November 18, 2024
File No. 25222269.06

Ms. Lucy B. Jones
2723 N. 29th Street
Milwaukee, WI 53210

Subject: Sample Results Notification
2723 N. 29th Street, Milwaukee
DNR Site Name: Findley Adhesives Property
BRRTS No. 03-41-005301

Dear Ms. Jones:

On behalf of the Wisconsin Department of Natural Resources (DNR) through the Vapor Intrusion Zone Contract (VIZC), SCS Engineers (SCS) is providing sample results for sub-slab vapor and indoor air samples which were collected from your property by SCS in October 2024. The approximate sample locations are shown on the attached map (**Figure 1**).

The samples were submitted for analysis of five specific chlorinated volatile organic compounds (CVOCs), including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), trans-1,2-DCE, and vinyl chloride. The sample laboratory reports are included as **Attachment A**.

CVOCs were not detected in the sub-slab samples collected from your property. A minor concentration of PCE was detected in the first-floor indoor air sample; the concentration was below the DNR's residential indoor air vapor action level (VAL) for PCE. No other CVOCs were detected in the samples. The sample results indicate there is not an indoor air health risk related to vapor intrusion of CVOCs.

The DNR Publication RR-977 Understanding Chemical Vapor Testing Results with additional information for you is included as **Attachment B**.

No additional sampling at your home is proposed. A final report summarizing the findings will be prepared and submitted to the DNR and listed on the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web (BOTW). Information related to this case can be found online; go to dnr.wi.gov and search "BOTW" or go to https://apps.dnr.wi.gov/botw/. Use the BRRTS number found at the top of this letter.

Please contact Alyssa Sellwood of DNR at (608) 622-8606 or Alyssa.Sellwood@wisconsin.gov or Nathan Kloczko of Wisconsin Department of Health Services (DHS) at (608) 867-4448 or Nathan.Kloczko@dhs.wisconsin.gov if you have questions concerning the analytical results.

Sincerely,

Jacob Krause, PG
Project Hydrogeologist
SCS Engineers

Robert Langdon
Senior Project Manager
SCS Engineers

JJK/REO/REL

cc: Alyssa Sellwood, DNR
Nathan Kloczko, DHS

Attachments: Table 1 – Sub-Slab Vapor Analytical Results Summary
Table 2 – Indoor Air Analytical Results Summary
Figure 1 – Vapor Investigation Map
Attachment A – Laboratory Reports
Attachment B – DNR Publication RR-977

I:\25222269.00\25222269.06 Findley_Deliverables\Results Notif - Third Round\241118_Jones_2723 N 29th_Results Notification_Final.docx

Tables

1 Sub-Slab Vapor Analytical Results Summary
2 Indoor Air Analytical Results Summary

Table 1. Sub-Slab Vapor Analytical Results Summary
Findley Adhesives, Milwaukee, Wisconsin / SCS Engineers Project #25222269.06
(Results are in µg/m^3)

Location	Sample	Sample Start Date	Sample End Date	Lab Notes	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
2723 N. 29th St.	10A_SSV_07_20240130	1/22/2024	1/30/2024	--	<2.13	<2.65	<1.65	<1.99	<1.08
	10A_SSV_07_20240605	5/29/2024	6/5/2024	--	<2.42	<3.00	<1.87	<2.25	<1.22
	10A_SSV_07_20241016	10/9/2024	10/16/2024	--	<2.43	<3.01	<1.88	<2.26	<1.23
	10A_SSV_08_20240130	1/22/2024	1/30/2024	--	<2.13	<2.65	<1.65	<1.99	<1.08
	10A_SSV_08_20240605	5/29/2024	6/5/2024	--	<2.42	<3.01	<1.87	<2.26	<1.23
	10A_SSV_08_20241016	10/9/2024	10/16/2024	--	<2.42	<3.01	<1.88	<2.26	<1.23
Vapor Risk Screening Level (Residential Building)					1,400	70	1,400	1,400	56
Vapor Risk Screening Level (Small Commercial Building)					5,800	290	5,800	5,800	930
Vapor Risk Screening Level (Large Commercial/Industrial Building)					18,000	880	18,000	18,000	2,800

Abbreviations:
µg/m^3 = micrograms per cubic meter
-- = Not Applicable
cis-1,2-DCE = cis-1,2-dichloroethene
trans-1,2-DCE = trans-1,2-dichloroethene

Notes:
1. Samples were collected using passive sorbent samplers and analyzed using the U.S. EPA 8260C analytical method.
2. Vapor Risk Screening Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on May 2024 U.S. EPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Vapor Risk Screening Levels.

Lab Notes:
None

Created by: REL Date: 2/13/2024
Last revision by: REO Date: 11/4/2024
Checked by: LMH Date: 11/4/2024
Proj Mgr QA/QC: REL Date: 11/12/2024

I:\25222269.00\25222269.06 Findley_Deliverables\Results Notif - Third Round\Tables-Figure-Attachments\[Table 1_Sub-Slab Vapor Analytical Results Summary - 2723 only.xlsx]Sub-Slab Vapor

Table 2. Indoor and Outdoor Air Analytical Results Summary
Findley Adhesives, Milwaukee, Wisconsin / SCS Engineers Project #25222269.06
(Results are in µg/m^3)

