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September 9, 2022

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

Subject: Transmittal of Data
Residential, Plume Monitoring, and Background Wells
Lemberger Landfill Sites
First Quarter 2022

Dear Ms. Collier:

On behalf of the Lemberger Site Remediation Group (LSRG), and in accordance with the Environmental Monitoring Plan (EMP), Revision 5 (February 2021), 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 March 2022, in accordance with the February 2021 EMP, revision 5.

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
Dan Koski – City of Manitowoc
Jane Rhode – City of Manitowoc
Dominique Sorel – SS. Papadopulos & Associates, 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: May 23, 2022

Subject: Data Validation Report
Groundwater Samples (Plume Wells): 1st Quarter 2022
Lemberger Landfill and Lemberger Transport and Recycling/Franklin, Wisconsin
Laboratory Project Numbers 40243103 and 40243107

SUMMARY

Limited validation (level III) was performed on the data for 10 groundwater samples (plume wells), one field duplicate, one field blank, and one trip blank collected from at the Lemberger Landfill and Lemberger Transport and Recycling Site in Franklin, Wisconsin. The samples were collected on March 29 - 31, 2022. Samples were submitted to Pace Analytical Services, LLC in Green Bay, Wisconsin for analysis. The samples were analyzed for the following parameter:

- Volatile organic compounds (VOCs) using SW-846 Method 8260B

The laboratory reported the results for the plume wells under laboratory project numbers 40243103 and 40243107.

The sample results were assessed using the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review (EPA-540-R-20-005),* November 2020 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 may 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 by the laboratory as estimated (J).
- Potential uncertainty exists for the nondetect results for acetone, chloromethane, and 2-hexanone in the samples in laboratory project number 40243103 due to continuing calibration nonconformances. These results were qualified as estimated (UJ).

SAMPLES

Samples included in this review are listed below.

Laboratory Project Number 40243103: plume wells; collected 03/29 - 03/30/2022

- RM-005D
- RM-204D
- RM-208D
- RM-211D
- RM-401XD
- FDUP-002[1]

Laboratory Project Number 40243107: plume wells and QC samples; collected 03/31/2022

- RM-007XD
- RM-008D
- RM-307D
- RM-402XD
- RM-402XXD
- FB-002[2]
- TB-001[2]

[1] FDUP-002: Field duplicate of RM-208D
[2] These field QC samples are relevant to plume well samples collected 03/31/2022

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

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 COCs.

The laboratory noted two sample labels had collection times that differed from the COC in laboratory report number 40243107 (samples RM-402XXD and RM-402XD). The laboratory logged the sample collection times according to the COC. No validation action was required 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 which were reported in the samples in the LCS and MS/MSD analyses. Thus, accuracy and/or precision could not be evaluated for select VOCs. No validation action was taken on the basis of this issue.

Holding Times and Sample Preservation

All samples were analyzed within the method-specified holding time. All samples were received by the laboratory on ice and at a temperature within the target range of 0 to 6°C. All samples were noted as properly preserved.

Samples were received by the laboratory between seven and nine days after collection. Samples were stored in coolers, on ice, in a locked former treatment building at the site until delivery to the laboratory. No validation actions were required on this basis since the samples were kept on ice prior to delivery to the laboratory and were received on ice and at acceptable cooler temperatures by the laboratory.

GC/MS Tunes

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

Initial and Continuing Calibrations

The percent relative standard deviations and relative response factors (RRFs) for all target compounds were within the acceptance criteria in the initial calibration. The same initial calibration was applied to the two data packages included in this review.

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 the resulting validation actions.

CC	Analyte	%D	Associated Samples	Validation Actions
40MSV3 04/11/2022 @07:22	Acetone	-25.2461	RM-005D, RM-204D, RM-208D, RM-211D, RM-401XD, FDUP-003	The nondetect results for the listed VOCs were qualified as estimated (UJ) in the associated samples.
	Chloromethane	-24.4798		
	2-Hexanone	-23.2422		

Blanks

Target analytes were not detected in the laboratory method blanks or in the trip blank (TB-001). The following table summarizes the concentration of the compound that was detected in the field blank, the associated samples, and the resulting validation actions.

Analyte	Blank Concentration (µg/L)	QL (µg/L)	Blank ID: Associated Samples	Validation Actions
Toluene	1.4	1.0	FB-002: RM-007XD, RM-008D, RM-307D, RM-402XD, RM-402XXD	Qualification was not required since toluene was not detected in the associated samples.

Surrogate Spike Recoveries

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

MS/MSD Results

MS/MSD analyses were performed on samples RM-005D and RM-402XXD. The MS/MSD %Rs and relative percent differences (RPDs) met criteria.

Note that the laboratory only spiked a subset of the VOCs which were 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: 2-butanone, 2-hexanone, 4-methyl-2-pentanone, and acetone. No validation action was taken on this basis.

LCS Results

An LCS was performed each day prior to sample analysis. All LCS %Rs were within the laboratory's acceptance criteria.

