January 8, 2024
File No. 25222269.01

Occupants
200/204 Deer Valley Road
Madison, WI 53713

Subject: Sample Results Notification
200 and 204 Deer Valley Road
Madison, WI 53713
WDNR Rimrock Road (State Lead)
BRRTS No. 02-13-248222

Dear Occupants:

On behalf of the Wisconsin Department of Natural Resources (WDNR) through the Vapor Intrusion Zone Contract (VIZC), SCS Engineers (SCS) is providing sample results for indoor air samples which were collected from your property by SCS in December 2023. The samples were collected to evaluate the effectiveness of a vapor mitigation system (VMS), which was installed in the 200/204 Deer Valley Road apartment building in October 2023. The approximate sample locations are shown on the attached **Figure 1**. The system was installed as a protective measure because previous sample results indicated that many years ago a sewer break near your building leaked chemicals likely coming from a now closed dry cleaner. The VMS was installed as a protective measure for vapors from the sewer leak. The WDNR Fact Sheet RR-892: What is Vapor Intrusion is attached to provide some background on vapor intrusion.

The samples were submitted for analysis of five specific chlorinated volatile organic compounds (CVOCs), including the dry cleaning solvent tetrachloroethene (PCE) and related compounds trichloroethene (TCE), cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride. The sample laboratory report is included as **Attachment A**. Results are summarized in the attached **Table 1** and as follows.

- Minor concentrations of CVOCs were detected below the WDNR residential indoor air vapor action levels (VALs).
- The sample results indicate the VMS is operating as intended and that there is *not* an indoor air health risk related to vapor intrusion of CVOCs.

The WDNR Publication RR-977 Understanding Chemical Vapor Testing Results is attached with additional information for you. Two additional sampling events are planned to evaluate potential variability of indoor air concentrations which SCS will coordinate with you and the property staff in advance of these additional events to schedule access.

Once the final sampling event is completed, a final report with these findings will be prepared and submitted to the WDNR and listed on the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web (BOTW).

Please contact Rob Hoverman of WDNR at (414) 497-0896 or robert.hoverman@wisconsin.gov or Nathan Kloczko of Wisconsin Department of Health (DHS) at (608) 867-4448 or Nathan.kloczko@dhs.wisconsin.gov if you have questions concerning the analytical results.

Sincerely,

Robert Langdon
Senior Project Manager
SCS Engineers

Ray Tierney, PG
Project Director
SCS Engineers

REL/lmh/JJK/RT

cc: Rob Hoverman, WDNR
Nathan Kloczko, DHS
Jeff Ackerman, WDNR
Ruth Zuber, Property Manager - Maple Glen Apartment Homes

Attachments: Table 1 – Indoor Air Analytical Results Summary
Figure 1 – Site Plan
Attachment A – Laboratory Report (To Property Manager Only)
Attachment B – WDNR Guidance Document RR-892
Attachment C – WDNR Guidance Document RR-977

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Table 1

Indoor Air Analytical Results Summary

Table 1. Indoor Air Analytical Results Summary
200 and 2004 Deer Valley Road/Rimrock Road (State Lead), Madison, Wisconsin/ SCS Engineers Project #25222269.01
(Results are in µg/m^3)

Sample	Location	Sample Start Date	Sample End Date	Lab Notes	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
07A_IAB_01_20231206	200/204 Deer Valley Road Basement	12/6/2023	12/13/2023	--	1.7	<0.0761	<0.0707	<0.0707	<0.0884
07A_IA1_02_20231206	200 Deer Valley Road, Unit 1 (1st Floor)	12/6/2023	12/13/2023	--	2.57	<0.0757	<0.0703	<0.0703	<0.0879
07A_IA2_03_20231206	200 Deer Valley Road, Unit 5 (2nd Floor)	12/6/2023	12/13/2023	--	0.747	<0.0760	<0.0706	<0.0706	<0.0882
07A_IA1_04_20231206	204 Deer Valley Road, Unit 3 (1st Floor)	12/6/2023	12/13/2023	--	0.103	<0.0761	<0.0707	<0.0707	<0.0883
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
cis-1,2-DCE = cis-1,2-dichloroethene
-- = Not Applicable
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 2023 U.S. EPA Regional Screening Level Tables.
3. **Bold+underlined** values meet or exceed Indoor Air Vapor Action Levels.

