**From:** Kelsey Bird <kbird@fehrgraham.com>
**Sent:** Wednesday, January 15, 2025 2:42 PM
**To:** Murray Wikol
**Cc:** Kenyotta Brown; Don Gallo; John Butz; Dillon Plamann; Schultz, Josie M - DNR
**Subject:** RE: 501 S. Washington Street : Letter and Test Data
**Attachments:** 21-1121 - Bay Towel - Sampling Results Jan 2025 - 501 S Washington Street Complied.pdf

**CAUTION: This email originated from outside the organization.**
**Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Hi Murray,

Attached is the results letter. Let me know if you have any questions.

Enjoy the rest of your vacation!

**KELSEY BIRD | Staff Engineer**
**Fehr Graham | Engineering & Environmental**

---

**From:** Murray Wikol <mwikol@provisions.ws>
**Sent:** Wednesday, January 15, 2025 2:38 PM
**To:** Kelsey Bird <kbird@fehrgraham.com>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** 501 S. Washington Street : Letter and Test Data

**This Message is from an external sender.**

---

Kelsey,

Please send the letter and data as discussed last week and yesterday.

Appreciate your help and assistance.

Best Regards,

Murray

Murray D. Wikol

www.provisionsllc.com
**6632 Telegraph Road, Suite 350**
**Bloomfield Hills, Michigan 48301**
**O: 248-988-9341 | C: 248-310-5955**
**mwikol@provisions.ws**

---

**From:** Kelsey Bird <kbird@fehrgraham.com>
**Sent:** Thursday, January 9, 2025 2:57 PM
**To:** Murray Wikol <mwikol@provisions.ws>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** RE: 501 S. Washington Street : Access Agreement

Hi Murray,

Here is Josie Schultz info, the DNR project manager for the Bay Towel Site.

Email josie.schultz@wisconsin.gov
Phone: 920.366.5685

Let me know if you need anything else from me. Have a good trip to Hawaii!!!

**KELSEY BIRD | Staff Engineer**
**Fehr Graham | Engineering & Environmental**

---

**From:** Murray Wikol <mwikol@provisions.ws>
**Sent:** Tuesday, December 31, 2024 9:02 AM
**To:** Kelsey Bird <kbird@fehrgraham.com>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** RE: 501 S. Washington Street : Access Agreement

**This Message is from an external sender.**

---

Kelsey,

Rather that “a couple of weeks”, what would be the incremental price to reduce it be a week ?

Murray D. Wikol

www.provisionsllc.com
**6632 Telegraph Road, Suite 350**
**Bloomfield Hills, Michigan 48301**
**O: 248-988-9341 | C: 248-310-5955**
**mwikol@provisions.ws**

---

**From:** Kelsey Bird <kbird@fehrgraham.com>
**Sent:** Tuesday, December 31, 2024 9:50 AM
**To:** Murray Wikol <mwikol@provisions.ws>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** RE: 501 S. Washington Street : Access Agreement

The price depends on the number of days. How soon would you like the results? It would be received by the lab on January 3rd.

**KELSEY BIRD | Engineer**
**Fehr Graham | Engineering & Environmental**

---

**From:** Murray Wikol <mwikol@provisions.ws>
**Sent:** Monday, December 30, 2024 5:13 PM
**To:** Kelsey Bird <kbird@fehrgraham.com>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** 501 S. Washington Street : Access Agreement

**This Message is from an external sender.**

---

How much incrementally if I pay the difference for expedited?

Murray D. Wikol

www.provisionsllc.com
**6632 Telegraph Road, Suite 350**
**Bloomfield Hills, Michigan 48301**
**O: 248-988-9341 | C: 248-310-5955**
**mwikol@provisions.ws**

**From:** Kelsey Bird <kbird@fehrgraham.com>
**Sent:** Monday, December 30, 2024 5:18 PM
**To:** Murray Wikol <mwikol@provisions.ws>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** RE: 501 S. Washington Street : Access Agreement

Hi Murray,

I just heard back regarding expediting the samples. So we were only approved by the client for a standard turn around time, so we can't expedite these samples. We will prioritize getting the results back to you as soon as possible once we get them.

**KELSEY BIRD | Engineer**
**Fehr Graham | Engineering & Environmental**

---

**From:** Murray Wikol <mwikol@provisions.ws>
**Sent:** Monday, December 30, 2024 4:01 PM
**To:** Kelsey Bird <kbird@fehrgraham.com>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** 501 S. Washington Street : Access Agreement

**This Message is from an external sender.**

---

Kelsey,

Glad you could make it back to Lake Orion!

If possible, see if you can get expedited lab results given the circumstances.

Appreciate it.

Best Regards,

Murray

Murray D. Wikol

ProVisions
www.provisionsllc.com

**6632 Telegraph Road, Suite 350**
**Bloomfield Hills, Michigan 48301**
**O: 248-988-9341 | C: 248-310-5955**

**mwikol@provisions.ws**

---

**From:** Kelsey Bird <kbird@fehrgraham.com>
**Sent:** Monday, December 30, 2024 4:55 PM
**To:** Murray Wikol <mwikol@provisions.ws>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** RE: 501 S. Washington Street : Access Agreement

Hi Murray,

I hope you did as well! I was back in Lake Orion last week!!

We will be grabbing them January 2nd. I already coordinated it with Quincy. That gives it enough time so that it is between the 14 and 28 day mark. I will ship them overnight and it will be probably a couple weeks until the results come back.

Thank you,

**KELSEY BIRD | Engineer**
**Fehr Graham | Engineering & Environmental**

---

**From:** Murray Wikol <mwikol@provisions.ws>
**Sent:** Monday, December 30, 2024 3:50 PM
**To:** Kelsey Bird <kbird@fehrgraham.com>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** 501 S. Washington Street : Access Agreement

**This Message is from an external sender.**

---

Kelsey,

Hope you had a Merry Christmas and Happy Holiday.

Based on the start date, wanted to check on the remaining duration of the tests on site.

Appreciate any update you may have.

Best Regards,

Murray D. Wikol

www.provisionsllc.com
**6632 Telegraph Road, Suite 350**
**Bloomfield Hills, Michigan 48301**
**O: 248-988-9341 | C: 248-310-5955**
**mwikol@provisions.ws**

---

**From:** Kelsey Bird <kbird@fehrgraham.com>
**Sent:** Friday, December 13, 2024 11:03 AM
**To:** Lacey Cochart <Lacey.Cochart@greenbaywi.gov>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>; Joanne Bungert <Joanne.Bungert@greenbaywi.gov>; Murray Wikol <mwikol@provisions.ws>
**Subject:** RE: 501 S. Washington Street : Access Agreement

Hi Lacey and Murray,

The scope of work I was referencing did not indicate the number of sub-slab and indoor air samples so I thought there was one each, so that is what is shown in the access agreement. It should be 2 subslab and 2 indoor air samples. I just updated the access agreement to reflect that change. Would you be able to sign it with the updates?

