

Our ref: 003978-RPT-53

December 01, 2023

Jeffrey Dewey
Remedial Project Manager
EPA Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Matt Thompson
Hydrogeologist
Wisconsin Department of Natural Resources
1300 West Clairemont Avenue
Eau Claire, Wisconsin 54701

Vapor Intrusion Evaluation Summary Report
Wausau Water Supply NPL Site
Wausau, Wisconsin

Dear Mr. Dewey and Mr. Thompson:

1. Background

The Wausau Superfund Site is located on the north side of the City of Wausau, in north central Wisconsin, along the Wisconsin River in Marathon County. The Site consists of two contaminant source areas separated by the Wisconsin River. The East Bank portion of the Site is related to solvent spills on property operated by Wausau Chemical Corporation (WCC). The West Bank portion of the Site is related to the former City of Wausau landfill. The West Bank portion of the Site is depicted in Figure 1. The former landfill property is presently owned by Regal Beloit Corporation (formerly Marathon Electric Company, now Rexnord). These two properties are considered source areas for contaminants in the aquifer, which is the source of drinking water for the City of Wausau.

In response to the U.S. Environmental Protection Agency's (EPA) letter of January 19, 2023, a Vapor Intrusion Evaluation Work Plan Addendum was submitted to EPA on August 22, 2023. It provided the proposed scope of work and field procedures for vapor intrusion (VI) evaluation and investigation at the Wausau Water Supply Superfund Site in Wausau, Wisconsin (Site). EPA approved the Vapor Intrusion Evaluation Work Plan Addendum via email on August 23, 2023.

GHD performed additional field work to supplement existing Site data to better understand the potential for vapor intrusion (VI) risk in areas adjacent to the known groundwater plume footprints at the Site. This field work was completed over the following dates August 29, September 13 and 14, 2023. These activities are listed below and summarized in greater detail in the sections to follow.

- Installation of sub-slab vapor sampling points and temporary soil gas sampling points.
- Collected additional sub slab, indoor air samples, and soil gas at Rexnord Building A and Building B. buildings located on the West Bank. West Bank samples were collected on four occasions: March 2017, August 2017, March 2023, and August/September 2023. Sub-slab, Indoor Air, and Soil Gas

Sub-slab vapor indoor air, and soil gas sampling was conducted at Rexnord north and south buildings on the West Bank during the August/September 2023 event.

1.1 West Bank Sub-slab Indoor Air, and Soil Gas Sampling

Sub-slab, indoor air, and soil gas sampling on the West Bank were limited to the Rexnord property per the approved 2023 Addendum 2: Vapor Intrusion Evaluation Work Plan.

Based on the close proximity of Rexnord buildings to the former City landfill, sub-slab sampling was performed at ten total locations in the two buildings closest to the former landfill. Sub-slab and indoor air sample locations are shown on Figure 1. Four sampling events have been performed in March 2017, August 2017, March 2023, and August/September 2023. All samples were collected using laboratory supplied vacuum canisters and flow rate controllers. Indoor air and ambient air samples utilized 6-Liter canisters fitted with 24-hour flow control regulators with sub-slab and soil gas samples utilizing 1-Liter canisters fitted with 100 milliliters per minute (ml/min) flow control regulators. Laboratory analysis was performed using U.S. EPA method TO-15 for TCE, c12DCE, CT, chloroform, and vinyl chloride.

1.2 West Bank Sub-slab Indoor Air, and Soil Gas Sampling Results

West Bank sub-slab results are presented in Table 1. The vapor data were compared to sub-slab screening levels and indoor air action levels for large industrial buildings. The sub-slab TCE concentrations from the past and current sampling events at SS-2 beneath Building B and at SS-5 beneath Building A, as well as at SS-1 beneath Building B and at SS-11 beneath Building A from the current sampling event exceeded the screening level of 880 µg/m³. Chloroform and CT were also detected in some of the sub-slab samples, but all concentrations were below their respective screening levels.

Indoor air samples were collected from four locations inside Building A and five locations inside Building B, as shown on Figure 1. Only the indoor air samples (IA-01, IA-02, IA-05, and IA-11) with accompanying sub-slab analytical results above the sub-slab screening levels were analyzed. Varying concentrations of TCE, CT, and chloroform in indoor air have been observed during the four most recent sampling events. However, concentrations have been below the indoor action levels for large industrial buildings.

