ENVIRONMENT
& HEALTH

MEMO

Project Name	**Former EZ Paintr/Shur-Line Facility St. Francis, Wisconsin**
Client	**Newell Operating Company**
Subject	**Indoor Air Screening Activity Summary (April 3, 2023)**
To	**Paul Grittner (WDNR)**
From	**Paul Lindquist, Susan Petrofske, Scott Tarmann, Jeanne Tarvin**
Cc	**Kristin Jones (NOC), Emily Sherman-Bender (Phoenix), Toni Schoen (SET)**

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Ref. 1690004991

This memorandum provides a summary of the indoor air screening activities performed by Ramboll US Consulting, Inc. (Ramboll) in the western tenant space at the former Shur-Line facility (the "facility" or "site") in St. Francis, Wisconsin, on April 3, 2023. The work was performed on behalf of Newell Operating Company (NOC) and access to the facility was arranged with the current property owner, Phoenix Investors (Phoenix). The objective of the indoor air screening was to assess possible sources of trichloroethylene (TCE) detected in the 8-hour indoor air samples collected on January 23, 2023[1].

Field Methods and Scope of Work

The indoor air screening assessment was performed on April 3, 2023, using a FROG-5000™ portable gas chromatograph (GC) equipped with a 10.6 electron-volt (eV) lamp photoionization detector (PID). Prior to use, the unit was calibrated by the manufacturer, Defiant Technologies, for TCE. The manufacturer instructions were followed regarding calibration verification and retention time, collection procedures, and running blanks between each screening location. The results were processed using the manufacturer provided Ellvin GC Software. The air measurements from the FROG-5000™ are output in the units of parts per billion by volume (ppbv).

A total of 21 indoor air (4051-FS-01 through 4051-FS-21) and 3 outdoor air (4051-FS-23 through 4051-FS-25) measurements were collected using the FROG-5000™. All indoor measurements were taken within the western portion of the facility that is currently utilized for the storage of packaged furniture, which occupies approximately 80-90% of the floor space. Measurements were collected within the breathing zone (3 to 4 feet above the floor) except for three floor penetration locations (4051-FS-19 through 4051-FS-21) and the remediation

[1] Vapor sampling results were provided to Phoenix Investors, Wisconsin Department of Natural Resources and Wisconsin Department of Health Services in a February 8, 2023 NR 716.14 Data Transmittal Letter.

system equalization tank (4051-FS-18). Indoor conditions regarding the operation of the overhead individual heating units, volume of furniture stored, etc. were generally consistent with those observed during the 8-hour indoor air sampling event completed in January 2023.

Screening locations and the general building layout are illustrated on Figure 1. Screening results and a description of each measurement location are provided on Table 1. Copies of the FROG-5000™ output report for each screening location are available upon request.

Preliminary Results and Observation Discussion

The FROG-5000™ provides field-screening level data specific to TCE. The collection duration for each measurement is approximately 1 minute and then the result is processed through the GC and PID for analysis. The 8-hour indoor air samples collected in January 2023 were submitted for laboratory analysis using United States Environmental Protection Agency (USEPA) Method TO-15 which utilizes a GC and mass spectrometer (MS). As a result, the screening measurements provided by the FROG-5000™ are not laboratory quality and not intended to provide quantitative, time-weighted sample result data that would be used to provide a direct comparison to the Wisconsin Department of Natural Resources (WDNR) Vapor Action Levels (VALs). Due to these inherent limitations of the FROG-5000™, screening measurements were more appropriately compared relative to each other to provide a general indication of possible source(s) of TCE within the western portion of the facility.

The indoor air screening results identified elevated concentrations at the following two locations:

- 4051-FS-18 (194.09 ppbv): Measurement collected within the remediation room within approximately 6 inches of the groundwater extraction and treatment system (GWETS) equalization tank passive vent stack. Please note that this vent stack is open to the room atmosphere; however, the measurement collected within the breathing zone within the remediation room (4051-FS-14; 4.40 ppbv) was two orders of magnitude lower than the vent stack location. A wall with an overhead door and a man door separates the remediation room from the main warehouse space where the January 2023 8-hour indoor air samples were collected.
- 4051-FS-21 (27.22 ppbv) and 4051-FS-21D (35.95 ppbv): Measurement collected from an open floor penetration observed within the western portion of the warehouse area where sub-slab vapor impacts were previously documented. It appears that the holes in this area of the floor are a remnant after the Shur-Line vacated the facility and removed the associated production equipment. Please note that a complete assessment of the floor condition could not be performed during the site visit due to the large volume of furniture being stored in the warehouse.