Note that the laboratory only spiked a subset of the VOCs that were reported in the samples in the LCS. Thus, accuracy could not be evaluated for the following VOCs (which were not spiked) in all LCSs: 2-butanone, 2-hexanone, 4-methyl-2-pentanone, and acetone. 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 samples listed below were submitted as the field duplicate pair with this sample set.

- RM-208D and FDUP-002 (laboratory project number 40243103)

The following tables summarize the RPDs or absolute differences (AbsDs) of the detected results in the field duplicate pair. All criteria were met (see criteria below the table).

Analyte	QL (µg/L)	RM-208D (µg/L)	FDUP-002 (µg/L)	RPD (%) or AbsD (µg/L)	Validation Action
1,1,1-Trichloroethane	1.0	8.5	8.2	RPD = 3.6	None; all criteria were met (see criteria, below)
1,1-Dichloroethane	1.0	6.2	5.7	RPD = 8.4	
1,1-Dichloroethene	1.0	1.8	1.9	AbsD = 0.1	
cis-1,2-Dichloroethene	1.0	3.9	4.6	AbsD = 0.7	
Trichloroethene	1.0	1.8	2.6	AbsD = 0.8	

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.

Quantitation Limits and Sample Results

No dilutions were performed on the samples in this data set.

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 sample set	0.02	0.2	0.38
Bromodichloromethane		0.06	0.6*	0.42
Bromoform		0.44	4.4*	3.8
Bromomethane		1	10	1.2
Chloroform		0.6	6*	1.2
Vinyl chloride		0.02	0.2*	0.17
cis-1,3-Dichloropropene		0.02	0.2	0.36
trans-1,3-Dichloropropene		0.02	0.2	3.5
* Laboratory LOD is below action limit				

QUALIFIED FORM 1s

SAMPLE NO.

RM-211D

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

Lab Name: Pace Analytical - Green Bay
Contract: 47340.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243103
Date Extracted: 04/11/2022 11:57
Lab Sample ID: 40243103001
Date Analyzed: 04/11/2022 11:57
Lab File ID: 04112022.B\04112217.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	0.61	J
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	<0.58	U
156-59-2	cis-1,2-Dichloroethene	<0.47	U
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	1.1	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	<0.32	U
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-204D

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

Lab Name: Pace Analytical - Green Bay
Contract: 47340.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243103
Date Extracted: 04/11/2022 12:56
Lab Sample ID: 40243103002
Date Analyzed: 04/11/2022 12:56
Lab File ID: 04112022.B\04112220.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	11.6	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	2.2	
156-59-2	cis-1,2-Dichloroethene	2.8	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	14.3	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	1.8	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-401XD

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay Contract: 47340.0000 PHASE 2 LEMBERGER

Date Received: 04/07/2022 14:50 Matrix: Water SDG No.: 40243103

Date Extracted: 04/11/2022 13:16 Lab Sample ID: 40243103003

Date Analyzed: 04/11/2022 13:16 Lab File ID: 04112022.B\04112221.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	12.0	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	3.2	
156-59-2	cis-1,2-Dichloroethene	4.2	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	15.3	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	2.8	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-005D

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

Lab Name: Pace Analytical - Green Bay
Contract: 47340.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243103
Date Extracted: 04/11/2022 11:38
Lab Sample ID: 40243103004
Date Analyzed: 04/11/2022 11:38
Lab File ID: 04112022.B\04112216.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	14.3	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	3.0	
156-59-2	cis-1,2-Dichloroethene	6.3	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	16.4	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	3.1	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-208D

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

Lab Name: Pace Analytical - Green Bay
Contract: 47340.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243103
Date Extracted: 04/11/2022 13:35
Lab Sample ID: 40243103005
Date Analyzed: 04/11/2022 13:35
Lab File ID: 04112022.B\04112222.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	6.2	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	1.8	
156-59-2	cis-1,2-Dichloroethene	3.9	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	8.5	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	1.8	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

FDUP-002

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

Lab Name: Pace Analytical - Green Bay
Contract: 47340.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243103
Date Extracted: 04/11/2022 13:55
Lab Sample ID: 40243103006
Date Analyzed: 04/11/2022 13:55
Lab File ID: 04112022.B\04112223.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	5.7	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	1.9	
156-59-2	cis-1,2-Dichloroethene	4.6	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	8.2	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	2.6	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

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

RM-402XXD

Lab Name: Pace Analytical - Green Bay | Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50 | Matrix: Water | SDG No.: 40243107
Date Extracted: 04/11/2022 22:08 | Lab Sample ID: 40243107001
Date Analyzed: 04/11/2022 22:08 | Lab File ID: 04112022.B\04112260.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	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	11.8	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	2.8	
156-59-2	cis-1,2-Dichloroethene	4.9	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	U
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	21.3	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	4.9	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-402XD

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243107
Date Extracted: 04/11/2022 23:07
Lab Sample ID: 40243107002
Date Analyzed: 04/11/2022 23:07
Lab File ID: 04112022.B\04112263.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	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	44.9	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	22.5	
156-59-2	cis-1,2-Dichloroethene	17.6	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	U
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	0.80	J
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	101	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	12.2	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-008D