Soil Gas samples were collected from two temporary locations (SG-01 and SG-02) on the west side of Building B, as shown in Figure 1. There were no analytical results above the large industrial screening levels during the August/September 2023 sampling event.

2. Recommendations

Based on the past and current West Bank commercial indoor air results, there does not appear to be a health risk at the sampled properties related to potential vapor intrusion of Site chemicals. In addition, the results of the past Preferential Pathway Investigation on the East Bank sample indicated no exceedances. Given the data provided in this report, no additional vapor intrusion evaluation, monitoring, or Preferential Pathway is recommended for this Site.

Regards,

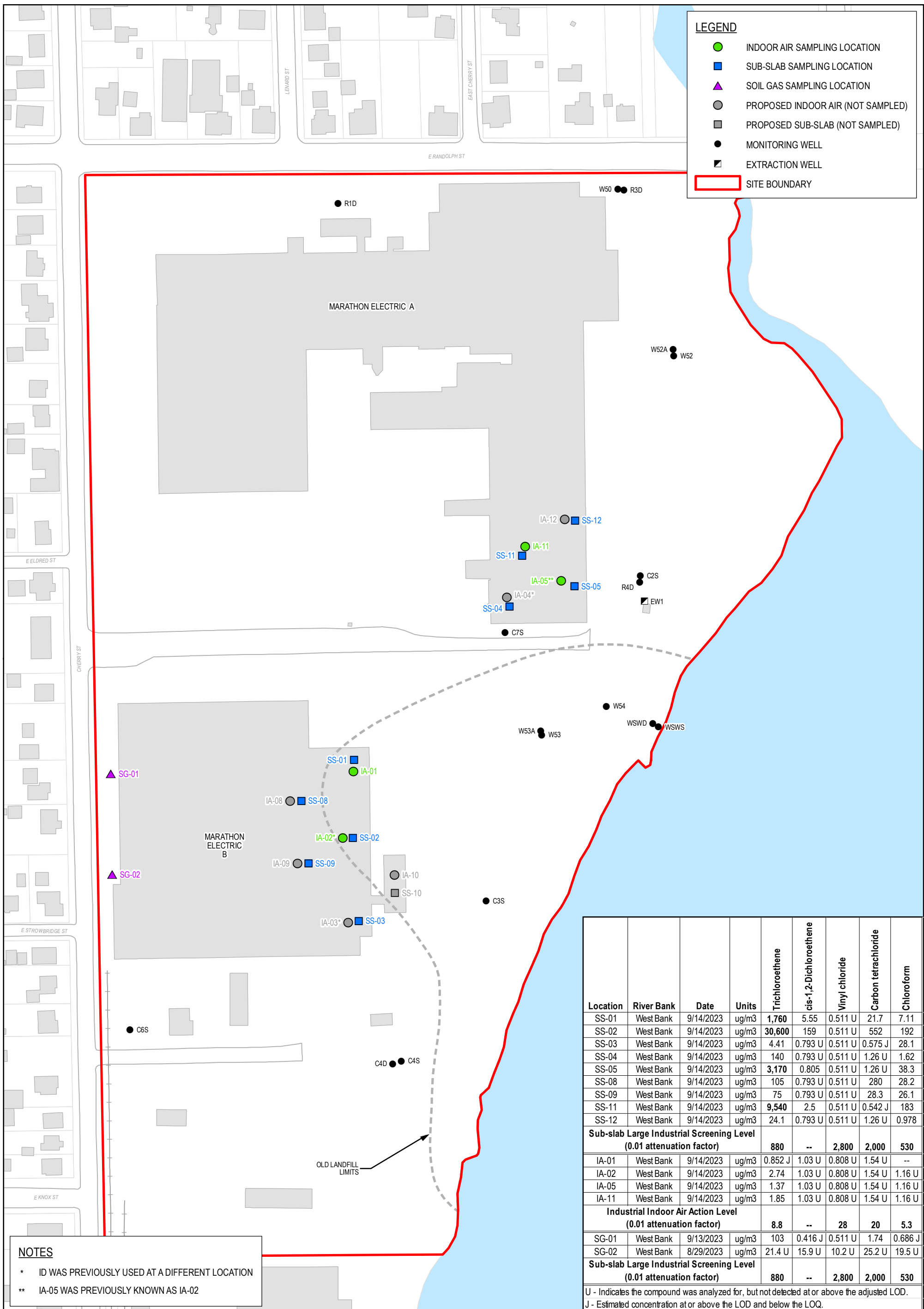


Daniel (OJ) Ojinaga
Project Manager

+1 520 603-1923
oj.ojinaga@ghd.com

OJ/lg/RPT-53

Figures



Table

Table 1

**West Bank Sub-slab, Indoor Air, and Soil Gas Results
Wausau Water Supply NPL Site
Wausau, Wisconsin**

Sub-slab Regal - March 2017	Date	Units	Trichloroethene	c-1,2-Dichloroethene	Vinyl chloride	Carbon tetrachloride	Chloroform
SS-1 (north side Building B)	3/13/2017	ug/m3	270	1.3 J	0.37 U	0.47 U	0.40 J
SS-2 (middle Building B)	3/13/2017	ug/m3	9,400	150	21 U	1,200	220
SS-3 (south side Building B)	3/13/2017	ug/m3	0.78	0.95 U	0.74 U	0.62	0.17 J
SS-4 (southeast side Building A)	3/13/2017	ug/m3	220	0.99 J	0.25 U	5.3	1.5
SS-5 (southeast side Building A)	3/13/2017	ug/m3	4,800	17 U	13 U	17 U	41 J
