

September 8, 2023

Lee and Roxanne Gnatzig
P.O. Box 101
Reedsburg, WI 53959

SUBJECT: Vapor Sampling Results - Contaminants Not Detected
PROPERTY: Reedsburg Cleaners, 120 N. Locust Street (PSI A); BRRTS # 02-57-001682

Dear Lee and Roxanne Gnatzig,

Included are the findings of a recent investigation on your property conducted by Bay West, LLC (Bay West) an environmental consultant hired by the Wisconsin Department of Natural Resources (WDNR).

Background:

As you are aware, this investigation was conducted because of the potential for contaminant vapors from the nearby Reedsburg Cleaners property identified above to migrate through soil, accumulate beneath the foundation of your property, and possibly enter your indoor air. The contaminant of concern at the Reedsburg Cleaners property is tetrachloroethylene (PCE) and trichloroethylene (TCE). The history of this site and the potential concerns to neighboring residents were described in detail in the original letter sent to your home.

Sampling:

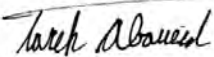
On July 18, 2023, Bay West deployed passive air sampling devices at each floor of your residence and installed one passive vapor sampler below the concrete floor of your basement for the collection of indoor air and sub-slab soil vapor samples. On August 1, 2023, the sample devices were retrieved then submitted to Beacon Environmental, where it underwent laboratory analysis for five contaminants, including PCE, TCE, cis-1,2-dichloroethene (DCE), trans-1,2-dichloroethene (DCE) and vinyl chloride (VC).

Your Test Results:

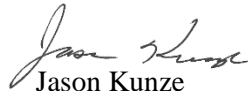
Attached are copies of the laboratory report for your passive vapor sub-slab and indoor air samples. The results of this 1st round of sampling shows that contaminants of concern were not detected. There does not appear to be a risk of PCE and TCE vapor entering your property at this time. In order to confirm the results, we will contact you to schedule another sampling visit in the near future.

We appreciate the opportunity to assist you with this vapor investigation effort. Please feel free to contact us if you have any questions about these results.

Sincerely,



Tarek Aboueid
Environmental Scientist
651.724.9757
taboueid@baywest.com



Jason Kunze
Senior Project Manager
651.291.3438
jkunze@baywest.com

Copy: Rob Hoverman, PG, WDNR, 414.497.0896, Robert.Hoverman@wisconsin.gov
Jeff Ackerman, WDNR PM, 608.275.3323, jeff.ackerman@wisconsin.gov
Jeremiah Yee, Wisconsin Dept of Health Services, 608-266-1865, dhsdphoperations@dhs.wisconsin.gov

Attachments:

TABLE

Table – Tabulated vapor analytical results with the sample dates, sample type (sub-slab or indoor air), and location.

FIGURES

Figure 1 – Property Location Map

Figure 2 – Building Map showing sampling locations.

APPENDIX

Appendix A – Access Agreement

Appendix B – Laboratory Analytical Results with Chain of Custody

Appendix C – Vapor Sampling Field Checklist and Photolog

Appendix D – Understanding Chemical Vapor Testing Results (DNR PUB-RR-977)

TABLE

Table 1A
Indoor Air Sub-Slab Analytical Results

157001460 – Reedsburg Cleaners
120 N. Locust Street, Reedsburg, WI
Property Sample Identifier (PSI) - A

Location		VAL Residential	VRSL Residential	120 N Locust Street			
Sample ID	08A_IA1_02_20230801			08A_IA2_03_20230801	08A_IAB_01_20230801	08A_SSV_01_20230801	
Date Sampled	7/18 to 8/1/2023			7/18 to 8/1/2023	7/18 to 8/1/2023	7/18 to 8/1/2023	
Volatile Organic Compounds (method EPA TO-17)							
cis-1,2-Dichloroethene	156-59-2	42	1400	< 0.929	< 0.929	< 0.928	< 0.935
tetrachloroethene (PCE)	127-18-4	42	1400	< 1.20	< 1.20	< 1.20	< 1.21
trans-1,2-Dichloroethene	156-60-5	42	1400	< 1.12	< 1.12	< 1.12	< 1.13
trichloroethene (TCE)	79-01-6	2.1	70	< 1.49	< 1.49	< 1.49	< 1.50
vinyl chloride	75-01-4	1.7	56	< 0.608	< 0.608	< 0.607	< 0.612

Notes:

All results are in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

USEPA VISL – United States Environmental Protection Agency Vapor Intrusion Screening Level

WIDNR – Wisconsin Department of Natural Resources

VAL – WIDNR Vapor Action Level, calculated using USEPA VISLs published May 2023

VRSL – WIDNR Vapor Risk Screening Level, calculated using USEPA VISLs published May 2023

— – No USEPA VISL established

< – Less than the laboratory Reporting Limit (RL)

Bold – Analyte detected

Grey – Result exceeds the Residential VAL

Orange – Result exceeds the Residential VRSL

FIGURES

Y:\Clients\WISCONSIN_DEPT_OF_NATURAL_RESOURCES\Reedsburg\Cleaners\Projects\J230382\001_Vapor_Intrusion\001_Vapor_Intrusion.aprx

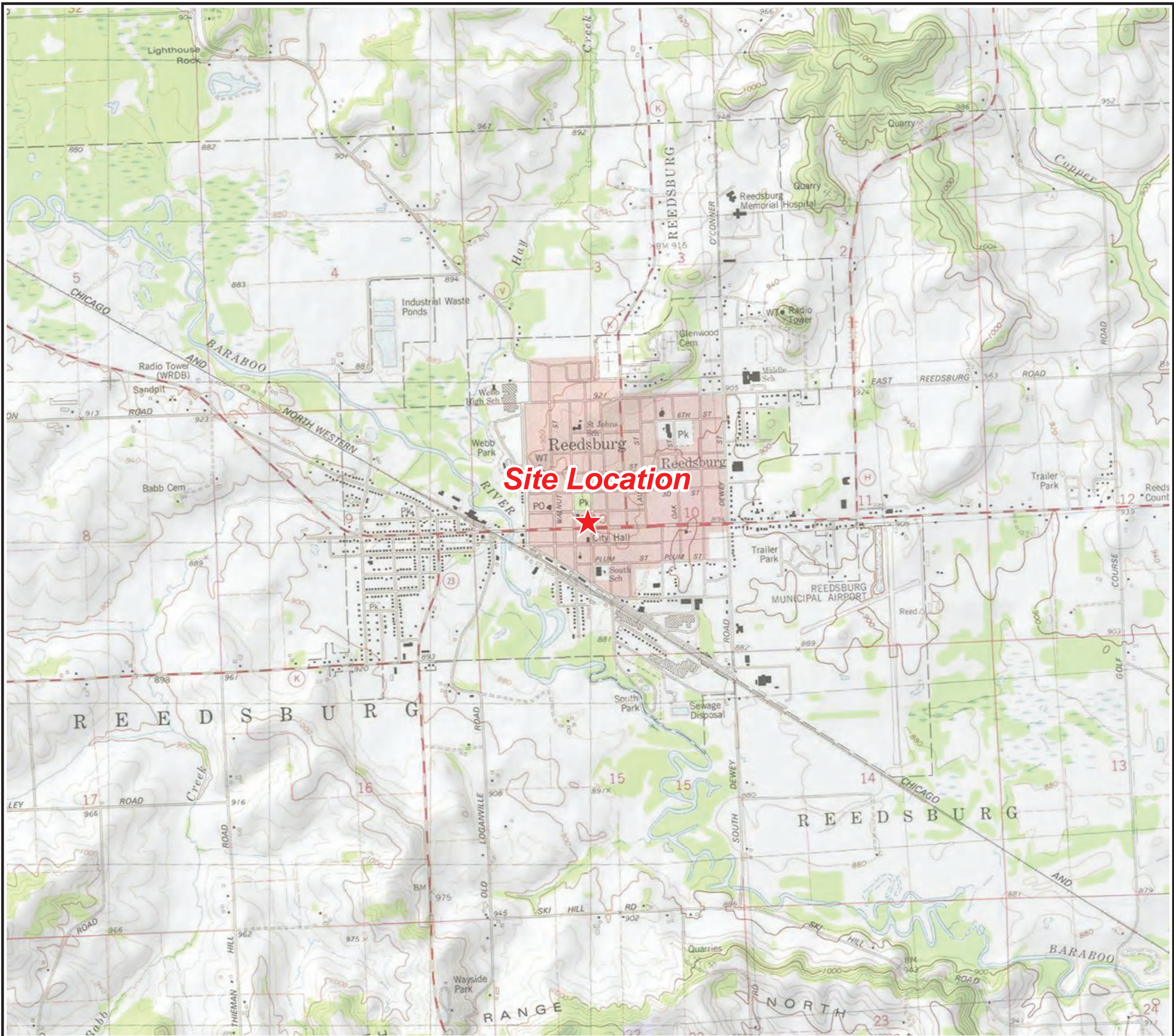
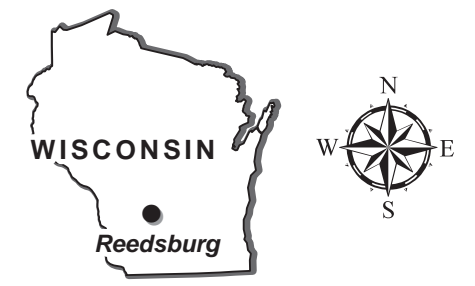