Sorry for the inconvenience. I will still be installing the samplers on Monday, they are scheduled to arrive today. Just wanted to make sure it was reflected in the access agreement.

Thank you,

**KELSEY BIRD | Engineer**
**Fehr Graham | Engineering & Environmental**

---

**From:** Lacey Cochart <Lacey.Cochart@greenbaywi.gov>
**Sent:** Thursday, December 12, 2024 2:08 PM
**To:** Kelsey Bird <kbird@fehrgraham.com>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>; Joanne Bungert <Joanne.Bungert@greenbaywi.gov>; Murray Wikol <mwikol@provisions.ws>
**Subject:** RE: 501 S. Washington Street : Access Agreement

**This Message is from an external sender.**

---

Kelsey,

We updated the agreement and signed – see attached.

**Lacey Cochart**
**Deputy City Attorney**
City of Green Bay
920.448.3084
greenbaywi.gov/law

**LEGAL DISCLAIMER:** This message and all attachments may be confidential or protected by privilege. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or use of the information contained in or attached to this message is strictly prohibited. Please notify the sender of the delivery error by replying to this message, and then delete it from your system. Thank you.

---

**From:** Kelsey Bird <kbird@fehrgraham.com>
**Sent:** Thursday, December 12, 2024 9:38 AM
**To:** Murray Wikol <mwikol@provisions.ws>
**Cc:** Kenyotta Brown <kbrown@provisions.ws>
**Subject:** RE: 501 S. Washington Street

The samplers are arriving tomorrow so I should be able to start the sampling Monday as long as we get the access agreement approved.

Thank you!

**KELSEY BIRD | Engineer**
**Fehr Graham | Engineering & Environmental**

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL

January 9, 2025

Murray Wikol
ProVisions LLC
Telegraph Road, Suite 350
Bloomfield Hills, MI 48301

**RE: Vapor Sampling Results December 2024 to January 2025 for 501 S. Washington Street, Green Bay, WI**
**Former Bay Towel Site**
**501 S. Adams Street**
**Green Bay, WI**
**BRRTS # 02-05-237064**

Dear Murray:

Fehr Graham, on behalf of Bay Towel, has completed additional site investigation activities for the former Bay Towel site located at 501 South Adams Street, Green Bay, WI 54301 (BRRTS #02-05-237064). The following site investigation activities have been completed on the City of Green Bay Fire Station 1 property located at 501 S. Washington Street:

- Two (2) sub-slab vapor passive samplers were installed and sampled over 16 days to analyze the vapor chemistry below the property building. The third of three (3) sub-slab vapor sampling events were completed, with the second and third rounds completed using passive, longer-duration sampling methods.
- One (1) indoor air sample was sampled over 16 days to analyze the vapor chemistry within the property building. The third of three (3) indoor air sampling events were completed, with the second and third rounds completed using passive, longer-duration sampling methods.
- All vapor and air samples were submitted for laboratory analysis of Chlorinated Volatile Organic Compounds (CVOCs) that are associated with drycleaning solvents: tetrachloroethylene, trichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, and vinyl chloride.

CVOC compounds were detected in vapors at your property. However, based on vapor laboratory analytical results, none of these detections exceed the Residential Sub-Slab or Indoor Air standards established by the Wisconsin Department and Natural Resources (DNR) and the Wisconsin Department of Health Services (DHS). The vapor results are summarized and compared to relevant standards in attached Table A.4.ii. The laboratory analytical reports for the vapor and air samples are also included as attachments.

The third round of vapor testing at the property building confirms the results of the first and second rounds of vapor testing, with more precise laboratory detection limits below DNR and DHS standards. This round confirms that the sub-slab vapor samples are below the Vapor Risk Screening Levels (VRSLs) and indoor air samples are below the vapor action levels (VALs) for residential

properties and that there is not a health concern in the property building in regards to vapor intrusion from the Bay Towel site.

A full summary of all site investigation results will be submitted to the DNR in the near future in a Site Investigation Report. Please refer to the attached DNR fact sheet RR-977 for an additional explanation of the vapor results at your property.

Thank you for your cooperation during this investigation, and please share these results with all property building occupants. If you have any questions, please feel free to contact the WDNR Project Manager for the Bay Towel Site, Ms. Josie Schultz (josie.schultz@wisconsin.gov or 920.366.5685), or contact me at dplamann@fehrgraham.com or 920.946.2407.

Sincerely,

Dillon Plamann, PG
Environmental Project Manager

Attachments: Table A.4.ii: Vapor Analytical Table – 501 S. Washington Street
Laboratory Analytical Reports
RR-977: Understanding Chemical Vapor Intrusion Testing Results

Cc: Ms. Josie Schultz, WDNR, via email only to josie.schultz@wisconsin.gov
Mr. Don Gallo, Gallo Law, LLC, via email only to don.gallo@dgallolaw.com
Mr. John Butz, Bay Towel, via email only to jbutz@baytowel.com

**TABLE A.4.II**
Vapor Analytical Table - 501 S. Washington Street
Former Bay Towel
501 S Adams Street, Green Bay, WI 54301
BRRTS# 02-05-237064

| Sample ID | | C-Carcinogen N-Non Carcinogen | WDNR / WDHFS **Residential** Subslab Vapor VRSL | WDNR / WDHFS **Residential** Indoor Air VAL | Fire Department Indoor Air | | |
|---|---|---|---|---|---|---|---|
| Sample Location | | | | | basement/boiler room | | |
| Sample Date(s) | | | | | 3/1/23 | 5/16/23-5/23/23 | 12/17/2024-1/2/2025 |
| Type of Sample | | | | | indoor air | indoor air | indoor air |
| Collection Method | | | | | Composite | Composite - Passive | Composite - Passive |
| Time Period of Collection | | | | | 24-hour | 7 Days | 16 days |
| Analytical Method | | | | | TO-15 chlorinated | TO-17 | TO-17 |
| Method/Result Leak Detection | | | | | shut-in/pass | none applicable | none applicable |
| | | | | | | | |
| Tetrachloroethene (PCE) | µg/m$^3$ | N | *1,400* | **42** | <1.36 | <2.40 | <0.530 |
| Trichloroethene (TCE) | µg/m$^3$ | C | *70* | **2.1** | <1.07 | <2.98 | <0.658 |
| cis-1,2 Dichloroethene | µg/m$^3$ | N | *1,400* | **42** | <0.793 | <1.85 | <0.410 |
| trans-1,2 Dichloroethene | µg/m$^3$ | N | *1,400* | **42** | <0.793 | <2.23 | <0.494 |
| Vinyl Chloride | µg/m$^3$ | C | *56* | **1.7** | <0.511 | <1.21 | <0.268 |

