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March 26, 2021

Ms. Demaree Collier
Remedial Project Manager
USEPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

Subject: Transmittal of Data
Plume Monitoring and Background Wells
Lemberger Landfill Sites
Fourth Quarter 2020

Dear Ms. Collier:

On behalf of the Lemberger Site Remediation Group (LSRG), and in accordance with the Environmental Monitoring Plan (EMP), Revision 4 (February 2014), and the subsequent monitoring program revisions as approved by the United States Environmental Protection Agency (USEPA) and the Wisconsin Department of Natural Resources (WDNR), TRC Environmental Corporation (TRC) is submitting the following data:

- Attachment 1: Data Validation Comments and Qualified Form 1s For All Wells
- Attachment 2: Table of Wisconsin Administrative Code Chapter NR 140 Groundwater Quality Standards (Enforcement Standards [ESs], Preventive Action Limits [PALs], Maximum Contaminant Levels [MCLs], and Secondary Maximum Contaminant Levels [SMCLs]) for the Pertinent Parameters
- Attachment 3: Tabular Summary of Analytical Results at Each Monitoring Well
- Attachment 4: Laboratory Data Qualifiers for Monitoring Wells
- Attachment 5: Tabular Summary of Groundwater Standard Exceedances at Plume Monitoring Wells

A CD containing field and laboratory data in an approved WDNR format has been attached to the copies provided to the WDNR and the USEPA, for their use. Groundwater samples were collected during December 2020, in accordance with a March 2016 revision to the post-MNA study program.

Please call if you have questions.

Sincerely,

TRC

Kristopher D. Krause, P.E.
Senior Project Manager

Meredith Westover, P.G.
Senior Hydrogeologist

Attachments

cc: B.J. LeRoy – WDNR
Brian Potts – Perkins Coie, LLP
Kristin Jones – Newell Rubbermaid
Troy Adams – Manitowoc Public Utilities
Scott Karbon – Manitowoc Public Utilities
James Wallner – Red Arrow Products
James Cook – Manitowoc Cranes
Kathleen McDaniel – City of Manitowoc
David Dougherty – Subterranean Research, Inc.
John Lang – EHS Support, LLC
Tom Sullivan – EHS Support, LLC
GEMS Data Submittal Contact (w/diskette)

Attachment 1

Data Validation Comments and Qualified Form 1s For All Wells

Memorandum

To: Meredith Westover

From: Amy Bass (Data Reviewer)
Elizabeth Denly (Peer Reviewer)

Date: January 28, 2021

Subject: Data Validation Report
VOC Groundwater Samples/Sentinel Wells: 4th Quarter 2020
Lemberger Landfill and Lemberger Transport and Recycling/Franklin, Wisconsin
Laboratory Project Number 40220035

SUMMARY

Full validation (level IV) was performed on the data for seven groundwater samples, one field duplicate, one field blank, and one trip blank collected from sentinel wells at the Lemberger Landfill and Lemberger Transport and Recycling Site in Franklin, Wisconsin. The samples were collected on December 16 and 17, 2020. Samples were submitted to Pace Analytical Services, LLC in Green Bay, Wisconsin for analysis. The samples were analyzed for volatile organic compounds (VOCs) using SW-846 Method 8260B. The results were reported under laboratory project number 40220035.

The sample results were assessed using the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review (EPA-540-R-2017-002),* January 2017 and the project-specific quality assurance project plan (QAPP), dated September 2011, Revision 1.

In general, the data are valid as reported and may be used for decision-making purposes. The following issues were noted which have a minor impact on the data usability:

- Select results were reported which were below the lowest calibration standard and quantitation limit (QL); these results were qualified as estimated (J).
- Potential uncertainty exists for the positive and nondetect results for select VOCs in all samples due to continuing calibration nonconformances. These results were qualified as estimated (J/UJ).
- Potential uncertainty exists for the nondetect result for 1,2-dichloropropane due to low matrix spike (MS) recovery in sample RM-002D. This result was qualified as estimated (UJ).

SAMPLES

Samples included in this review are listed below.

- RM-002D
- RM-003D
- RM-003XXD
- RM-210D
- RM-401XXD
- RM-403XD
- RM-404XXD
- FDUP-001[1]
- FB-001
- TB-001

[1] Field duplicate of RM-003D

REVIEW ELEMENTS

Sample data were reviewed for the following parameters:

- Agreement of analyses conducted with chain-of-custody (COC) requests
- Data completeness
- Holding times and sample preservation
- Gas chromatography/mass spectrometry (GC/MS) tunes
- Initial and continuing calibrations
- Blanks
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) results
- Laboratory control sample (LCS) results
- Internal standard performance
- Field duplicate results
- Quantitation limits and sample results
- Target compound identification

DISCUSSION

Agreement of Analyses Conducted with Chain-of-Custody Requests

Sample reports were checked to verify that the results corresponded to analytical requests as designated on the COC. The following issues were noted.