The remaining screening results for measurements collected within the warehouse area and adjacent first floor rooms were relatively consistent with concentrations ranging from 2.59 to 9.72 ppbv. With the exception of screening location 4051-FS-13 (Former Hazardous Waste Storage Room) and 4051-FS-14 and -18 (Remediation Room), all screening measurements were collected within 3 to 20 feet of stored furniture products. As a result, it is difficult to ascertain whether the furniture itself may have some impact on these screening results and/or the concentrations reported in the 8-hour indoor air samples collected in January 2023.

Screening measurements collected within the eastern (4051-FS-09; 1.30 ppbv) and western (4051-FS-10, 11.67 ppbv) basement areas beneath the warehouse area appear to correlate with the

historic area of documented sub-slab vapor impacts. The eastern basement area, located outside the area of sub-slab vapor impacts, contains the water main risers and also an active sump crock/pump. Based on discussions with the property owner, the eastern basement is accessed on a generally monthly basis during testing of the buildings fire suppression system. In contrast, the western basement served as the old boiler room and is not accessed as part of routine facility operations as evidenced by the lack of functioning overhead lighting. The western basement is located within the area of the operating SSDS.

The facility consists of two tenant spaces separated by a wall. The wall separating the two tenant spaces includes one man door and one fire door as shown on Figure 1. While the fire door appeared well sealed, the man door, located near screening location (4051-FS-16) appeared to have some gaps that could potentially allow air movement between the two tenant spaces. An air flow test using a Dräger® Air Flow Tube was conducted by Ramboll to determine the direction of air movement at the time of the indoor air screening activities. The flow was observed to move from the western warehouse space to the eastern neighboring tenant space through gaps along the door frame. Ramboll was unable to verify if there were any gaps or wall penetrations along the top of the shared wall due to the presence of drop ceiling in the eastern warehouse space.

Recommended Next Steps

Based on the screening results and observations made during the April 3, 2023 site visit, Ramboll recommends the following next steps:

- Modify the current GWETS equalization tank vents to exhaust to the building exterior. Please note that this work could be performed concurrently with the GWETS piping relocation tentatively planned for the week of April 17, 2023, to support the property owner's installation of an exterior access door to the remediation room.
- Work with the property owner and their tenant to seal accessible cracks and floor penetrations that may allow for vapor breakthrough. Additional inspections and sealing activities will be conducted as access to the floor becomes available.
- Work with the property owner to seal the man door between the two tenant spaces and verify ceiling completion to minimize the potential for air movement between the two areas. Sealing might involve adding weatherstripping around the door frame to reduce/minimize the flow of air through gaps/openings.

Following implementation of the recommendations, Ramboll will perform a confirmation 8-hour indoor air sampling event. The scope of work will include collection of indoor air samples at the same four locations sampled in January 2023 along with two additional locations along the eastern portion of the warehouse space near the wall that separates the two tenant spaces. Additionally, sub-slab vapor samples will be collected from the two western most vapor pins (V-15 and V-29) located within the warehouse space to verify subsurface vapor conditions. All samples will be collected utilizing Summa canisters and will be submitted to an analytical laboratory for analysis of TCE using USEPA Method TO-15.

Based on the results of the above-described confirmation sampling event, a determination will be made, based on the laboratory data, whether there is a reasonable risk to the tenant occupying the eastern portion of the building. If a reasonable risk to the neighboring tenant space is present, access will be

requested, and vapor sampling will be completed. Vapor sampling would be completed from the two existing sub-slab monitoring points (V-13 and V-14) previously installed in 2016 with accompanying indoor air samples. All samples would be collected utilizing Summa canisters and would be submitted to the analytical laboratory for analysis of TCE using Method TO-15. Prior to performance of the vapor sampling, a review of neighboring tenant operations and chemical inventory would be performed to assess the presence of TCE or TCE-containing materials.