Notes:
N = Noncarcinogen; C = Carcinogen
*ITALICS* : Exceeds **Subslab** Vapor Standard
**BOLD** : Exceeds **Indoor** Air Standard

NA = Not Analyzed
NS = No Standards
VAL = Vapor Action Level (compared for indoor air concentrations)
VRSL = Vapor Risk Screening Levels (compared for sub-slab vapor concentrations)
AF (Attenuation Factor) = 0.03 for Residential and Small Commercial

Standards for VAL and VRSL from January 2023 WDNR RR-0136 based on November 2022 U.S. EPA Regional Screening Level (RSL) Tables:
https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

All values in ug/m$^3$ obtained from U.S. EPA Vapor Intrusion Screening Level (VISL) calculator from
U.S. EPA Regional Screening Level (RSL) database of toxicity and chemical parameters.

Indoor air values from U.S. EPA Vapor Intrusion Screening Level (VISL) calculator and Regional Screening Levels (RSL) and correspond to noncarcinogenic hazard index of 1 or a carcinogenic target risk level of 1x10E-6 .

Residential vs. Small Commercial vs. Large Commercial/Industrial determined based on WDNR Publication RR-800

RR-800 Table 6a - Default Attenuation Factors
Sub-Slab Vapor = 0.03 (Small Commercial & Residential)

**TABLE A.4.II**
Vapor Analytical Table - 501 S. Washington Street
Former Bay Towel
501 S Adams Street, Green Bay, WI 54301
BRRTS# 02-05-237064

| Sample ID | | C-Carcinogen N-Non Carcinogen | WDNR / WDHFS **Residential** Subslab Vapor VRSL | WDNR / WDHFS **Residential** Indoor Air VAL | Fire Department SSVS-1 | | Fire Department SS-2 |
|---|---|---|---|---|---|---|---|
| Sample Location | | | | | basement/boiler room | | |
| Sample Date(s) | | | | | 2/28/23 | 5/16/23-5/23/23 | 12/17/2024-1/2/2025 |
| Type of Sample | | | | | sub-slab | sub-slab | sub-slab |
| Collection Method | | | | | Grab | Composite - Passive | Composite - Passive |
| Time Period of Collection | | | | | 30-min | 7 Days | 16 Days |
| Analytical Method | | | | | TO-15 chlorinated | EPA 8260C | EPA 8260C |
| Method/Result Leak Detection | | | | | water/pass | none applicable | none applicable |
| | | | | | | | |
| Tetrachloroethene (PCE) | µg/m$^3$ | N | *1,400* | **42** | <1.36 | 4.05 | 4.98 |
| Trichloroethene (TCE) | µg/m$^3$ | C | *70* | **2.1** | <1.07 | <3.01 | <0.658 |
| cis-1,2 Dichloroethene | µg/m$^3$ | N | *1,400* | **42** | <0.793 | <1.87 | <0.410 |
| trans-1,2 Dichloroethene | µg/m$^3$ | N | *1,400* | **42** | <0.793 | <2.26 | <0.493 |
| Vinyl Chloride | µg/m$^3$ | C | *56* | **1.7** | <0.511 | <1.23 | <0.268 |

Notes:
N = Noncarcinogen; C = Carcinogen
*ITALICS* : Exceeds **Subslab** Vapor Standard
**BOLD** : Exceeds **Indoor** Air Standard

NA = Not Analyzed
NS = No Standards
VAL = Vapor Action Level (compared for indoor air concentrations)
VRSL = Vapor Risk Screening Levels (compared for sub-slab vapor concentrations)
AF (Attenuation Factor) = 0.03 for Residential and Small Commercial

Standards for VAL and VRSL from January 2023 WDNR RR-0136 based on November 2022 U.S
https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

All values in ug/m$^3$ obtained from U.S. EPA Vapor Intrusion Screening Level (VISL) calculator fr
U.S. EPA Regional Screening Level (RSL) database of toxicity and chemical parameters.

Indoor air values from U.S. EPA Vapor Intrusion Screening Level (VISL) calculator and Regional
noncarcinogenic hazard index of 1 or a carcinogenic target risk level of 1x10E-6 .

Residential vs. Small Commercial vs. Large Commercial/Industrial determined based on WDNF

RR-800 Table 6a - Default Attenuation Factors
Sub-Slab Vapor = 0.03 (Small Commercial & Residential)

**TABLE A.4.II**
Vapor Analytical Table - 501 S. Washington Street
Former Bay Towel
501 S Adams Street, Green Bay, WI 54301
BRRTS# 02-05-237064

| Sample ID | | C-Carcinogen N-Non Carcinogen | WDNR / WDHFS **Residential** Subslab Vapor VRSL | WDNR / WDHFS **Residential** Indoor Air VAL | Fire Department SSVS-2 | | Fire Department SS-3 |
|---|---|---|---|---|---|---|---|
| Sample Location | | | | | cleaner storage room/garage | | |
| Sample Date(s) | | | | | 2/28/23 | 5/16/23-5/23/23 | 12/17/2024-1/2/2024 |
| Type of Sample | | | | | sub-slab | sub-slab | sub-slab |
| Collection Method | | | | | Grab | Composite - Passive | Composite - Passive |
| Time Period of Collection | | | | | 30-min | 7 Days | 16 Days |
| Analytical Method | | | | | TO-15 chlorinated | EPA 8260C | EPA 8260C |
| Method/Result Leak Detection | | | | | water/pass | none applicable | none applicable |
| | | | | | | | |
| Tetrachloroethene (PCE) | µg/m$^3$ | N | *1,400* | **42** | 2.32 | 6.41 | 18.6 |
| Trichloroethene (TCE) | µg/m$^3$ | C | *70* | **2.1** | <1.07 | <3.01 | 1.08 J |
| cis-1,2 Dichloroethene | µg/m$^3$ | N | *1,400* | **42** | <0.793 | <1.87 | <0.410 |
| trans-1,2 Dichloroethene | µg/m$^3$ | N | *1,400* | **42** | <0.793 | <2.25 | <0.494 |
| Vinyl Chloride | µg/m$^3$ | C | *56* | **1.7** | <0.511 | <1.22 | <0.268 |

Notes:
N = Noncarcinogen; C = Carcinogen
*ITALICS* : Exceeds **Subslab** Vapor Standard
**BOLD** : Exceeds **Indoor** Air Standard

NA = Not Analyzed
NS = No Standards
VAL = Vapor Action Level (compared for indoor air concentrations)
VRSL = Vapor Risk Screening Levels (compared for sub-slab vapor concentrations)
AF (Attenuation Factor) = 0.03 for Residential and Small Commercial

Standards for VAL and VRSL from January 2023 WDNR RR-0136 based on November 2022 U.S
https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

All values in ug/m$^3$ obtained from U.S. EPA Vapor Intrusion Screening Level (VISL) calculator fr
U.S. EPA Regional Screening Level (RSL) database of toxicity and chemical parameters.