Location	Sample	Sample Start Date	Sample End Date	Lab Notes	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
2723 N. 29th St., Basement	10A_IAB_07_20240130	1/22/2024	1/30/2024	(1)	<1.06	<1.32	<0.819	<0.986	<0.536
	10A_IAB_07_20240605	5/29/2024	6/5/2024	(1)	<1.21	<1.50	<0.936	<1.13	<0.612
	10A_IAB_07_20241016	10/9/2024	10/16/2024	(1)	<1.21	<1.51	<0.940	<1.13	<0.615
2723 N. 29th St., First Floor	10A_IA1_08_20240130	1/22/2024	1/30/2024	(1)	1.48 J	<1.32	<0.819	<0.987	<0.536
	10A_IA1_08_2024_0605	5/29/2024	6/5/2024	(1)	<1.21	<1.50	<0.934	<1.13	<0.611
	10A_IA1_08_20241016	10/9/2024	10/16/2024	(1)	1.40 J	<1.51	<0.942	<1.13	<0.616
2723 N. 29th St., Second Floor	10A_IA2_09_20240605	5/29/2024	6/5/2024	(1)	<1.21	<1.50	<0.934	<1.13	<0.611
	10A_IA2_09_20241016	10/9/2024	10/16/2024	(1)	<1.22	<1.51	<0.942	<1.13	<0.616
Indoor Air Vapor Action Level (Residential Building)					42	2.1	42	42	1.7
Indoor Air Vapor Action Level (Commercial/Industrial Building)					180	8.8	180	180	28

Abbreviations:
µg/m^3 = micrograms per cubic meter
-- = Not Applicable
cis-1,2-DCE = cis-1,2-dichloroethene
trans-1,2-DCE = trans-1,2-dichloroethene

Notes:
1. Samples were collected using passive sorbent samplers analyzed using EPA Method TO-17.
2. Indoor Air Vapor Action Levels are from Wisconsin Department of Natural Resources' WI Vapor Quick Look-Up Table, which is based on May 2024 U.S. EPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Indoor Air Vapor Action Levels.

Lab Notes/Qualifiers:
J = Value reported below limit of quantitation (LOQ).
(1) All non-detected analytes = 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.

I:\25222269.00\25222269.06 Findley_Deliverables\Results Notif - Third Round\Tables-Figure-Attachments\[Table 2_Indoor and Outdoor Air Analytical Results Summary - 2723 only.xlsx]Indoor Air

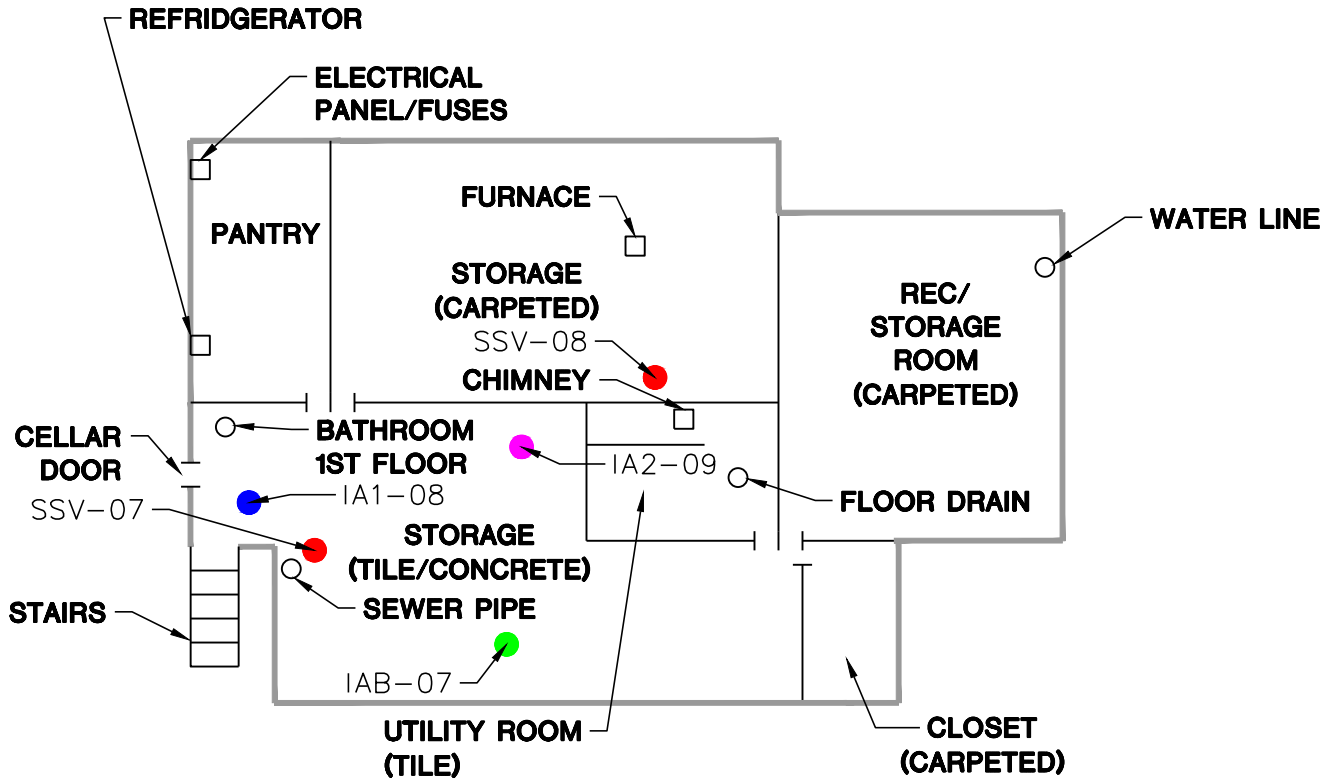
Created by: REL Date: 2/13/2024
Last revision by: AJR Date: 11/4/2024
Checked by: JSN Date: 11/4/2024
Proj Mgr QA/QC: REL Date: 11/12/2024

Figure 1

Vapor Investigation Map

2723 N. 29TH ST.

BASEMENT LEVEL



N

8 0 8

SCALE: 1" = 8'

NOTE:

1. BUILDING DETAILS AND SAMPLE LOCATIONS ARE APPROXIMATE.

LEGEND

- SUB-SLAB SAMPLE LOCATION
- BASEMENT INDOOR AIR SAMPLE LOCATION
- 1ST FLOOR INDOOR AIR SAMPLE LOCATION
- 2ND FLOOR INDOOR AIR SAMPLE LOCATION