- The COC indicates a collection time of 0930 for sample FDUP-001, and the collection time entered for sample RM-403XD was struck through and initialed but not corrected. The Sample Condition Upon Receipt Form indicates, based on the sample labels, “no time” for sample FDUP-001 (referred to as “004”) and “time 0930” for sample RM-403XD (referred to as “005”). A collection time of 0930 was entered by the laboratory for both samples, FDUP-001 and RM-403XD. No validation action was taken on this basis.

Data Completeness

The data packages were found to be complete as received from the laboratory with the following exception.

- The laboratory only spiked a subset of the VOCs reported in the samples in the LCS and MS/MSD analyses; thus, accuracy and/or precision could not be evaluated for select VOCs.

Additional details are provided in the following sections. No validation actions were taken on the basis of this issue.

Holding Times and Sample Preservation

All samples were received by the laboratory on ice (temperature measurements were not provided) and were noted to be appropriately acid preserved. All analyses were performed within the method-specified holding time.

GC/MS Tunes

The frequency and abundance of all bromofluorobenzene tunes were within the acceptance criteria.

Initial and Continuing Calibrations

The percent relative standard deviations, coefficients of determination, and relative response factors (RRFs) were within the laboratory acceptance criteria in the initial calibrations.

All RRFs were within the acceptance criteria in the continuing calibrations (CCs). The following table summarizes the percent differences or percent drifts (%Ds) which were outside of the laboratory acceptance criteria in the CCs, the associated samples, and resulting validation actions.

CC	Analyte	%D	Associated Sample(s)	Validation Actions
40MSV3 12/22/20 @06:22	Acetone	-29.3107	RM-002D	The nondetect result for acetone in sample RM-002D was qualified as estimated (UJ).
	1,1-Dichloroethane	-20.1392		The positive result for 1,1-dichloroethane in sample RM-002D was qualified as estimated (J).
40MSV3 12/23/20 @07:30	Acetone	-32.4526	RM-210D, FB-001, TB-001	The positive results for 1,1-dichloroethane and cis-1,2-dichloethene in sample RM-210D, and the positive results for acetone and 2-butanone in sample FB-001 were qualified as estimated (J). The nondetect results for the listed VOCs were qualified as estimated (UJ) in the associated samples.
	Bromomethane	-29.8056		
	2-Butanone	-22.3483		
	1,1-Dichloroethane	-25.0764		
	1,2-Dichloroethane	-21.6443		
	cis-1,2-Dichloroethene	-24.1221		
	trans-1,2-Dichloroethene	-21.4294		
	Methylene chloride	-24.5576		
40MSVA 12/22/20 @05:08	Bromomethane	30.1032	RM-404XXD, RM-003XXD, RM-003D, FDUP-001, RM-403XD, RM-401XXD	The nondetect results for the listed VOCs were qualified as estimated (UJ) in the associated samples.
	Chloromethane	-24.3251		

Blanks

A method blank was analyzed each day prior to sample analysis. Target analytes were not detected in the trip blank or method blanks. The following table summarizes the analytes detected in the field blank, the associated samples, and the resulting validation actions.

Blank ID: Analyte	Blank Concentration (µg/L)	QL (µg/L)	Associated Samples	Validation Actions
Field Blank (FB-001): Acetone	3.2 J	20.0	RM-002D, RM-003D, RM-003XXD, RM-210D, RM-401XXD, RM-403XD, RM404XXD, FDUP-001	Qualification was not required since the blank contaminants were not detected in the associated samples.
Field Blank (FB-001): 2-Butanone	3.2 J	20.0		
Field Blank (FB-001): Toluene	1.8	1.0		

Surrogate Spike Recoveries

The percent recoveries (%Rs) of the VOC surrogates were within the laboratory acceptance criteria for all samples.

MS/MSD Results

MS/MSD analyses for VOCs were performed on samples RM-002D and RM-003XXD. The following table summarizes the %R that was outside of the laboratory's acceptance criteria in the MS/MSD analyses and the resulting validation action; all relative percent difference (RPD) criteria were met.

MS/MSD Sample ID	Analyte	MS %R	MSD %R	QC Limits %R	Validation Action
RM-002D	1,2-Dichloropropane	85	-	86-135	The nondetect result for 1,2-dichloropropane in sample RM-002D was qualified as estimated (UJ).
-: criteria met					

Note that the laboratory only spiked a subset of the VOCs reported in the samples in the MS/MSDs; thus, accuracy and precision could not be evaluated for the following VOCs (which were not spiked) in the MS/MSD analyses: acetone, 2-butanone, 2-hexanone, and 4-methyl-2-pentanone. No validation action was taken on this basis.

LCS Results

An LCS was analyzed each day prior to sample analysis. The %R criteria were met for all LCS analyses relevant to this sample set.

Note that the laboratory only spiked a subset of the VOCs reported in the samples in the LCS analyses. Thus, accuracy could not be evaluated for the following VOCs (which were not spiked) in the LCS analyses: acetone, 2-butanone, 2-hexanone, and 4-methyl-2-pentanone. No validation action was taken on this basis.

Internal Standard Performance

Internal standards were within the method acceptance criteria in all sample analyses.