Indoor air values from U.S. EPA Vapor Intrusion Screening Level (VISL) calculator and Regional
noncarcinogenic hazard index of 1 or a carcinogenic target risk level of 1x10E-6 .

Residential vs. Small Commercial vs. Large Commercial/Industrial determined based on WDNF

RR-800 Table 6a - Default Attenuation Factors
Sub-Slab Vapor = 0.03 (Small Commercial & Residential)

Beacon Environmental
526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 240809R03

Laboratory Work Order: 0008251

**Project Description:**

Bay Towel
Green Bay, WI

Client PO No.: 21-1121

Prepared for:
Dillon Plamann
**Fehr Graham**
909 North 8th Street, Suite 101
Sheboygan, WI 53081

Ryan W. Schneider
Senior Project Manager

January 09, 2025

All data meet requirements as specified in the Beacon Environmental Quality System Manual 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

# Table of Contents


Cover Page 1

Sample Summary 3

Case Narrative 4

Analytical Results 5

- Summary of Compound Detections 6
- Data Summary Table 7
- Detailed Analytical Results 8
  - 0008251-01 - SS-2 (Fire Station) 9
  - 0008251-02 - IA-2 (Fire Station) 10
  - 0008251-03 - SS-3 (Fire Station) 11

QC Summaries 12

Additional QC Information 21

- Sample Result Calculations 22
  - Equation 23
- LOD/MRL Calculation Table 24
- Certifications 25
- Notes and Definitions 26

Sample Management Records 27

- Chain of Custody 28

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

## Sample Summary

| Lab Sample ID | Client Sample ID | Received | Analysis | Matrix |
|---|---|---|---|---|
| 0008251-01<br>Sampler Type: | SS-2 (Fire Station)<br>Beacon Passive Sampler | 01/03/2025 | TO-17 (Passive) | Sub Slab Air |
| 0008251-02<br>Sampler Type: | IA-2 (Fire Station)<br>Beacon Passive Sampler | 01/03/2025 | TO-17 (Passive) | Indoor Air |
| 0008251-03<br>Sampler Type: | SS-3 (Fire Station)<br>Beacon Passive Sampler | 01/03/2025 | TO-17 (Passive) | Sub Slab Air |

**Project Completeness**

**Samples Received:** 3
**Samples Analyzed:** 3

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

# *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 µg/m3. 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) for EPA Method TO-17**
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 detection (LOD) as noted in the data tables.

**Calibration Verification**
All continuing calibration verification (CCV) values are within ±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 limit of detection (LOD) 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

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

# *Analytical Results*

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

## *Summary of Compound Detections- Concentration*

Lab Sample ID: 0008251-01

**SS-2 (Fire Station)**
Sub Slab Air

Method: TO-17 (Passive)

| Analyte | CAS# | Result (µg/m³) | Q | RT | LOQ (µg/m³) | LOD (µg/m³) | File ID |
|---|---|---|---|---|---|---|---|
| Tetrachloroethene | 127-18-4 | 4.98 | | 5.742 | 1.06 | 0.529 | C25010305.D |

Lab Sample ID: 0008251-03

**SS-3 (Fire Station)**
Sub Slab Air

Method: TO-17 (Passive)

| Analyte | CAS# | Result (µg/m³) | Q | RT | LOQ (µg/m³) | LOD (µg/m³) | File ID |
|---|---|---|---|---|---|---|---|
| Trichloroethene | 79-01-6 | 1.08 | J | 4.225 | 1.32 | 0.658 | C25010307.D |
| Tetrachloroethene | 127-18-4 | 18.6 | | 5.739 | 1.06 | 0.530 | C25010307.D |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

## *Data Summary Table- Concentration*

| Compound | Frequency | LOD (µg/m³) | Max Value (µg/m³) |
|---|---|---|---|
| Trichloroethene | 1 | 0.658 | 1.08 |
| Tetrachloroethene | 2 | 0.529 | 18.6 |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

# *Detailed Analytical Results*

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

Lab Sample ID: 0008251-01

## SS-2 (Fire Station)

Sub Slab Air

Method: TO-17 (Passive)

| Analyte | CAS# | Result (µg/m³) | Q | LOD (µg/m³) | LOQ (µg/m³) | Analyzed | File ID |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | <0.268 | U | 0.268 | 0.536 | 01/03/2025 17:07 | C25010305.D |
| trans-1,2-Dichloroethene | 156-60-5 | <0.493 | U | 0.493 | 0.987 | 01/03/2025 17:07 | C25010305.D |
| cis-1,2-Dichloroethene | 156-59-2 | <0.410 | U | 0.410 | 0.819 | 01/03/2025 17:07 | C25010305.D |
| Trichloroethene | 79-01-6 | <0.658 | U | 0.658 | 1.32 | 01/03/2025 17:07 | C25010305.D |
| **Tetrachloroethene** | 127-18-4 | **4.98** | | 0.529 | 1.06 | 01/03/2025 17:07 | C25010305.D |

| *Analyte* | *CAS#* | *% Recovery* | *Recovery Limits* | *Q* | *Analyzed* | *File ID* |
|---|---|---|---|---|---|---|
| *Surrogate: 1,2-DCA-d4* | 17060-07-0 | *83.1%* | *70-130* | | *01/03/2025 17:07* | *C25010305.D* |
| *Surrogate: Toluene-d8* | 2037-26-5 | *107%* | *70-130* | | *01/03/2025 17:07* | *C25010305.D* |
| *Surrogate: Bromofluorobenzene* | 460-00-4 | *89.6%* | *70-130* | | *01/03/2025 17:07* | *C25010305.D* |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