CLIENT	WISCONSIN DEPARTMENT OF NATURAL RESOURCES	SITE	FINDLEY ADHESIVES, SITE ID #10 2723 N. 29TH STREET, MILWAUKEE PROPERTY SAMPLE IDENTIFIER A
			VAPOR INVESTIGATION MAP

PROJECT NO.	25222269.06	DRAWN BY:	SB
DRAWN:	01/08/2024	CHECKED BY:	REL
REVISED:	07/15/2024	APPROVED BY:	REL 07/17/2024

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE 1

Attachment A

Laboratory Reports

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

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 241003R01

Laboratory Work Order: 0008072

Project Description:
DNR VIZC Findley Adhesives
Milwaukee, WI

Client PO No.: 25222269.06

Prepared for:
Jacob Krause
SCS Engineers
2830 Dairy Drive
Madison, WI 53718-6751

Ryan W. Schneider
Senior Project Manager

October 31, 2024

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

Table of Contents

Cover Page 1

Sample Summary 3

Case Narrative 4

Analytical Results 5

- Detailed Analytical Results 6
  - 0008072-01 - 10A_SSV_07_20241016 7
  - 0008072-02 - 10A_SSV_08_20241016 8

QC Summaries 9

Additional QC Information 18

- Sample Result Calculations 19
  - Equation 19
- MRL Calculation Table 20
- Certifications 21
- Notes and Definitions 22

Sample Management Records 23

- Chain of Custody 24

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Sample Summary

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0008072-01	10A_SSV_07_20241016	10/22/2024	EPA 8260C	Sub Slab Air
Sampler Type:	Beacon Passive Sampler			
0008072-02	10A_SSV_08_20241016	10/22/2024	EPA 8260C	Sub Slab Air
Sampler Type:	Beacon Passive Sampler			

Project Completeness

Samples Received: 2
Samples Analyzed: 2

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Case Narrative

U.S. EPA Method 8260C

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260C, with laboratory results provided in micrograms per cubic meter ($\mu g/m^3$). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were under BEACON's Quality Assurance Project Plan.

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.

Project Details

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. Some closing QC checks were analyzed out of tune time but all samples were analyzed within tune time.

End of Case Narrative

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Analytical Results

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Detailed Analytical Results

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Lab Sample ID: 0008072-01

10A_SSV_07_20241016

Sub Slab Air

Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<1.23		1.23	10/23/2024 21:37	C24102317.D
trans-1,2-Dichloroethene	156-60-5	<2.26		2.26	10/23/2024 21:37	C24102317.D
cis-1,2-Dichloroethene	156-59-2	<1.88		1.88	10/23/2024 21:37	C24102317.D
Trichloroethene	79-01-6	<3.01		3.01	10/23/2024 21:37	C24102317.D
Tetrachloroethene	127-18-4	<2.43		2.43	10/23/2024 21:37	C24102317.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*85.4%*	*70-130*		*10/23/2024 21:37*	*C24102317.D*
Surrogate: Toluene-d8	2037-26-5	*98.4%*	*70-130*		*10/23/2024 21:37*	*C24102317.D*
Surrogate: Bromofluorobenzene	460-00-4	*102%*	*70-130*		*10/23/2024 21:37*	*C24102317.D*

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Lab Sample ID: 0008072-02

10A_SSV_08_20241016

Sub Slab Air

Method: EPA 8260C

Analyte	CAS#	Result (µg/m³)	Q	LOQ (µg/m³)	Analyzed	File ID
Vinyl Chloride	75-01-4	<1.23		1.23	10/23/2024 22:17	C24102318.D
trans-1,2-Dichloroethene	156-60-5	<2.26		2.26	10/23/2024 22:17	C24102318.D
cis-1,2-Dichloroethene	156-59-2	<1.88		1.88	10/23/2024 22:17	C24102318.D
Trichloroethene	79-01-6	<3.01		3.01	10/23/2024 22:17	C24102318.D
Tetrachloroethene	127-18-4	<2.42		2.42	10/23/2024 22:17	C24102318.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*84.8%*	*70-130*		*10/23/2024 22:17*	*C24102318.D*
Surrogate: Toluene-d8	2037-26-5	*93.6%*	*70-130*		*10/23/2024 22:17*	*C24102318.D*
Surrogate: Bromofluorobenzene	460-00-4	*102%*	*70-130*		*10/23/2024 22:17*	*C24102318.D*

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

QC Information/Summary

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary

Sequence: B24I004 - Instrument: C System - File ID: Ca24090316.D

B24I004-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
Surrogate: 1,2-DCA-d4	*102*		*ng*	100		*102*	*70-130*			
Surrogate: Toluene-d8	*107*		*ng*	100		*107*	*70-130*			
Surrogate: Bromofluorobenzene	*104*		*ng*	100		*104*	*70-130*			

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary

Sequence: B24I004 - Instrument: C System - File ID: Ca24090318.D

B24I004-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	57.8	10	ng	50.0		116	70-130			
trans-1,2-Dichloroethene	52.5	10	ng	50.0		105	70-130			
cis-1,2-Dichloroethene	53.6	10	ng	50.0		107	70-130			
Trichloroethene	51.7	10	ng	50.0		103	70-130			
Tetrachloroethene	52.7	10	ng	50.0		105	70-130			
Surrogate: 1,2-DCA-d4	*48.8*		*ng*	50.0		*97.6*	*70-130*			
Surrogate: Toluene-d8	*54.6*		*ng*	50.0		*109*	*70-130*			
Surrogate: Bromofluorobenzene	*52.3*		*ng*	50.0		*105*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary

Sequence: B24J072 - Batch: 24J0061 - Instrument: C System - File ID: C24102302.D

24J0061-BS1 (LCS, Calibration Source Verification)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	44.9	10	ng	50.0		89.8	80-120			
trans-1,2-Dichloroethene	49.3	10	ng	50.0		98.6	80-120			
cis-1,2-Dichloroethene	51.2	10	ng	50.0		102	80-120			
Trichloroethene	50.2	10	ng	50.0		100	80-120			
Tetrachloroethene	56.4	10	ng	50.0		113	80-120			
Surrogate: 1,2-DCA-d4	*48.5*		*ng*	50.0		*97.1*	*70-130*			
Surrogate: Toluene-d8	*51.3*		*ng*	50.0		*103*	*70-130*			
Surrogate: Bromofluorobenzene	*56.2*		*ng*	50.0		*112*	*70-130*			

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary

Sequence: B24J072 - Batch: 24J0061 - Instrument: C System - File ID: C24102303.D

24J0061-BLK1 (Lab Blank)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<1.23	1.23	µg/m³							U
trans-1,2-Dichloroethene	<2.26	2.26	µg/m³							U
cis-1,2-Dichloroethene	<1.88	1.88	µg/m³							U
Trichloroethene	<3.01	3.01	µg/m³							U
Tetrachloroethene	<2.42	2.42	µg/m³							U
Surrogate: 1,2-DCA-d4	*97.1*		*ng*	100		*97.1*	*70-130*			
Surrogate: Toluene-d8	*103*		*ng*	100		*103*	*70-130*			
Surrogate: Bromofluorobenzene	*101*		*ng*	100		*101*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary

Sequence: B24J072 - Instrument: C System - File ID: C24102304.D

B24J072-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	47.2	10	ng	50.0		94.5	70-130			
trans-1,2-Dichloroethene	48.6	10	ng	50.0		97.3	70-130			
cis-1,2-Dichloroethene	50.8	10	ng	50.0		102	70-130			
Trichloroethene	52.3	10	ng	50.0		105	70-130			
Tetrachloroethene	57.5	10	ng	50.0		115	70-130			
Surrogate: 1,2-DCA-d4	*48.8*		*ng*	50.0		*97.7*	*70-130*			
Surrogate: Toluene-d8	*52.2*		*ng*	50.0		*104*	*70-130*			
Surrogate: Bromofluorobenzene	*55.3*		*ng*	50.0		*111*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary

Sequence: B24J072 - Instrument: C System - File ID: C24102327.D

B24J072-CCV1 (LCS, Closing Calibration Verification)

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	43.6	10	ng	50.0		87.3	50-150			
trans-1,2-Dichloroethene	48.3	10	ng	50.0		96.6	50-150			
cis-1,2-Dichloroethene	52.9	10	ng	50.0		106	50-150			
Trichloroethene	51.6	10	ng	50.0		103	50-150			
Tetrachloroethene	58.3	10	ng	50.0		117	50-150			
Surrogate: 1,2-DCA-d4	*48.7*		*ng*	50.0		*97.4*	*70-130*			
Surrogate: Toluene-d8	*51.8*		*ng*	50.0		*104*	*70-130*			
Surrogate: Bromofluorobenzene	*54.2*		*ng*	50.0		*108*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Soil-Gas Analysis by EPA 8260 - Data in Concentration - Quality Control Summary

Sequence: B24J072 - Instrument: C System - File ID: C24102328.D

B24J072-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
Surrogate: 1,2-DCA-d4	*97.7*		*ng*	100		*97.7*	*70-130*			
Surrogate: Toluene-d8	*101*		*ng*	100		*101*	*70-130*			
Surrogate: Bromofluorobenzene	*100*		*ng*	100		*100*	*70-130*			

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

EPA 8260C - LCS/LCSD RPD Quality Control Summary

LCS: 24J0061-BS1 File ID: C24102302.D Analyzed: 10/23/24 14:26

LCSD: B24J072-ICV1 File ID: C24102304.D Analyzed: 10/23/24 13:15

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	44.92	89.84		50	47.24	94.50	80-120	5.03	30	
trans-1,2-Dichloroethene	156-60-5	49.29	98.58		50	48.63	97.30	80-120	1.35	30	
cis-1,2-Dichloroethene	156-59-2	51.22	102.44		50	50.76	102.00	80-120	0.90	30	
Trichloroethene	79-01-6	50.16	100.32		50	52.3	105.00	80-120	4.18	30	
Tetrachloroethene	127-18-4	56.41	112.82		50	57.48	115.00	80-120	1.88	30	

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Additional QC Information

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Sample Result Calculation Summary (Concentration)

EPA 8260C

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial Result ng	C Calculated Result µg/m³	File ID
Lab ID: 0008072-01 **Sample Name:** 10A_SSV_07_20241016						
Vinyl Chloride	10,056	1.00	0.810	U	U	C24102317.D
trans-1,2-Dichloroethene	10,056	1.00	0.440	U	U	C24102317.D
cis-1,2-Dichloroethene	10,056	1.00	0.530	U	U	C24102317.D
Trichloroethene	10,056	1.00	0.330	U	U	C24102317.D
Tetrachloroethene	10,056	1.00	0.410	U	U	C24102317.D
Lab ID: 0008072-02 **Sample Name:** 10A_SSV_08_20241016						
Vinyl Chloride	10,059	1.00	0.810	U	U	C24102318.D
trans-1,2-Dichloroethene	10,059	1.00	0.440	U	U	C24102318.D
cis-1,2-Dichloroethene	10,059	1.00	0.530	U	U	C24102318.D
Trichloroethene	10,059	1.00	0.330	U	U	C24102318.D
Tetrachloroethene	10,059	1.00	0.410	U	U	C24102318.D

Calculations:

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

where: C = concentration (µg/m^3)
M = mass (ng)
DF = dilution factor
t = sampling time (minutes)
U = compound specific uptake rate

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

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Method Detection and Reporting Limit Calculations (Concentration)