Field Duplicate Results

The following samples were submitted as the field duplicate pair with this sample set:

- RM-003D and FDUP-001

The following table summarizes the RPDs for the detected VOC results in the field duplicate pair. If one or both sample results were <5× the QL, the RPD is not applicable, and the absolute difference (AbsD) was used to evaluate field duplicate precision. If one of the two results was nondetect, the AbsD is noncalculable (NC); the positive result must be <5× QL to meet criteria.

Compound	QL (µg/L)	RM-003D (µg/L)	FDUP-001 (µg/L)	RPD (%) or AbsD (µg/L)	Validation Action
1,1,1-Trichloroethane	1.0	28.1	28.6	RPD = 1.8	None; all criteria were met.
1,1-Dichloroethane	1.0	15.7	16.1	RPD = 2.5	
1,1-Dichloroethene	1.0	3.4	3.6	AbsD = 0.2	
cis-1,2-Dichloroethene	1.0	7.0	7.1	RPD = 1.4	
Tetrachloroethene	1.1	0.33 J	ND	AbsD = NC	
Trichloroethene	1.0	5.3	5.5	RPD = 3.7	

Criteria:

- When both results are ≥ 5x the QL, RPDs must be ≤ 35%.
- When one or both results are < 5x the QL, AbsD must be < the QL.
- When one result is nondetect, the positive result must be < 5× the QL.

Quantitation Limits and Sample Results

Sample calculations were spot-checked; there were no errors noted. No dilutions were performed in the VOC analyses of these samples.

Select results were reported which were below the lowest calibration standard level and QL (or limit of quantitation [LOQ]). These results were qualified as estimated (J) by the laboratory.

The laboratory's limit of detection (LOD) for select VOCs was above one or both of the project action limits specified in the QAPP; the affected VOCs, project action limits, and current laboratory LODs are summarized in the table below.

Analyte	Affected Samples	WAC Chapter NR 140 PAL (µg/L)	WAC Chapter NR 140 ES (µg/L)	Laboratory LOD (µg/L)
1,1,2,2-Tetrachloroethane	All samples in this data set	0.02	0.2	0.28
1,1,2-Trichloroethane		0.5	5*	0.55
Bromodichloromethane		0.06	0.6*	0.36
Bromoform		0.44	4.4*	4.0
Carbon tetrachloride		0.5	5*	1.1
Chloroform		0.6	6*	1.3
cis-1,3-Dichloropropene		0.02	0.2	3.6
Methylene chloride		0.5	5*	0.58

Analyte	Affected Samples	WAC Chapter NR 140 PAL (µg/L)	WAC Chapter NR 140 ES (µg/L)	Laboratory LOD (µg/L)
trans-1,3-Dichloropropene		0.02	0.2	4.4
Vinyl chloride		0.02	0.2*	0.17
* Laboratory LOD is below the action limit.				

Target Compound Identification

All criteria were met. It was noted, however, that on one of the two instruments used (40MSV3), the secondary ion (99) for 1,1,1-trichloroethane (detected in each sample of this sample set) coelutes with the internal standard (IS), which also has the secondary ion of 99 and therefore can interfere in the proper identification of this compound. Inquiry was previously made to the laboratory regarding this issue. The laboratory concurred with this potential interference issue, which is considered in the reported compound identification. The spectra and extracted ion chromatograms for detected 1,1,1-trichloroethane results in the affected samples (RM-002D and RM-210D) were reviewed during validation and confirmed to be accurate.

QUALIFIED FORM 1s

SAMPLE NO.

RM-404XXD

MSV - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay
Contract: 376175.0000 PHASE 5 LEMBERGER
Date Received: 12/18/2020 07:30
Matrix: Water SDG No.: 40220035
Date Extracted: 12/22/2020 08:53
Lab Sample ID: 40220035001
Date Analyzed: 12/22/2020 08:53
Lab File ID: 12222020.B\12222012.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSVA Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<2.7	U
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	~~U~~ UJ
78-93-3	2-Butanone (MEK)	<2.9	U
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	<0.27	U
107-06-2	1,2-Dichloroethane	<0.28	U
75-35-4	1,1-Dichloroethene	<0.24	U
156-59-2	cis-1,2-Dichloroethene	<0.27	U
156-60-5	trans-1,2-Dichloroethene	<0.46	U
78-87-5	1,2-Dichloropropane	<0.28	U
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	<0.33	U
108-88-3	Toluene	<0.27	U
71-55-6	1,1,1-Trichloroethane	0.66	J
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	0.29	J
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

SAMPLE NO.

RM-003XXD

MSV - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay
Contract: 376175.0000 PHASE 5 LEMBERGER
Date Received: 12/18/2020 07:30
Matrix: Water SDG No.: 40220035
Date Extracted: 12/22/2020 08:08
Lab Sample ID: 40220035002
Date Analyzed: 12/22/2020 08:08
Lab File ID: 12222020.B\12222010.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSVA Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<2.7	U
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	~~U~~ UJ
78-93-3	2-Butanone (MEK)	<2.9	U
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	0.70	J
107-06-2	1,2-Dichloroethane	<0.28	U
75-35-4	1,1-Dichloroethene	0.27	J
156-59-2	cis-1,2-Dichloroethene	0.47	J
156-60-5	trans-1,2-Dichloroethene	<0.46	U
78-87-5	1,2-Dichloropropane	<0.28	U
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	<0.33	U
108-88-3	Toluene	<0.27	U
71-55-6	1,1,1-Trichloroethane	2.6	
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	0.79	J
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

SAMPLE NO.