Lab Sample ID: 0008251-02

## IA-2 (Fire Station)

Indoor Air

Method: TO-17 (Passive)

| Analyte | CAS# | Result (µg/m³) | Q | LOD (µg/m³) | LOQ (µg/m³) | Analyzed | File ID |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | <0.268 | U | 0.268 | 0.536 | 01/03/2025 17:41 | C25010306.D |
| trans-1,2-Dichloroethene | 156-60-5 | <0.494 | U | 0.494 | 0.987 | 01/03/2025 17:41 | C25010306.D |
| cis-1,2-Dichloroethene | 156-59-2 | <0.410 | U | 0.410 | 0.819 | 01/03/2025 17:41 | C25010306.D |
| Trichloroethene | 79-01-6 | <0.658 | U | 0.658 | 1.32 | 01/03/2025 17:41 | C25010306.D |
| Tetrachloroethene | 127-18-4 | <0.530 | U | 0.530 | 1.06 | 01/03/2025 17:41 | C25010306.D |

| *Analyte* | *CAS#* | *% Recovery* | *Recovery Limits* | *Q* | *Analyzed* | *File ID* |
|---|---|---|---|---|---|---|
| *Surrogate: 1,2-DCA-d4* | 17060-07-0 | *96.9%* | *70-130* | | *01/03/2025 17:41* | *C25010306.D* |
| *Surrogate: Toluene-d8* | 2037-26-5 | *93.3%* | *70-130* | | *01/03/2025 17:41* | *C25010306.D* |
| *Surrogate: Bromofluorobenzene* | 460-00-4 | *89.9%* | *70-130* | | *01/03/2025 17:41* | *C25010306.D* |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

Lab Sample ID: 0008251-03

## SS-3 (Fire Station)

Sub Slab Air

Method: TO-17 (Passive)

| Analyte | CAS# | Result (µg/m³) | Q | LOD (µg/m³) | LOQ (µg/m³) | Analyzed | File ID |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 75-01-4 | <0.268 | U | 0.268 | 0.536 | 01/03/2025 18:16 | C25010307.D |
| trans-1,2-Dichloroethene | 156-60-5 | <0.494 | U | 0.494 | 0.987 | 01/03/2025 18:16 | C25010307.D |
| cis-1,2-Dichloroethene | 156-59-2 | <0.410 | U | 0.410 | 0.820 | 01/03/2025 18:16 | C25010307.D |
| **Trichloroethene** | 79-01-6 | **1.08** | J | 0.658 | 1.32 | 01/03/2025 18:16 | C25010307.D |
| **Tetrachloroethene** | 127-18-4 | **18.6** | | 0.530 | 1.06 | 01/03/2025 18:16 | C25010307.D |

| *Analyte* | *CAS#* | *% Recovery* | *Recovery Limits* | *Q* | *Analyzed* | *File ID* |
|---|---|---|---|---|---|---|
| *Surrogate: 1,2-DCA-d4* | 17060-07-0 | *84.5%* | *70-130* | | *01/03/2025 18:16* | *C25010307.D* |
| *Surrogate: Toluene-d8* | 2037-26-5 | *110%* | *70-130* | | *01/03/2025 18:16* | *C25010307.D* |
| *Surrogate: Bromofluorobenzene* | 460-00-4 | *87.7%* | *70-130* | | *01/03/2025 18:16* | *C25010307.D* |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

# *QC Information/Summary*

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

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

**Sequence: B24L062 - Instrument: C System - File ID: C24121316.D**

***B24L062-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte | Result | LOQ | LOD | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 47.7 | 10 | 5 | ng | 50.0 | | 95.3 | 70-130 | | | |
| trans-1,2-Dichloroethene | 53.8 | 10 | 5 | ng | 50.0 | | 108 | 70-130 | | | |
| cis-1,2-Dichloroethene | 52.2 | 10 | 5 | ng | 50.0 | | 104 | 70-130 | | | |
| Trichloroethene | 49.4 | 10 | 5 | ng | 50.0 | | 98.9 | 70-130 | | | |
| Tetrachloroethene | 51.1 | 10 | 5 | ng | 50.0 | | 102 | 70-130 | | | |
| *Surrogate: 1,2-DCA-d4* | *48.4* | | | *ng* | 50.0 | | *96.8* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *50.6* | | | *ng* | 50.0 | | *101* | *70-130* | | | |
| *Surrogate: Bromofluorobenzene* | *49.3* | | | *ng* | 50.0 | | *98.7* | *70-130* | | | |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

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

**Sequence: B24L062 - Instrument: C System - File ID: C24121318.D**

***B24L062-ICB1 (Lab Blank/Initial Calibration Blank)***

| Analyte | Result | LOQ | LOD | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | <5 | 10 | 5 | ng | | | | | | | U |
| trans-1,2-Dichloroethene | <5 | 10 | 5 | ng | | | | | | | U |
| cis-1,2-Dichloroethene | <5 | 10 | 5 | ng | | | | | | | U |
| Trichloroethene | <5 | 10 | 5 | ng | | | | | | | U |
| Tetrachloroethene | <5 | 10 | 5 | ng | | | | | | | U |
| *Surrogate: 1,2-DCA-d4* | *82.4* | | | *ng* | 100 | | *82.4* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *107* | | | *ng* | 100 | | *107* | *70-130* | | | |
| *Surrogate: Bromofluorobenzene* | *90.4* | | | *ng* | 100 | | *90.4* | *70-130* | | | |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

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

**Sequence: B25A011 - Batch: 25A0011 - Instrument: C System - File ID: C25010302.D**

***25A0011-BS1 (LCS, Calibration Source Verification)***

| Analyte | Result | LOQ | LOD | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 56.0 | 10 | 5 | ng | 50.0 | | 112 | 70-130 | | | |
| trans-1,2-Dichloroethene | 47.5 | 10 | 5 | ng | 50.0 | | 94.9 | 70-130 | | | |
| cis-1,2-Dichloroethene | 48.0 | 10 | 5 | ng | 50.0 | | 96.0 | 70-130 | | | |
| Trichloroethene | 54.6 | 10 | 5 | ng | 50.0 | | 109 | 70-130 | | | |
| Tetrachloroethene | 51.2 | 10 | 5 | ng | 50.0 | | 102 | 70-130 | | | |
| *Surrogate: 1,2-DCA-d4* | *49.7* | | | *ng* | 50.0 | | *99.5* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *51.3* | | | *ng* | 50.0 | | *103* | *70-130* | | | |
| *Surrogate: Bromofluorobenzene* | *49.1* | | | *ng* | 50.0 | | *98.3* | *70-130* | | | |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