EPA 8260C

Analyte	t Sampling Time minutes	DF Dilution Factor	U Uptake Rate	M Initial LOQ ng	C Calculated LOQ µg/m³
Lab ID: 0008072-01 **Sample Name:** 10A_SSV_07_20241016					
Vinyl Chloride	10,056	1.00	0.810	10.0	1.23
trans-1,2-Dichloroethene	10,056	1.00	0.440	10.0	2.26
cis-1,2-Dichloroethene	10,056	1.00	0.530	10.0	1.88
Trichloroethene	10,056	1.00	0.330	10.0	3.01
Tetrachloroethene	10,056	1.00	0.410	10.0	2.43
Lab ID: 0008072-02 **Sample Name:** 10A_SSV_08_20241016					
Vinyl Chloride	10,059	1.00	0.810	10.0	1.23
trans-1,2-Dichloroethene	10,059	1.00	0.440	10.0	2.26
cis-1,2-Dichloroethene	10,059	1.00	0.530	10.0	1.88
Trichloroethene	10,059	1.00	0.330	10.0	3.01
Tetrachloroethene	10,059	1.00	0.410	10.0	2.42

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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	11/23/2024	
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-NELAP	12097	New York Department of Health	04/01/2025	
Utah-NELAP	MD010912024-15	Utah Department of Health	12/31/2024	
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

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R01
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008072
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Sample Management Records

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

PASSIVE SOIL GAS SAMPLES | CHAIN-OF-CUSTODY

Project Information	Client Information	
Site Name: DNR VIZC Findley Adhesives 2723 N 29th St Res. Property	Company Name: SCS Engineers	Project Manager: Rob Langdon
	Office Location: Madison, WI	Client PO:
Site Location: Milwaukee, WI	Submitted by: Jacob Krause	Turn around time (check one): ☒ Normal ☐ Rush (specify) ____ days
	Email: jkrause@scsengineers.com	

Field Sample ID	Start Date	Start Time	Stop Date	Stop Time	Sampling Hole Depth ☐ cm ☒ inches	Surface Type (Soil, Asphalt, Concrete, Gravel)	Optional Information (Location Description, Sample Condition, PID / FID Readings, etc)
10A_SSV_07_20241016	10.9.24	~~[illegible]~~ 0953	10.16.24	0929	5"	Concrete	Sub-Slab vapor
" _08_ "	↓	↓ 0958	↓	0937	↓	↓	↓

Special Instructions:

Relinquished by (signature): [signature]	Date / Time: 10.21-24 1200	Received by (signature): Autumn Anderson	Date / Time: 10/22/24 11:58
Relinquished by (signature):	Date / Time:	Received by (signature):	Date / Time:
For Lab Use Only	Beacon Job No: 8072	Beacon Proposal: 241003R01	Analytical Method: 8260C
Courier Name: Fedex	Shipment Condition: good	Custody Seal Intact: ☑ Yes ☐ No ☐ n/a	Custody Seal No: 6393651

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

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 241003R02

Laboratory Work Order: 0008073

Project Description:
DNR VIZC Findley Adhesives
Milwaukee, WI

Client PO No.: 2522269.06

Prepared for:
Jacob Krause
SCS Engineers
2830 Dairy Drive
Madison, WI 53718-6751

Ryan W. Schneider
Senior Project Manager

October 31, 2024

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

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
  - 0008073-01 - 10A_IAB_07_20241016 9
  - 0008073-02 - 10A_IA1_08_20241016 10
  - 0008073-03 - 10A_IA2_09_20241016 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

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Sample Summary

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0008073-01	10A_IAB_07_20241016	10/22/2024	TO-17 (Passive)	Indoor Air
Sampler Type:	Beacon Passive Sampler			
0008073-02	10A_IA1_08_20241016	10/22/2024	TO-17 (Passive)	Indoor Air
Sampler Type:	Beacon Passive Sampler			
0008073-03	10A_IA2_09_20241016	10/22/2024	TO-17 (Passive)	Indoor Air
Sampler Type:	Beacon Passive Sampler			

Project Completeness

Samples Received: 3
Samples Analyzed: 3

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Analytical Results

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Summary of Compound Detections- Concentration

Lab Sample ID: 0008073-02

10A_IA1_08_20241016
Indoor Air

Method: TO-17 (Passive)

Analyte	CAS#	Result (µg/m³)	Q	RT	LOQ (µg/m³)	LOD (µg/m³)	File ID
Tetrachloroethene	127-18-4	1.40	J	5.735	2.43	1.22	C24102323.D

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Data Summary Table- Concentration

Compound	Frequency	LOD (µg/m³)	Max Value (µg/m³)
Tetrachloroethene	1	1.22	1.40

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Detailed Analytical Results

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Lab Sample ID: 0008073-01

10A_IAB_07_20241016

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	<0.615	U	0.615	1.23	10/24/2024 00:45	C24102322.D
trans-1,2-Dichloroethene	156-60-5	<1.13	U	1.13	2.26	10/24/2024 00:45	C24102322.D
cis-1,2-Dichloroethene	156-59-2	<0.940	U	0.940	1.88	10/24/2024 00:45	C24102322.D
Trichloroethene	79-01-6	<1.51	U	1.51	3.02	10/24/2024 00:45	C24102322.D
Tetrachloroethene	127-18-4	<1.21	U	1.21	2.43	10/24/2024 00:45	C24102322.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*89.7%*	*70-130*		*10/24/2024 00:45*	*C24102322.D*
Surrogate: Toluene-d8	2037-26-5	*93.7%*	*70-130*		*10/24/2024 00:45*	*C24102322.D*
Surrogate: Bromofluorobenzene	460-00-4	*102%*	*70-130*		*10/24/2024 00:45*	*C24102322.D*