Sub-slab Large Industrial Screening Level (0.01 attenuation factor)			880	--	2,800	2,000	530
Indoor Air Regal - March 2017							
Indoor Air - Building B	3/13/2017	ug/m3	1.6	0.095 U	0.074 U	0.44 J	0.15 J
Indoor Air - Building A	3/13/2017	ug/m3	0.82	0.095 U	0.074 U	0.42 J	0.14 J
Industrial Indoor Air Action Level			8.8	--	28	20	5.3
Outdoor Air near Building B	3/13/2017	ug/m3	0.075 U	0.095 U	0.074 U	0.41 J	0.093 J

Table 1

**West Bank Sub-slab, Indoor Air, and Soil Gas Results
Wausau Water Supply NPL Site
Wausau, Wisconsin**

Sub-slab Regal - August 2017	Date	Units	Trichloroethene	c-1,2-Dichloroethene	Vinyl chloride	Carbon tetrachloride	Chloroform
SS-1 (north side Building B)	8/1/2017	ug/m3	280	1.3 J	0.74 U	0.94 U	0.73 U
SS-2 (middle Building B)	8/1/2017	ug/m3	15,000	260	43 U	1,800	470
SS-3 (south side Building B)	8/1/2017	ug/m3	0.75 U	0.95 U	0.74 U	5.5	0.73 U
SS-4 (southeast Building A)	8/2/2017	ug/m3	9.4	0.95 U	0.74 U	0.94 U	0.73 U
SS-5 (southeast Building A)	8/1/2017	ug/m3	4,900	15 U	12 U	15 U	50 J
Sub-slab Large Industrial Screening Level (0.01 attenuation factor)			880	--	2,800	2,000	530

Indoor Air Regal - August 2017

Indoor Air - Building B	8/1/2017	ug/m3	0.075 U	0.095 U	0.074 U	0.41 J	0.15 J
Indoor Air - Building A	8/1/2017	ug/m3	0.17 J	0.095 U	0.074 U	0.45 J	0.14 J
Industrial Indoor Air Action Level (0.01 attenuation factor)			8.8	--	28	20	5.3

Outdoor Air near Building B	8/1/2017	ug/m3	0.075 U	0.095 U	0.074 U	0.44 J	0.14 J
-----------------------------	----------	-------	---------	---------	---------	--------	--------