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243107
Date Extracted: 04/11/2022 23:27
Lab Sample ID: 40243107003
Date Analyzed: 04/11/2022 23:27
Lab File ID: 04112022.B\04112264.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	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	8.1	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	1.6	
156-59-2	cis-1,2-Dichloroethene	3.9	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	U
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	24.3	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	3.8	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-007XD

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243107
Date Extracted: 04/12/2022 01:05
Lab Sample ID: 40243107004
Date Analyzed: 04/12/2022 01:05
Lab File ID: 04112022.B\04112269.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	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	200	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	31.3	
156-59-2	cis-1,2-Dichloroethene	71.4	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	U
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	2.4	
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	221	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	45.1	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-307D

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243107
Date Extracted: 04/11/2022 23:46
Lab Sample ID: 40243107005
Date Analyzed: 04/11/2022 23:46
Lab File ID: 04112022.B\04112265.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	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	14.0	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	3.1	
156-59-2	cis-1,2-Dichloroethene	1.8	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	U
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	0.98	J
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	65.9	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	7.1	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

FB-002

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243107
Date Extracted: 04/11/2022 22:47
Lab Sample ID: 40243107006
Date Analyzed: 04/11/2022 22:47
Lab File ID: 04112022.B\04112262.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	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	<0.30	U
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	<0.58	U
156-59-2	cis-1,2-Dichloroethene	<0.47	U
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	U
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	1.4	
71-55-6	1,1,1-Trichloroethane	<0.30	U
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	<0.32	U
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

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

TB-001

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243107
Date Extracted: 04/11/2022 21:48
Lab Sample ID: 40243107007
Date Analyzed: 04/11/2022 21:48
Lab File ID: 04112022.B\04112259.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	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	<0.30	U
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	<0.58	U
156-59-2	cis-1,2-Dichloroethene	<0.47	U
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	U
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	<0.30	U
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	<0.32	U
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

Memorandum

To: Meredith Westover

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

Date: May 26, 2022

Subject: Data Validation Report
Groundwater Samples (Sentinel Wells): 1st Quarter 2022
Lemberger Landfill and Lemberger Transport and Recycling/Franklin, Wisconsin
Laboratory Project Numbers 40243102 and 40243104

SUMMARY

Full validation (level IV) was performed on the data for six groundwater samples (sentinel wells), one field duplicate, one field blank, and one trip blank collected at the Lemberger Landfill and Lemberger Transport and Recycling Site in Franklin, Wisconsin. The samples were collected on March 29 and 30, 2022. 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 laboratory reported the sentinel well results under laboratory project numbers 40243102 and 40243104.

The sample results were assessed using the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review (EPA-540-R-20-005),* November 2020 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 nondetect results for select VOCs in all samples except RM-002D due to continuing calibration nonconformances. These results were qualified as estimated (UJ).

SAMPLES

Samples included in this review are listed below:

Laboratory Project Number 40243102: sentinel wells and QC samples; collected 03/30/2022

- RM-002D
- RM-210D
- RM-401XXD
- FB-001[1]
- TB-001[1]

Laboratory Project Number 40243104: sentinel wells; collected 03/29/2022

- RM-003D
- RM-003XXD
- RM-403XD
- FDUP-001[2]

[1] These field QC samples are relevant to sentinel well samples collected 03/30/2022
[2] FDUP-001: Field duplicate of RM-403XD

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 (MS)/MS Duplicate (MSD) results
- Laboratory control sample (LCS) results
- Internal standard performance
- Laboratory duplicate results
- 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.

Page numbers (i.e., “Page 1 of 1”) were not entered on the COC forms, but the required information was otherwise provided, and signatures and custody chain were properly recorded. The laboratory noted on the Sample Condition Upon Receipt Form for the 40243102 data package that the container label for sample RM-210D reported an incorrect collection date of 03/29/2022; the collection date for this sample was correctly entered as 03/30/2022, in agreement with the COC. No validation actions were required on the basis of these issues.

Data Completeness

The data package was found to be complete as received from the laboratory with the following exceptions.

- The laboratory only spiked a subset of the VOCs which were reported in the samples in the LCS and MS/MSDs. Thus, accuracy and/or precision could not be evaluated for select VOCs. No validation actions were taken on the basis of this issue.

- 1,1-Dichloroethene is reported as a positive result (detected at 0.74 J µg/L) in sample RM-003XXD. In the original data package, the raw data reporting for this sample indicated that 1,1-dichloroethene was "Not Detected", and there were no gas chromatogram signal details or mass spectrometer output provided (since the analyte was noted as nondetect). The laboratory issued a corrected data package to provide the missing raw data output. No further validation action was required on this basis.

Holding Times and Sample Preservation

All samples were analyzed within the method-specified holding time. All samples were received by the laboratory on ice and were properly preserved.

Samples were received by the laboratory 8 to 9 days after collection. Samples were stored in coolers, on ice, in a locked former treatment building at the site until delivery to the laboratory. No validation actions were required on this basis since the samples were kept on ice prior to delivery to the laboratory and were received on ice and at acceptable cooler temperatures by the laboratory.