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Lab Sample ID: 0008073-02

10A_IA1_08_20241016

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	<0.616	U	0.616	1.23	10/24/2024 01:25	C24102323.D
trans-1,2-Dichloroethene	156-60-5	<1.13	U	1.13	2.27	10/24/2024 01:25	C24102323.D
cis-1,2-Dichloroethene	156-59-2	<0.942	U	0.942	1.88	10/24/2024 01:25	C24102323.D
Trichloroethene	79-01-6	<1.51	U	1.51	3.02	10/24/2024 01:25	C24102323.D
Tetrachloroethene	127-18-4	**1.40**	J	1.22	2.43	10/24/2024 01:25	C24102323.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*96.5%*	*70-130*		*10/24/2024 01:25*	*C24102323.D*
Surrogate: Toluene-d8	2037-26-5	*93.9%*	*70-130*		*10/24/2024 01:25*	*C24102323.D*
Surrogate: Bromofluorobenzene	460-00-4	*107%*	*70-130*		*10/24/2024 01:25*	*C24102323.D*

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Lab Sample ID: 0008073-03

10A_IA2_09_20241016

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	<0.616	U	0.616	1.23	10/24/2024 02:05	C24102324.D
trans-1,2-Dichloroethene	156-60-5	<1.13	U	1.13	2.27	10/24/2024 02:05	C24102324.D
cis-1,2-Dichloroethene	156-59-2	<0.942	U	0.942	1.88	10/24/2024 02:05	C24102324.D
Trichloroethene	79-01-6	<1.51	U	1.51	3.02	10/24/2024 02:05	C24102324.D
Tetrachloroethene	127-18-4	<1.22	U	1.22	2.43	10/24/2024 02:05	C24102324.D

Analyte	*CAS#*	*% Recovery*	*Recovery Limits*	*Q*	*Analyzed*	*File ID*
Surrogate: 1,2-DCA-d4	17060-07-0	*93.9%*	*70-130*		*10/24/2024 02:05*	*C24102324.D*
Surrogate: Toluene-d8	2037-26-5	*93.3%*	*70-130*		*10/24/2024 02:05*	*C24102324.D*
Surrogate: Bromofluorobenzene	460-00-4	*108%*	*70-130*		*10/24/2024 02:05*	*C24102324.D*

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

QC Information/Summary

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

Sequence: B24I004 - Instrument: C System - File ID: Ca24090316.D

B24I004-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	*102*			*ng*	100		*102*	*70-130*			
Surrogate: Toluene-d8	*107*			*ng*	100		*107*	*70-130*			
Surrogate: Bromofluorobenzene	*104*			*ng*	100		*104*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

Sequence: B24I004 - Instrument: C System - File ID: Ca24090318.D

B24I004-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	57.8	10	5	ng	50.0		116	70-130			
trans-1,2-Dichloroethene	52.5	10	5	ng	50.0		105	70-130			
cis-1,2-Dichloroethene	53.6	10	5	ng	50.0		107	70-130			
Trichloroethene	51.7	10	5	ng	50.0		103	70-130			
Tetrachloroethene	52.7	10	5	ng	50.0		105	70-130			
Surrogate: 1,2-DCA-d4	*48.8*			*ng*	50.0		*97.6*	*70-130*			
Surrogate: Toluene-d8	*54.6*			*ng*	50.0		*109*	*70-130*			
Surrogate: Bromofluorobenzene	*52.3*			*ng*	50.0		*105*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

Sequence: B24J071 - Batch: 24J0060 - Instrument: C System - File ID: C24102302.D

24J0060-BS1 (LCS, Calibration Source Verification)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	44.9	10	5	ng	50.0		89.8	70-130			
trans-1,2-Dichloroethene	49.3	10	5	ng	50.0		98.6	70-130			
cis-1,2-Dichloroethene	51.2	10	5	ng	50.0		102	70-130			
Trichloroethene	50.2	10	5	ng	50.0		100	70-130			
Tetrachloroethene	56.4	10	5	ng	50.0		113	70-130			
Surrogate: 1,2-DCA-d4	*48.5*			*ng*	50.0		*97.1*	*70-130*			
Surrogate: Toluene-d8	*51.3*			*ng*	50.0		*103*	*70-130*			
Surrogate: Bromofluorobenzene	*56.2*			*ng*	50.0		*112*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

Sequence: B24J071 - Batch: 24J0060 - Instrument: C System - File ID: C24102303.D

24J0060-BLK1 (Lab Blank)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	<0.615	1.23	0.615	µg/m³							U
trans-1,2-Dichloroethene	<1.13	2.26	1.13	µg/m³							U
cis-1,2-Dichloroethene	<0.940	1.88	0.940	µg/m³							U
Trichloroethene	<1.51	3.02	1.51	µg/m³							U
Tetrachloroethene	<1.21	2.43	1.21	µg/m³							U
Surrogate: 1,2-DCA-d4	*97.1*			*ng*	100		*97.1*	*70-130*			
Surrogate: Toluene-d8	*103*			*ng*	100		*103*	*70-130*			
Surrogate: Bromofluorobenzene	*101*			*ng*	100		*101*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

Sequence: B24J071 - Instrument: C System - File ID: C24102304.D

B24J071-ICV1 (LCSD/Second Source Verification/CALV)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	47.2	10	5	ng	50.0		94.5	70-130			
trans-1,2-Dichloroethene	48.6	10	5	ng	50.0		97.3	70-130			
cis-1,2-Dichloroethene	50.8	10	5	ng	50.0		102	70-130			
Trichloroethene	52.3	10	5	ng	50.0		105	70-130			
Tetrachloroethene	57.5	10	5	ng	50.0		115	70-130			
Surrogate: 1,2-DCA-d4	*48.8*			*ng*	50.0		*97.7*	*70-130*			
Surrogate: Toluene-d8	*52.2*			*ng*	50.0		*104*	*70-130*			
Surrogate: Bromofluorobenzene	*55.3*			*ng*	50.0		*111*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

Sequence: B24J071 - Instrument: C System - File ID: C24102327.D

B24J071-CCV1 (LCS, Closing Calibration Verification)