RM-003D

MSV - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay
Contract: 376175.0000 PHASE 5 LEMBERGER
Date Received: 12/18/2020 07:30
Matrix: Water SDG No.: 40220035
Date Extracted: 12/22/2020 08:31
Lab Sample ID: 40220035003
Date Analyzed: 12/22/2020 08:31
Lab File ID: 12222020.B\12222011.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSVA Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<2.7	U
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	~~U~~ UJ
78-93-3	2-Butanone (MEK)	<2.9	U
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	15.7	
107-06-2	1,2-Dichloroethane	<0.28	U
75-35-4	1,1-Dichloroethene	3.4	
156-59-2	cis-1,2-Dichloroethene	7.0	
156-60-5	trans-1,2-Dichloroethene	<0.46	U
78-87-5	1,2-Dichloropropane	<0.28	U
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	0.33	J
108-88-3	Toluene	<0.27	U
71-55-6	1,1,1-Trichloroethane	28.1	
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	5.3	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

SAMPLE NO.

FDUP-001

MSV - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay
Contract: 376175.0000 PHASE 5 LEMBERGER
Date Received: 12/18/2020 07:30
Matrix: Water SDG No.: 40220035
Date Extracted: 12/22/2020 09:16
Lab Sample ID: 40220035004
Date Analyzed: 12/22/2020 09:16
Lab File ID: 12222020.B\12222013.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSVA Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<2.7	U
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	~~U~~ UJ
78-93-3	2-Butanone (MEK)	<2.9	U
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	16.1	
107-06-2	1,2-Dichloroethane	<0.28	U
75-35-4	1,1-Dichloroethene	3.6	
156-59-2	cis-1,2-Dichloroethene	7.1	
156-60-5	trans-1,2-Dichloroethene	<0.46	U
78-87-5	1,2-Dichloropropane	<0.28	U
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	<0.33	U
108-88-3	Toluene	<0.27	U
71-55-6	1,1,1-Trichloroethane	28.6	
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	5.5	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

SAMPLE NO.

RM-403XD

MSV - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay
Contract: 376175.0000 PHASE 5 LEMBERGER
Date Received: 12/18/2020 07:30
Matrix: Water SDG No.: 40220035
Date Extracted: 12/22/2020 09:38
Lab Sample ID: 40220035005
Date Analyzed: 12/22/2020 09:38
Lab File ID: 12222020.B\12222014.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSVA Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<2.7	U
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	~~U~~ UJ
78-93-3	2-Butanone (MEK)	<2.9	U
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	46.6	
107-06-2	1,2-Dichloroethane	<0.28	U
75-35-4	1,1-Dichloroethene	7.3	
156-59-2	cis-1,2-Dichloroethene	13.5	
156-60-5	trans-1,2-Dichloroethene	<0.46	U
78-87-5	1,2-Dichloropropane	<0.28	U
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	1.1	
108-88-3	Toluene	<0.27	U
71-55-6	1,1,1-Trichloroethane	85.2	
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	15.9	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

SAMPLE NO.

RM-401XXD

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay Contract: 376175.0000 PHASE 5 LEMBERGER

Date Received: 12/18/2020 07:30 Matrix: Water SDG No.: 40220035

Date Extracted: 12/22/2020 10:01 Lab Sample ID: 40220035006

Date Analyzed: 12/22/2020 10:01 Lab File ID: 12222020.B\12222015.D

Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1 Instrument: 40MSVA Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<2.7	U
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	~~U~~ UJ
78-93-3	2-Butanone (MEK)	<2.9	U
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	3.7	
107-06-2	1,2-Dichloroethane	<0.28	U
75-35-4	1,1-Dichloroethene	2.7	
156-59-2	cis-1,2-Dichloroethene	6.9	
156-60-5	trans-1,2-Dichloroethene	<0.46	U
78-87-5	1,2-Dichloropropane	<0.28	U
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	<0.33	U
108-88-3	Toluene	<0.27	U
71-55-6	1,1,1-Trichloroethane	5.8	
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	1.5	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

SAMPLE NO.

RM-002D

MSV - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay
Contract: 376175.0000 PHASE 5 LEMBERGER
Date Received: 12/18/2020 07:30
Matrix: Water SDG No.: 40220035
Date Extracted: 12/22/2020 10:40
Lab Sample ID: 40220035007
Date Analyzed: 12/22/2020 10:40
Lab File ID: 12222020.B\12222016.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSV3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<2.7	~~U~~ UJ
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	U
78-93-3	2-Butanone (MEK)	<2.9	U
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	4.4	J
107-06-2	1,2-Dichloroethane	<0.28	U
75-35-4	1,1-Dichloroethene	0.72	J
156-59-2	cis-1,2-Dichloroethene	1.1	
156-60-5	trans-1,2-Dichloroethene	<0.46	U
78-87-5	1,2-Dichloropropane	<0.28	~~U~~ UJ
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	<0.33	U
108-88-3	Toluene	<0.27	U
71-55-6	1,1,1-Trichloroethane	6.7	
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	1.8	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

SAMPLE NO.