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

**Sequence: B25A011 - Batch: 25A0011 - Instrument: C System - File ID: C25010303.D**

***25A0011-BLK1 (Lab Blank)***

| Analyte | Result | LOQ | LOD | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | <0.268 | 0.536 | 0.268 | µg/m³ | | | | | | | U |
| trans-1,2-Dichloroethene | <0.493 | 0.987 | 0.493 | µg/m³ | | | | | | | U |
| cis-1,2-Dichloroethene | <0.410 | 0.819 | 0.410 | µg/m³ | | | | | | | U |
| Trichloroethene | <0.658 | 1.32 | 0.658 | µg/m³ | | | | | | | U |
| Tetrachloroethene | <0.529 | 1.06 | 0.529 | µg/m³ | | | | | | | U |
| *Surrogate: 1,2-DCA-d4* | *101* | | | *ng* | 100 | | *101* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *96.7* | | | *ng* | 100 | | *96.7* | *70-130* | | | |
| *Surrogate: Bromofluorobenzene* | *85.5* | | | *ng* | 100 | | *85.5* | *70-130* | | | |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

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

**Sequence: B25A011 - Instrument: C System - File ID: C25010304.D**

***B25A011-ICV1 (LCSD/Second Source Verification/CALV)***

| Analyte | Result | LOQ | LOD | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 63.8 | 10 | 5 | ng | 50.0 | | 128 | 70-130 | | | |
| trans-1,2-Dichloroethene | 52.7 | 10 | 5 | ng | 50.0 | | 105 | 70-130 | | | |
| cis-1,2-Dichloroethene | 53.9 | 10 | 5 | ng | 50.0 | | 108 | 70-130 | | | |
| Trichloroethene | 54.1 | 10 | 5 | ng | 50.0 | | 108 | 70-130 | | | |
| Tetrachloroethene | 52.5 | 10 | 5 | ng | 50.0 | | 105 | 70-130 | | | |
| *Surrogate: 1,2-DCA-d4* | *55.4* | | | *ng* | 50.0 | | *111* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *53.2* | | | *ng* | 50.0 | | *106* | *70-130* | | | |
| *Surrogate: Bromofluorobenzene* | *45.6* | | | *ng* | 50.0 | | *91.3* | *70-130* | | | |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

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

**Sequence: B25A011 - Instrument: C System - File ID: C25010313.D**

***B25A011-CCV1 (LCS, Closing Calibration Verification)***

| Analyte | Result | LOQ | LOD | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 58.2 | 10 | 5 | ng | 50.0 | | 116 | 70-130 | | | |
| trans-1,2-Dichloroethene | 53.1 | 10 | 5 | ng | 50.0 | | 106 | 70-130 | | | |
| cis-1,2-Dichloroethene | 55.1 | 10 | 5 | ng | 50.0 | | 110 | 70-130 | | | |
| Trichloroethene | 57.5 | 10 | 5 | ng | 50.0 | | 115 | 70-130 | | | |
| Tetrachloroethene | 52.2 | 10 | 5 | ng | 50.0 | | 104 | 70-130 | | | |
| *Surrogate: 1,2-DCA-d4* | *57.9* | | | *ng* | 50.0 | | *116* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *51.1* | | | *ng* | 50.0 | | *102* | *70-130* | | | |
| *Surrogate: Bromofluorobenzene* | *47.2* | | | *ng* | 50.0 | | *94.4* | *70-130* | | | |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

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

**Sequence: B25A011 - Instrument: C System - File ID: C25010314.D**

***B25A011-CCB1 (Lab Blank)***

| Analyte | Result | LOQ | LOD | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | <5 | 10 | 5 | ng | | | | | | | U |
| trans-1,2-Dichloroethene | <5 | 10 | 5 | ng | | | | | | | U |
| cis-1,2-Dichloroethene | <5 | 10 | 5 | ng | | | | | | | U |
| Trichloroethene | <5 | 10 | 5 | ng | | | | | | | U |
| Tetrachloroethene | <5 | 10 | 5 | ng | | | | | | | U |
| *Surrogate: 1,2-DCA-d4* | *109* | | | *ng* | 100 | | *109* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *95.4* | | | *ng* | 100 | | *95.4* | *70-130* | | | |
| *Surrogate: Bromofluorobenzene* | *85.2* | | | *ng* | 100 | | *85.2* | *70-130* | | | |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

## *TO-17 (Passive) - LCS/LCSD RPD Quality Control Summary*

***LCS: 25A0011-BS1 File ID: C25010302.D*** Analyzed: 1/3/25 16:33

***LCSD: B25A011-ICV1 File ID: C25010304.D*** Analyzed: 1/3/25 15:32

| 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 | 55.99 | 112 | | 50 | 63.78 | 128.00 | 70-130 | 13.01 | 30 | |
| trans-1,2-Dichloroethene | 156-60-5 | 47.47 | 94.9 | | 50 | 52.68 | 105.00 | 70-130 | 10.40 | 30 | |
| cis-1,2-Dichloroethene | 156-59-2 | 48.01 | 96 | | 50 | 53.86 | 108.00 | 70-130 | 11.49 | 30 | |
| Trichloroethene | 79-01-6 | 54.60 | 109.2 | | 50 | 54.11 | 108.00 | 70-130 | 0.90 | 30 | |
| Tetrachloroethene | 127-18-4 | 51.22 | 102.4 | | 50 | 52.51 | 105.00 | 70-130 | 2.49 | 30 | |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

# *Additional QC Information*

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

## Sample Result Calculation Summary (Concentration)

### TO-17 (Passive)

| Analyte | t<br>Sampling Time<br>minutes | DF<br>Dilution Factor | Uc<br>Uptake Rate | M<br>Initial Result<br>ng | C<br>Calculated Result<br>µg/m³ | File ID |
|---|---|---|---|---|---|---|
| **Lab ID:** 0008251-01 **Sample Name:** SS-2 (Fire Station) | | | | | | |
| Vinyl Chloride | 23,037 | 1.00 | 0.810 | U | U | C25010305.D |
| trans-1,2-Dichloroethene | 23,037 | 1.00 | 0.440 | U | U | C25010305.D |
| cis-1,2-Dichloroethene | 23,037 | 1.00 | 0.530 | U | U | C25010305.D |
| Trichloroethene | 23,037 | 1.00 | 0.330 | U | U | C25010305.D |
| Tetrachloroethene | 23,037 | 1.00 | 0.410 | 47.08 | 4.98 | C25010305.D |
| **Lab ID:** 0008251-02 **Sample Name:** IA-2 (Fire Station) | | | | | | |
| Vinyl Chloride | 23,026 | 1.00 | 0.810 | U | U | C25010306.D |
| trans-1,2-Dichloroethene | 23,026 | 1.00 | 0.440 | U | U | C25010306.D |
| cis-1,2-Dichloroethene | 23,026 | 1.00 | 0.530 | U | U | C25010306.D |
| Trichloroethene | 23,026 | 1.00 | 0.330 | U | U | C25010306.D |
| Tetrachloroethene | 23,026 | 1.00 | 0.410 | U | U | C25010306.D |
| **Lab ID:** 0008251-03 **Sample Name:** SS-3 (Fire Station) | | | | | | |
| Vinyl Chloride | 23,021 | 1.00 | 0.810 | U | U | C25010307.D |
| trans-1,2-Dichloroethene | 23,021 | 1.00 | 0.440 | U | U | C25010307.D |
| cis-1,2-Dichloroethene | 23,021 | 1.00 | 0.530 | U | U | C25010307.D |
| Trichloroethene | 23,021 | 1.00 | 0.330 | 8.23 | 1.08 | C25010307.D |
| Tetrachloroethene | 23,021 | 1.00 | 0.410 | 175.88 | 18.6 | C25010307.D |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