Analyte	Result	LOQ	LOD	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Vinyl Chloride	43.6	10	5	ng	50.0		87.3	70-130			
trans-1,2-Dichloroethene	48.3	10	5	ng	50.0		96.6	70-130			
cis-1,2-Dichloroethene	52.9	10	5	ng	50.0		106	70-130			
Trichloroethene	51.6	10	5	ng	50.0		103	70-130			
Tetrachloroethene	58.3	10	5	ng	50.0		117	70-130			
Surrogate: 1,2-DCA-d4	*48.7*			*ng*	50.0		*97.4*	*70-130*			
Surrogate: Toluene-d8	*51.8*			*ng*	50.0		*104*	*70-130*			
Surrogate: Bromofluorobenzene	*54.2*			*ng*	50.0		*108*	*70-130*			

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

Sequence: B24J071 - Instrument: C System - File ID: C24102339.D

B24J071-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	*97.8*			*ng*	100		*97.8*	*70-130*			
Surrogate: Toluene-d8	*101*			*ng*	100		*101*	*70-130*			
Surrogate: Bromofluorobenzene	*99.7*			*ng*	100		*99.7*	*70-130*			

BEACON ENVIRONMENTAL

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

LCS: 24J0060-BS1 File ID: C24102302.D Analyzed: 10/23/24 14:26

LCSD: B24J071-ICV1 File ID: C24102304.D Analyzed: 10/23/24 13:15

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	44.92	89.84		50	47.24	94.50	70-130	5.03	30	
trans-1,2-Dichloroethene	156-60-5	49.29	98.58		50	48.63	97.30	70-130	1.35	30	
cis-1,2-Dichloroethene	156-59-2	51.22	102.44		50	50.76	102.00	70-130	0.90	30	
Trichloroethene	79-01-6	50.16	100.32		50	52.3	105.00	70-130	4.18	30	
Tetrachloroethene	127-18-4	56.41	112.82		50	57.48	115.00	70-130	1.88	30	

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Additional QC Information

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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
Lab ID: 0008073-01 **Sample Name:** 10A_IAB_07_20241016						
Vinyl Chloride	10,041	1.00	0.810	U	U	C24102322.D
trans-1,2-Dichloroethene	10,041	1.00	0.440	U	U	C24102322.D
cis-1,2-Dichloroethene	10,041	1.00	0.530	U	U	C24102322.D
Trichloroethene	10,041	1.00	0.330	U	U	C24102322.D
Tetrachloroethene	10,041	1.00	0.410	U	U	C24102322.D
Lab ID: 0008073-02 **Sample Name:** 10A_IA1_08_20241016						
Vinyl Chloride	10,018	1.00	0.810	U	U	C24102323.D
trans-1,2-Dichloroethene	10,018	1.00	0.440	U	U	C24102323.D
cis-1,2-Dichloroethene	10,018	1.00	0.530	U	U	C24102323.D
Trichloroethene	10,018	1.00	0.330	U	U	C24102323.D
Tetrachloroethene	10,018	1.00	0.410	5.75	1.40	C24102323.D
Lab ID: 0008073-03 **Sample Name:** 10A_IA2_09_20241016						
Vinyl Chloride	10,018	1.00	0.810	U	U	C24102324.D
trans-1,2-Dichloroethene	10,018	1.00	0.440	U	U	C24102324.D
cis-1,2-Dichloroethene	10,018	1.00	0.530	U	U	C24102324.D
Trichloroethene	10,018	1.00	0.330	U	U	C24102324.D
Tetrachloroethene	10,018	1.00	0.410	U	U	C24102324.D

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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 (µg/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

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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: 0008073-01	**Sample Name:** 10A_IAB_07_20241016						
Vinyl Chloride	10,041	1.00	0.810	10.00	5.00	1.23	0.615
trans-1,2-Dichloroethene	10,041	1.00	0.440	10.00	5.00	2.26	1.13
cis-1,2-Dichloroethene	10,041	1.00	0.530	10.00	5.00	1.88	0.940
Trichloroethene	10,041	1.00	0.330	10.00	5.00	3.02	1.51
Tetrachloroethene	10,041	1.00	0.410	10.00	5.00	2.43	1.21
Lab ID: 0008073-02	**Sample Name:** 10A_IA1_08_20241016						
Vinyl Chloride	10,018	1.00	0.810	10.00	5.00	1.23	0.616
trans-1,2-Dichloroethene	10,018	1.00	0.440	10.00	5.00	2.27	1.13
cis-1,2-Dichloroethene	10,018	1.00	0.530	10.00	5.00	1.88	0.942
Trichloroethene	10,018	1.00	0.330	10.00	5.00	3.02	1.51
Tetrachloroethene	10,018	1.00	0.410	10.00	5.00	2.43	1.22
Lab ID: 0008073-03	**Sample Name:** 10A_IA2_09_20241016						
Vinyl Chloride	10,018	1.00	0.810	10.00	5.00	1.23	0.616
trans-1,2-Dichloroethene	10,018	1.00	0.440	10.00	5.00	2.27	1.13
cis-1,2-Dichloroethene	10,018	1.00	0.530	10.00	5.00	1.88	0.942
Trichloroethene	10,018	1.00	0.330	10.00	5.00	3.02	1.51
Tetrachloroethene	10,018	1.00	0.410	10.00	5.00	2.43	1.22

526 Underwood Lane
Bel Air, MD 21014 USA
1.410.838.8780

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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	11/23/2024	
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-NELAP	12097	New York Department of Health	04/01/2025	
Utah-NELAP	MD010912024-15	Utah Department of Health	12/31/2024	
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

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

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

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

SCS Engineers	**Site Name:** DNR VIZC Findley Adhesives	**Beacon Proposal:** 241003R02
2830 Dairy Drive	**Site Location:** Milwaukee, WI	**Lab Work Order:** 0008073
Madison, WI 53718-6751	**Project Manager:** Jacob Krause	**Reported:** 10/31/2024