GC/MS Tunes

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

Initial and Continuing Calibrations

The coefficients of determination, percent relative standard deviations, and relative response factors (RRFs) for all target compounds were within the 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 acceptance criteria (%D |≤20%|) in the CCs and the associated samples. The %Ds which were outside of the acceptance criteria in the VOC initial calibration verification (ICV) standards were not summarized in the table below since the ICVs did not immediately precede any VOC sample analyses.

CC	Compound	%D	Associated Samples	Validation Action
40MSV3 04/11/22 @07:22	Acetone	-25.2461	RM-210D, RM-401XXD, FB-001, TB-001	The nondetect results for the listed VOCs were qualified as estimated (UJ) in the associated samples.
	Chloromethane	-24.4798		
	2-Hexanone	-23.2422		
40MSVB 04/08/22 @16:30	2-Hexanone	25.8407	RM-003D, RM-003XXD, RM-403XD, FDUP-001	
	4-Methyl-2-pentanone	20.8559		

Blanks

Target analytes were not detected in the method blanks or trip blank. The following table summarizes the concentration of the compound that was detected in the field blank, the associated samples, and the resulting validation actions.

Compound	Blank Concentration (µg/L)	QL (µg/L)	Blank ID: Associated Samples	Validation Action
Toluene	1.3	1.0	FB-001: All sentinel groundwater samples collected on 03/20/22	No qualification was required since toluene was not detected in the associated samples.

Surrogate Spike Recoveries

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

MS/MSD Results

MS/MSD analyses were performed on sample RM-003D. All MS/MSD %R and relative percent difference (RPD) criteria were met.

Note that the laboratory only spiked a subset of the VOCs which were 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 groundwater sample RM-003D: 2-butanone, 2-hexanone, 4-methyl-2-pentanone, and acetone. No validation action was taken on this basis.

LCS Results

An LCS analysis was performed each day prior to sample analysis. All LCS %Rs met the laboratory's acceptance criteria.

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

Internal Standard Performance

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

Laboratory Duplicate Results

Laboratory duplicates were not performed on a sample from this data set.

Field Duplicate Results

Samples RM-403XD and FDUP-001 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs or absolute difference (AbsDs) of the detected results in the field duplicate pair. All criteria were met (see criteria below the table).

Analyte	QL(s) (µg/L)	RM-403XD (µg/L)	FDUP-001 (µg/L)	RPD (%) or AbsD (µg/L)	Validation Action
1,1,1-Trichloroethane	1.0	90.7	81.7	RPD = 10.4	None; all criteria were met (see criteria below).
1,1-Dichloroethane	1.0	55.9	51.3	RPD = 8.6	
1,1-Dichloroethene	1.0	8.3	7.6	RPD = 8.8	
Tetrachloroethene	1.0	1.1	0.79 J	AbsD = 0.31	
Trichloroethene	1.0	11.5	10.5	RPD = 9.1	
cis-1,2-Dichloroethene	1.0	12.9	12.0	RPD = 7.2	

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.

Quantitation Limits and Sample Results

Sample calculations were spot-checked; there were no errors noted. There were no dilutions performed on the samples in this data set.

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 nondetect VOC results 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 sample set	0.02	0.2	0.38
Bromodichloromethane		0.06	0.6 *	0.42
Bromoform		0.44	4.4 *	3.8
Bromomethane		1	10	1.2
Chloroform		0.6	6 *	1.2
Vinyl chloride		0.02	0.2 *	0.17
cis-1,3-Dichloropropene		0.02	0.2	0.36
trans-1,3-Dichloropropene		0.02	0.2	3.5
* Laboratory LOD is below action limit				

Target Compound Identification

All criteria were met.

QUALIFIED FORM 1s

SAMPLE NO.

RM-002D

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243102
Date Extracted: 04/11/2022 18:32
Lab Sample ID: 40243102001
Date Analyzed: 04/11/2022 18:32
Lab File ID: 04112022.B\04112249.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	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	6.3	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	0.89	J
156-59-2	cis-1,2-Dichloroethene	1.1	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	U
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	6.3	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	1.5	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-210D

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243102
Date Extracted: 04/11/2022 12:17
Lab Sample ID: 40243102002
Date Analyzed: 04/11/2022 12:17
Lab File ID: 04112022.B\04112218.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	4.8	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	0.99	J
156-59-2	cis-1,2-Dichloroethene	1.6	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	7.1	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	1.2	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-401XXD

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243102
Date Extracted: 04/11/2022 12:36
Lab Sample ID: 40243102003
Date Analyzed: 04/11/2022 12:36
Lab File ID: 04112022.B\04112219.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	3.1	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	2.0	
156-59-2	cis-1,2-Dichloroethene	3.1	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	3.3	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	0.56	J
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

FB-001

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243102
Date Extracted: 04/11/2022 10:58
Lab Sample ID: 40243102004
Date Analyzed: 04/11/2022 10:58
Lab File ID: 04112022.B\04112214.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	<0.30	U
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	<0.58	U
156-59-2	cis-1,2-Dichloroethene	<0.47	U
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	1.3	
71-55-6	1,1,1-Trichloroethane	<0.30	U
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	<0.32	U
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