RM-210D

MSV - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay
Contract: 376175.0000 PHASE 5 LEMBERGER
Date Received: 12/18/2020 07:30
Matrix: Water SDG No.: 40220035
Date Extracted: 12/23/2020 10:44
Lab Sample ID: 40220035008
Date Analyzed: 12/23/2020 10:44
Lab File ID: 12232020.B\12232013.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSV3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<2.7	~~U~~ UJ
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	~~U~~ UJ
78-93-3	2-Butanone (MEK)	<2.9	~~U~~ UJ
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	2.8	J
107-06-2	1,2-Dichloroethane	<0.28	~~U~~ UJ
75-35-4	1,1-Dichloroethene	0.74	J
156-59-2	cis-1,2-Dichloroethene	1.4	J
156-60-5	trans-1,2-Dichloroethene	<0.46	~~U~~ UJ
78-87-5	1,2-Dichloropropane	<0.28	U
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	~~U~~ UJ
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	<0.33	U
108-88-3	Toluene	<0.27	U
71-55-6	1,1,1-Trichloroethane	6.6	
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	1.3	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

SAMPLE NO.

FB-001

MSV - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay
Contract: 376175.0000 PHASE 5 LEMBERGER
Date Received: 12/18/2020 07:30
Matrix: Water SDG No.: 40220035
Date Extracted: 12/23/2020 11:05
Lab Sample ID: 40220035009
Date Analyzed: 12/23/2020 11:05
Lab File ID: 12232020.B\12232014.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSV3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	3.2	~~J~~ J
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	~~U~~ UJ
78-93-3	2-Butanone (MEK)	3.2	~~J~~ J
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	<0.27	~~U~~ UJ
107-06-2	1,2-Dichloroethane	<0.28	~~U~~ UJ
75-35-4	1,1-Dichloroethene	<0.24	U
156-59-2	cis-1,2-Dichloroethene	<0.27	~~U~~ UJ
156-60-5	trans-1,2-Dichloroethene	<0.46	~~U~~ UJ
78-87-5	1,2-Dichloropropane	<0.28	U
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	~~U~~ UJ
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	<0.33	U
108-88-3	Toluene	1.8	
71-55-6	1,1,1-Trichloroethane	<0.24	U
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	<0.26	U
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

SAMPLE NO.

TB-001

MSV - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay
Contract: 376175.0000 PHASE 5 LEMBERGER
Date Received: 12/18/2020 07:30
Matrix: Water SDG No.: 40220035
Date Extracted: 12/23/2020 10:22
Lab Sample ID: 40220035010
Date Analyzed: 12/23/2020 10:22
Lab File ID: 12232020.B\12232012.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSV3 Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<2.7	~~U~~ UJ
71-43-2	Benzene	<0.25	U
75-27-4	Bromodichloromethane	<0.36	U
75-25-2	Bromoform	<4.0	U
74-83-9	Bromomethane	<0.97	~~U~~ UJ
78-93-3	2-Butanone (MEK)	<2.9	~~U~~ UJ
75-15-0	Carbon disulfide	<0.45	U
56-23-5	Carbon tetrachloride	<1.1	U
108-90-7	Chlorobenzene	<0.71	U
75-00-3	Chloroethane	<1.3	U
67-66-3	Chloroform	<1.3	U
74-87-3	Chloromethane	<2.2	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	<0.27	~~U~~ UJ
107-06-2	1,2-Dichloroethane	<0.28	~~U~~ UJ
75-35-4	1,1-Dichloroethene	<0.24	U
156-59-2	cis-1,2-Dichloroethene	<0.27	~~U~~ UJ
156-60-5	trans-1,2-Dichloroethene	<0.46	~~U~~ UJ
78-87-5	1,2-Dichloropropane	<0.28	U
10061-01-5	cis-1,3-Dichloropropene	<3.6	U
10061-02-6	trans-1,3-Dichloropropene	<4.4	U
100-41-4	Ethylbenzene	<0.32	U
591-78-6	2-Hexanone	<5.2	U
75-09-2	Methylene Chloride	<0.58	~~U~~ UJ
108-10-1	4-Methyl-2-pentanone (MIBK)	<4.6	U
100-42-5	Styrene	<3.0	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.28	U
127-18-4	Tetrachloroethene	<0.33	U
108-88-3	Toluene	<0.27	U
71-55-6	1,1,1-Trichloroethane	<0.24	U
79-00-5	1,1,2-Trichloroethane	<0.55	U
79-01-6	Trichloroethene	<0.26	U
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.5	U