Figure 1

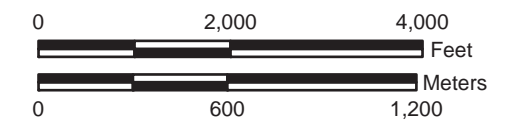
Site Location Map

Reedsburg Cleaners
WDNR ERP Case #: 02-57-001682
WDNR PS Act. ID: VIZC_REEDSBURG

Reedsburg, WI 53959



Map Projection: NAD 1983 UTM Zone 15 N, Meters
Basemap: ESRI USA Topo Maps WMS



1:24,000

★ Site Location



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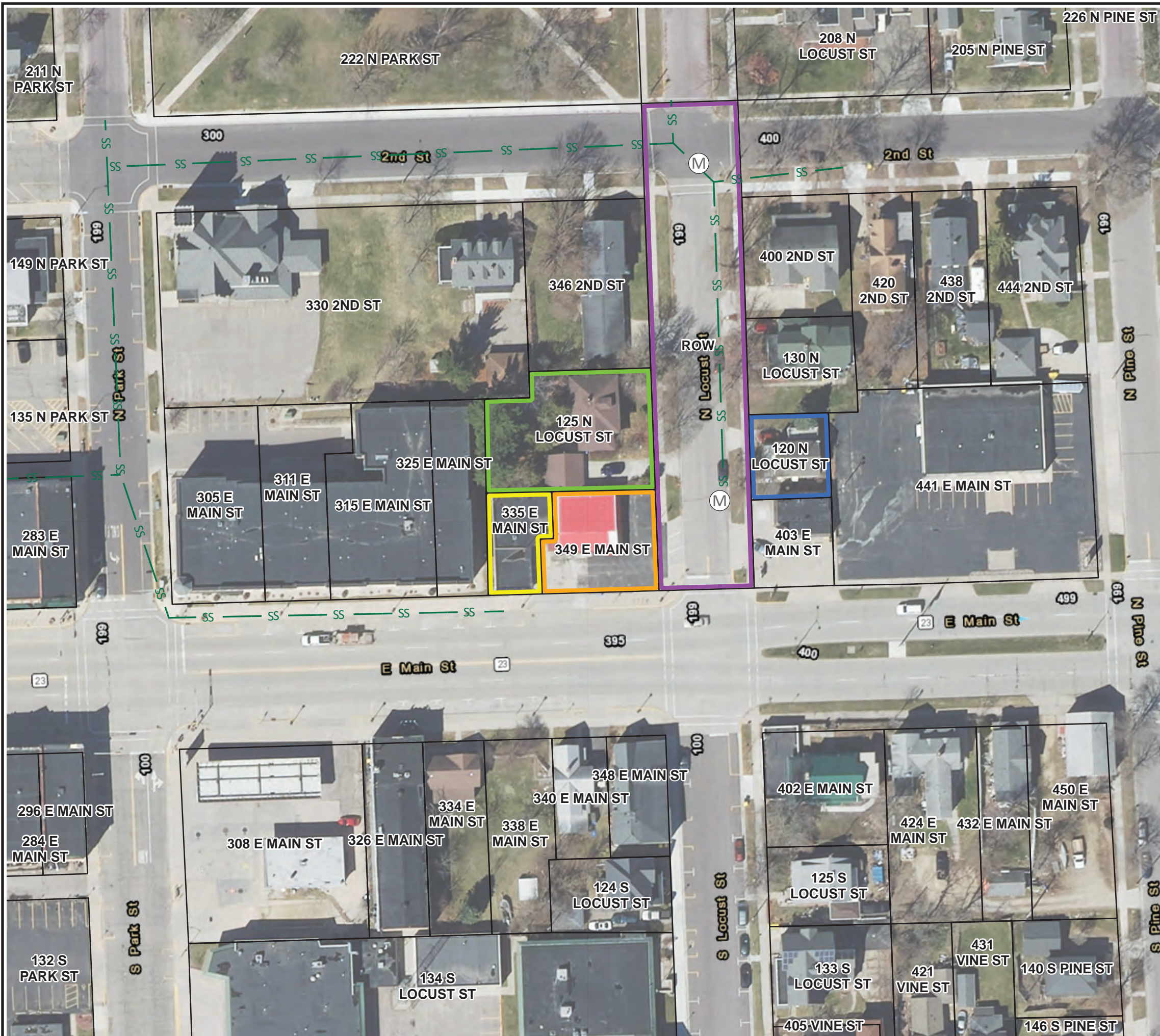


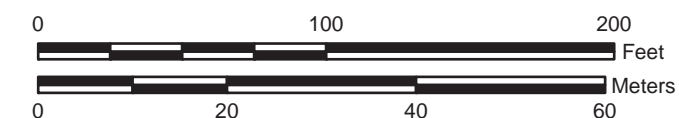
Figure 2 Site Map

Reedsburg Cleaners
 WDNR ERP Case #: 02-57-001682
 WDNR PS Act. ID: VIZC_REEDSBURG

Reedsburg, WI 53959



Map Projection: NAD 1983 UTM Zone 15N, Meters
 Basemap: WI DNR Aerial Imagery WMS, 10/14/2022

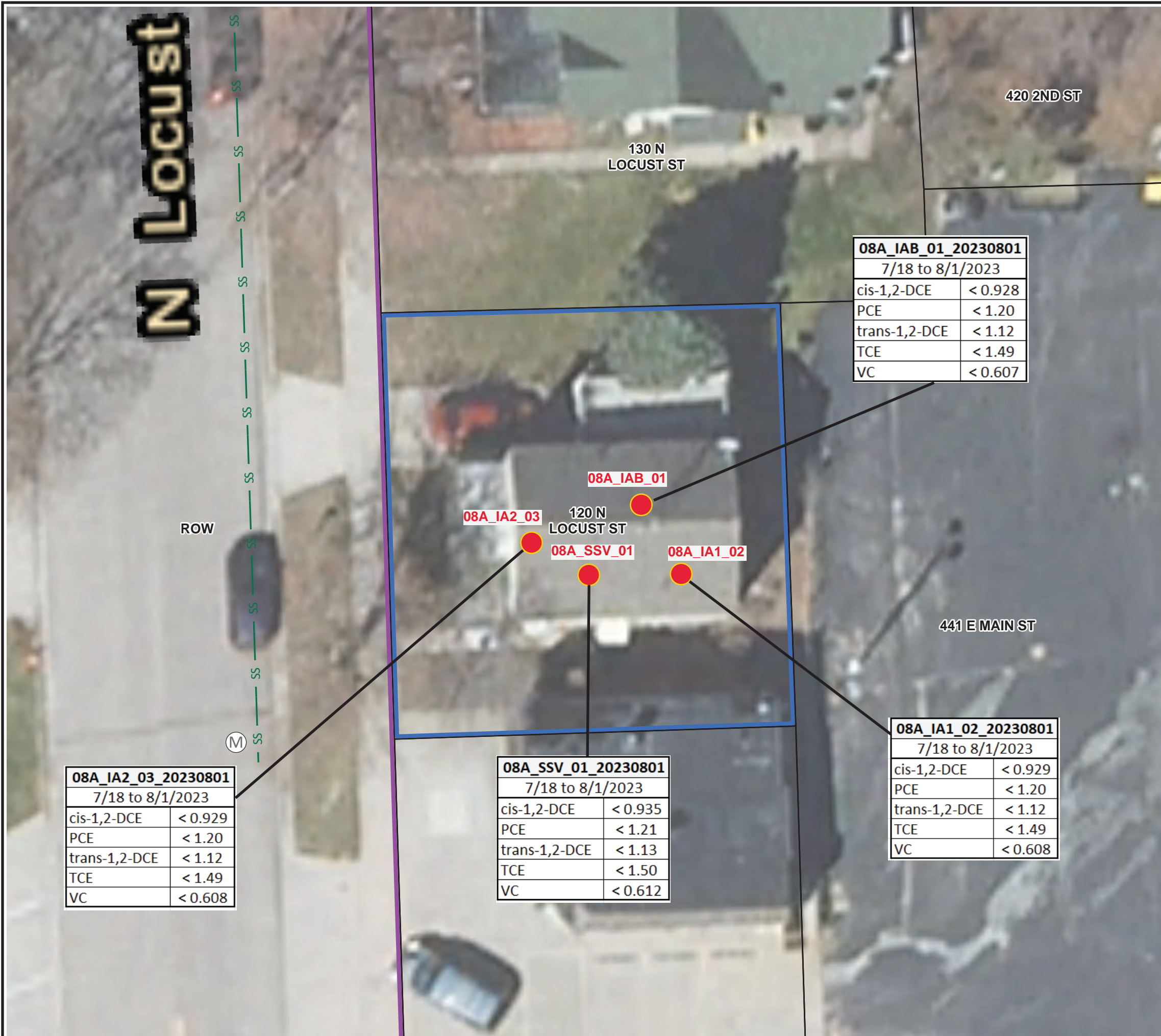


- (M) Manhole
- SS Sanitary Sewers
- 120 N Locust St (PSI A)
- 125 N Locust St (PSI B)
- 335 E Main St (PSI C)
- ROW (PSI R)
- 349 E Main St (Source)
- Parcel Boundaries



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N Locust St



08A_IA2_03_20230801	
7/18 to 8/1/2023	
cis-1,2-DCE	< 0.929
PCE	< 1.20
trans-1,2-DCE	< 1.12
TCE	< 1.49
VC	< 0.608

08A_SSV_01_20230801	
7/18 to 8/1/2023	
cis-1,2-DCE	< 0.935
PCE	< 1.21
trans-1,2-DCE	< 1.13
TCE	< 1.50
VC	< 0.612

08A_IAB_01_20230801	
7/18 to 8/1/2023	
cis-1,2-DCE	< 0.928
PCE	< 1.20
trans-1,2-DCE	< 1.12
TCE	< 1.49
VC	< 0.607

08A_IA1_02_20230801	
7/18 to 8/1/2023	
cis-1,2-DCE	< 0.929
PCE	< 1.20
trans-1,2-DCE	< 1.12
TCE	< 1.49
VC	< 0.608

Figure 2A

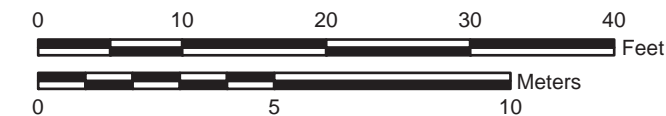
Site Map

Reedsburg Cleaners
WDNR ERP Case #: 02-57-001682
WDNR PS Act. ID: VIZC_REEDSBURG

120 N Locust Street
 Reedsburg, WI 53959



Map Projection: NAD 1983 UTM Zone 15N, Meters
 Basemap: WI DNR Aerial Imagery WMS, 10/14/2022