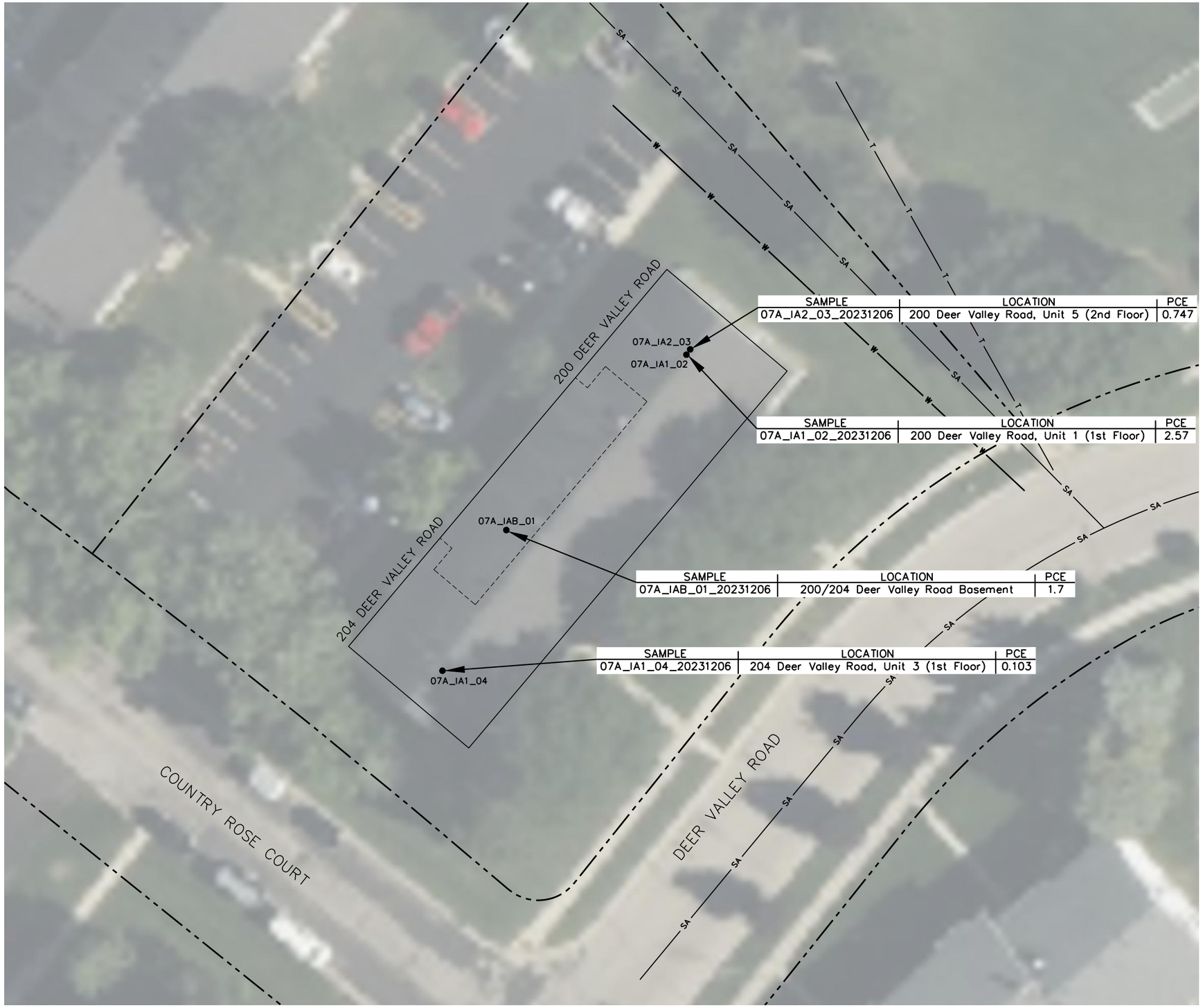
Lab Notes:
none

Created by: REL Date: 12/22/2023
Last revision by: AJR Date: 12/26/2023
Checked by: REO Date: 12/26/2023
Proj Mgr QA/QC: REL Date: 12/26/2023