TB-001

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0000 PHASE 2 LEMBERGER
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243102
Date Extracted: 04/11/2022 11:18
Lab Sample ID: 40243102005
Date Analyzed: 04/11/2022 11:18
Lab File ID: 04112022.B\04112215.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	<8.6	~~U~~ UJ
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	~~U~~ UJ
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	<0.30	U
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	<0.58	U
156-59-2	cis-1,2-Dichloroethene	<0.47	U
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	U
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	<0.30	U
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	<0.32	U
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-003D

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0600 PHASE2 LEMBERGERLF
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243104
Date Extracted: 04/08/2022 20:35
Lab Sample ID: 40243104001
Date Analyzed: 04/08/2022 20:35
Lab File ID: 04082022.B\04082263.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSVB Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	11.5	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	1.8	
156-59-2	cis-1,2-Dichloroethene	3.2	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	~~U~~ UJ
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	0.45	J
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	18.2	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	2.8	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-003XXD

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0600 PHASE2 LEMBERGERLF
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243104
Date Extracted: 04/08/2022 20:56
Lab Sample ID: 40243104002
Date Analyzed: 04/08/2022 20:56
Lab File ID: 04082022.B\04082264.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSVB Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	3.2	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	0.74	J
156-59-2	cis-1,2-Dichloroethene	1.3	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	~~U~~ UJ
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	<0.41	U
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	6.3	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	1.6	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

RM-403XD

MSV - FORM I VOA-1

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Green Bay Contract: 473040.0600 PHASE2 LEMBERGERLF

Date Received: 04/07/2022 14:50 Matrix: Water SDG No.: 40243104

Date Extracted: 04/08/2022 21:16 Lab Sample ID: 40243104003

Date Analyzed: 04/08/2022 21:16 Lab File ID: 04082022.B\04082265.D

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	55.9	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	8.3	
156-59-2	cis-1,2-Dichloroethene	12.9	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	~~U~~ UJ
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	1.1	
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	90.7	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	11.5	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	U

SAMPLE NO.

FDUP-001

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

Lab Name: Pace Analytical - Green Bay
Contract: 473040.0600 PHASE2 LEMBERGERLF
Date Received: 04/07/2022 14:50
Matrix: Water SDG No.: 40243104
Date Extracted: 04/08/2022 21:37
Lab Sample ID: 40243104004
Date Analyzed: 04/08/2022 21:37
Lab File ID: 04082022.B\04082266.D
Initial wt/vol: 5 mL Final wt/vol: 5 mL Dilution: 1
Instrument: 40MSVB Percent Moisture:

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
67-64-1	Acetone	<8.6	U
71-43-2	Benzene	<0.30	U
75-27-4	Bromodichloromethane	<0.42	U
75-25-2	Bromoform	<3.8	U
74-83-9	Bromomethane	<1.2	U
78-93-3	2-Butanone (MEK)	<6.5	U
75-15-0	Carbon disulfide	<1.1	U
56-23-5	Carbon tetrachloride	<0.37	U
108-90-7	Chlorobenzene	<0.86	U
75-00-3	Chloroethane	<1.4	U
67-66-3	Chloroform	<1.2	U
74-87-3	Chloromethane	<1.6	U
124-48-1	Dibromochloromethane	<2.6	U
75-34-3	1,1-Dichloroethane	51.3	
107-06-2	1,2-Dichloroethane	<0.29	U
75-35-4	1,1-Dichloroethene	7.6	
156-59-2	cis-1,2-Dichloroethene	12.0	
156-60-5	trans-1,2-Dichloroethene	<0.53	U
78-87-5	1,2-Dichloropropane	<0.45	U
10061-01-5	cis-1,3-Dichloropropene	<0.36	U
10061-02-6	trans-1,3-Dichloropropene	<3.5	U
100-41-4	Ethylbenzene	<0.33	U
591-78-6	2-Hexanone	<6.3	~~U~~ UJ
75-09-2	Methylene Chloride	<0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	<6.0	~~U~~ UJ
100-42-5	Styrene	<0.36	U
79-34-5	1,1,2,2-Tetrachloroethane	<0.38	U
127-18-4	Tetrachloroethene	0.79	J
108-88-3	Toluene	<0.29	U
71-55-6	1,1,1-Trichloroethane	81.7	
79-00-5	1,1,2-Trichloroethane	<0.34	U
79-01-6	Trichloroethene	10.5	
75-01-4	Vinyl chloride	<0.17	U
1330-20-7	Xylene (Total)	<1.0	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
MARCH 2022