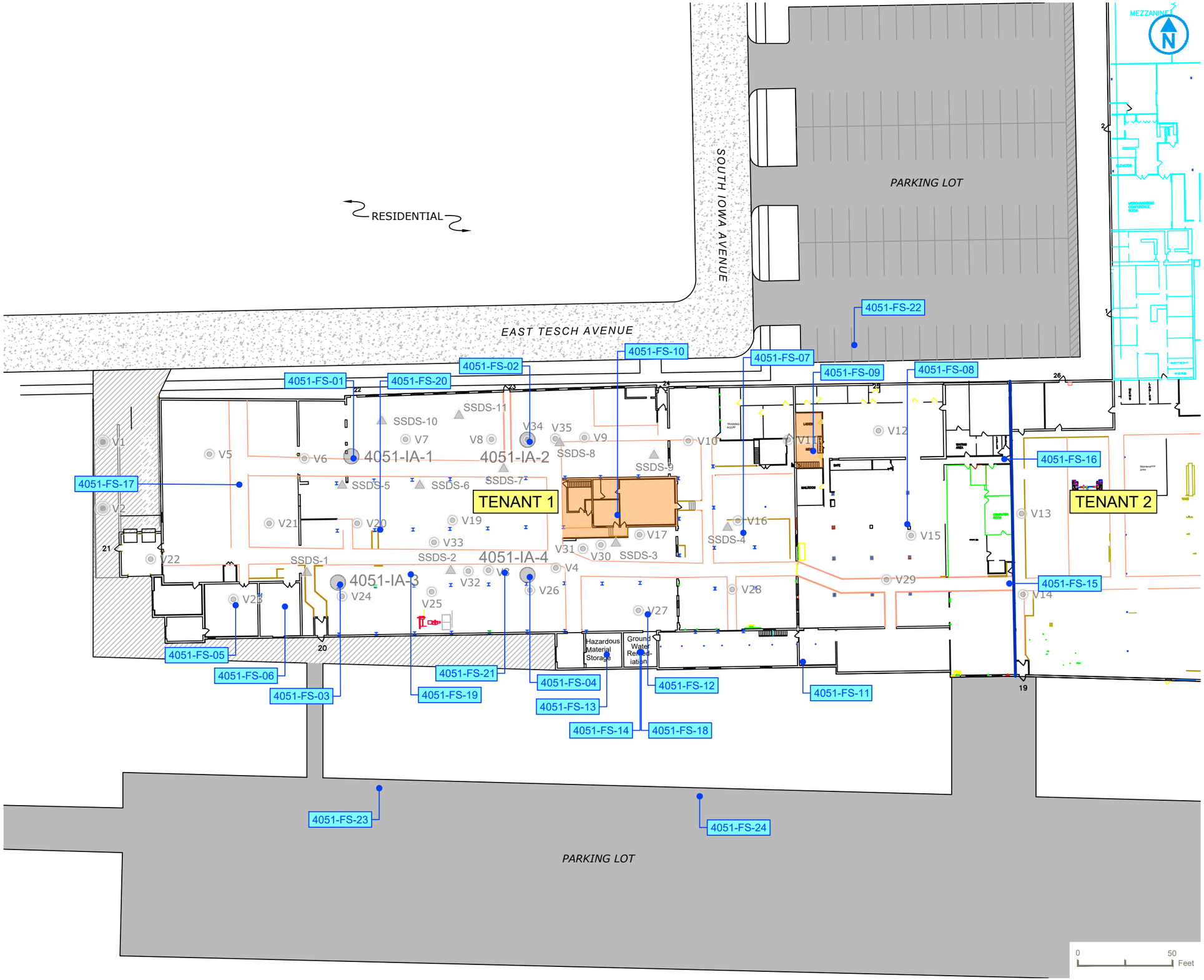
Data transmittal letters will be prepared in accordance with WAC NR 716.16 and submitted to the property owner and WDNR within 10-business days of receipt of the laboratory analytical results. It is Ramboll's understanding that the property owner would then share the results with their tenant(s), as appropriate.

Please let us know if you have any questions or would like to set up a call to discuss.

Attachments

Figure 1: Site Layout and Indoor Air Screening Locations (4/3/2023)
Table 1: Field Screening Results Summary (4/3/2023)

FIGURE



SUB-SLAB VAPOR MONITORING POINTS

EXTERIOR SOIL VAPOR SAMPLING LOCATION

SSDS EXTRACTION SUMP

INTERIOR BASEMENT LOCATION

INDOOR AIR SAMPLE LOCATION

WALL SEPARATING TENANT SPACES

1051-FS INDOOR AIR ASSESSEMENT LOCATION (APPROXIMATE)

`NOTE:
THE WESTERN PORTION OF THE BUILDING IS CURRENTLY USED AS A WAREHOUSE. THE HISTORIC SITE FEATURES, ROOM LABELS, AND EQUIPMENT LAYOUT ARE NOT REPRESENTATIVE OF THE CURRENT CONDITION OF THE WESTERN BUILDING AREA.

INDOOR AIR MEASUREMENT LOCATIONS

FORMER EZ PAINTR/SHUR-LINE FACILITY
ST. FRANCIS, WISCONSIN

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FIGURE 1

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL

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DESIGNER: HJW/ELS

DATED: 4/12/2023

PROJECT: 1690004991

TABLE

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TABLE 1
FIELD SCREENING MEASUREMENT SUMMARY
FORMER SHUR-LINE FACILITY
WESTERN WAREHOUSE AREA
APRIL 3, 2023