I:\25222269.00\25222269.01 Castille Affordable Housing\Data\Tables\[Table 1_Indoor Air Analytical Results Summary.xlsx]Indoor Air

Figure 1

Site Plan



SAMPLE	LOCATION	PCE
07A_IA2_03_20231206	200 Deer Valley Road, Unit 5 (2nd Floor)	0.747

SAMPLE	LOCATION	PCE
07A_IA1_02_20231206	200 Deer Valley Road, Unit 1 (1st Floor)	2.57

SAMPLE	LOCATION	PCE
07A_IAB_01_20231206	200/204 Deer Valley Road Basement	1.7

SAMPLE	LOCATION	PCE
07A_IA1_04_20231206	204 Deer Valley Road, Unit 3 (1st Floor)	0.103

LEGEND

- ● INDOOR AIR SAMPLE LOCATION
- SA SANITARY SEWER
- W WATER MAIN
- T BURIED TELEPHONE
- APPROXIMATE BASEMENT AREA
- APPROXIMATE PROPERTY LINE
- PCE TETRACHLOROETHENE ($\mu g/m^3$)

NOTE:

1. ALL UTILITY AND SAMPLE LOCATIONS ARE APPROXIMATE.

30 0 30

SCALE: 1" = 30'

N

SITE PLAN

200 & 204 DEER VALLEY ROAD
MADISON, WISCONSIN

SITE

WDNR
3911 FISH HATCHERY ROAD
MADISON, WISCONSIN

CLIENT

FIGURE 1

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

ENGINEER

DRAWN BY:	KP/SB
CHECKED BY:	REL
APPROVED BY:	REL 01/08/2024
PROJECT NO.	25222269.01
DRAWN:	02/13/2020
REVISED:	01/08/2024

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Attachment A

Laboratory Report
(To Property Manager Only)

Attachment B

WDNR Guidance Document RR-892

PUB-RR-892
Feb 2014

Wisconsin DNR vapor intrusion quick facts

What is Vapor Intrusion?

Chemicals used in commercial or industrial activities – dry cleaning chemicals, chemical degreasers and petroleum products such as gasoline – are sometimes spilled and leak into nearby soil or groundwater. When this happens, these chemicals may release gases or vapors, which travel from the contaminated groundwater or soil and move into nearby homes or businesses. This is called vapor intrusion.

The process when chemical vapors from contaminated soil or groundwater enter a home or other structure is called vapor intrusion.

Why are these chemical vapors a problem?

The chemicals that cause vapor intrusion are known as volatile organic compounds, or VOCs. Even when spilled into soil or water, these chemicals easily evaporate. They don't cause human health problems when they evaporate into the outside air, but when their vapors move into homes or businesses, they may cause long-term health problems for the people who live or work in those buildings. These vapors are usually odorless and colorless and undetectable without special testing equipment.

Why is vapor intrusion a concern?

Exposure to some chemical gases or vapors can cause an increased risk of adverse health effects. Whether or not a person experiences any health effects depends on several factors, including the amount and length of exposure, the toxicity of the chemical, and the individual's sensitivity to the chemical. When harmful chemical vapor intrusion is the result of environmental contamination, the Wisconsin Department of Natural Resources (DNR) requires that steps be taken to reduce or eliminate exposures which could be harmful to human health.

What should I expect if vapor intrusion is suspected near my home or business?

For businesses or other locations where VOC contamination has been found, the DNR requires that the potential for vapor intrusion be investigated. If you live near a site being cleaned up, you may be contacted by the site owner or others working on the cleanup. Your cooperation and consent will be requested before any testing or sampling is conducted on your property. Ask the person contacting you any questions you have about the work being done, or contact the DNR for more information (see DNR contact information on reverse). For more information about testing for vapor intrusion, see DNR-Pub-RR-954, "What to Expect During Vapor Intrusion Sampling."