PARAMETER	UNITS	RM-002D 3/30/2022 40243102001	RM-003D 3/29/2022 40243104001	RM-003XXD 3/29/2022 40243104002	RM-005D 3/30/2022 40243103004	RM-007XD 3/31/2022 40243107004	RM-008D 3/31/2022 40243107003	RM-204D 3/29/2022 40243103002	RM-208D 3/30/2022 40243103005	RM-208D DUP 3/30/2022 40243103006
1,1,1-TRICHLOROETHANE	UG/L	6.3	18.2	6.3	16.4	221	24.3	14.3	8.5	8.2
1,1,2,2-TETRACHLOROETHANE	UG/L	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38
1,1,2-TRICHLOROETHANE	UG/L	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,1-DICHLOROETHANE	UG/L	6.3	11.5	3.2	14.3	200	8.1	11.6	6.2	5.7
1,1-DICHLOROETHENE	UG/L	0.89 J	1.8	0.74 J	3.0	31.3	1.6	2.2	1.8	1.9
1,2-DICHLOROETHANE	UG/L	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29
1,2-DICHLOROPROPANE	UG/L	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45
2-BUTANONE	UG/L	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5
2-HEXANONE	UG/L	< 6.3	< 6.3 uj	< 6.3 uj	< 6.3 uj	< 6.3	< 6.3	< 6.3 uj	< 6.3 uj	< 6.3 uj
4-METHYL-2-PENTANONE	UG/L	< 6.0	< 6.0 uj	< 6.0 uj	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0
ACETONE	UG/L	< 8.6	< 8.6	< 8.6	< 8.6 uj	< 8.6	< 8.6	< 8.6 uj	< 8.6 uj	< 8.6 uj
BENZENE	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
BROMODICHLOROMETHANE	UG/L	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42
BROMOFORM	UG/L	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8
BROMOMETHANE	UG/L	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
CARBON DISULFIDE	UG/L	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
CARBON TETRACHLORIDE	UG/L	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37
CHLOROBENZENE	UG/L	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86
CHLORODIBROMOMETHANE	UG/L	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6
CHLOROETHANE	UG/L	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
CHLOROFORM	UG/L	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
CHLOROMETHANE	UG/L	< 1.6	< 1.6	< 1.6	< 1.6 uj	< 1.6	< 1.6	< 1.6 uj	< 1.6 uj	< 1.6 uj
CIS-1,2-DICHLOROETHENE	UG/L	1.1	3.2	1.3	6.3	71.4	3.9	2.8	3.9	4.6
CIS-1,3-DICHLOROPROPENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
ETHYLBENZENE	UG/L	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
METHYLENE CHLORIDE	UG/L	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32
STYRENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
TETRACHLOROETHENE	UG/L	< 0.41	0.45 J	< 0.41	< 0.41	2.4	< 0.41	< 0.41	< 0.41	< 0.41
TOLUENE	UG/L	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29
TRANS-1,2-DICHLOROETHENE	UG/L	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53
TRANS-1,3-DICHLOROPROPENE	UG/L	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5
TRICHLOROETHENE	UG/L	1.5	2.8	1.6	3.1	45.1	3.8	1.8	1.8	2.6
VINYL CHLORIDE	UG/L	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17
XYLENE, TOTAL	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

NOTES:
Laboratory data qualifiers are included 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
u = data validation rules result is not-detected.

LEMBERGER LANDFILL
MONITORING WELL VOLATILE ORGANIC ANALYSIS RESULTS
MARCH 2022

PARAMETER	UNITS	RM-210D 3/30/2022 40243102002	RM-211D 3/29/2022 40243103001	RM-307D 3/31/2022 40243107005	RM-401XD 3/30/2022 40243103003	RM-401XXD 3/30/2022 40243102003	RM-402XD 3/31/2022 40243107002	RM-402XXD 3/31/2022 40243107001	RM-403XD 3/29/2022 40243104003	RM-403XD DUP 3/29/2022 40243104004
1,1,1-TRICHLOROETHANE	UG/L	7.1	1.1	65.9	15.3	3.3	101	21.3	90.7	81.7
1,1,2,2-TETRACHLOROETHANE	UG/L	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38	< 0.38
1,1,2-TRICHLOROETHANE	UG/L	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,1-DICHLOROETHANE	UG/L	4.8	0.61 J	14.0	12.0	3.1	44.9	11.8	55.9	51.3
1,1-DICHLOROETHENE	UG/L	0.99 J	< 0.58	3.1	3.2	2.0	22.5	2.8	8.3	7.6
1,2-DICHLOROETHANE	UG/L	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29
1,2-DICHLOROPROPANE	UG/L	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45
2-BUTANONE	UG/L	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5	< 6.5
2-HEXANONE	UG/L	< 6.3 uj	< 6.3 uj	< 6.3	< 6.3 uj	< 6.3 uj	< 6.3	< 6.3	< 6.3 uj	< 6.3 uj
4-METHYL-2-PENTANONE	UG/L	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0 uj	< 6.0 uj
ACETONE	UG/L	< 8.6 uj	< 8.6 uj	< 8.6	< 8.6 uj	< 8.6 uj	< 8.6	< 8.6	< 8.6	< 8.6
BENZENE	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
BROMODICHLOROMETHANE	UG/L	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42	< 0.42
BROMOFORM	UG/L	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8	< 3.8
BROMOMETHANE	UG/L	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
CARBON DISULFIDE	UG/L	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
CARBON TETRACHLORIDE	UG/L	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37	< 0.37
CHLOROBENZENE	UG/L	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86	< 0.86
CHLORODIBROMOMETHANE	UG/L	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6
CHLOROETHANE	UG/L	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
CHLOROFORM	UG/L	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
CHLOROMETHANE	UG/L	< 1.6 uj	< 1.6 uj	< 1.6	< 1.6 uj	< 1.6 uj	< 1.6	< 1.6	< 1.6	< 1.6
CIS-1,2-DICHLOROETHENE	UG/L	1.6	< 0.47	1.8	4.2	3.1	17.6	4.9	12.9	12.0
CIS-1,3-DICHLOROPROPENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
ETHYLBENZENE	UG/L	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33
METHYLENE CHLORIDE	UG/L	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32
STYRENE	UG/L	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36
TETRACHLOROETHENE	UG/L	< 0.41	< 0.41	0.98 J	< 0.41	< 0.41	0.80 J	< 0.41	1.1	0.79 J
TOLUENE	UG/L	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29
TRANS-1,2-DICHLOROETHENE	UG/L	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53	< 0.53
TRANS-1,3-DICHLOROPROPENE	UG/L	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5
TRICHLOROETHENE	UG/L	1.2	< 0.32	7.1	2.8	0.56 J	12.2	4.9	11.5	10.5
VINYL CHLORIDE	UG/L	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17
XYLENE, TOTAL	UG/L	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0