Attachment 2

Table of Wisconsin Administrative Code Chapter NR 140 Groundwater Quality Standards (Enforcement Standards [ESs], Preventive Action Limits [PALs], Maximum Contaminant Levels [MCLs], and Secondary Maximum Contaminant Levels [SMCLs]) for the Pertinent Parameters

Attachment 2
Groundwater Quality Standards

Parameter Name	Units	MCL	SMCL	NR PAL	NR ES
1,1,1,2-Tetrachloroethane	µg/L			7	70
1,1,1-Trichloroethane	µg/L	200		40	200
1,1,2-Trichloroethane	µg/L	5		0.5	5
1,1-Dichloroethene	µg/L	7		0.7	7
1,2,3-Trichloropropane	µg/L			12	60
1,2,4-Trichlorobenzene	µg/L	70		14	70
1,2-Dichlorobenzene	µg/L	600		60	600
1,2-Dichloroethane	µg/L	5		0.5	5
1,2-Dichloropropane	µg/L	5		0.5	5
1,4-Dichlorobenzene	µg/L	75		15	75
2,3,7,8-TCDD	ng/L	0.03		0.003	0.03
Alpha-chlordane	µg/L	2		0.2	2
Anthracene	µg/L			600	3000
Antimony, dissolved	µg/L	6		1.2	6
Antimony, total	µg/L	6		1.2	6
Aroclor-1016	µg/L	0.5		0.003	0.03
Aroclor-1221	µg/L	0.5		0.003	0.03
Aroclor-1232	µg/L	0.5		0.003	0.03
Aroclor-1242	µg/L	0.5		0.003	0.03
Aroclor-1248	µg/L	0.5		0.003	0.03
Aroclor-1254	µg/L	0.5		0.003	0.03
Aroclor-1260	µg/L	0.5		0.003	0.03
Arsenic, dissolved	µg/L	10		1	10
Arsenic, total	µg/L	10		1	10
Barium, dissolved	µg/L	2000		400	2000
Barium, total	µg/L	2000		400	2000
Bentazon	µg/L			60	300
Benzene	µg/L	5		0.5	5
Benzo(a)pyrene	µg/L	0.2		0.02	0.2
Benzo(b)fluoranthene	µg/L			0.02	0.2
Beryllium, dissolved	µg/L	4		0.4	4
Beryllium, total	µg/L	4		0.4	4
bis(2-ethylhexyl)Phthalate	µg/L	6		0.6	6
Cadmium, dissolved	µg/L	5		0.5	5
Cadmium, total	µg/L	5		0.5	5

Attachment 2 (continued)
Groundwater Quality Standards

Parameter Name	Units	MCL	SMCL	NR PAL	NR ES
Carbon disulfide	µg/L			200	1000
Carbon tetrachloride	µg/L	5		0.5	5
Chlordane, technical	µg/L	2		0.2	2
Chloride	mg/L		250	125	250
Chlorobenzene	µg/L	100		20	100
Chromium, dissolved	µg/L	100		10	100
Chromium, total	µg/L	100		10	100
Chrysene	µg/L			0.02	0.2
cis-1,2-Dichloroethene	µg/L	70		7	70
Cobalt, dissolved	µg/L			8	40
Cobalt, total	µg/L			8	40
Copper, dissolved	µg/L	1300	1000	130	1300
Copper, total	µg/L	1300	1000	130	1300
Cyanazine	µg/L			0.1	1
Cyanide, total	mg/L	0.2		0.04	0.2
Di-n-butylphthalate	µg/L			100	1000
Endrin	µg/L	2		0.4	2
Ethylbenzene	µg/L	700		140	700
Fluoranthene	µg/L			80	400
Gamma-BHC (lindane)	µg/L	0.2		0.02	0.2
Gamma-chlordane	µg/L	2		0.2	2
Heptachlor	µg/L	0.4		0.04	0.4
Heptachlor epoxide	µg/L	0.2		0.02	0.2
Hexachlorobenzene	µg/L	1		0.1	1
Hydrogen sulfide	µg/L			6	30
Iron, dissolved	µg/L		300	150	300
Iron, total	µg/L		300	150	300
Lead, dissolved	µg/L	15		1.5	15
Lead, total	µg/L	15		1.5	15
Manganese, dissolved	µg/L		50	60	300
Manganese, total	µg/L		50	60	300
Mercury, dissolved	µg/L	2		0.2	2
Mercury, total	µg/L	2		0.2	2
Methanol	µg/L			1000	5000
Methoxychlor	µg/L	40		4	40
Methylene chloride	µg/L	5		0.5	5