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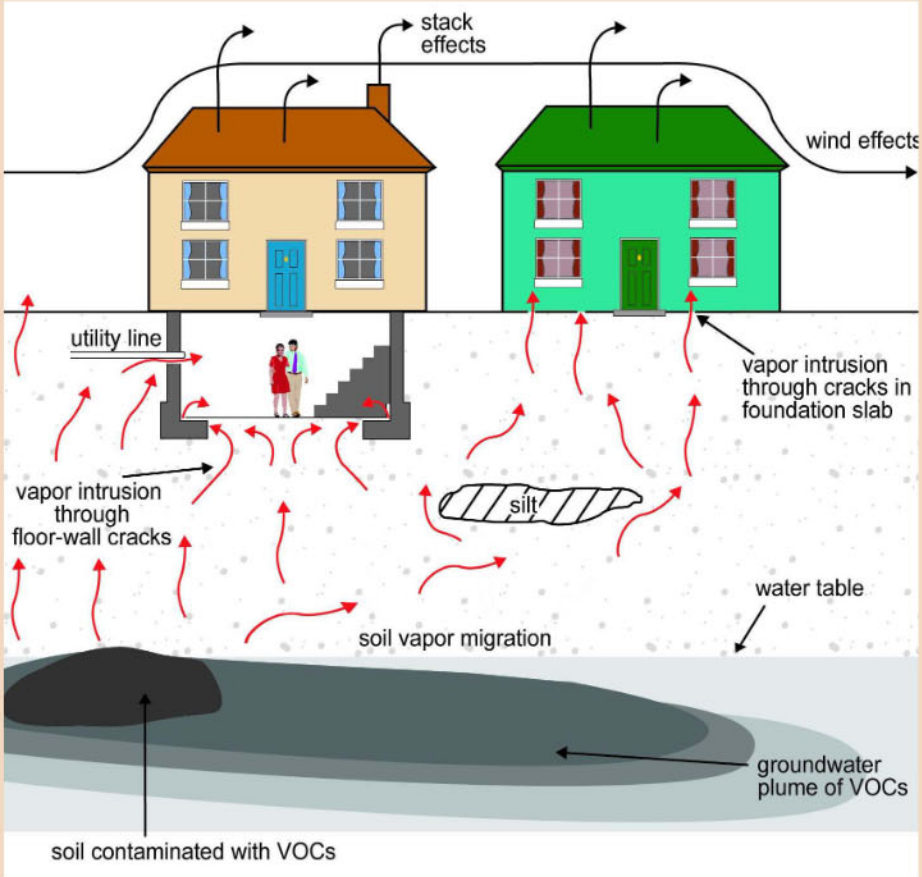
dnr.wi.gov, search "Brownfields"

How Vapors Enter a Building

If you live near a commercial or industrial facility or landfill where VOCs have entered either the soil or groundwater, there may be a potential for those chemicals to travel as vapors into your home or business. Vapors can enter buildings in various ways, including through cracks in the foundation and openings for utility lines. Building ventilation and weather can influence the extent of vapor intrusion.



Adapted from U.S. Environmental Protection Agency (EPA) graphic. www.epa.gov/oswer/vaporintrusion/basic.html

Where can I find more information?

Health and vapor-related information can be found at the Wisconsin Department of Health Services (DHS) website at **dhs.wisconsin.gov** , search "Vapor." For other health-related questions, please contact your local health department: **www.dhs.wisconsin.gov/localhealth**.

For more DNR information, please visit the DNR's Remediation and Redevelopment (RR) Program's Vapor Intrusion page at **dnr.wi.gov/topic/Brownfields/Vapor.html**.

Additional information can be obtained through the DNR field office in your region. To find the correct office, visit the RR Program Staff Contacts page at **dnr.wi.gov/topic/Brownfields/Contact.html** or call the RR Program at (608) 266-2111.

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.

Attachment C

WDNR Guidance Document 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.