Table 1

**West Bank Sub-slab, Indoor Air, and Soil Gas Results
Wausau Water Supply NPL Site
Wausau, Wisconsin**

			Trichloroethene	c-1,2-Dichloroethene	Vinyl chloride	Carbon tetrachloride	Chloroform
Sub-slab Regal - March 2023							
	Date	Units					
SS-1 (north side Building B)	3/1/2023	ug/m3	236	1.03 U	0.808 U	1.19 J	1.16 U
SS-2 (middle Building B)	3/1/2023	ug/m3	21,900	184	0.808 U	420	185
SS-3 (south side Building B)	3/1/2023	ug/m3	7.29/6.70	1.03 U/1.03U	0.808 U/0.808 U	0.661 J/0.591J	40.2/36.4
SS-4 (southeast side Building A)	3/1/2023	ug/m3	424	1.03 U	0.808 U	1.54 U	1.16 U
SS-5 (southeast side Building A)	3/1/2023	ug/m3	6,640	1.03 U	0.808 U	0.674 J	20.1
Sub-slab Large Industrial Screening Level (0.01 attenuation factor)			880	--	2,800	2,000	530
Indoor Air - March 2023							
Indoor Air - Building B	3/1/2023	ug/m3	2.33 J	1.03 UJ	0.808 UJ	0.461 J	1.16 UJ
Indoor Air - Building A	3/1/2023	ug/m3	1.62	1.03 U	0.808 U	1.54 U	1.16 U
Industrial Indoor Air Action Level (0.01 attenuation factor)			8.8	--	28	20	5.3

Table 1

**West Bank Sub-slab, Indoor Air, and Soil Gas Results
Wausau Water Supply NPL Site
Wausau, Wisconsin**

			Trichloroethene	c-1,2-Dichloroethene	Vinyl chloride	Carbon tetrachloride	Chloroform
Sub-slab Regal - September 2023							
	Date	Units					
SS-1 (north side Building B)	9/14/2023	ug/m3	1760	5.55	0.511 U	21.7	7.11
SS-2 (middle side Building B)	9/14/2023	ug/m3	30600	159	0.511 U	552	192
SS-3 (south side Building B)	9/14/2023	ug/m3	4.41	0.793 U	0.511 U	0.575J	28.1
SS-4 (southwest side Building A)	9/14/2023	ug/m3	140	0.793 U	0.511 U	1.26 U	1.62
SS-5 (southeast side Building A)	9/14/2023	ug/m3	3170	0.805	0.511 U	1.26 U	38.3
SS-8 (northwest side Building B)	9/14/2023	ug/m3	105	0.793 U	0.511 U	280	28.2
SS-9 (southwest side Building B)	9/14/2023	ug/m3	75	0.793 U	0.511 U	28.3	26.1
SS-11 (northwest side Building A)	9/14/2023	ug/m3	9540	2.5	0.511 U	0.542J	183
SS-12 (northeast side Building A)	9/14/2023	ug/m3	24.1	0.793 U	0.511 U	1.26 U	0.978
Sub-slab Large Industrial Screening Level			880	--	2,800	2,000	530
Indoor Air - September 2023							
IA-01 (north side Building B)	9/14/2023	ug/m3	0.852J	1.03 U	0.808 U	1.54 U	--
IA-02 (middle side Building B)	9/14/2023	ug/m3	2.74	1.03 U	0.808 U	1.54 U	1.16 U
*IA-05 (southeast side Building A)	9/14/2023	ug/m3	1.37	1.03 U	0.808 U	1.54 U	1.16 U
IA-11 (northwest side Building A)	9/14/2023	ug/m3	1.85	1.03 U	0.808 U	1.54 U	1.16 U
Industrial Indoor Air Action Level (0.01 attenuation factor)			8.8	--	28	20	5.3
Soil Gas Probes Outdoor - September 2023							
SG-1 (northwest side Building B)	9/13/2023	ug/m3	103	0.416 J	0.511 U	1.74	0.686J
SG-2 (southwest side Building B)	8/29/2023	ug/m3	21.4 U	15.9 U	10.2 U	25.2 U	19.5 U
Sub-slab Large Industrial Screening Level			880	--	2,800	2,000	530

Notes:

4,800 - Result exceeded applicable screening level

Note: All units µg/m3

Screening Levels and Action Levels are from Wisconsin DNR "WI Vapor Quick Look-Up Table, Indoor Air Vapor Action Levels and Vapor Risk Screening Levels. Based on November 2022 U.S.EPA Regional Screening Levels.

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

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