NOTES:
Laboratory data qualifiers are included 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
u = data validation rules result is not-detected.

LEMBERGER LANDFILL
MONITORING WELL INDICATOR PARAMETERS AND FIELD DATA
MARCH 2022

PARAMETER	UNITS	RM-002D 3/30/2022 40243102001	RM-003D 3/29/2022 40243104001	RM-003XXD 3/29/2022 40243104002	RM-005D 3/30/2022 40243103004	RM-007XD 3/31/2022 40243107004	RM-008D 3/31/2022 40243107003	RM-204D 3/29/2022 40243103002	RM-208D 3/30/2022 40243103005
COLOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
CONDUCTANCE, SPECIFIC	UMHOS/CM	579	751	822	800	1008	937	763	764
DEPTH TO WATER	FEET	23.23	18.17	15.13	42.40	37.53	38.22	29.20	38.82
DISSOLVED OXYGEN, FIELD	MG/L	0.91	1.32	1.76	1.23	1.29	3.51	0.49	0.97
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
OXIDATION REDUCTION POTENTIAL	MV	116	197	217	156	163	153	136	175
PH, FIELD	SU	7.43	7.21	7.26	7.22	7.04	7.17	7.28	7.28
TEMPERATURE	DEG C	6.6	2.0	1.9	7.6	8.6	2.2	8.2	8.6
TURBIDITY, FIELD NTU	NTU	6	0	0	0	0	0	5	0
WATER ELEVATION	FEET	792.48	801.96	806.4	800.68	806.66	807.26	799.28	801.09

LEMBERGER LANDFILL
MONITORING WELL INDICATOR PARAMETERS AND FIELD DATA
MARCH 2022

PARAMETER	UNITS	RM-210D 3/30/2022 40243102002	RM-211D 3/29/2022 40243103001	RM-307D 3/31/2022 40243107005	RM-401XD 3/30/2022 40243103003	RM-401XXD 3/30/2022 40243102003	RM-402XD 3/31/2022 40243107002	RM-402XXD 3/31/2022 40243107001	RM-403XD 3/29/2022 40243104003
COLOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
CONDUCTANCE, SPECIFIC	UMHOS/CM	736	721	765	771	744	1212	849	904
DEPTH TO WATER	FEET	29.97	16.28	46.28	31.60	26.78	35.65	35.73	38.10
DISSOLVED OXYGEN, FIELD	MG/L	1.72	0.49	3.68	1.19	2.72	1.74	2.39	1.82
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
OXIDATION REDUCTION POTENTIAL	MV	172	149	251	193	204	242	257	202
PH, FIELD	SU	7.51	7.24	6.94	7.28	7.39	7.13	7.17	7.11
TEMPERATURE	DEG C	5.3	7.4	8.1	7.8	6.7	3.7	6.3	5.7
TURBIDITY, FIELD NTU	NTU	7	0	8	3	0	0	0	0
WATER ELEVATION	FEET	797.89	804.07	807.66	802	806.07	806.42	806.49	806.4

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: 473040.0000 PHASE 2 LEMBERGER
Pace Project No.: 40243102

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.

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

QUALIFIERS

Project: 47340.0000 PHASE 2 LEMBERGER
Pace Project No.: 40243103

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.

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

QUALIFIERS

Project: 473040.0600 PHASE2 LEMBERGERLF
Pace Project No.: 40243104

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.

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

QUALIFIERS

Project: 473040.0000 PHASE 2 LEMBERGER
Pace Project No.: 40243107

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.