- (M) Manhole
- SS Sanitary Sewer
- 120 N Locust St (PSI A)
- ROW (PSI R)
- Parcel Boundaries

Features

- Passive Vapor Sample Location

Notes:

All results are in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)
 < – Less than the laboratory Reporting Limit (RL)

Bold – Analyte detected

Grey – Result exceeds the Residential VAL

Orange – Result exceeds the Residential VRSL



APPENDIX A

Wisconsin Department of Natural Resources
ACCESS PERMISSION AGREEMENT



I, Lee Gnatzig (Print Name) hereby give permission to the Wisconsin Department of Natural Resources (DNR) and its employees, duly authorized representatives, agents and contractors, to enter upon and have access at reasonable times to the home/business located at

(ADDRESS) 120 N Locust

and that is owned by Lee Roxanne Gnatzig (Print as Listed on Title / County GIS)

The property is located in the SE 1/4 of the NW 1/4 of Sec 10, T12N, R04E, Sauk County, Wisconsin. The access permission is for the following purposes: The DNR may perform an investigation of the home/business for vapor migration from trichloroethylene (TCE) and tetrachloroethylene (PCE) located in groundwater, associated with the Reedsburg Cleaners Site, BRRTS #02-57-001682 located near your property. This permission allows the DNR or its authorized representative to:

- (1) Install and maintain sub-slab vapor probe(s) into the foundation of the home or business.
- (2) Collect at least three (3) separate vapor samples from the sub-slab probe(s) at different times of the year.
- (3) Collect indoor air samples on each level of the home or business and within the sealed sump headspace, if applicable.
- (4) Collect water sample(s) from the sump, if applicable.
- (5) Abandon the vapor probe(s) when no longer needed.

The permission that is granted shall remain in effect for one year from the signature date when the vapor investigation work is expected to be complete. If an extension is necessary to complete the work, DNR will inform you in writing.

The property owner agrees not to damage or interfere with the use of any sub-slab probe installed as permitted herein.

IN WITNESS WHEREOF:

Lee Gnatzig
Signature of Property Owner Representative

5-3-23
Signature Date

Lee Gnatzig
Print Name, Title

Lee Gnatzig@gmail.com
Email address

Pox 101 Reedsburg, WI 53959
Mailing Address of Owner

6089635266
Area Code and Telephone Number

TENANT(S) / LESSEE(S) by UNIT NUMBER, ETC.

HANNA ANDONO
Name of Tenant(s)/Lessee(s)

608 415 2046
Tenant(s) phone number

Tenant(s) email address

Mail or email correspondence regarding this site to:

Department of Natural Resources
ATTN: Rob Hoverman
1027 West St. Paul Avenue
Milwaukee, WI 53233-2641

Robert.Hoverman@wisconsin.gov
Phone: 414.497.0896

APPENDIX B



Beacon Environmental

2203A Commerce Road, Suite 1

Forest Hill, MD 21050 USA

1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230427H01

Laboratory Work Order: 0007114

Project Description:

0257001682

Reedsburg, WI

Prepared for:

Jason Kunze

Bay West LLC

5 Empire Drive

St. Paul, MN 55103

Ryan W. Schneider
Senior Project Manager

August 14, 2023

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

Steven C. Thornley
Laboratory Director

Peter B. Kelly
Quality Manager

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Bay West LLC
5 Empire Drive
St. Paul, MN 55103**Site Name:** 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze**Beacon Proposal:** 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023**Sample Summary**

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0007114-01	08A_SSV_01_20230801	08/03/2023	TO-17 (Passive)	Soil Gas
Sampler Type:	Beacon Passive Sampler			

Project Completeness**Samples Received:** 1**Samples Analyzed:** 1

Bay West LLC
5 Empire Drive
St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

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Reported: 08/14/2023

Case Narrative

U.S. EPA Method TO-17

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method TO-17, with laboratory results provided in nanograms (ng) and micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method TO-17. Analyses and reporting were under BEACON's Quality Assurance Project Plan.

Passive Soil-Gas Survey Notes

If sample locations are covered with or near the edge of an impervious surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are higher than if the surfacing was not present. Therefore, the sample location conditions should be considered when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times).

Reporting Limits

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. All reported results are within the calibration range. The project method quantitation limit (MQL) is the limit of quantitation (LOQ) as noted in the data tables. Beacon determined uptake rates for a suite of compounds with the Beacon sampler for sampling in air. Beacon calculated the uptake rates for the remaining compounds using Graham's Law of Diffusion. The reported data includes LOQ limits.

Discussion

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

Bay West LLC
5 Empire Drive
St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Analytical Results

Bay West LLC
5 Empire Drive
St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Detailed Analytical Results

Bay West LLC
5 Empire Drive
St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Detailed Analytical Results- Mass

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Lab Sample ID: 0007114-01

08A_SSV_01_20230801

Method: TO-17 (Passive)

Soil Gas

Analyte	CAS#	Result (ng) Q	LOQ (ng)	Analyzed	File ID	
Vinyl Chloride	75-01-4	<10.0	10.0	08/07/2023 16:41	Ka23080709.D	
trans-1,2-Dichloroethene	156-60-5	<10.0	10.0	08/07/2023 16:41	Ka23080709.D	
cis-1,2-Dichloroethene	156-59-2	<10.0	10.0	08/07/2023 16:41	Ka23080709.D	
Trichloroethene	79-01-6	<10.0	10.0	08/07/2023 16:41	Ka23080709.D	
Tetrachloroethene	127-18-4	<10.0	10.0	08/07/2023 16:41	Ka23080709.D	
Analyte	CAS#	% Recovery	Recovery Limits	Q	Analyzed	File ID
Surrogate: 1,2-DCA-d4	17060-07-0	96.3%	70-130		08/07/2023 16:41	Ka23080709.D
Surrogate: Toluene-d8	2037-26-5	96.2%	70-130		08/07/2023 16:41	Ka23080709.D
Surrogate: Bromofluorobenzene	460-00-4	90.4%	70-130		08/07/2023 16:41	Ka23080709.D

Bay West LLC
5 Empire Drive
St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Detailed Analytical Results- Concentration

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Lab Sample ID: 0007114-01

08A_SSV_01_20230801

Method: TO-17 (Passive)

Soil Gas

Analyte	CAS#	Result (µg/m ³)	Q	LOQ (µg/m ³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.612		0.612	08/07/2023 16:41	Ka23080709.D
trans-1,2-Dichloroethene	156-60-5	<1.13		1.13	08/07/2023 16:41	Ka23080709.D
cis-1,2-Dichloroethene	156-59-2	<0.935		0.935	08/07/2023 16:41	Ka23080709.D
Trichloroethene	79-01-6	<1.50		1.50	08/07/2023 16:41	Ka23080709.D
Tetrachloroethene	127-18-4	<1.21		1.21	08/07/2023 16:41	Ka23080709.D
Analyte	CAS#	% Recovery	Recovery Limits	Q	Analyzed	File ID
Surrogate: 1,2-DCA-d4	17060-07-0	96.3%	70-130		08/07/2023 16:41	Ka23080709.D
Surrogate: Toluene-d8	2037-26-5	96.2%	70-130		08/07/2023 16:41	Ka23080709.D
Surrogate: Bromofluorobenzene	460-00-4	90.4%	70-130		08/07/2023 16:41	Ka23080709.D

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Site Name: 0257001682
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Reported: 08/14/2023

QC Information/Summary

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler (mass) - Quality Control Summary

Sequence: B23G105 - Instrument: K System - File ID: Ka23072721.D
B23G105-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	51.5	10	ng	50.0		103	70-130			
trans-1,2-Dichloroethene	50.4	10	ng	50.0		101	70-130			
cis-1,2-Dichloroethene	49.4	10	ng	50.0		98.8	70-130			
Trichloroethene	49.4	10	ng	50.0		98.8	70-130			
Tetrachloroethene	48.2	10	ng	50.0		96.4	70-130			
<i>Surrogate: 1,2-DCA-d4</i>	<i>49.2</i>		<i>ng</i>	<i>50.0</i>		<i>98.3</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>50.4</i>		<i>ng</i>	<i>50.0</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>45.4</i>		<i>ng</i>	<i>50.0</i>		<i>90.8</i>	<i>70-130</i>			

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 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler (mass) - Quality Control Summary

Sequence: B23G105 - Instrument: K System - File ID: Ka23072724.D
B23G105-ICB1 (Lab Blank/Initial Calibration Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<5	10	ng							U
trans-1,2-Dichloroethene	<5	10	ng							U
cis-1,2-Dichloroethene	<5	10	ng							U
Trichloroethene	<5	10	ng							U
Tetrachloroethene	<5	10	ng							U
<i>Surrogate: 1,2-DCA-d4</i>	<i>100</i>		<i>ng</i>	<i>100</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>103</i>		<i>ng</i>	<i>100</i>		<i>103</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>88.2</i>		<i>ng</i>	<i>100</i>		<i>88.2</i>	<i>70-130</i>			

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Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler (mass) - Quality Control Summary

Sequence: B23H016 - Batch: 23H0012 - Instrument: K System - File ID: Ka23080702.D
23H0012-BS1 (LCS, Calibration Source Verification)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	39.0	10	ng	50.0		77.9	70-130			
trans-1,2-Dichloroethene	46.8	10	ng	50.0		93.7	70-130			
cis-1,2-Dichloroethene	46.7	10	ng	50.0		93.5	70-130			
Trichloroethene	46.1	10	ng	50.0		92.2	70-130			
Tetrachloroethene	46.6	10	ng	50.0		93.3	70-130			
<i>Surrogate: 1,2-DCA-d4</i>	<i>49.5</i>		<i>ng</i>	<i>50.0</i>		<i>98.9</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>50.3</i>		<i>ng</i>	<i>50.0</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>44.9</i>		<i>ng</i>	<i>50.0</i>		<i>89.8</i>	<i>70-130</i>			

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Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler (mass) - Quality Control Summary