Calculations:

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

$$Uc = U * \left(\left(\frac{Ts + 273.15}{Tu + 273.15}\right)^{1/2}\right)$$

where:

| | | |
|---|---|---|
| C | = | concentration ($\mu g/m^3$) |
| 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*

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

# CERTIFICATE OF ANALYSIS

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

## Method Detection and Reporting Limit Calculations (Concentration)

### TO-17 (Passive)

| Analyte | t Sampling Time minutes | DF Dilution Factor | Uc Uptake Rate | M Initial (ng) LOQ | M Initial (ng) LOD | C Calculated (µg/m³) LOQ | C Calculated (µg/m³) LOD |
|---|---|---|---|---|---|---|---|
| **Lab ID:** 0008251-01 | **Sample Name:** SS-2 (Fire Station) | | | | | | |
| Vinyl Chloride | 23,037 | 1.00 | 0.810 | 10.00 | 5.00 | 0.536 | 0.268 |
| trans-1,2-Dichloroethene | 23,037 | 1.00 | 0.440 | 10.00 | 5.00 | 0.987 | 0.493 |
| cis-1,2-Dichloroethene | 23,037 | 1.00 | 0.530 | 10.00 | 5.00 | 0.819 | 0.410 |
| Trichloroethene | 23,037 | 1.00 | 0.330 | 10.00 | 5.00 | 1.32 | 0.658 |
| Tetrachloroethene | 23,037 | 1.00 | 0.410 | 10.00 | 5.00 | 1.06 | 0.529 |
| **Lab ID:** 0008251-02 | **Sample Name:** IA-2 (Fire Station) | | | | | | |
| Vinyl Chloride | 23,026 | 1.00 | 0.810 | 10.00 | 5.00 | 0.536 | 0.268 |
| trans-1,2-Dichloroethene | 23,026 | 1.00 | 0.440 | 10.00 | 5.00 | 0.987 | 0.494 |
| cis-1,2-Dichloroethene | 23,026 | 1.00 | 0.530 | 10.00 | 5.00 | 0.819 | 0.410 |
| Trichloroethene | 23,026 | 1.00 | 0.330 | 10.00 | 5.00 | 1.32 | 0.658 |
| Tetrachloroethene | 23,026 | 1.00 | 0.410 | 10.00 | 5.00 | 1.06 | 0.530 |
| **Lab ID:** 0008251-03 | **Sample Name:** SS-3 (Fire Station) | | | | | | |
| Vinyl Chloride | 23,021 | 1.00 | 0.810 | 10.00 | 5.00 | 0.536 | 0.268 |
| trans-1,2-Dichloroethene | 23,021 | 1.00 | 0.440 | 10.00 | 5.00 | 0.987 | 0.494 |
| cis-1,2-Dichloroethene | 23,021 | 1.00 | 0.530 | 10.00 | 5.00 | 0.820 | 0.410 |
| Trichloroethene | 23,021 | 1.00 | 0.330 | 10.00 | 5.00 | 1.32 | 0.658 |
| Tetrachloroethene | 23,021 | 1.00 | 0.410 | 10.00 | 5.00 | 1.06 | 0.530 |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | |
|---|---|---|
| **Fehr Graham**<br>909 North 8th Street, Suite 101<br>Sheboygan, WI 53081 | **Site Name:** Bay Towel<br>**Site Location:** Green Bay, WI<br>**Project Manager:** Dillon Plamann | **Beacon Proposal:** 240809R03<br>**Lab Work Order:** 0008251<br>**Reported:** 01/09/2025 |

## *Laboratory Certification List*

| Certification ID | Certification No. | Description | Expires | Project Required |
|---|---|---|---|---|
| Alaska CS-LAP | 19-002 | Alaska Department of Environmental Conservation | 12/30/2024 | |
| Colorado | MD010912023 | Colorado Division of Oil and Public Safety | 11/23/2025 | |
| DoD-ELAP | 72690/L24-851 | United States Department of Defense Environmental Laboratory Accreditation | 12/31/2026 | |
| ISO/IEC 17025:2017 | 72690/L24-851 | General Requirements for the Competence of Testing and Calibration Laboratories | 12/31/2026 | |
| NEFAP | 72690/L24-846 | TNI National Environmental Field Activities Program (NEFAP) | 12/31/2026 | |
| NY-NELAP | 12097 | New York Department of Health | 04/01/2025 | |
| Utah-NELAP | MD010912024-16 | Utah Department of Health | 12/31/2025 | |
| Washington State | C1085 | The State of Washington Department of Ecology | 05/23/2025 | |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | | | | |
|---|---|---|---|---|---|
| **Fehr Graham** | **Site Name:** | Bay Towel | **Beacon Proposal:** | 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** | Green Bay, WI | **Lab Work Order:** | 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** | Dillon Plamann | **Reported:** | 01/09/2025 |

## 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 |
| %RE | Percent Relative Error |
| RPD | Relative Percent Difference |
| RT | Retention Times in Minutes |
| RRT | Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm$0.06 control limits) |
| RV | Calibration reference value |
| VISL | EPA Vapor Intrusion Screening Level |
| 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 |
| g | Uptake rate determined using Graham's Law of Diffusion. |

### *Sample/Sample Receipt Qualifiers and Notes:*

| | |
|---|---|
| J | Value reported below limit of quantitation (LOQ). |
| U | Analyte was not detected and is reported as less than the limit of detection (LOD). The LOD has been adjusted for any dilution or concentration of the sample. |

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

| | | |
|---|---|---|
| **Fehr Graham** | **Site Name:** Bay Towel | **Beacon Proposal:** 240809R03 |
| 909 North 8th Street, Suite 101 | **Site Location:** Green Bay, WI | **Lab Work Order:** 0008251 |
| Sheboygan, WI 53081 | **Project Manager:** Dillon Plamann | **Reported:** 01/09/2025 |

# *Sample Management Records*

BEACON ENVIRONMENTAL
526 Underwood Lane
Bel Air, Maryland 21014 USA
1-410-838-8780
help@beacon-usa.com