Sample Management Records

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

PASSIVE AIR SAMPLING – BEACON SAMPLER

CHAIN-OF-CUSTODY

Client Information		
Company: SCS Engineers	Project Manager: Rob Langdon	Client PO:
Address: 2830 Dairy Drive	Project Name: DNR VIZC Findly Adhesive 2723 N 29th St Res.	Turn around time (check one): [X] Normal [ ] Rush (specify) ____ days
City / State / Zip: Madison, WI 53718	Location: Milwaukee, WI	Analysis: [X] Method TO-17 [ ] Method 8260C
Phone: 608 280 1630	Submitted by: Jacob Krause	
	Email: jkrause@scsengineers.com	

Location ID	Start Date	Start Time	Stop Date	Stop Time	Aver Temp (C)	Notes	INDOOR AIR	AMBIENT AIR	CRAWL SPACE	SEWER GAS
10A-IAB-07-20241016	10-9-24	1005	10-16-24	0926			X			
10A-IA1-08-20241016	↓	1011	↓	0909			X			
10A-IA2-09-20241016	↓	1017	↓	0915			X			

Special Notes / Instructions:

Relinquished by (signature): [signature]	Date / Time: 10-21-24 1200	Received by (signature): Antoine Andrews	Date / Time: 10/22/24 11:58
Relinquished by (signature):	Date / Time:	Received by (signature):	Date / Time:
For Lab Use Only	Beacon Job No: 8073	Beacon Proposal: 241003R02	
Courier Name: Fedex	Shipment Condition: good	Custody Seal Intact: [✓] Yes [ ] No [ ] n/a	Custody Seal No: 6393651

Attachment B

DNR Publication RR-977

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.

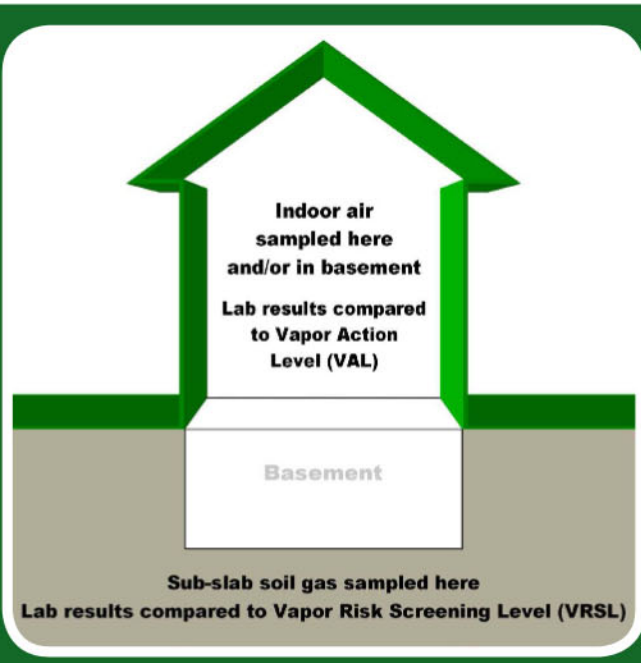
Indoor Air Testing Results

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.

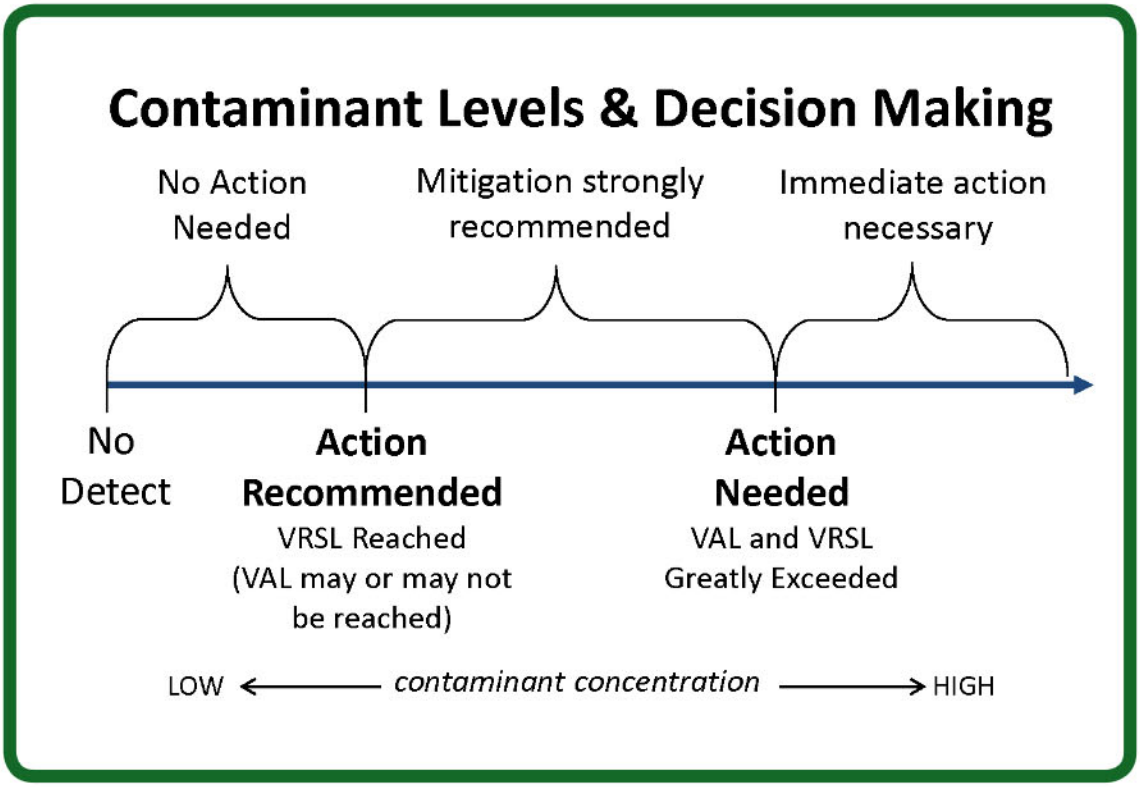
Follow-Up Actions

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.