Sequence: B23H016 - Instrument: K System - File ID: Ka23080704.D
B23H016-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	43.9	10	ng	50.0		87.8	70-130			
trans-1,2-Dichloroethene	49.8	10	ng	50.0		99.6	70-130			
cis-1,2-Dichloroethene	48.9	10	ng	50.0		97.9	70-130			
Trichloroethene	47.8	10	ng	50.0		95.5	70-130			
Tetrachloroethene	48.4	10	ng	50.0		96.9	70-130			
<i>Surrogate: 1,2-DCA-d4</i>	<i>50.2</i>		<i>ng</i>	<i>50.0</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>50.7</i>		<i>ng</i>	<i>50.0</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>43.8</i>		<i>ng</i>	<i>50.0</i>		<i>87.5</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Batch: 23H0012 - Instrument: K System - File ID: Ka23080705.D
23H0012-BLK1 (Lab Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<0.612	0.612	µg/m ³							U
trans-1,2-Dichloroethene	<1.13	1.13	µg/m ³							U
cis-1,2-Dichloroethene	<0.935	0.935	µg/m ³							U
Trichloroethene	<1.50	1.50	µg/m ³							U
Tetrachloroethene	<1.21	1.21	µg/m ³							U
<i>Surrogate: 1,2-DCA-d4</i>	<i>101</i>		<i>ng</i>	<i>100</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>106</i>		<i>ng</i>	<i>100</i>		<i>106</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>85.2</i>		<i>ng</i>	<i>100</i>		<i>85.2</i>	<i>70-130</i>			

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Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler (mass) - Quality Control Summary

Sequence: B23H016 - Batch: 23H0012 - Instrument: K System - File ID: Ka23080705.D
23H0012-BLK1 (Lab Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<5.0	10	ng							U
trans-1,2-Dichloroethene	<5.0	10	ng							U
cis-1,2-Dichloroethene	<5.0	10	ng							U
Trichloroethene	<5.0	10	ng							U
Tetrachloroethene	<5.0	10	ng							U
<i>Surrogate: 1,2-DCA-d4</i>	<i>101</i>		<i>ng</i>	<i>100</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>106</i>		<i>ng</i>	<i>100</i>		<i>106</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>85.2</i>		<i>ng</i>	<i>100</i>		<i>85.2</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler (mass) - Quality Control Summary

Sequence: B23H016 - Instrument: K System - File ID: Ka23080714.D
B23H016-CCV1 (LCS, Closing Calibration Verification)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	36.3	10	ng	50.0		72.6	70-130			
trans-1,2-Dichloroethene	49.6	10	ng	50.0		99.1	70-130			
cis-1,2-Dichloroethene	47.9	10	ng	50.0		95.8	70-130			
Trichloroethene	46.7	10	ng	50.0		93.3	70-130			
Tetrachloroethene	45.1	10	ng	50.0		90.2	70-130			
<i>Surrogate: 1,2-DCA-d4</i>	<i>51.2</i>		<i>ng</i>	<i>50.0</i>		<i>102</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>50.5</i>		<i>ng</i>	<i>50.0</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>44.9</i>		<i>ng</i>	<i>50.0</i>		<i>89.7</i>	<i>70-130</i>			

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Lab Work Order: 0007114
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Instrument: K System - File ID: Ka23080715.D
B23H016-CCB1 (Lab Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<5	10	ng							U
trans-1,2-Dichloroethene	<5	10	ng							U
cis-1,2-Dichloroethene	<5	10	ng							U
Trichloroethene	<5	10	ng							U
Tetrachloroethene	<5	10	ng							U
<i>Surrogate: 1,2-DCA-d4</i>	<i>104</i>		<i>ng</i>	<i>100</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>104</i>		<i>ng</i>	<i>100</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>86.3</i>		<i>ng</i>	<i>100</i>		<i>86.3</i>	<i>70-130</i>			

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Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Instrument: K System - File ID: Ka23080724.D
B23H016-CCB2 (Lab Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<5	10	ng							U
trans-1,2-Dichloroethene	<5	10	ng							U
cis-1,2-Dichloroethene	<5	10	ng							U
Trichloroethene	<5	10	ng							U
Tetrachloroethene	<5	10	ng							U
<i>Surrogate: 1,2-DCA-d4</i>	<i>107</i>		<i>ng</i>	<i>100</i>		<i>107</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>103</i>		<i>ng</i>	<i>100</i>		<i>103</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>88.2</i>		<i>ng</i>	<i>100</i>		<i>88.2</i>	<i>70-130</i>			

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Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

TO-17 (Passive) - LCS/LCSD RPD Quality Control Summary
LCS: 23H0012-BS1 File ID: Ka23080702.D

Analyzed: 8/7/23 12:49

LCSD: B23H016-ICV1 File ID: Ka23080704.D

Analyzed: 8/7/23 11:59

Analyte	CAS#	LCS Result (ng)	%REC Q	Spike Level (ng)	LCSD Result (ng)	%REC	%REC Limits	RPD	RPD Limit	Q
Vinyl Chloride	75-01-4	38.97	77.94	50	43.92	87.80	70-130	11.94	30	
trans-1,2-Dichloroethene	156-60-5	46.84	93.68	50	49.8	99.60	70-130	6.13	30	
cis-1,2-Dichloroethene	156-59-2	46.73	93.46	50	48.93	97.90	70-130	4.60	30	
Trichloroethene	79-01-6	46.11	92.22	50	47.76	95.50	70-130	3.52	30	
Tetrachloroethene	127-18-4	46.63	93.26	50	48.44	96.90	70-130	3.81	30	

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Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Additional QC Information

Bay West LLC 5 Empire Drive St. Paul, MN 55103	Site Name: 0257001682 Site Location: Reedsburg, WI Project Manager: Jason Kunze	Beacon Proposal: 230427H01 Lab Work Order: 0007114 Reported: 08/14/2023
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Sample Result Calculation Summary (Concentration)
TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
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Lab ID: 0007114-01 **Sample Name:** 08A_SSV_01_20230801

Vinyl Chloride	20,170	1.00	0.810	U	U	Ka23080709.D
trans-1,2-Dichloroethene	20,170	1.00	0.440	U	U	Ka23080709.D
cis-1,2-Dichloroethene	20,170	1.00	0.530	U	U	Ka23080709.D
Trichloroethene	20,170	1.00	0.330	U	U	Ka23080709.D
Tetrachloroethene	20,170	1.00	0.410	U	U	Ka23080709.D

Calculations:

$$C = \frac{1000 \times M \times DF}{U_c \times t}$$

$$U_c = U * \left(\frac{T_s + 273.15}{T_u + 273.15} \right)^{1/2}$$

- where:
- C = concentration (µg/m³)
 - M = mass (ng)
 - DF = dilution factor
 - Uc = uptake rate (ml/min), corrected
 - t = sampling time (minutes)
 - U = compound specific uptake rate
 - Tu = uptake rate study temperature
 - Ts = sample average temperature

Note: Tu is 16.65°C

Reference: Federal Register/Vol. 79, No. 125/June 30, 2014

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Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Method Detection and Reporting Limit Calculations (Concentration)
TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m ³
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Lab ID: 0007114-01

Sample Name: 08A_SSV_01_20230801

Vinyl Chloride	20,170	1.00	0.810	10.0	0.612
trans-1,2-Dichloroethene	20,170	1.00	0.440	10.0	1.13
cis-1,2-Dichloroethene	20,170	1.00	0.530	10.0	0.935
Trichloroethene	20,170	1.00	0.330	10.0	1.50
Tetrachloroethene	20,170	1.00	0.410	10.0	1.21

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Reported: 08/14/2023

Laboratory Certification List

Certification ID	Certification No.	Description	Expires	Project Required
Alaska CS-LAP	19-002	Alaska Department of Environmental Conservation	12/30/2024	
DoD-ELAP	72690/L22-563	United States Department of Defense Environmental Laboratory Accreditation	11/30/2024	
ISO/IEC 17025:2017	72690/L22-563	General Requirements for the Competence of Testing and Calibration Laboratories	11/30/2024	
NEFAP	72690/L22-564	TNI National Environmental Field Activities Program (NEFAP)	11/30/2024	
NY-NELAC	12097	New York Department of Health	04/01/2024	
Utah-NELAC	MD010912022-12	Utah Department of Health	12/31/2023	

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Reported: 08/14/2023

Qualifiers/Notes and Definitions

General Definitions:

DF	Dilution Factor
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
NA	Not Applicable
Q	Qualifier
RPD	Relative Percent Difference
RT	Retention Times in Minutes
RRT	Evaluation of Relative Retention Times in RRT Units (qualified if outside ± 0.06 control limits)
3σ	Uncertainty
∉	Compound not on scope of accreditation
+	values are outside method/contract required QC limits
∅	Compound not on scope of accreditation and analyzed with a one-point calibration

Bay West LLC
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Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007114
Reported: 08/14/2023

Sample Management Records



Beacon Environmental

2203A Commerce Road, Suite 1

Forest Hill, MD 21050 USA

1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 230427H01

Laboratory Work Order: 0007115

Project Description:

0257001682

Reedsburg, WI

Prepared for:

Jason Kunze

Bay West LLC

5 Empire Drive

St. Paul, MN 55103

Ryan W. Schneider
Senior Project Manager

August 14, 2023

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

Steven C. Thornley
Laboratory Director

Peter B. Kelly
Quality Manager

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Bay West LLC
 5 Empire Drive
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Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Sample Summary

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0007115-01 Sampler Type:	08A_IAB_01_20230801 Beacon Passive Sampler	08/03/2023	TO-17 (Passive)	Indoor Air
0007115-02 Sampler Type:	08A_IA1_02_20230801 Beacon Passive Sampler	08/03/2023	TO-17 (Passive)	Indoor Air
0007115-03 Sampler Type:	08A_IA2_03_20230801 Beacon Passive Sampler	08/03/2023	TO-17 (Passive)	Indoor Air

Project Completeness
Samples Received: 3
Samples Analyzed: 3

Bay West LLC
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Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Case Narrative

Beacon Environmental provided thermally conditioned Beacon Samplers for sampling, with analyses following U.S. EPA Method TO-17, with analytical results reported in $\mu\text{g}/\text{m}^3$. Beacon calculated concentration results using the exposure period, target analyte mass, and the following procedures detailed in ISO 16017-2, *Indoor, ambient and workplace air-Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography-Part 2: Diffusive sampling*.