Attachment 2 (continued)
Groundwater Quality Standards

Parameter Name	Units	MCL	SMCL	NR PAL	NR ES
N-hexane	µg/L			120	600
Nickel, dissolved	µg/L			20	100
Nickel, total	µg/L			20	100
Nitrogen, ammonia	mg/L			0.97	9.7
N-nitrosodiphenylamine	µg/L			0.7	7
Pentachlorophenol	µg/L	1		0.1	1
Prometon	µg/L			20	100
Pyrene	µg/L			50	250
Pyridine	µg/L			2	10
Selenium, dissolved	µg/L	50		10	50
Selenium, total	µg/L	50		10	50
Silver, dissolved	µg/L		100	10	50
Silver, total	µg/L		100	10	50
Styrene	µg/L	100		10	100
Tetrachloroethene	µg/L	5		0.5	5
Thallium, dissolved	µg/L	2		0.4	2
Thallium, total	µg/L	2		0.4	2
Toluene	µg/L	1000		160	800
Toxaphene	µg/L	3		0.3	3
trans-1,2-Dichloroethene	µg/L	100		20	100
Trichloroethene	µg/L	5		0.5	5
Trimethylbenzenes, total	µg/L			96	480
Vanadium, dissolved	µg/L			6	30
Vanadium, total	µg/L			6	30
Vinyl chloride	µg/L	2		0.02	0.2
Xylenes, total	µg/L	10000		400	2000
Zinc, dissolved	µg/L		5000	2500	5000
Zinc, total	µg/L		5000	2500	5000

Note:
Table updated February 2021 to reflect January 2020 register (WDNR) and latest USEPA MCLs.

Attachment 3

Tabular Summary of Analytical Results at Each Monitoring Well

LEMBERGER LANDFILL
MONITORING WELL VOLATILE ORGANIC ANALYSIS RESULTS
DECEMBER 2020

PARAMETER	UNITS	RM-002D 12/17/2020 40220035007	RM-003D 12/16/2020 40220035003	RM-003D DUP 12/16/2020 40220035004	RM-003XXD 12/16/2020 40220035002	RM-210D 12/17/2020 40220035008	RM-401XXD 12/17/2020 40220035006	RM-403XD 12/17/2020 40220035005	RM-404XXD 12/16/2020 40220035001
1,1,1-TRICHLOROETHANE	UG/L	6.7	28.1	28.6	2.6	6.6	5.8	85.2	0.66 J
1,1,2,2-TETRACHLOROETHANE	UG/L	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
1,1,2-TRICHLOROETHANE	UG/L	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55	< 0.55
1,1-DICHLOROETHANE	UG/L	4.4 j	15.7	16.1	0.70 J	2.8 j	3.7	46.6	< 0.27
1,1-DICHLOROETHENE	UG/L	0.72 J	3.4	3.6	0.27 J	0.74 J	2.7	7.3	< 0.24
1,2-DICHLOROETHANE	UG/L	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28 j	< 0.28	< 0.28	< 0.28
1,2-DICHLOROPROPANE	UG/L	< 0.28 M1j	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
2-BUTANONE	UG/L	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9 j	< 2.9	< 2.9	< 2.9
2-HEXANONE	UG/L	< 5.2	< 5.2	< 5.2	< 5.2	< 5.2	< 5.2	< 5.2	< 5.2
4-METHYL-2-PENTANONE	UG/L	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
ACETONE	UG/L	< 2.7 j	< 2.7	< 2.7	< 2.7	< 2.7 j	< 2.7	< 2.7	< 2.7
BENZENE	UG/L	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
BROMODICHLOROMETHANE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
BROMOFORM	UG/L	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
BROMOMETHANE	UG/L	< 0.97	< 0.97 j	< 0.97 j	< 0.97 j	< 0.97 j	< 0.97 j	< 0.97 j	< 0.97 j
CARBON DISULFIDE	UG/L	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45
CARBON TETRACHLORIDE	UG/L	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
CHLOROBENZENE	UG/L	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71	< 0.71
CHLORODIBROMOMETHANE	UG/L	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6
CHLOROETHANE	UG/L	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
CHLOROFORM	UG/L	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
CHLOROMETHANE	UG/L	< 2.2	< 2.2 j	< 2.2 j	< 2.2 j	< 2.2	< 2.2 j	< 2.2 j	< 2.2 j
CIS-1,2-DICHLOROETHENE	UG/L	1.1	7.0	7.1	0.47 J	1.4 j	6.9	13.5	< 0.27
CIS-1,3-DICHLOROPROPENE	UG/L	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6
ETHYLBENZENE	UG/L	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32
METHYLENE CHLORIDE	UG/L	< 0.58	< 0.58	< 0.58	< 0.58	< 0.58 j	< 0.58	< 0.58	< 0.58
STYRENE	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
TETRACHLOROETHENE	UG/L	< 0.33	0.33 J	< 0.33	< 0.33	< 0.33	< 0.33	1.1	< 0.33
TOLUENE	UG/L	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27
TRANS-1,2-DICHLOROETHENE	UG/L	< 0.46	< 0.46	< 0.46	< 0.46	< 0.46 j	< 0.46	< 0.46	< 0.46
TRANS-1,3-DICHLOROPROPENE	UG/L	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4
TRICHLOROETHENE	UG/L	1.8	5.3	5.5	0.79 J	1.3	1.5	15.9	0.29 J
VINYL CHLORIDE	UG/L	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17
XYLENE, TOTAL	UG/L	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5

NOTES:
Laboratory data qualifiers are included in the laboratory reports in Attachment 4. See specific laboratory report for Sample Delivery Group (SDG) definition.
Non-detect results are reported as "< Limit of Detection (LOD)"
Data Validation Qualifiers:
j = the result is estimated