Attachment 5

Tabular Summary of Groundwater Standard Exceedances at Plume Monitoring Wells

Summary of Groundwater Standard Exceedances at Plume Monitoring Wells
Lemberger Landfill Sites
1st Quarter 2022

Well ID	Parameter	Result	Data Qualifiers	Units	Standard[1]		Well Location
					ES[2]	PAL[3]	
RM-002D	1,1-Dichloroethene	0.89	J	UG/L		X	2,900' northwest of LL site
RM-002D	Trichloroethene	1.5		UG/L		X	2,900' northwest of LL site
RM-003D	1,1-Dichloroethene	1.8		UG/L		X	1,000' west of LL site
RM-003D	Trichloroethene	2.8		UG/L		X	1,000' west of LL site
RM-003XXD	1,1-Dichloroethene	0.74	J	UG/L		X	1,000' west of LL site
RM-003XXD	Trichloroethene	1.6		UG/L		X	1,000' west of LL site
RM-005D	1,1-Dichloroethene	3		UG/L		X	Northwest side of LL site
RM-005D	Trichloroethene	3.1		UG/L		X	Northwest side of LL site
RM-007XD	1,1,1-Trichloroethane	221		UG/L	X		North side of LTR site
RM-007XD	1,1-Dichloroethane	200		UG/L		X	North side of LTR site
RM-007XD	1,1-Dichloroethene	31.3		UG/L	X		North side of LTR site
RM-007XD	cis-1,2-Dichloroethene	71.4		UG/L	X		North side of LTR site
RM-007XD	Tetrachloroethene	2.4		UG/L		X	North side of LTR site
RM-007XD	Trichloroethene	45.1		UG/L	X		North side of LTR site
RM-008D	1,1-Dichloroethene	1.6		UG/L		X	500' south of LL site
RM-008D	Trichloroethene	3.8		UG/L		X	500' south of LL site
RM-204D	1,1-Dichloroethene	2.2		UG/L		X	1,300' north of LL site
RM-204D	Trichloroethene	1.8		UG/L		X	1,300' north of LL site
RM-208D	1,1-Dichloroethene	1.8		UG/L		X	Southwest side of LL site
RM-208D	Trichloroethene	1.8		UG/L		X	Southwest side of LL site
RM-208D DUP	1,1-Dichloroethene	1.9		UG/L		X	Southwest side of LL site
RM-208D DUP	Trichloroethene	2.6		UG/L		X	Southwest side of LL site
RM-210D	1,1-Dichloroethene	0.99	J	UG/L		X	3,600' north of LL site
RM-210D	Trichloroethene	1.2		UG/L		X	3,600' north of LL site
RM-307D	1,1,1-Trichloroethane	65.9		UG/L		X	West side of LTR site
RM-307D	1,1-Dichloroethene	3.1		UG/L		X	West side of LTR site
RM-307D	Tetrachloroethene	0.98	J	UG/L		X	West side of LTR site
RM-307D	Trichloroethene	7.1		UG/L	X		West side of LTR site
RM-401XD	1,1-Dichloroethene	3.2		UG/L		X	400' Northwest of LL Site
RM-401XD	Trichloroethene	2.8		UG/L		X	400' Northwest of LL Site
RM-401XXD	1,1-Dichloroethene	2		UG/L		X	400' Northwest of LL Site
RM-401XXD	Trichloroethene	0.56	J	UG/L		X	400' Northwest of LL Site

Summary of Groundwater Standard Exceedances at Plume Monitoring Wells
Lemberger Landfill Sites
1st Quarter 2022

Well ID	Parameter	Result	Data Qualifiers	Units	Standard[1]		Well Location
					ES[2]	PAL[3]	
RM-402XD	1,1,1-Trichloroethane	101		UG/L		X	400' Northwest of LTR site
RM-402XD	1,1-Dichloroethene	22.5		UG/L	X		400' Northwest of LTR site
RM-402XD	cis-1,2-Dichloroethene	17.6		UG/L		X	400' Northwest of LTR site
RM-402XD	Tetrachloroethene	0.8	J	UG/L		X	400' Northwest of LTR site
RM-402XD	Trichloroethene	12.2		UG/L	X		400' Northwest of LTR site
RM-402XXD	1,1-Dichloroethene	2.8		UG/L		X	400' Northwest of LTR site
RM-402XXD	Trichloroethene	4.9		UG/L		X	400' Northwest of LTR site
RM-403XD	1,1,1-Trichloroethane	90.7		UG/L		X	400' West of LTR site
RM-403XD	1,1-Dichloroethene	8.3		UG/L	X		400' West of LTR site
RM-403XD	cis-1,2-Dichloroethene	12.9		UG/L		X	400' West of LTR site
RM-403XD	Tetrachloroethene	1.1		UG/L		X	400' West of LTR site
RM-403XD	Trichloroethene	11.5		UG/L	X		400' West of LTR site
RM-403XD DUP	1,1,1-Trichloroethane	81.7		UG/L		X	400' West of LTR site
RM-403XD DUP	1,1-Dichloroethene	7.6		UG/L	X		400' West of LTR site
RM-403XD DUP	cis-1,2-Dichloroethene	12		UG/L		X	400' West of LTR site
RM-403XD DUP	Tetrachloroethene	0.79	J	UG/L		X	400' West of LTR site
RM-403XD DUP	Trichloroethene	10.5		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)
1/31, 2/28, 3/29-3/31 2022	January, February, March 2022

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
- [ ] 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 _____ Date Signed (mm/dd/yyyy) 08/01/2022

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: _____