Beacon reports results and reporting limits to three significant digits.

Reporting Limits (RLs)

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. Beacon performed dilution analysis when results exceeded the upper calibration limit, bringing all reported results within the calibration range. The project method quantitation limit (MQL) is the limit of quantitation (LOQ) as noted in the data tables. The reported data includes LOQ limits.

Calibration Verification

All continuing calibration verification (CCV) values are within $\pm 30\%$ of the true values as defined by the initial calibration and met the requirements specified in BEACON's Quality Manual.

Internal Standards and Surrogates

Internal standards and surrogates are spiked on all blanks (ICB, BLK), field samples and laboratory control samples (ICV/CALV, BS, ICV and CCV). Acceptance criteria for internal standards are 60 to 140 percent and surrogate recoveries are 70 to 130 percent; all internal standards and surrogates are within the acceptance criteria unless noted in the **Case Narrative**.

Blank Contamination

No targeted compounds above the project method quantitation limit (MQL) for each compound were observed in the Laboratory Method Blanks unless noted in the **Case Narrative**.

Laboratory Control Samples

Acceptance criteria for surrogate and analytes recoveries are 70 to 130 percent; all recoveries are within the acceptance criteria unless noted in the **Case Narrative**.

Discussion

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017.

End of Case Narrative

Bay West LLC
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Site Name: 0257001682
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Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Analytical Results

Bay West LLC
5 Empire Drive
St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Detailed Analytical Results

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Lab Sample ID: 0007115-01

08A_IAB_01_20230801

Method: TO-17 (Passive)

Indoor Air

Analyte	CAS#	Result (µg/m ³)	Q	LOQ (µg/m ³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.607		0.607	08/07/2023 17:11	Ka23080710.D
trans-1,2-Dichloroethene	156-60-5	<1.12		1.12	08/07/2023 17:11	Ka23080710.D
cis-1,2-Dichloroethene	156-59-2	<0.928		0.928	08/07/2023 17:11	Ka23080710.D
Trichloroethene	79-01-6	<1.49		1.49	08/07/2023 17:11	Ka23080710.D
Tetrachloroethene	127-18-4	<1.20		1.20	08/07/2023 17:11	Ka23080710.D
Analyte	CAS#	% Recovery	Recovery Limits	Q	Analyzed	File ID
Surrogate: 1,2-DCA-d4	17060-07-0	100%	70-130		08/07/2023 17:11	Ka23080710.D
Surrogate: Toluene-d8	2037-26-5	96.8%	70-130		08/07/2023 17:11	Ka23080710.D
Surrogate: Bromofluorobenzene	460-00-4	92.1%	70-130		08/07/2023 17:11	Ka23080710.D

Bay West LLC
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Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Lab Sample ID: 0007115-02

08A_IA1_02_20230801

Method: TO-17 (Passive)

Indoor Air

Analyte	CAS#	Result (µg/m ³)	Q	LOQ (µg/m ³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.608		0.608	08/07/2023 19:19	Ka23080711.D
trans-1,2-Dichloroethene	156-60-5	<1.12		1.12	08/07/2023 19:19	Ka23080711.D
cis-1,2-Dichloroethene	156-59-2	<0.929		0.929	08/07/2023 19:19	Ka23080711.D
Trichloroethene	79-01-6	<1.49		1.49	08/07/2023 19:19	Ka23080711.D
Tetrachloroethene	127-18-4	<1.20		1.20	08/07/2023 19:19	Ka23080711.D
Analyte	CAS#	% Recovery	Recovery Limits	Q	Analyzed	File ID
Surrogate: 1,2-DCA-d4	17060-07-0	97.9%	70-130		08/07/2023 19:19	Ka23080711.D
Surrogate: Toluene-d8	2037-26-5	97.8%	70-130		08/07/2023 19:19	Ka23080711.D
Surrogate: Bromofluorobenzene	460-00-4	93.8%	70-130		08/07/2023 19:19	Ka23080711.D

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Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Lab Sample ID: 0007115-03

08A_IA2_03_20230801

Method: TO-17 (Passive)

Indoor Air

Analyte	CAS#	Result ($\mu\text{g}/\text{m}^3$)	Q	LOQ ($\mu\text{g}/\text{m}^3$)	Analyzed	File ID
Vinyl Chloride	75-01-4	<0.608		0.608	08/07/2023 19:48	Ka23080712.D
trans-1,2-Dichloroethene	156-60-5	<1.12		1.12	08/07/2023 19:48	Ka23080712.D
cis-1,2-Dichloroethene	156-59-2	<0.929		0.929	08/07/2023 19:48	Ka23080712.D
Trichloroethene	79-01-6	<1.49		1.49	08/07/2023 19:48	Ka23080712.D
Tetrachloroethene	127-18-4	<1.20		1.20	08/07/2023 19:48	Ka23080712.D
Analyte	CAS#	% Recovery	Recovery Limits	Q	Analyzed	File ID
Surrogate: 1,2-DCA-d4	17060-07-0	98.5%	70-130		08/07/2023 19:48	Ka23080712.D
Surrogate: Toluene-d8	2037-26-5	95.3%	70-130		08/07/2023 19:48	Ka23080712.D
Surrogate: Bromofluorobenzene	460-00-4	93.1%	70-130		08/07/2023 19:48	Ka23080712.D

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Site Name: 0257001682
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Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

QC Information/Summary

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23G105 - Instrument: K System - File ID: Ka23072721.D
B23G105-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	51.5	10	ng	50.0		103	70-130			
trans-1,2-Dichloroethene	50.4	10	ng	50.0		101	70-130			
cis-1,2-Dichloroethene	49.4	10	ng	50.0		98.8	70-130			
Trichloroethene	49.4	10	ng	50.0		98.8	70-130			
Tetrachloroethene	48.2	10	ng	50.0		96.4	70-130			
<i>Surrogate: 1,2-DCA-d4</i>	<i>49.2</i>		<i>ng</i>	<i>50.0</i>		<i>98.3</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>50.4</i>		<i>ng</i>	<i>50.0</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>45.4</i>		<i>ng</i>	<i>50.0</i>		<i>90.8</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23G105 - Instrument: K System - File ID: Ka23072724.D
B23G105-ICB1 (Lab Blank/Initial Calibration Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<5	10	ng							U
trans-1,2-Dichloroethene	<5	10	ng							U
cis-1,2-Dichloroethene	<5	10	ng							U
Trichloroethene	<5	10	ng							U
Tetrachloroethene	<5	10	ng							U
<i>Surrogate: 1,2-DCA-d4</i>	<i>100</i>		<i>ng</i>	<i>100</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>103</i>		<i>ng</i>	<i>100</i>		<i>103</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>88.2</i>		<i>ng</i>	<i>100</i>		<i>88.2</i>	<i>70-130</i>			

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Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Batch: 23H0012 - Instrument: K System - File ID: Ka23080702.D
23H0012-BS1 (LCS, Calibration Source Verification)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	39.0	10	ng	50.0		77.9	70-130			
trans-1,2-Dichloroethene	46.8	10	ng	50.0		93.7	70-130			
cis-1,2-Dichloroethene	46.7	10	ng	50.0		93.5	70-130			
Trichloroethene	46.1	10	ng	50.0		92.2	70-130			
Tetrachloroethene	46.6	10	ng	50.0		93.3	70-130			
<i>Surrogate: 1,2-DCA-d4</i>	<i>49.5</i>		<i>ng</i>	<i>50.0</i>		<i>98.9</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>50.3</i>		<i>ng</i>	<i>50.0</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>44.9</i>		<i>ng</i>	<i>50.0</i>		<i>89.8</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Instrument: K System - File ID: Ka23080704.D
B23H016-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	43.9	10	ng	50.0		87.8	70-130			
trans-1,2-Dichloroethene	49.8	10	ng	50.0		99.6	70-130			
cis-1,2-Dichloroethene	48.9	10	ng	50.0		97.9	70-130			
Trichloroethene	47.8	10	ng	50.0		95.5	70-130			
Tetrachloroethene	48.4	10	ng	50.0		96.9	70-130			
<i>Surrogate: 1,2-DCA-d4</i>	<i>50.2</i>		<i>ng</i>	<i>50.0</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>50.7</i>		<i>ng</i>	<i>50.0</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>43.8</i>		<i>ng</i>	<i>50.0</i>		<i>87.5</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
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Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Batch: 23H0012 - Instrument: K System - File ID: Ka23080705.D
23H0012-BLK1 (Lab Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<0.607	0.607	µg/m ³							U
trans-1,2-Dichloroethene	<1.12	1.12	µg/m ³							U
cis-1,2-Dichloroethene	<0.928	0.928	µg/m ³							U
Trichloroethene	<1.49	1.49	µg/m ³							U
Tetrachloroethene	<1.20	1.20	µg/m ³							U
<i>Surrogate: 1,2-DCA-d4</i>	<i>101</i>		<i>ng</i>	<i>100</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>106</i>		<i>ng</i>	<i>100</i>		<i>106</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>85.2</i>		<i>ng</i>	<i>100</i>		<i>85.2</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Instrument: K System - File ID: Ka23080714.D
B23H016-CCV1 (LCS, Closing Calibration Verification)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	36.3	10	ng	50.0		72.6	70-130			
trans-1,2-Dichloroethene	49.6	10	ng	50.0		99.1	70-130			
cis-1,2-Dichloroethene	47.9	10	ng	50.0		95.8	70-130			
Trichloroethene	46.7	10	ng	50.0		93.3	70-130			
Tetrachloroethene	45.1	10	ng	50.0		90.2	70-130			
<i>Surrogate: 1,2-DCA-d4</i>	<i>51.2</i>		<i>ng</i>	<i>50.0</i>		<i>102</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>50.5</i>		<i>ng</i>	<i>50.0</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>44.9</i>		<i>ng</i>	<i>50.0</i>		<i>89.7</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Instrument: K System - File ID: Ka23080715.D
B23H016-CCB1 (Lab Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<5	10	ng							U
trans-1,2-Dichloroethene	<5	10	ng							U
cis-1,2-Dichloroethene	<5	10	ng							U
Trichloroethene	<5	10	ng							U
Tetrachloroethene	<5	10	ng							U
<i>Surrogate: 1,2-DCA-d4</i>	<i>104</i>		<i>ng</i>	<i>100</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>104</i>		<i>ng</i>	<i>100</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>86.3</i>		<i>ng</i>	<i>100</i>		<i>86.3</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Instrument: K System - File ID: Ka23080723.D
B23H016-CCV2 (Continuing Calibration Verification)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	35.0	10	ng	50.0		70.0	70-130			
trans-1,2-Dichloroethene	48.5	10	ng	50.0		96.9	70-130			
cis-1,2-Dichloroethene	48.6	10	ng	50.0		97.2	70-130			
Trichloroethene	46.9	10	ng	50.0		93.7	70-130			
Tetrachloroethene	47.2	10	ng	50.0		94.4	70-130			
<i>Surrogate: 1,2-DCA-d4</i>	<i>53.2</i>		<i>ng</i>	<i>50.0</i>		<i>106</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>50.9</i>		<i>ng</i>	<i>50.0</i>		<i>102</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>45.1</i>		<i>ng</i>	<i>50.0</i>		<i>90.1</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Organics in Air by EPA TO-17 Using Beacon Sampler - Quality Control Summary