# BEACON SAMPLER CHAIN-OF-CUSTODY

| Client Information | | Project Information | |
|---|---|---|---|
| Company: Fehr Graham | | Site Name: Bay Towel | Project Manager: Dillon Plamann |
| Office Address: 909 N 8th St. | | Site Location: 501 S. Adams St. Green Bay | Client PO: 21-1121 |
| City / State / Zip: Sheboygan, WI 53081 | | Submitted by: Kelsey Bird | Turn around time (check one): ☐ Normal ☒ Rush (specify) 4 days |
| Phone: (920) 453-0700 | | Email: kbird@fehrgraham.com | |

| Field Sample ID | Start Date | Start Time | Stop Date | Stop Time | Average Temp (°C) | Notes / Surface Type for Soil Gas e.g. Describe Conditions, Soil/Asphalt/Concrete/Gravel | INDOOR AIR | AMBIENT AIR | CRAWL SPACE | SEWER GAS | SOIL GAS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SS-2 (Fire Station) | 12/17/2024 | 1013 | 01/02/2025 | 1010 | | | | | | | X |
| IA-2 (Fire Station) | 12/17/2024 | 1018 | 01/02/2025 | 1004 | | | X | | | | |
| SS-3 (Fire station) | 12/17/2024 | 1043 | 01/02/2025 | 1024 | | | | | | | X |

Special Notes / Instructions:

| For Lab Use Only | Beacon Job No: 8251 | Beacon Proposal: 240809R03 | Analytical Method: TO-17 |
|---|---|---|---|

Fedex, good, N/A, -

received. Anthun Anderson 10:45 1/3/2025

# 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.

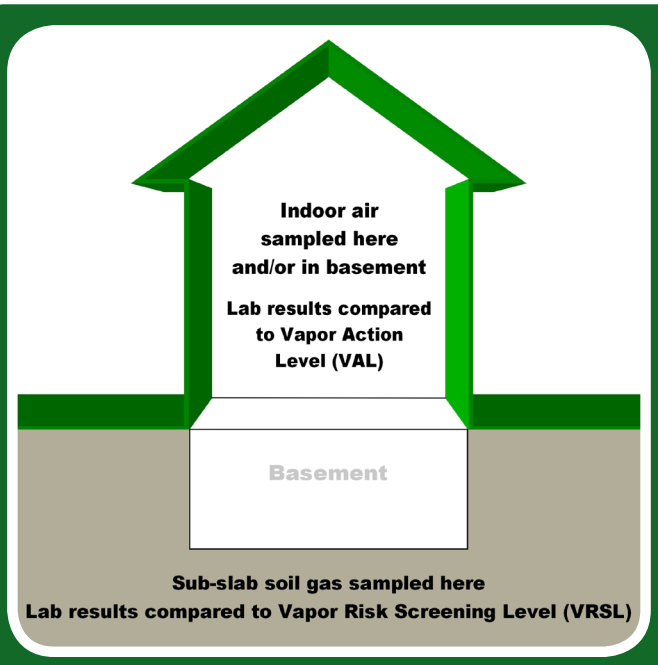
## Indoor Air Testing Results

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.




The air and soil gas samples from your property are tested at a laboratory. Chemical concentrations are measured and the results are compared to state health-risk numbers.

## 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.

Wisconsin Department of Natural Resources
P.O. Box 7921, Madison, WI 53707
dnr.wi.gov, search "Brownfields"

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.

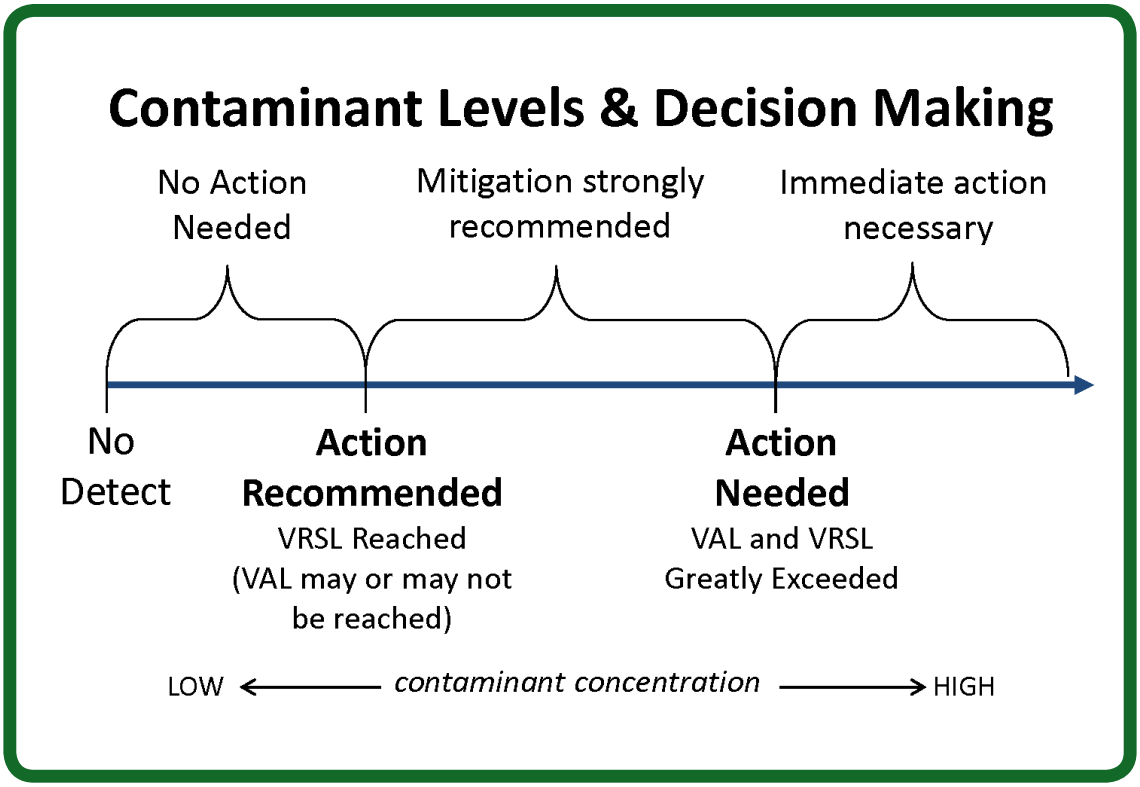
## Follow-Up Actions

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 µg/m3 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**

This document contains information about certain state statutes and administrative rules but does not necessarily include all of the details found in the statutes and rules. Readers should consult the actual language of the statutes and rules to answer specific questions. The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services, and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington, D.C. 20240. This publication is available in alternative format upon request. Please call 608-267-3543 for more information.