LEMBERGER LANDFILL
MONITORING WELL INDICATOR PARAMETERS AND FIELD DATA
DECEMBER 2020

PARAMETER	UNITS	RM-002D 12/17/2020 40220035007	RM-003D 12/16/2020 40220035003	RM-003XXD 12/16/2020 40220035002	RM-210D 12/17/2020 40220035008	RM-401XXD 12/17/2020 40220035006	RM-403XD 12/17/2020 40220035005	RM-404XXD 12/16/2020 40220035001
COLOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE	NONE
CONDUCTANCE, SPECIFIC	UMHOS/CM	567	788	722	750	750	871	760
DEPTH TO WATER	FEET	24.54	17.25	14.60	26.47	26.00	37.67	54.80
DISSOLVED OXYGEN, FIELD	MG/L	3.38	1.81	2.33	0.71	3.92	2.84	5.08
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE	NONE
OXIDATION REDUCTION POTENTIAL	MV	51	142	137	126	218	154	170
PH, FIELD	SU	7.40	7.35	7.50	7.16	7.37	7.20	7.38
TEMPERATURE	DEG C	3.5	5.3	2.5	1.8	3.5	4.9	2.0
TURBIDITY, FIELD NTU	NTU	8	0	0	8	0	0	7
WATER ELEVATION	FEET	791.17	802.88	806.93	801.39	806.85	806.83	806.86

Attachment 4

Laboratory Data Qualifiers for Monitoring Wells

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 376175.0000 PHASE 5 LEMBERGER
Pace Project No.: 40220035

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Attachment 5

Tabular Summary of Groundwater Standard Exceedances at Plume Monitoring Wells

Summary of Groundwater Standard Exceedances at Plume Monitoring Wells
Lemberger Landfill Sites
4th Quarter 2020

Well ID	Parameter	Result	Data Qualifiers	Units	Standard[1]		Well Location
					ES[2]	PAL[3]	
RM-002D	1,1-Dichloroethene	0.72	J	UG/L		X	2,900' northwest of LL site
RM-002D	Trichloroethene	1.8		UG/L		X	2,900' northwest of LL site
RM-003D	1,1-Dichloroethene	3.4		UG/L		X	1,000' west of LL site
RM-003D	cis-1,2-Dichloroethene	7		UG/L		X	1,000' west of LL site
RM-003D	Trichloroethene	5.3		UG/L	X		1,000' west of LL site
RM-003D DUP	1,1-Dichloroethene	3.6		UG/L		X	1,000' west of LL site
RM-003D DUP	cis-1,2-Dichloroethene	7.1		UG/L		X	1,000' west of LL site
RM-003D DUP	Trichloroethene	5.5		UG/L	X		1,000' west of LL site
RM-003XXD	Trichloroethene	0.79	J	UG/L		X	1,000' west of LL site
RM-210D	1,1-Dichloroethene	0.74	J	UG/L		X	3,600' north of LL site
RM-210D	Trichloroethene	1.3		UG/L		X	3,600' north of LL site
RM-401XXD	1,1-Dichloroethene	2.7		UG/L		X	400' Northwest of LL Site
RM-401XXD	Trichloroethene	1.5		UG/L		X	400' Northwest of LL Site
RM-403XD	1,1,1-Trichloroethane	85.2		UG/L		X	400' West of LTR site
RM-403XD	1,1-Dichloroethene	7.3		UG/L	X		400' West of LTR site
RM-403XD	cis-1,2-Dichloroethene	13.5		UG/L		X	400' West of LTR site
RM-403XD	Tetrachloroethene	1.1		UG/L		X	400' West of LTR site
RM-403XD	Trichloroethene	15.9		UG/L	X		400' West of LTR site

Notes:

[1] Table includes exceedances where the reported concentration is between the Limit of Detection and Limit of Quantitation ("J' data qualifier).

[2] ES =Wisconsin Administrative Code NR140 Enforcement Standard

[3] PAL =Wisconsin Administrative Code NR140 Preventive Action Limit

[4] LTR = Lemberger Transport and Recycling

[5] LL = Lemberger Landfill

Laboratory qualifiers are included in the sample-specific laboratory reports. See laboratory reports for the SDG-specific definitions.

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Environmental Monitoring Data Certification

Form 4400-231 (R 5/17)

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 507.30NR 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)
TRC Environmental Corp.

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

Name	Phone No. (include area code)
Meredith Westover	(608) 358-5035

Email
mwestover@trccompanies.com

Facility Name
Lemberger Landfill

License # / Monitoring ID	Facility ID (FID)
00753	436016790

Actual sampling dates (e.g., July 2-6, 2003)	The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
11/20, 11/30, 12/16, 12/17, 12/31, 2020	October, November, and December 2020

Type of Data Submitted (Check all that apply):

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

Notification attached?

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

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Facility Representative Name (Print)	Title	Phone No. (include area code)
Meredith Westover	Database Manager	(608) 358-5035

Signature

02/18/2021
Date Signed (mm/dd/yyyy)

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: _____