Sequence: B23H016 - Instrument: K System - File ID: Ka23080724.D
B23H016-CCB2 (Lab Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<5	10	ng							U
trans-1,2-Dichloroethene	<5	10	ng							U
cis-1,2-Dichloroethene	<5	10	ng							U
Trichloroethene	<5	10	ng							U
Tetrachloroethene	<5	10	ng							U
<i>Surrogate: 1,2-DCA-d4</i>	<i>107</i>		<i>ng</i>	<i>100</i>		<i>107</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>103</i>		<i>ng</i>	<i>100</i>		<i>103</i>	<i>70-130</i>			
<i>Surrogate: Bromofluorobenzene</i>	<i>88.2</i>		<i>ng</i>	<i>100</i>		<i>88.2</i>	<i>70-130</i>			

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

TO-17 (Passive) - LCS/LCSD RPD Quality Control Summary
LCS: 23H0012-BS1 File ID: Ka23080702.D

Analyzed: 8/7/23 12:49

LCSD: B23H016-ICV1 File ID: Ka23080704.D

Analyzed: 8/7/23 11:59

Analyte	CAS#	LCS Result (ng)	%REC Q	Spike Level (ng)	LCSD Result (ng)	%REC	%REC Limits	RPD	RPD Limit	Q
Vinyl Chloride	75-01-4	38.97	77.94	50	43.92	87.80	70-130	11.94	30	
trans-1,2-Dichloroethene	156-60-5	46.84	93.68	50	49.8	99.60	70-130	6.13	30	
cis-1,2-Dichloroethene	156-59-2	46.73	93.46	50	48.93	97.90	70-130	4.60	30	
Trichloroethene	79-01-6	46.11	92.22	50	47.76	95.50	70-130	3.52	30	
Tetrachloroethene	127-18-4	46.63	93.26	50	48.44	96.90	70-130	3.81	30	

Bay West LLC
5 Empire Drive
St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Additional QC Information

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Sample Result Calculation Summary (Concentration)
TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial Result ng	C Calculated Result µg/m ³	File ID
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Lab ID: 0007115-01 **Sample Name:** 08A_IAB_01_20230801 **̄ Temp (°C):** 21.66

Vinyl Chloride	20,156	1.00	0.817	U	U	Ka23080710.D
trans-1,2-Dichloroethene	20,156	1.00	0.444	U	U	Ka23080710.D
cis-1,2-Dichloroethene	20,156	1.00	0.535	U	U	Ka23080710.D
Trichloroethene	20,156	1.00	0.333	U	U	Ka23080710.D
Tetrachloroethene	20,156	1.00	0.414	U	U	Ka23080710.D

Lab ID: 0007115-02 **Sample Name:** 08A_IA1_02_20230801 **̄ Temp (°C):** 21.66

Vinyl Chloride	20,140	1.00	0.817	U	U	Ka23080711.D
trans-1,2-Dichloroethene	20,140	1.00	0.444	U	U	Ka23080711.D
cis-1,2-Dichloroethene	20,140	1.00	0.535	U	U	Ka23080711.D
Trichloroethene	20,140	1.00	0.333	U	U	Ka23080711.D
Tetrachloroethene	20,140	1.00	0.414	U	U	Ka23080711.D

Lab ID: 0007115-03 **Sample Name:** 08A_IA2_03_20230801 **̄ Temp (°C):** 21.66

Vinyl Chloride	20,132	1.00	0.817	U	U	Ka23080712.D
trans-1,2-Dichloroethene	20,132	1.00	0.444	U	U	Ka23080712.D
cis-1,2-Dichloroethene	20,132	1.00	0.535	U	U	Ka23080712.D
Trichloroethene	20,132	1.00	0.333	U	U	Ka23080712.D
Tetrachloroethene	20,132	1.00	0.414	U	U	Ka23080712.D

Bay West LLC
5 Empire Drive
St. Paul, MN 55103**Site Name:** 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze**Beacon Proposal:** 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Calculations:

$$C = \frac{1000 \times M \times DF}{U_c \times t}$$

$$U_c = U * \left(\frac{T_s + 273.15}{T_u + 273.15} \right)^{1/2}$$

where: C = concentration ($\mu\text{g}/\text{m}^3$)
M = mass (ng)
DF = dilution factor
U_c = uptake rate (ml/min), corrected
t = sampling time (minutes)
U = compound specific uptake rate
T_u = uptake rate study temperature
T_s = sample average temperature

Note: T_u is 16.65°C*Reference: Federal Register/Vol. 79, No. 125/June 30, 2014*

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Site Name: 0257001682
Site Location: Reedsburg, WI
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Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Method Detection and Reporting Limit Calculations (Concentration)
TO-17 (Passive)

Analyte	t Sampling Time minutes	DF Dilution Factor	Uc Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m ³
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Lab ID: 0007115-01 **Sample Name:** 08A_IAB_01_20230801 **̄ Temp (°C):** 21.66

Vinyl Chloride	20,156	1.00	0.817	10.0	0.607
trans-1,2-Dichloroethene	20,156	1.00	0.444	10.0	1.12
cis-1,2-Dichloroethene	20,156	1.00	0.535	10.0	0.928
Trichloroethene	20,156	1.00	0.333	10.0	1.49
Tetrachloroethene	20,156	1.00	0.414	10.0	1.20

Lab ID: 0007115-02 **Sample Name:** 08A_IA1_02_20230801 **̄ Temp (°C):** 21.66

Vinyl Chloride	20,140	1.00	0.817	10.0	0.608
trans-1,2-Dichloroethene	20,140	1.00	0.444	10.0	1.12
cis-1,2-Dichloroethene	20,140	1.00	0.535	10.0	0.929
Trichloroethene	20,140	1.00	0.333	10.0	1.49
Tetrachloroethene	20,140	1.00	0.414	10.0	1.20

Lab ID: 0007115-03 **Sample Name:** 08A_IA2_03_20230801 **̄ Temp (°C):** 21.66

Vinyl Chloride	20,132	1.00	0.817	10.0	0.608
trans-1,2-Dichloroethene	20,132	1.00	0.444	10.0	1.12
cis-1,2-Dichloroethene	20,132	1.00	0.535	10.0	0.929
Trichloroethene	20,132	1.00	0.333	10.0	1.49
Tetrachloroethene	20,132	1.00	0.414	10.0	1.20

Bay West LLC
 5 Empire Drive
 St. Paul, MN 55103

Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Laboratory Certification List

Certification ID	Certification No.	Description	Expires	Project Required
Alaska CS-LAP	19-002	Alaska Department of Environmental Conservation	12/30/2024	
DoD-ELAP	72690/L22-563	United States Department of Defense Environmental Laboratory Accreditation	11/30/2024	
ISO/IEC 17025:2017	72690/L22-563	General Requirements for the Competence of Testing and Calibration Laboratories	11/30/2024	
NEFAP	72690/L22-564	TNI National Environmental Field Activities Program (NEFAP)	11/30/2024	
NY-NELAC	12097	New York Department of Health	04/01/2024	
Utah-NELAC	MD010912022-12	Utah Department of Health	12/31/2023	

Bay West LLC
5 Empire Drive
St. Paul, MN 55103**Site Name:** 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze**Beacon Proposal:** 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Qualifiers/Notes and Definitions

General Definitions:

DF	Dilution Factor
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
NA	Not Applicable
Q	Qualifier
RPD	Relative Percent Difference
RT	Retention Times in Minutes
RRT	Evaluation of Relative Retention Times in RRT Units (qualified if outside ± 0.06 control limits)
3σ	Uncertainty
∉	Compound not on scope of accreditation
+	values are outside method/contract required QC limits
∅	Compound not on scope of accreditation and analyzed with a one-point calibration

Bay West LLC
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Site Name: 0257001682
Site Location: Reedsburg, WI
Project Manager: Jason Kunze

Beacon Proposal: 230427H01
Lab Work Order: 0007115
Reported: 08/14/2023

Sample Management Records

APPENDIX C

PASSIVE VAPOR SAMPLING INFORMATION

Project Information

Project Name: Reedsburg Cleaners
 Bay West Job #: J230382
 Bay West Sampler Name(s): Anders Santelman
 Weather Conditions: 80 and sunny

Project Information

Property Address: 120 N Locust St, Reedsburg Wisconsin
 Property Owner Name: Lee Gnatzig
 Property Type: Single Family Residential, currently rented

Sub-Slab Installation information

Concrete Slab Thickness: 5 inches
 Type of Sub-slab installed: Poured
 Time of Sub-Slab Installation: 910
 Time for Sub-Slab Vapor Equilibration: 910 to 930
 Water based or leak test performed and passed? Y or N
 General Indoor Air PID (ppm) Reading: 0.0

#1

Sample ID: 08A SSV 01 20230801
 Passive Sampler Type: Passive Sub-Slab Vapor Sampler
 Sample Location: Sub-Slab (basement)
 Duration of Test: 2 weeks
 Analysis: PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride
 Laboratory: Beacon

Start (or Grab) Sample

Date: 7/18/2023
 Time: 0926
 Static Pressure: 0.6 Pa
 PID (ppm): 5.0

End (or Grab) Sample

Date: 8/01/2023
 Time: 0936
 Static Pressure: 0.6 Pa
 PID (ppm): 7.8

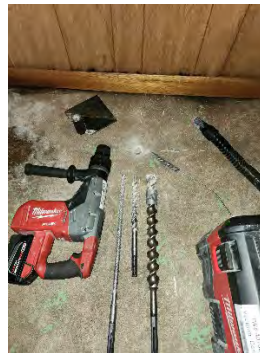


Photo 1: Tools used to drill SS



Photo 2: Taking PID readings



Photo 3: Sampler Setup

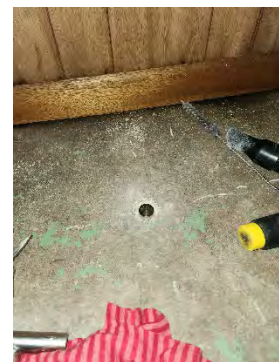

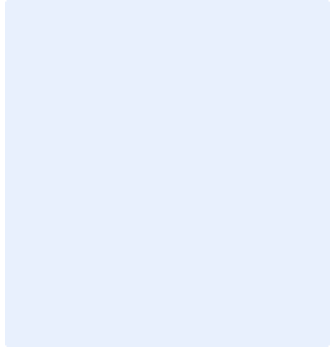
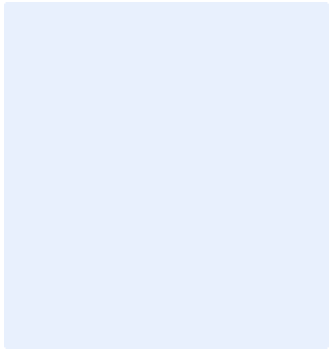
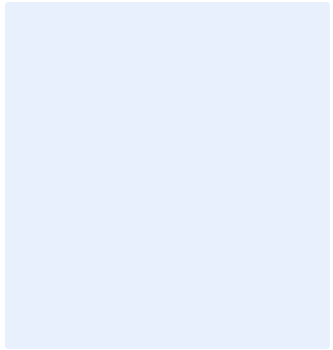
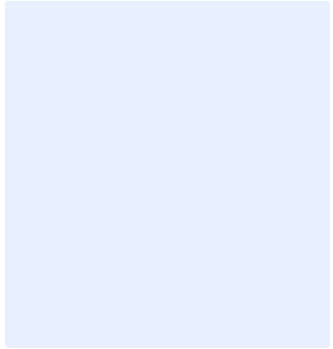
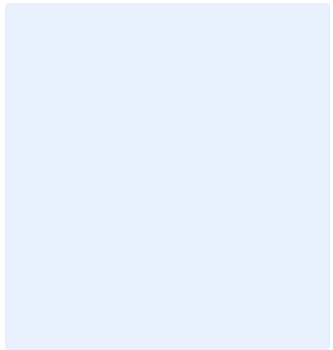


Photo 4: SS as left

#2

<p>Sample ID: <u>08A IAB 01 20230801</u> Passive Sampler Type: <u>Passive Indoor Air Sampler</u> Sample Location: <u>Basement</u> Duration of Test: <u>2 weeks</u> Analysis: <u>PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride</u> Laboratory: <u>Beacon</u></p> <p>Start (or Grab) Sample Date: <u>7/18/2023</u> Time: <u>0932</u> Static Pressure: <u>NA</u> PID (ppm): <u>0.0</u></p> <p>End (or Grab) Sample Date: <u>8/01/2023</u> Time: <u>0928</u> Static Pressure: <u>NA</u> PID (ppm): <u>0.9</u> Floor recently cleaned, causing elevated PID</p>	 <p>Photo 1: Basement Ambient</p>	 <p>Photo 2: _____</p>
	 <p>Photo 3: _____</p>	 <p>Photo 4: _____</p>

#3

<p>Sample ID: <u>08A IA1 02 20230801</u> Passive Sampler Type: <u>Passive Indoor Air Sampler</u> Sample Location: <u>First Floor</u> Duration of Test: <u>2 weeks</u> Analysis: <u>PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride</u> Laboratory: <u>Beacon</u></p> <p>Start (or Grab) Sample Date: <u>7/18/2023</u> Time: <u>0944</u> Static Pressure: <u>NA</u> PID (ppm): <u>0.0</u></p> <p>End (or Grab) Sample Date: <u>8/01/2023</u> Time: <u>0924</u> Static Pressure: <u>NA</u> PID (ppm): <u>0.3</u></p>	 <p>Photo 1: 1st floor ambient</p>	 <p>Photo 2: _____</p>
	 <p>Photo 3: _____</p>	 <p>Photo 4: _____</p>

#4

Sample ID: 08A_IA2_03_20230801
 Passive Sampler Type: Passive Indoor Air Sampler
 Sample Location: Second Floor
 Duration of Test: 2 weeks
 Analysis: PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride
 Laboratory: Beacon

Start (or Grab) Sample

Date: 7/18/2023
 Time: 0947
 Static Pressure: NA
 PID (ppm): 0.0

End (or Grab) Sample

Date: 8/01/2023
 Time: 0947
 Static Pressure: NA
 PID (ppm): 0.2

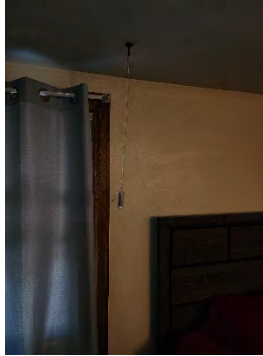


Photo 1: 2nd floor ambient

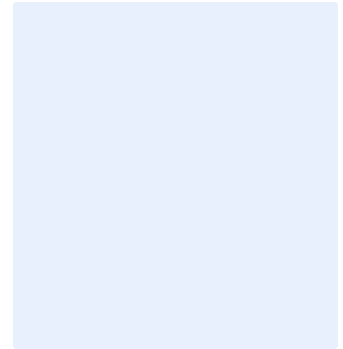


Photo 2: _____

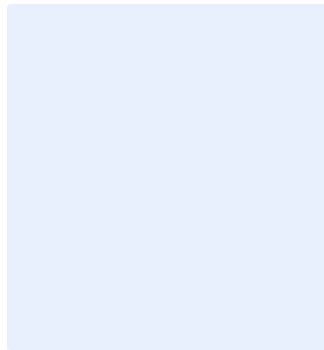


Photo 3: _____

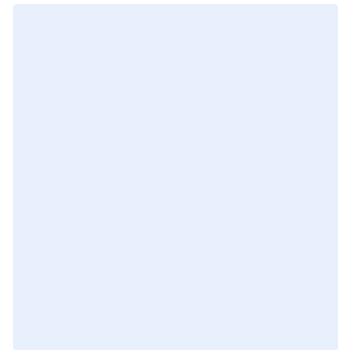


Photo 4: _____



Main Area



Main Area



Main Area



Main Area



Laundry



Furnace



Water heater and sewer pipe



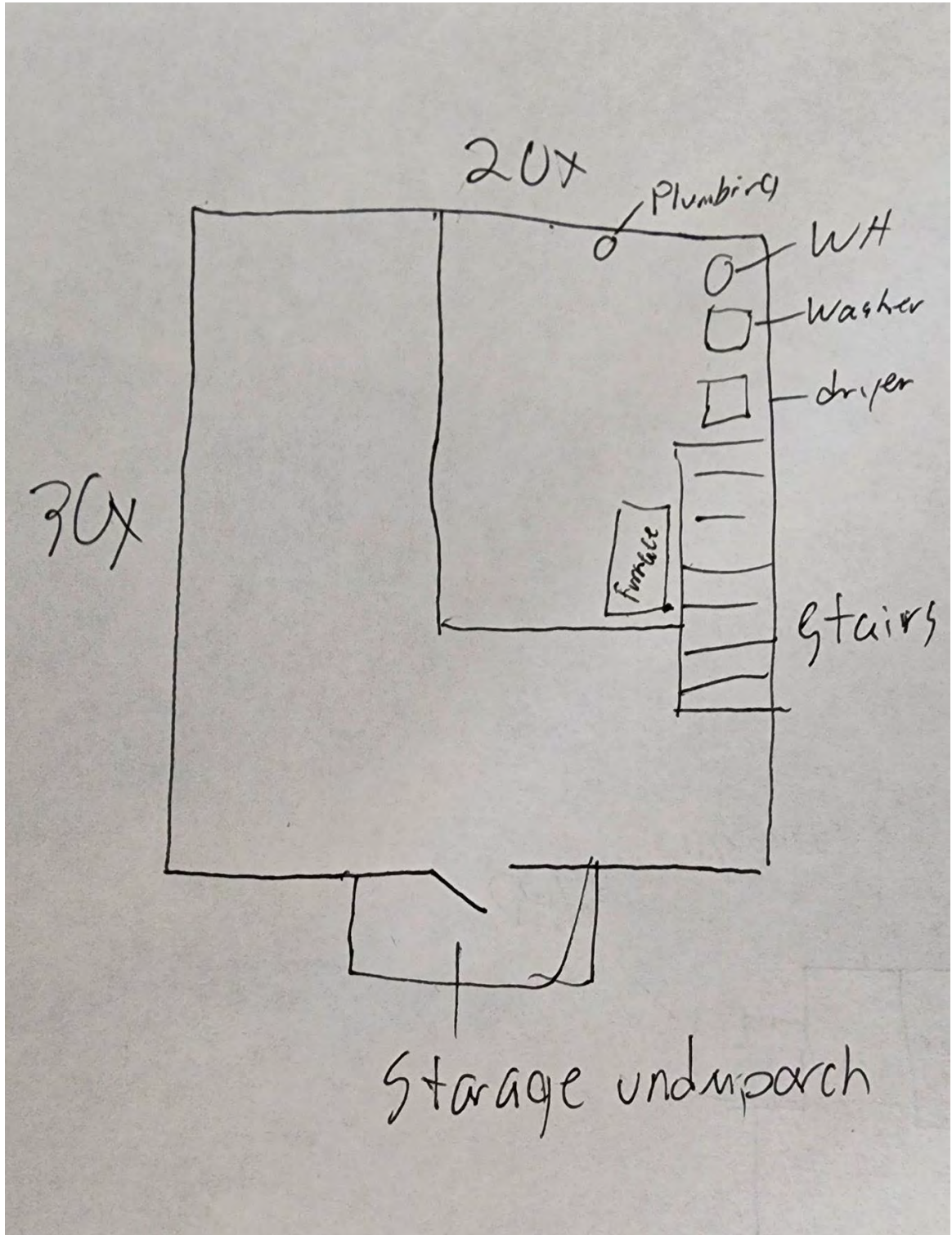
Backroom sewer pipe



Pipe by stairs



Under porch storage, door not accessible.