Frog Sample ID	TCE Screening Measurement (ppbv)	Location Description	Purpose	Conditions of General Location During Assessment
4051-FS-01	6.12	Warehouse Area; co-located with 4051-IA-1	Evaluate conditions at the prior January 2023 indoor air sampling locations and within the frequently occupied areas of the warehouse	Furniture (e.g., packaged couches, packed dressers and cabinets) stored in the area. Area generally free of cracks. Minor surficial cracks observed throughout the area; however, a majority of cracks are sealed or painted.
4051-FS-02	7.13	Warehouse Area; co-located with 4051-IA-2		
4051-FS-03	5.50	Warehouse Area; co-located with 4051-IA-3		
4051-FS-04	7.57	Warehouse Area; co-located with 4051-IA-4		
4051-FS-05	3.31	Former “Carpenter Shop” near V23	Evaluate conditions at western limits of SSDS area of influence	Furniture stored in area. No noticeable floor cracks.
4051-FS-06	4.88	Former “Air Compressor & Dry Goods Storage” room		Furniture stored in area. No noticeable floor cracks.
4051-FS-07	9.10	Eastern portion of the warehouse area near V16 and SSDS-4	Evaluate conditions at eastern limits of SSDS area of influence	Furniture stored in area. No noticeable floor cracks.
4051-FS-08	9.17	Eastern portion of the warehouse area near V15		Furniture stored in area. No noticeable floor cracks.
4051-FS-09	1.30	Basement beneath the eastern portion of the warehouse area	Evaluate conditions in basement spaces beneath warehouse	No furniture stored in area. Drinking water pipe from main floor bathroom leaking into basement. No noticeable method of air movement (e.g., fans, heating/cooling). No noticeable floor cracks.
4051-FS-10	11.67	Basement beneath the central portion of the warehouse area		No furniture stored in area. No noticeable method of air movement (e.g., fans, heating/cooling).
4051-FS-11	6.24	East of the “Remediation Room”	Evaluate the “Remediation Room” as a potential source of TCE to indoor air.	No furniture stored in area. No noticeable floor cracks.
4051-FS-12	9.72	Immediately north of the “Remediation Room”		Furniture stored in area. No noticeable floor cracks.
4051-FS-13	4.64	West of "Remediation Room" in former "Hazardous Waste Storage Area"		No furniture stored in area. No noticeable floor cracks.
4051-FS-14	4.40	Inside "Remediation Room" (GWETS and SSDS Equipment); box fan running		Box fan in operation within remediation room. All doors closed during entire assessment except for access. No noticeable floor cracks.
4051-FS-15	7.28	Eastern extent of the warehouse area near the wall partitioning the tenant spaces	Evaluate the warehouse space adjacent to the Quality Packaging area.	Furniture stored in area. No noticeable floor cracks.
4051-FS-16	6.93	Eastern extent of the warehouse area near the wall partitioning the tenant spaces near a keyed, shackle padlocked door		Collected in hallway, furniture not directly adjacent to assessment area; however, located in neighboring rooms. Floor covered with carpet.
4051-FS-17	2.59	Western extent of the warehouse between V5 and V21	Evaluate the western most areas outside the influence of the SSDS	Furniture stored in area. Minor surficial cracks; however, cracks appear to be sealed.

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TABLE 1
FIELD SCREENING MEASUREMENT SUMMARY
FORMER SHUR-LINE FACILITY
WESTERN WAREHOUSE AREA
APRIL 3, 2023

Frog Sample ID	TCE Screening Measurement (ppbv)	Location Description	Purpose	Conditions of General Location During Assessment
4051-FS-18	194.09	In "Remediation Room" (approximately 6 inches from 800-gallon equalization tank vent)	Assess potential contribution of the equalization tanks to air quality observed in the "Remediation Room"	Box fan in operation within remediation room. All doors closed during entire assessment except for access.
4051-FS-19	6.28	Concrete floor seam near sealed "pit"	Assess potential floor cracks or penetrations.	Furniture stored in area
4051-FS-20	4.93	Abandoned floor penetration (bollard or utility)		Furniture stored in area
4051-FS-21	27.22	Holes in concrete after equipment removal; sample collected 0.5 inches beneath floor surface		Furniture stored in area
4051-FS-21 DUP	35.95	Duplicate of 4051-FS-21		
4051-FS-22	<1	Outdoor Air (Downwind): Located in parking lot at intersection of S Iowa Ave and E Tesch Ave.	Outdoor air screening measurements completed to evaluate exterior TCE concentrations on the day of screening.	Raining Wind calm (<5 mph) Elevated humidity due to rain
4051-FS-23	<1	Outdoor Air (Upwind): Located in parking lot south of facility		
4051-FS-24	<1	Outdoor Air (Upwind): Located in parking lot south of facility		

Notes:
Screening samples collected using FROG 5000 calibrated to trichloroethene (TCE). Unit reported in parts per billion by volume (ppbv).
All Frog assessment readings were collected approximately 3 to 4 feet above the floor (approximate breathing zone) unless otherwise noted.