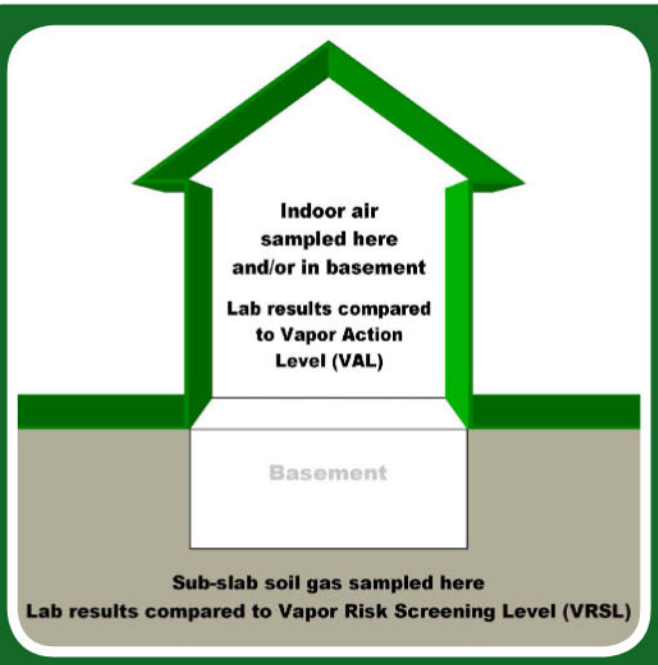
Indoor Air Testing Results

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.

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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.

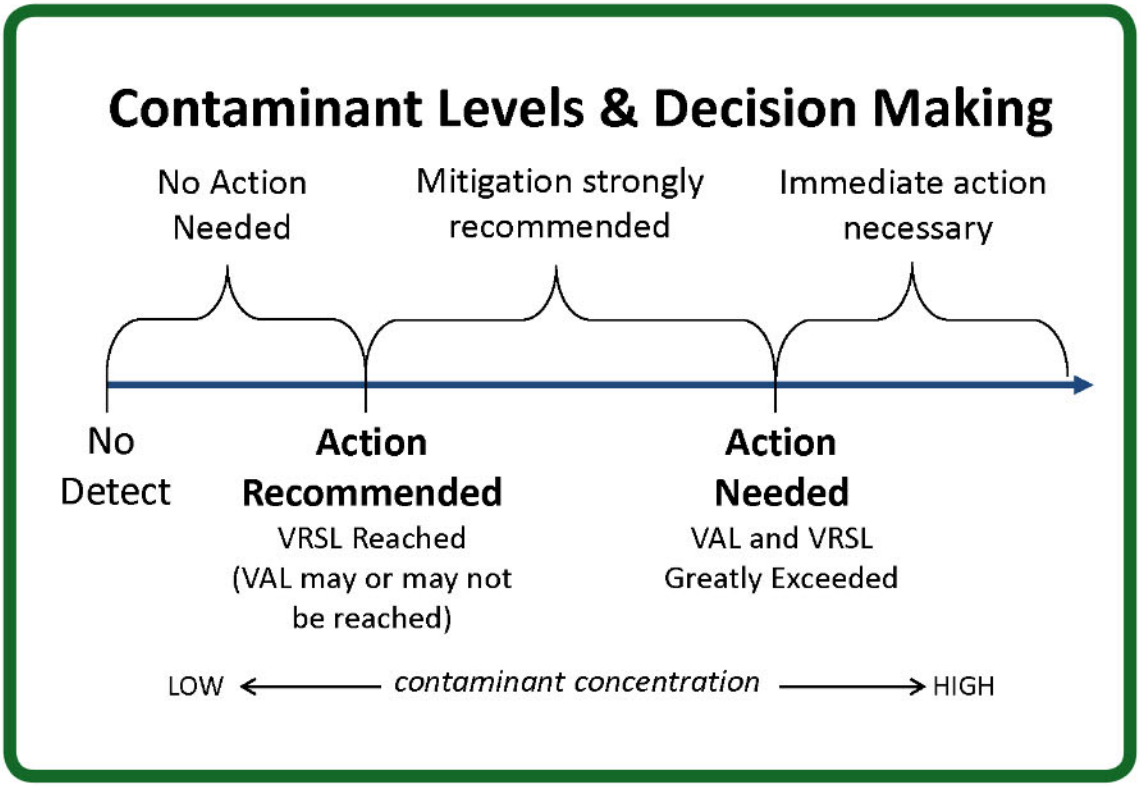
Follow-Up Actions

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**

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