Simple basement sketch

APPENDIX D



Understanding Chemical Vapor Intrusion Testing Results

RR-977

October 2014

From the Lab to You

Chemical vapor samples were taken from underneath your house or building and possibly indoors as well. These samples have been tested by a certified laboratory and a report was issued. The Wisconsin Department of Natural Resources (DNR) uses these test results to determine if people in the building are being exposed to chemical vapors coming from nearby contaminated soil or groundwater, and to decide what, if any, action is needed to prevent this exposure.

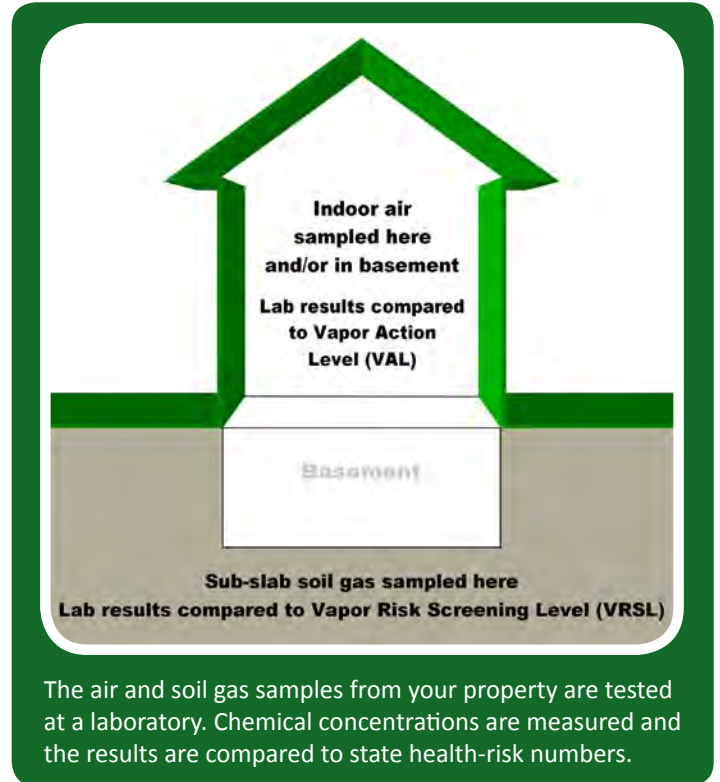
Indoor Air Testing Results

If indoor air samples were collected in your house or building, test results from the lab will be compared to the state Vapor Action Level (VAL) for chemicals of concern. The VAL is a chemical compound's numerical value that represents a health hazard risk to no more than 1 in 100,000 people during a lifetime of exposure. If test results show chemical concentrations in your air below the VAL then adverse health effects are extremely rare, even if you were to breathe the chemical at this concentration for your entire life.

Test results showing chemical concentrations in the air at or above the VAL prompt DNR to recommend that exposure to these chemical vapors be reduced. If test results show concentrations significantly above the VAL, or more than one type of chemical vapor is identified in your indoor air, the risk from exposure increases. If the concentration of any indoor chemical vapor greatly exceeds the VAL, DNR is concerned about even short-term exposure and will typically require immediate action to address the problem.

The VAL for each chemical is set by scientific research. It is protective of all people, including those who are most susceptible to adverse health effects.

If test results identify chemicals in your air that are not present in nearby soil or groundwater contamination, it is likely that these vapors are coming from some product or activity in or near your house or building. Many everyday consumer products (e.g., cleaners, solvents, polish, adhesives, lubricants, aerosols, insect repellants, etc.); combustion processes (e.g., smoking, home heating); fuels in attached garages; dry cleaned clothing or draperies; and occupant activities (e.g., craft hobbies), also release chemical vapors into the air.



Sub-slab Soil Gas Testing Results

Soil gas samples were collected from the ground beneath the concrete slab of your building foundation or basement. The lab measured the concentrations of various chemicals in these samples. DNR compares these measurements to the state Vapor Risk Screening Level (VRSL), which identifies the concentration of a chemical in soil gas that scientific research suggests can be a health risk if vapor enters a building. If soil gas measurements exceed the VRSL for a chemical of concern, action to reduce exposure is strongly recommended.

The VRSL is a higher number (higher chemical concentration) than the VAL because it is presumed that concrete building foundations and basement walls will prevent most soil gas from entering a building. Further, any soil gas that does enter a building through cracks, holes, sump pumps, drains, etc., will be diluted to some extent by the indoor air. So, people inside will not be breathing air that includes the full concentration of chemical vapors that exist in the ground.



DNR generally relies on the test results of the sub-slab soil gas samples when determining what, if any, action should be taken related to chemical vapors coming from nearby soil or groundwater contamination. Indoor air quality is highly variable, and it is difficult to make a definitive decision about vapor intrusion based on indoor air sampling alone.

Follow-Up Actions

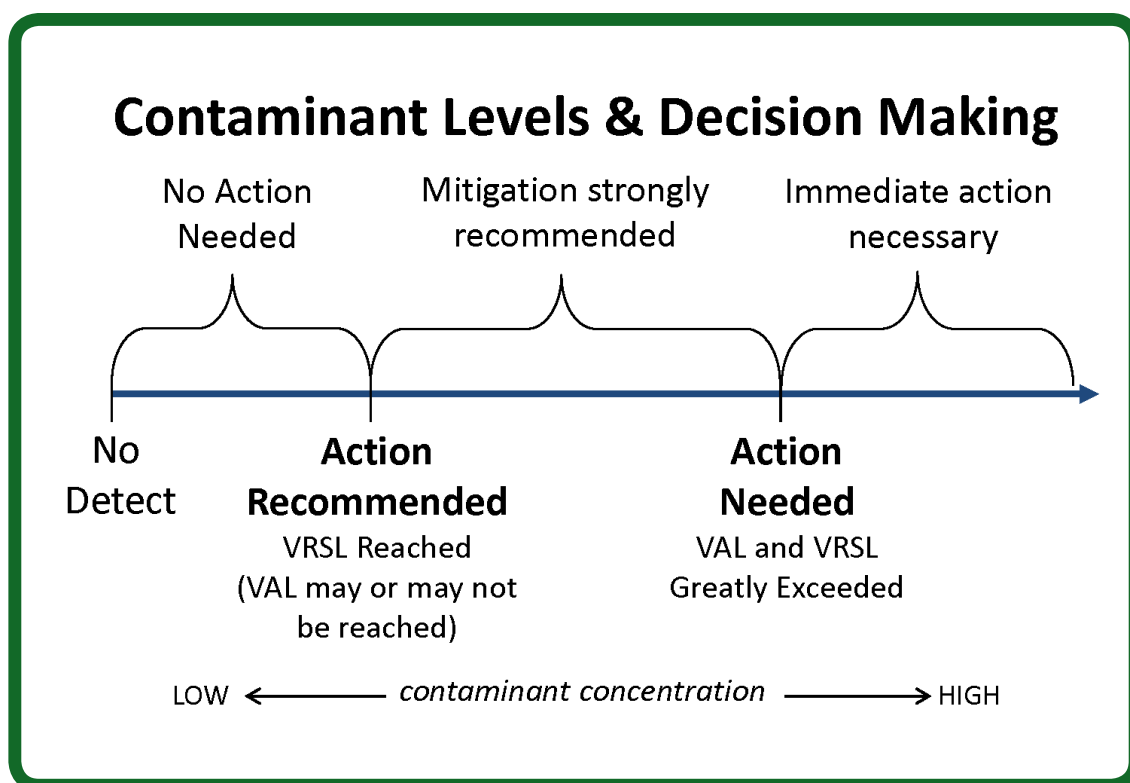
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

When test results show soil gas chemical concentrations above a VRSL, both DNR and the Wisconsin Department of

Health Services recommend that owners take action to reduce potential exposure. This typically involves installing a vapor mitigation system that vents chemical vapors from beneath your home or building to the outdoors, similar to a radon mitigation system.

If indoor air concentrations exceed a VAL, but sub-slab concentrations are less than a VRSL, then the chemical vapors are most likely coming from indoor sources. Steps should be taken by the house or building owner to identify the products and practices causing the problem and implement appropriate remedies.

If soil gas mitigation is recommended, a representative of the party who is responsible for the soil or groundwater contamination will contact you to discuss your options.



A Note about Measurement Units: The lab report may include some unfamiliar technical language. The most important point to note is whether or not the test result for a specific chemical exceeds a VAL or VRSL, which are also sometimes referred to, generically, as “screening levels.”

The concentration of gaseous pollutants in air is typically described in two different ways: 1) as units of mass per volume, where $\mu\text{g}/\text{m}^3$ represents micrograms of gaseous pollutant per cubic meter of ambient air; and 2) as parts per billion by volume (ppbv), where the volume of a gaseous pollutant is compared to a set volume of ambient air. These are the numbers that are compared to the VAL and VRSL.

For more information, visit dnr.wi.gov/topic/Brownfields/Vapor.html