Point Name / Homeowner:		DNR ID #:		Time Purged:		Color:	
								Odor:	
								Turbidity (quant, text, color):	

Comments:									
Date Sampled:		Time Sampled:		Sample Location:		Treated (Y/N):			
NLS Lab #:		Point Name / Homeowner:		DNR ID #:		Time Purged:		Color:	
								Odor:	
								Turbidity (quant, text, color):	

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See reverse side for sample custody information

NTS FIELD QUALITY ASSURANCE RECORD

CLIENT / SITE: Marathon County Solid Waste Management
Department / Annual Private Well Monitoring

Initials / Signature: WAC / [Signature] & 1

Bottles Prepared By:

Instruments Checked By:

STDs & Buffers, Date Made:

Reagent Grade Water, Jug #:

Reagent Water Date Filled:

Bracket test samples using the appropriate pH buffers. Use pH buffer 4.01 with pH buffer 7.00 for low pH samples and pH buffer 10.01 with pH buffer 7.00 for samples having a high pH. On a routine basis use pH buffers 4.01 and 7.00.

Thermometer - NLS #:

Geotech. 45 micron filter lot #:

QED.45 Dispo Filter model #:

GWV 1.0 Dispo Filter lot #:

CONDUCTIVITY METER NUMBER

[illegible]

pH METER NUMBER

[illegible]

R = Initial Reading; S = Standardized Reading

Comments: