



Vapor Intrusion – DEQ’s Revised Approach

Community Partners Listening Session

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April 17, 2024



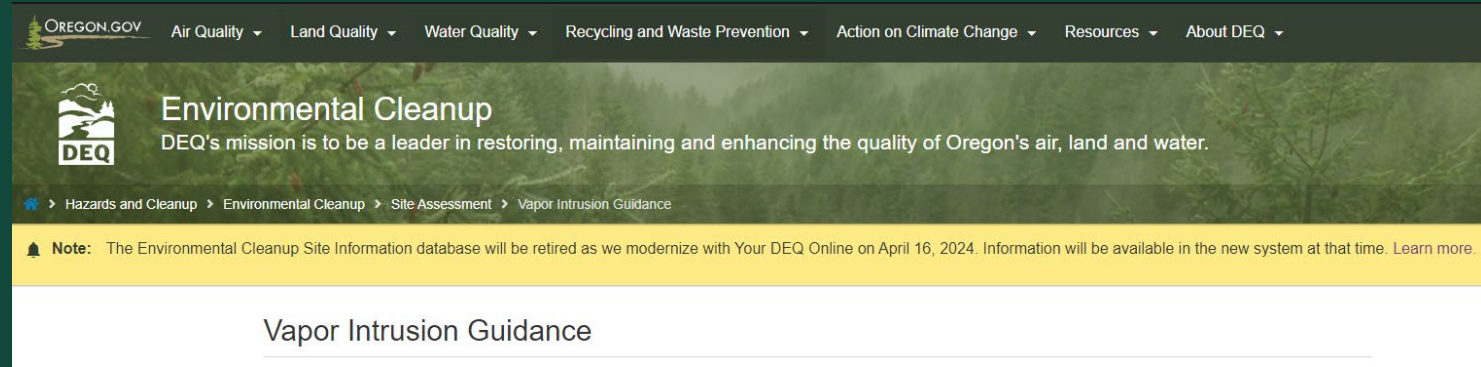
Welcome and Introductions

DEQ's mission: to be a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.



Housekeeping

- Thank you for attending
- Recording today
 - Slides will be posted on our website
- Feedback and questions
 - Share questions in the chat
 - Time at the end today for listening and Q&A
 - To provide input after the presentation today:
VIWorkGroup@deq.oregon.gov



Presentation Outline

- Introduction to Vapor Intrusion
- Regulatory Framework
- Changes in the Revised Guidance
- Public Review and Next Steps
- Questions and Listening Session



Guidance for
Assessing and
Remediating
Vapor Intrusion
into Buildings

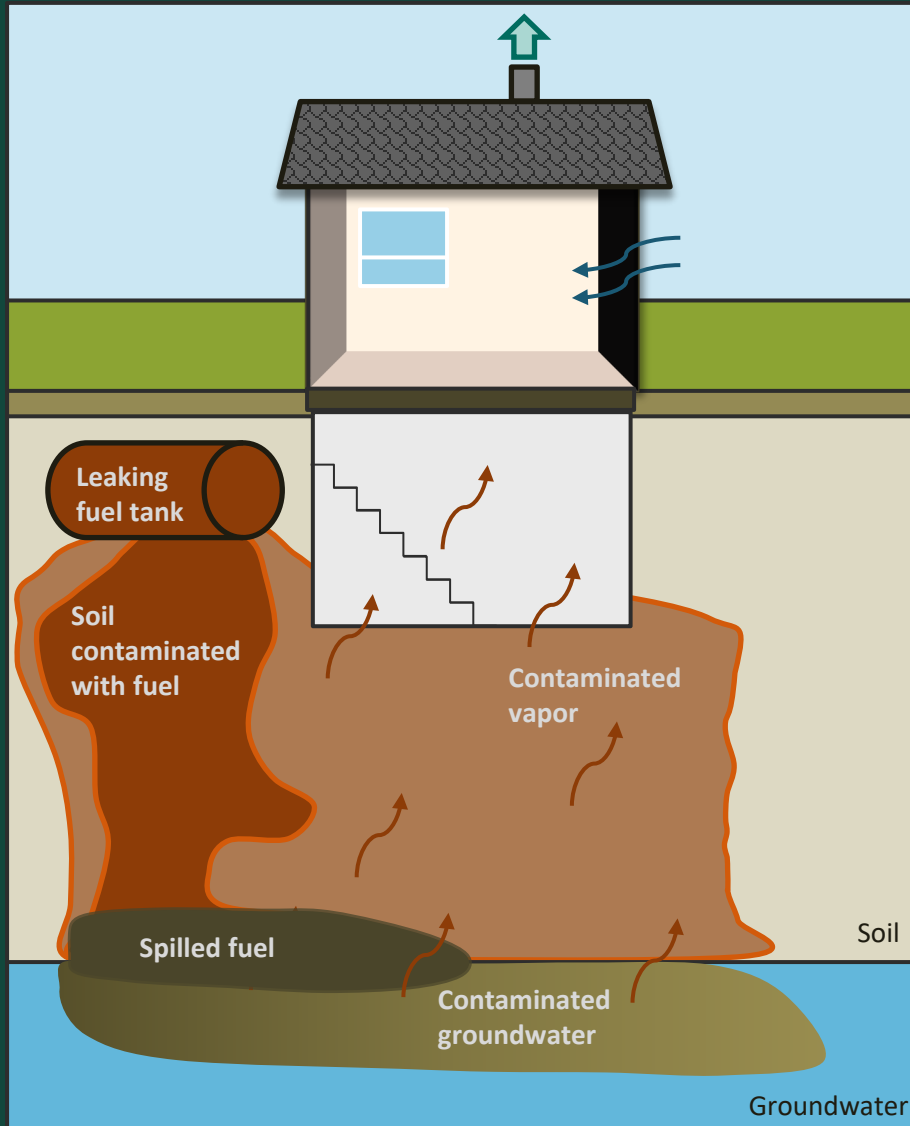
March 2024



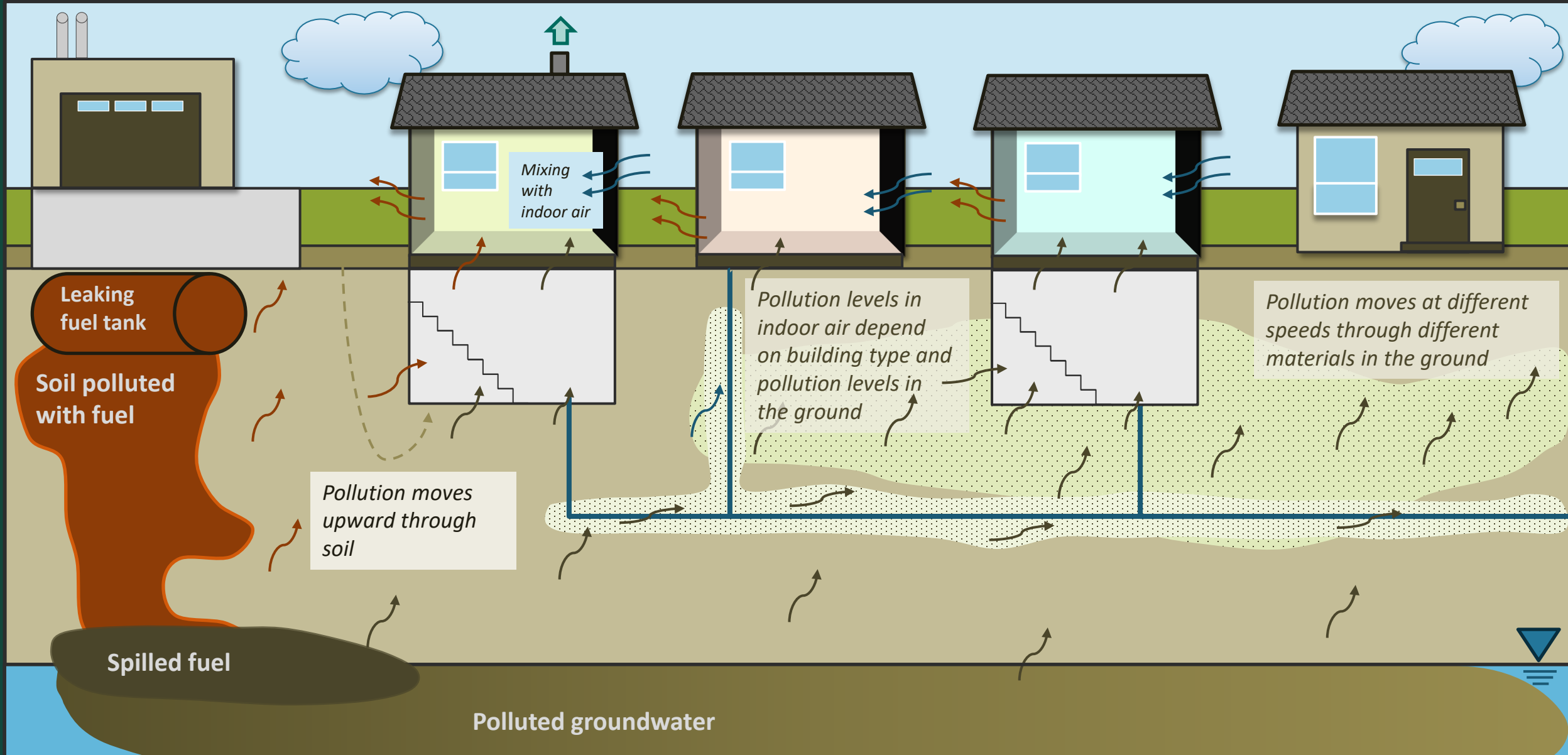
Vapor Intrusion Background



What is Vapor Intrusion?

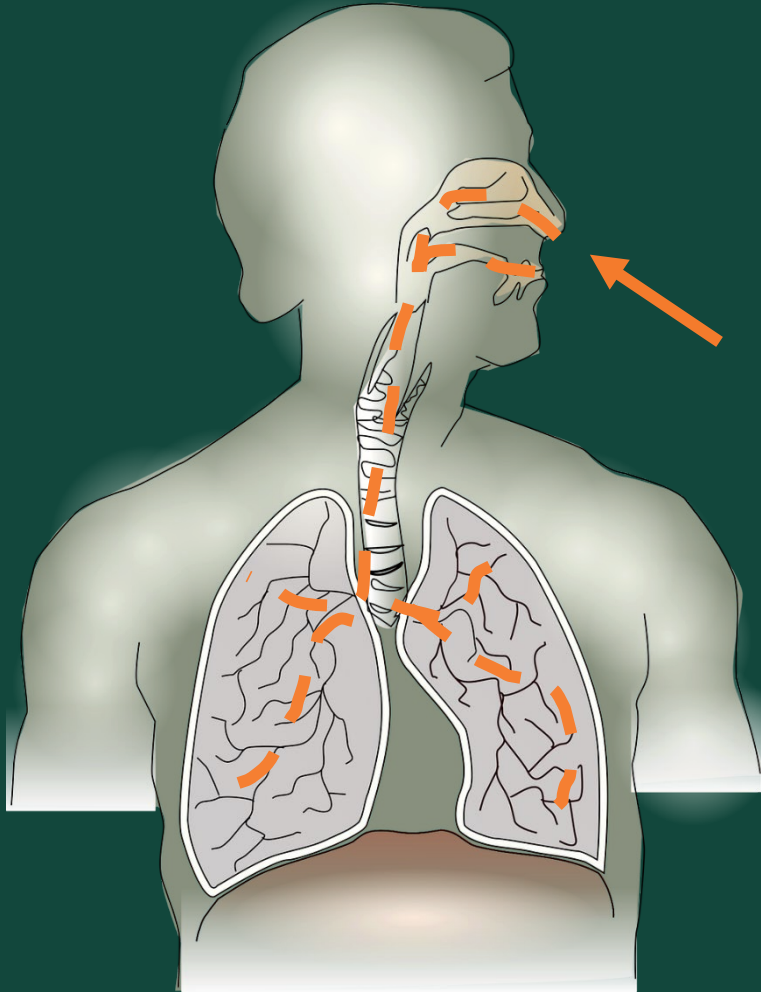


- Vapor intrusion is the movement of contaminated vapors from spills or releases below the ground into buildings.
- Vapor intrusion can cause unhealthy levels of pollution in indoor air at environmental cleanup sites.



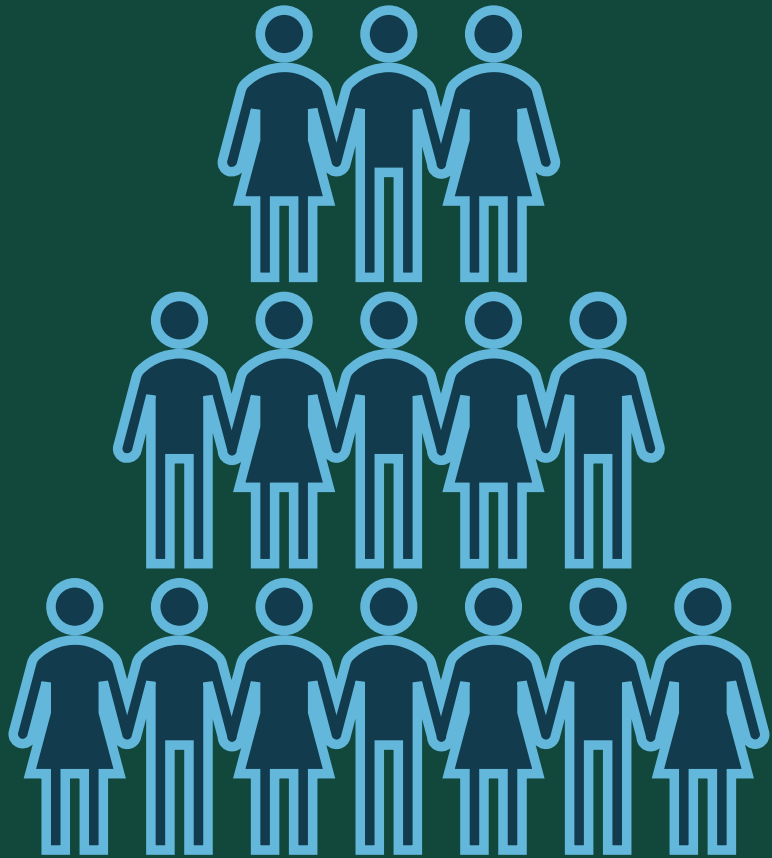
How do contaminated vapors get into buildings where they can impact health?

How does Vapor Intrusion affect health?



- Vapor intrusion health risks vary with different chemicals. Some chemicals can affect your brain, lungs, reproductive system, a developing infant, or increase cancer risks.
- Many chemicals can increase health risks if you breathe them for a long period of time over many years. Certain chemicals can also increase health risks over shorter time periods.

How does Vapor Intrusion affect health?



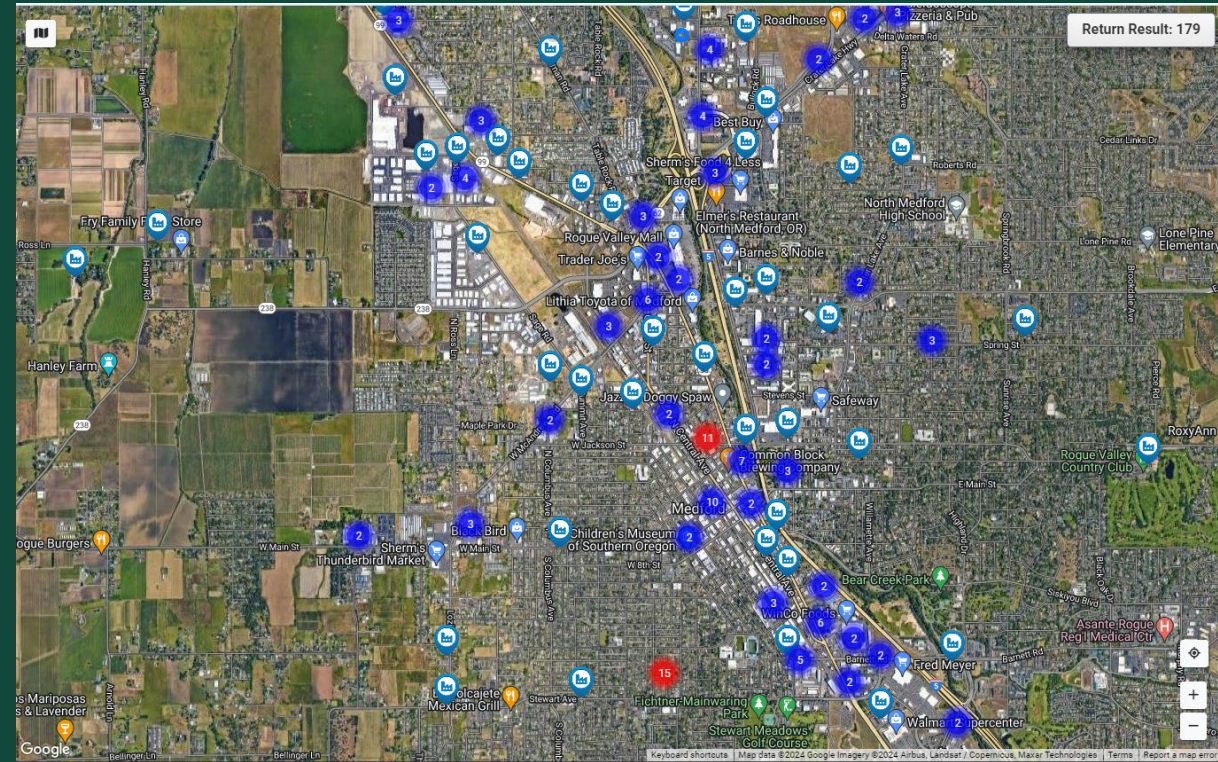
- Certain members of the population are more susceptible to vapor intrusion risks, such as children, the elderly, unborn children, people with disabilities, and those who live in areas impacted by multiple sources of pollution.
- The new guidance will improve DEQ's ability to protect all people in Oregon from health risks associated with vapor intrusion.

How does vapor intrusion affect the community?



How does vapor intrusion affect community members?

- Heating Oil Tank that leaked at a home you own or rent
- Leaking Underground Storage Tanks in your community
- Nearby properties that had a spill or release of contaminants that create harmful vapors, potentially at dry cleaners, gas stations, industrial sites, etc.
- See nearby projects on DEQ's website



How does vapor intrusion affect housing developers?

- Vapor intrusion risks may be present at a property you own or want to buy if contamination exists beneath the ground
 - Heating oil tanks, gas stations
 - Former commercial/industrial uses
- Vapor intrusion risks may affect inhabitants of current or future buildings
- If risks need to be addressed, DEQ works with developers to ensure risks are addressed



How does vapor intrusion affect community organizations?

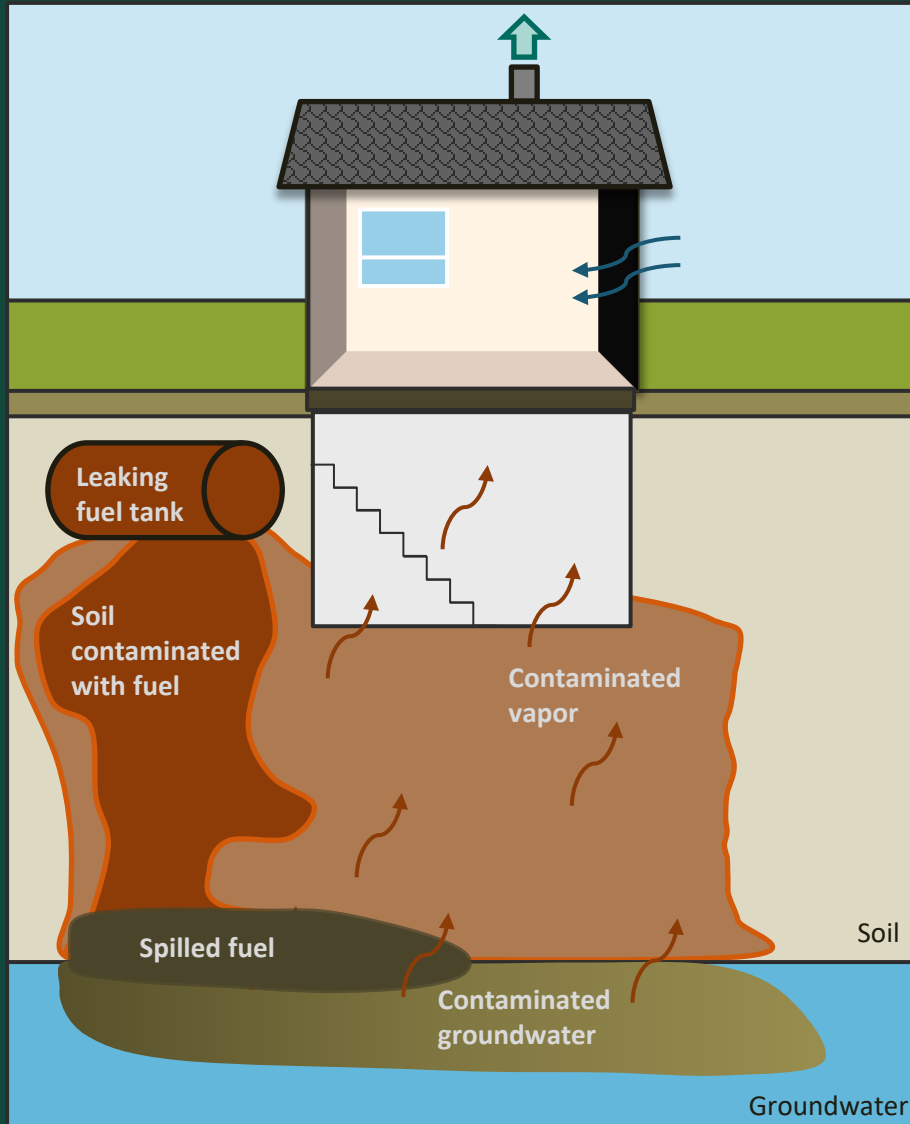


- Community members served by an organization live or work in buildings with vapor intrusion
- Shared spaces – community centers, childcare facilities – may be near contaminated sites that pose a vapor intrusion risk
- **Before acquiring a property, conduct an environmental assessment that evaluates risks of vapor intrusion to current and future buildings**

Vapor Intrusion Regulatory Background



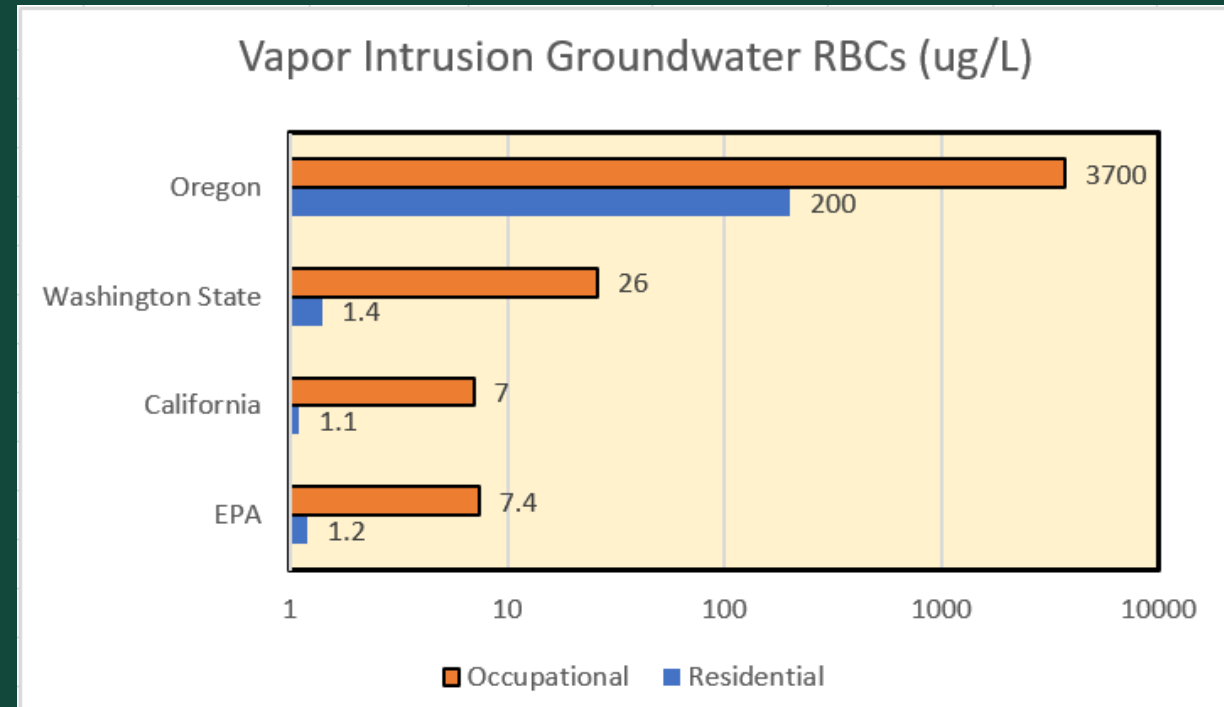
Why does DEQ Regulate Vapor Intrusion?



- Breathing air impacted by vapor intrusion is one of the most common ways that environmental pollution affects peoples' health
- Vapors are often odorless and colorless - building occupants frequently unaware of exposure
- Vapors are mobile and hard to contain -> cleaning up vapor contamination is more difficult than soil contamination
- Vapor concentrations in the ground and in the building can change depending on building type and operation (heating/cooling) and the seasons (summer/winter or rainy/dry)

Reasons for Updating Guidance

- Update with latest science since the 2010 VI guidance
- Update screening levels to ensure they are protective
 - Acceptable levels in indoor air remained the same
 - DEQ's risk-based concentrations (RBCs) used for screening sites were updated based on new data about the relationship of indoor air levels to soil vapor levels
 - Consistent with EPA and other states
- Improve quality and consistency of evaluating and addressing vapor intrusion risks



Timeline for Final Guidance 2024



- Draft guidance and revised RBCs posted on website March 2024
 - For use immediately
- 90-day public review period until May 31, 2024

Changes with New Guidance

What has changed? What does it mean for the public?

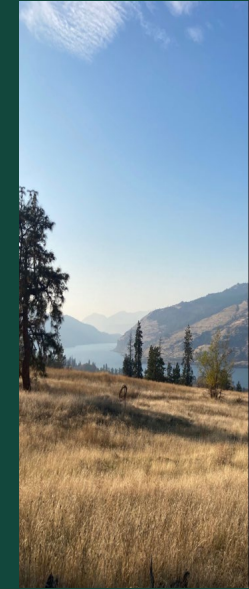


Overview of VI Guidance

1. Introduction
2. VI Conceptual Site Model
3. VI Evaluation Process
 - Separate flow charts for chlorinated VI and petroleum VI
4. VI Sampling and Analysis
5. VI Risk-Based Concentrations
6. VI Remediation and Mitigation
7. Community Engagement

Appendices

- A. Response Matrix for Indoor Air
- B. Heating Oil Tank Sites
- C. Development of RBCs
- D. Other Agency Response to TCE
- E. Managing Air Discharges from Remedial Systems
- F. Engineering Review of VI Mitigation



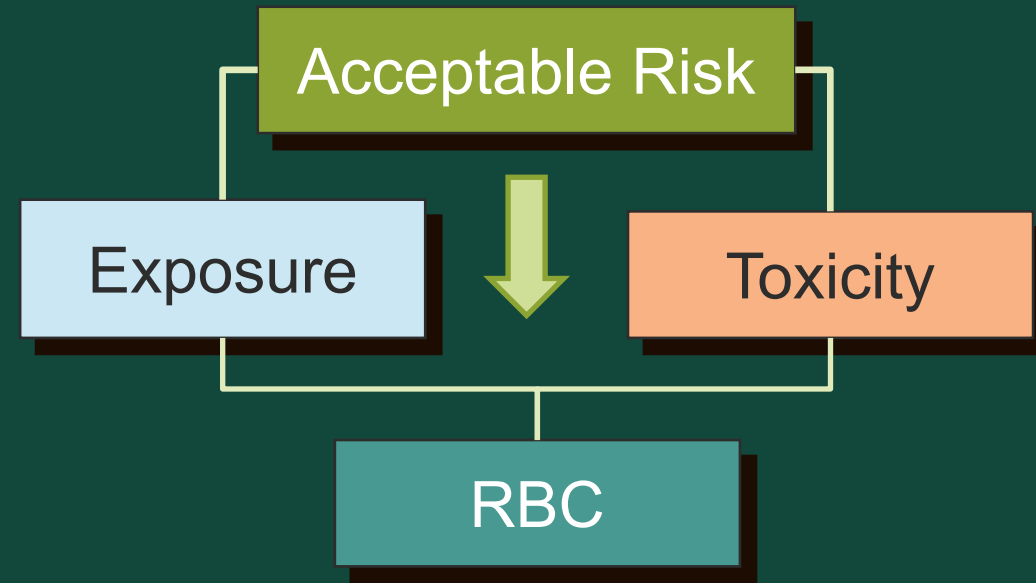
Guidance for
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March 2024



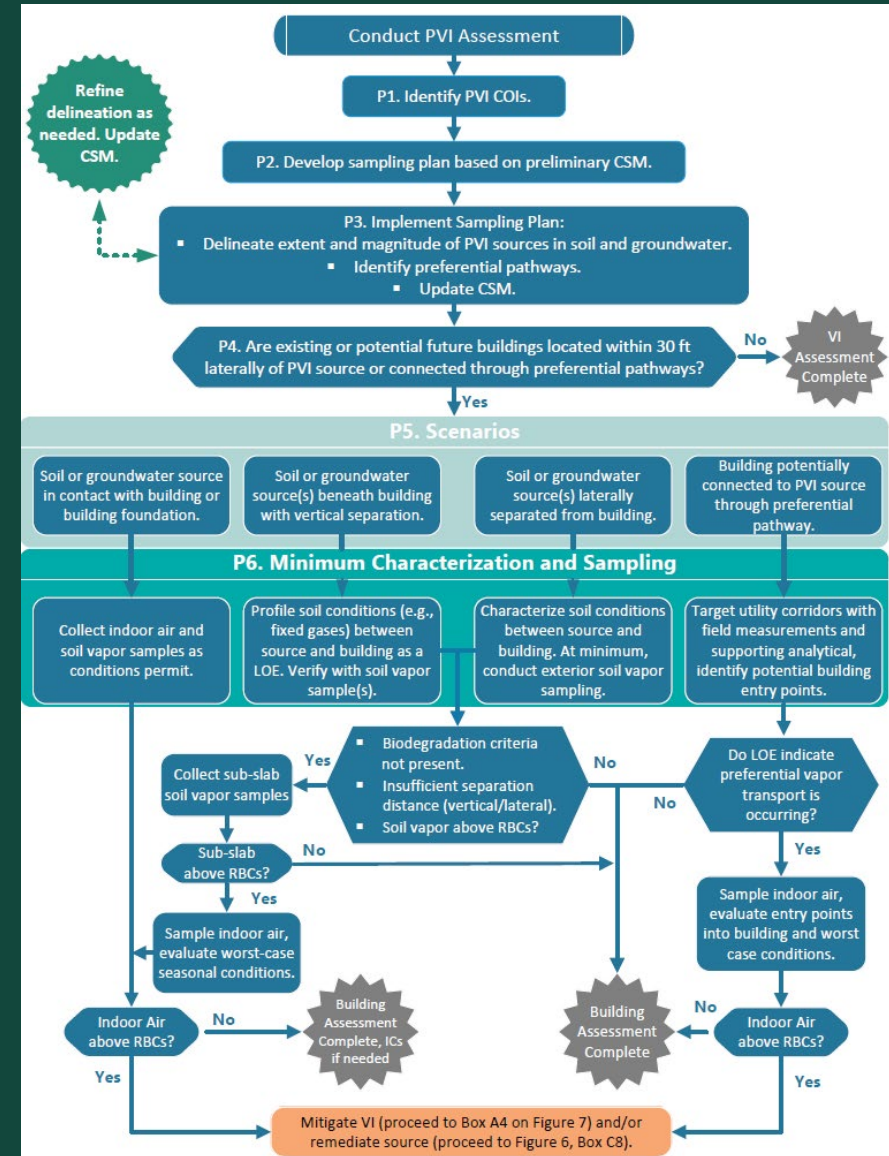
Vapor Intrusion Risk-Based Evaluations

- Screening levels (risk-based concentrations, or RBCs) updated June 2023
 - Added acute RBCs to protect short-term exposure
 - Expanded the list of chemicals with RBCs
- Updating annually; aligned with U.S. EPA
 - Current version: March 2024



Vapor Intrusion Evaluation Process

- Revised guidance contains flow charts explaining the vapor intrusion process step by step



Sampling and Analysis (Section 4)

- Focus on collecting soil vapor samples
- Moving away from soil sample – soil samples are an unreliable indicator of vapor intrusion risk

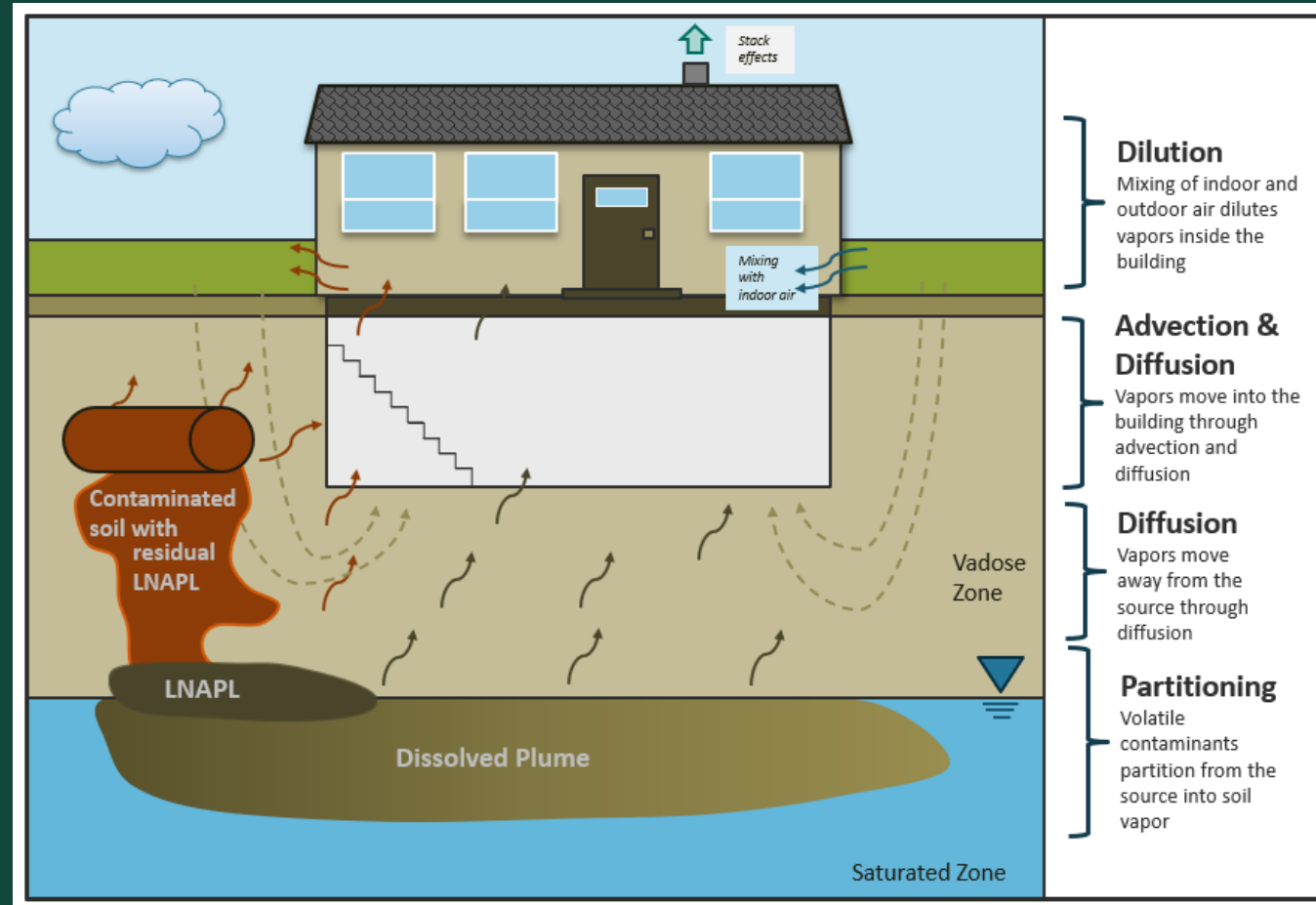


Mitigation, Remediation, and Performance Monitoring



VI Remediation and Mitigation

- Engineer Controls to Protect Human Health
- Address unacceptable VI risk
- Or mitigate inferred current risk until additional data available
- VI sources may require remediation
- Strategy often a combination of technologies
- Plans provided to DEQ in advance for review/approval



VI Remediation and Mitigation*

Remediation
reduces/removes VI
sources

- Excavation, soil vapor extraction, groundwater remediation, etc.
- Preference to remove/treat hot spots
- Minimize the need to manage sources long-term

Mitigation can provide
immediate protection
to building occupants

- Interrupts VI pathway at/near building
- Does not remove the contamination source
- Increases long-term operation needs – can be years to decades

*DEQ does not require specific mitigation or remedial techniques, but instead asks for an appropriate evaluation and proposal for review and approval

Data to Demonstrate Effectiveness

Indoor Air

Indoor concentrations are below risk levels

Differential Pressure

Negative pressure (e.g., $<$ indoor air) and sustained across the building sub-slab (or lateral extent vapor plume)

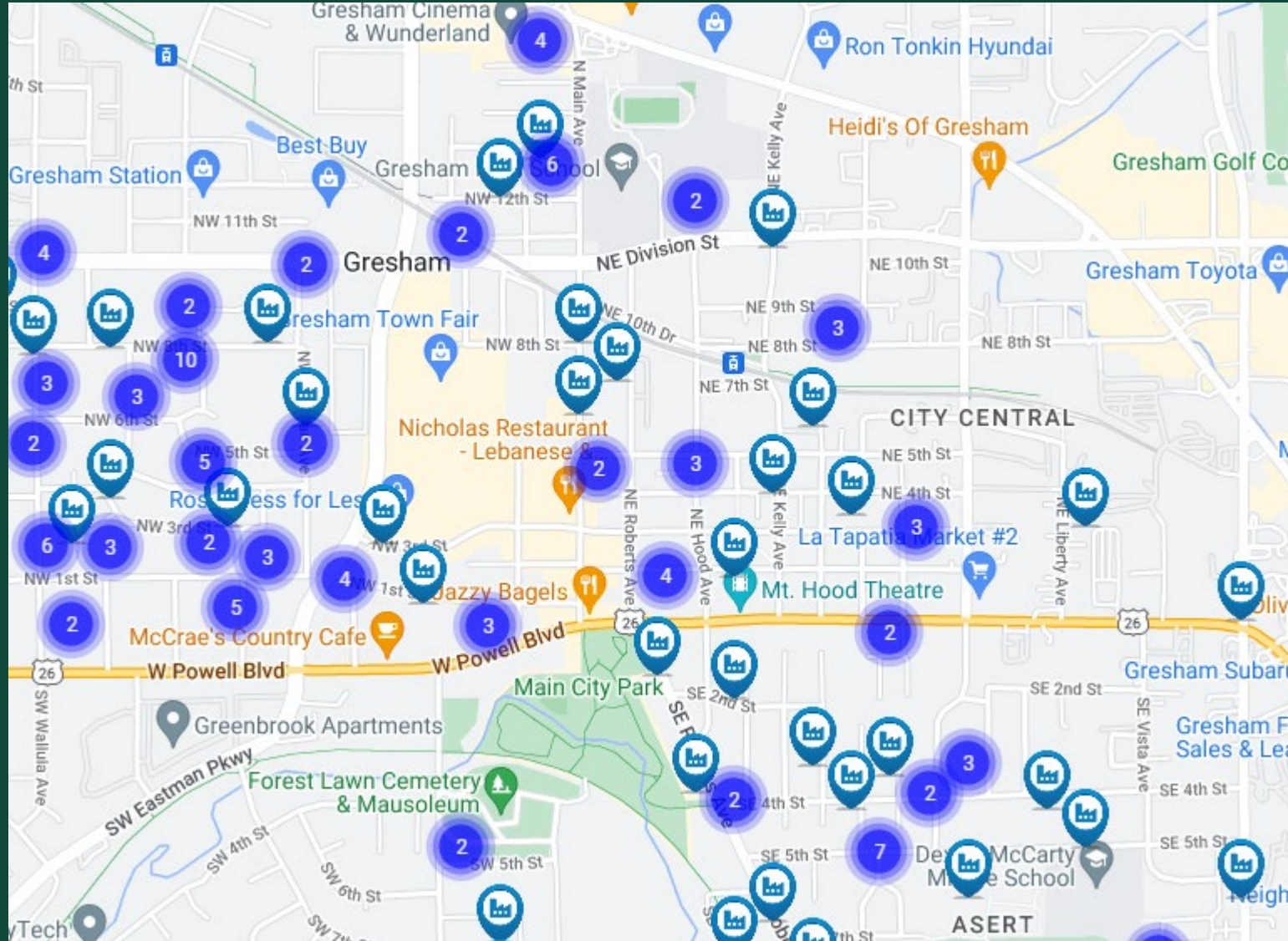
Sub-Slab

Reduction of sub-slab concentrations below risk levels

Heating Oil Tanks (HOT) (Appendix B)



HOT Overview: Where are Heating Oil Tanks?



Where are Heating oil Tanks? continued

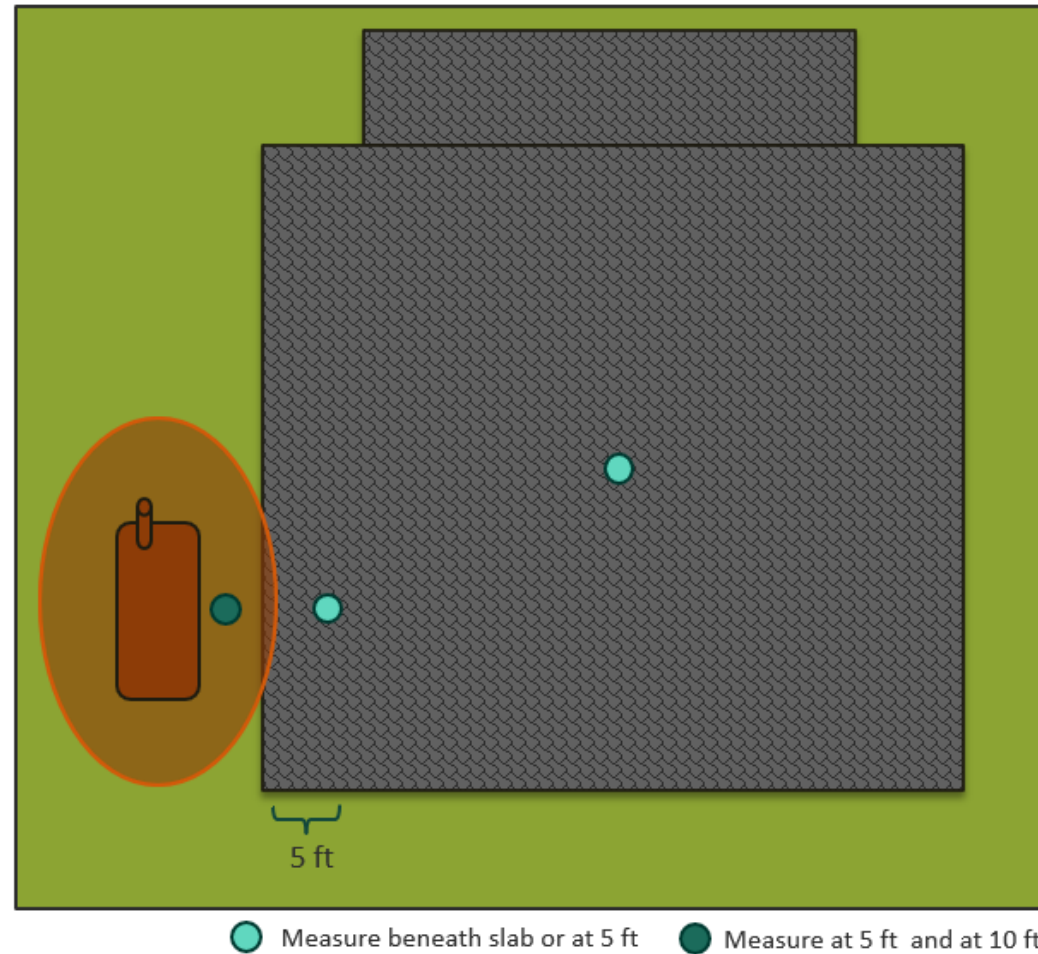
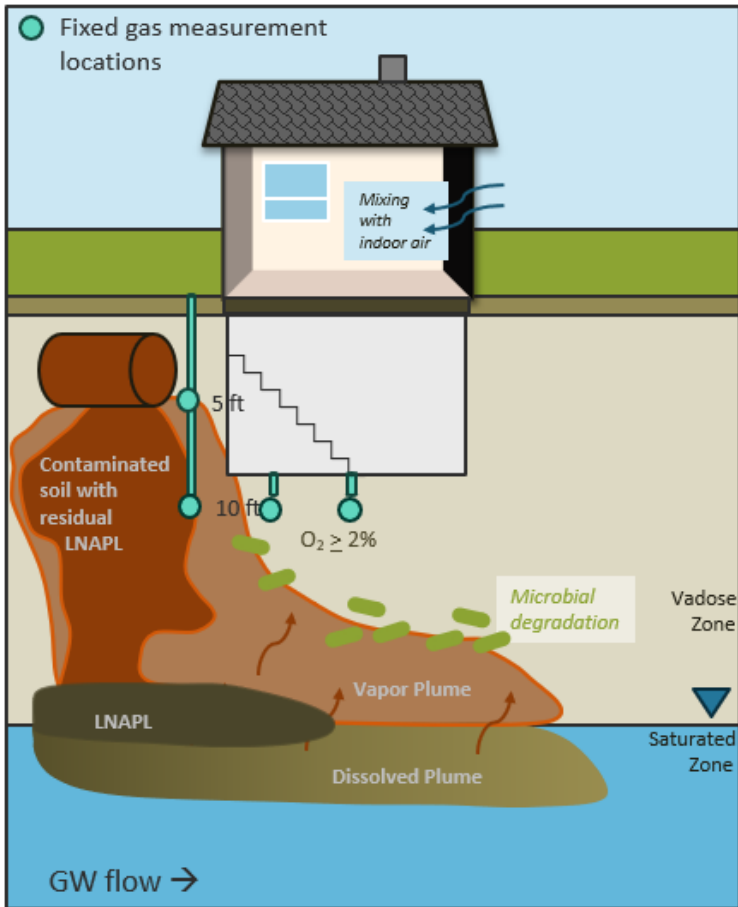


Heating Oil Tank Sites are Unique

- It is almost always diesel fuel: Risk ↓
- Diesel is less volatile than other vapor sources: Risk ↓
- Sites can be very close to residential structures: Risk ↑↑
- Heating oil tanks often have smaller spills than other sites, like gas stations: Risk ↓

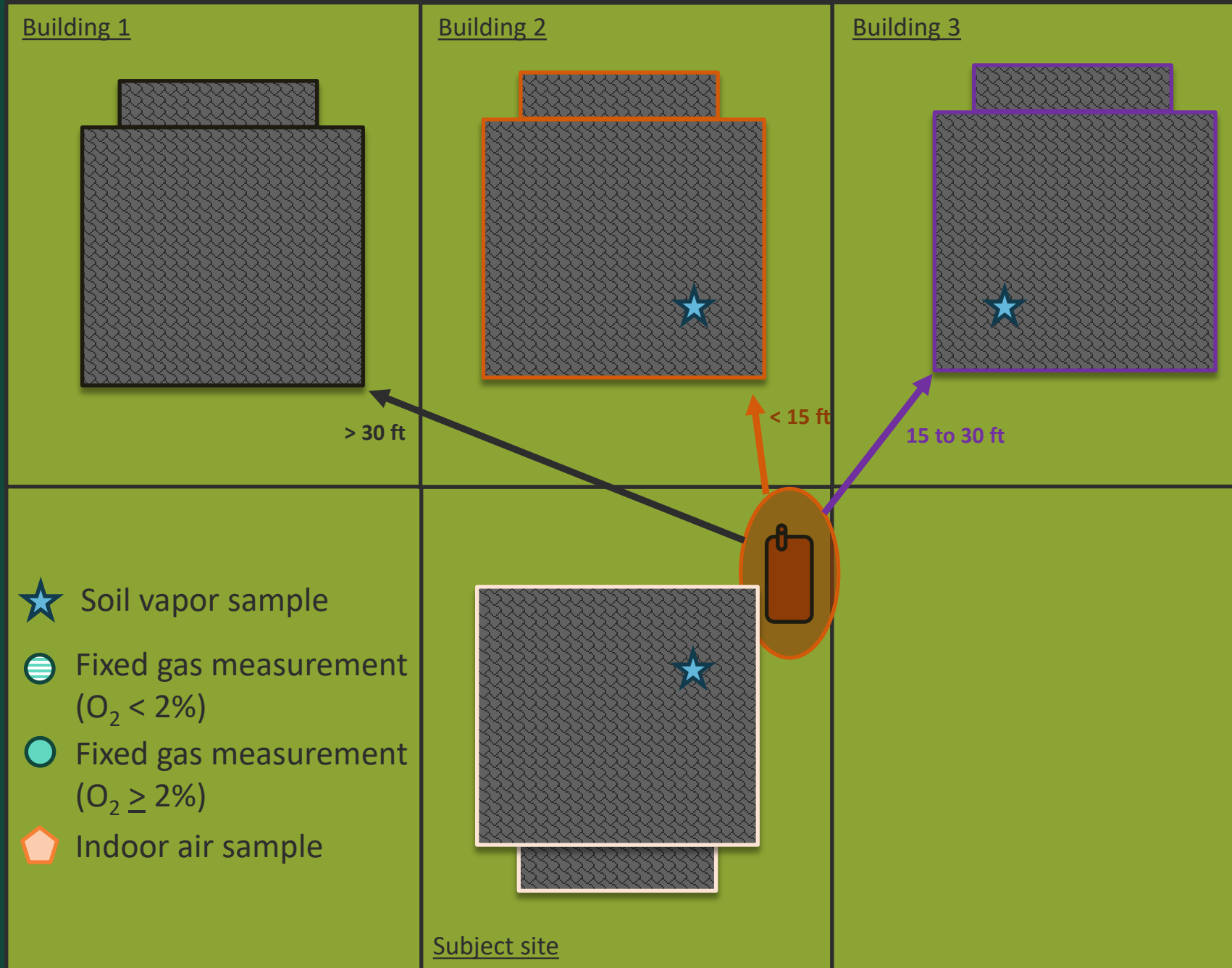


What's New?

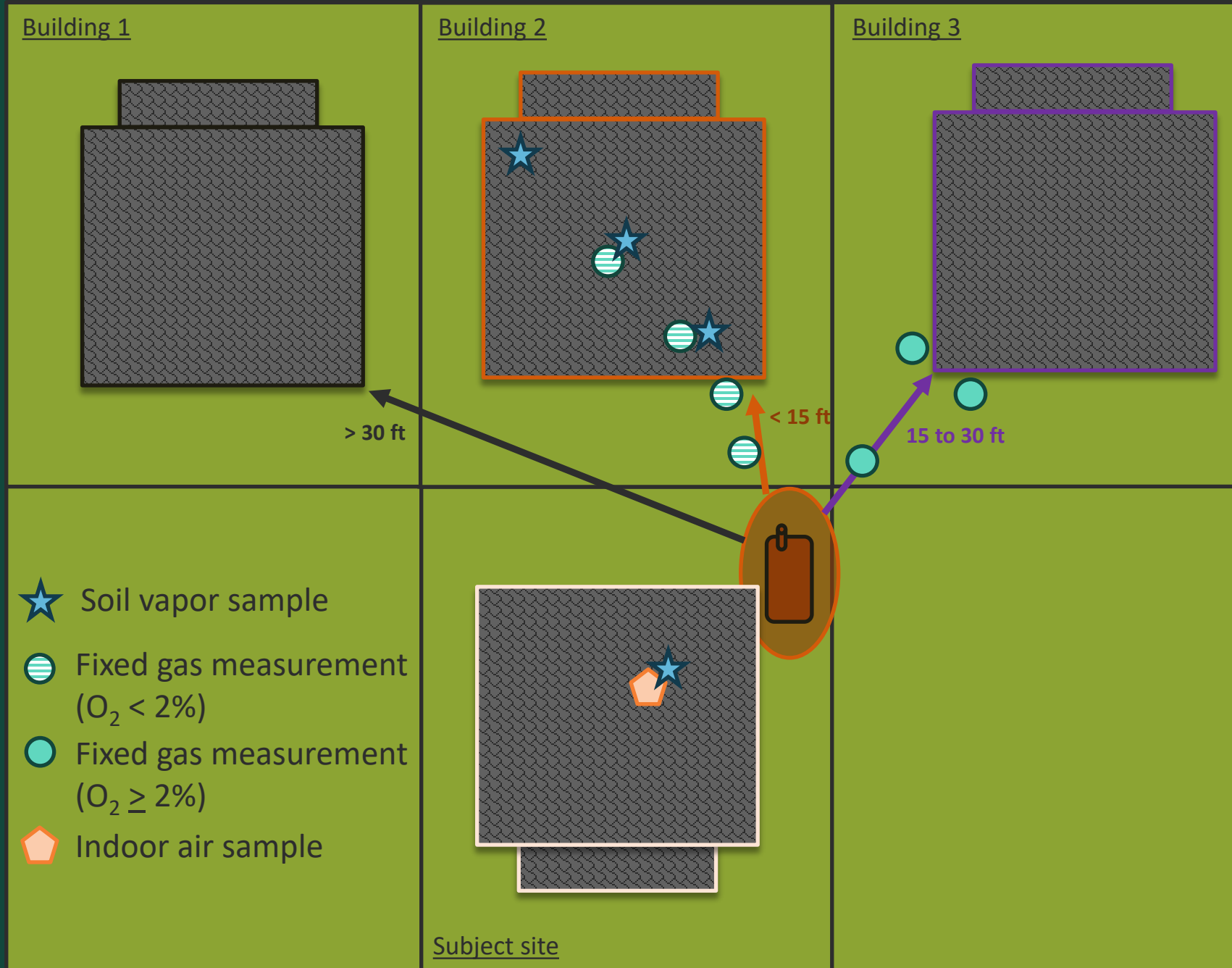


- Updates on latest science for how vapor moves through soil
- Using different measurement and sampling techniques to understand a leak
- Includes “biodegradation”

HOT investigations using 2010 guidance

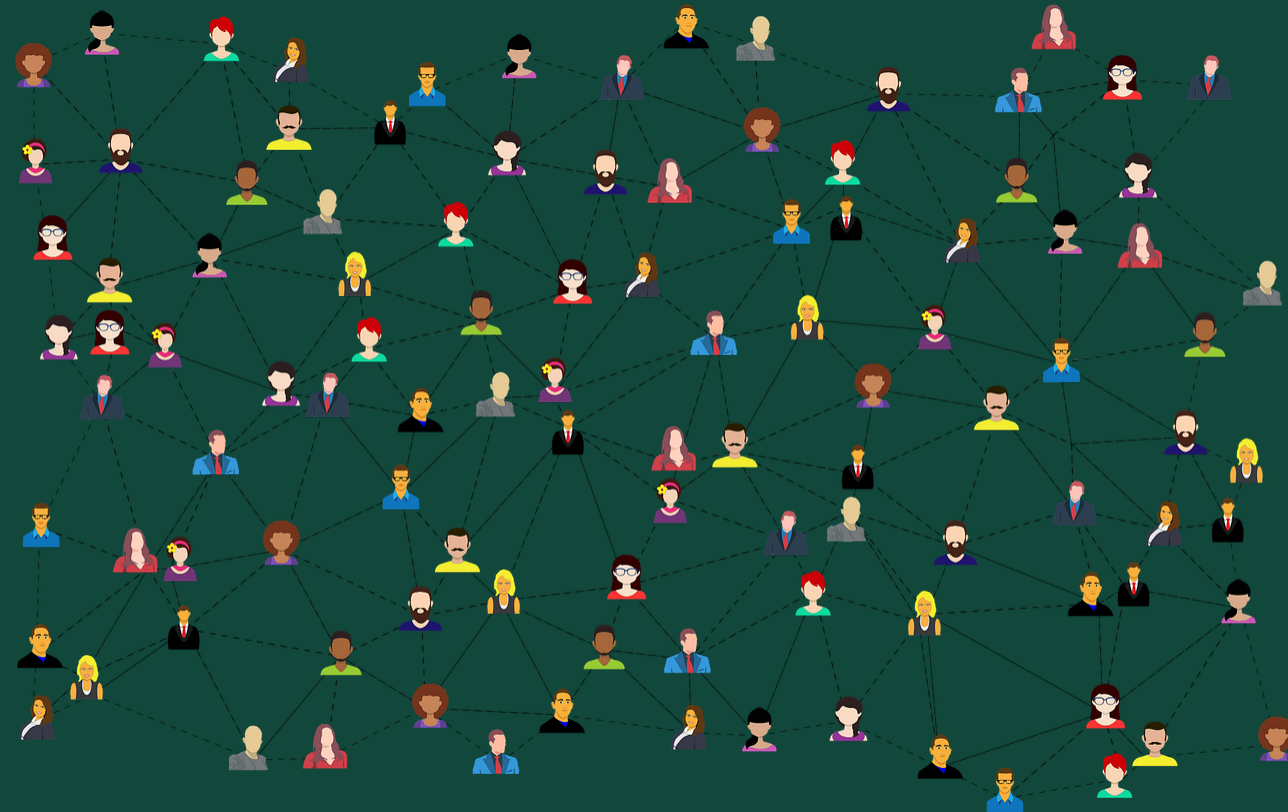


HOT investigations using 2024 guidance



Community Engagement (Section 7)

- New guidance recommends engaging communities impacted by VI risks early on and throughout the process
 - Acknowledges clear and open communication is key
 - Provides multiple references by EPA, ITRC, Washington Dept of Ecology



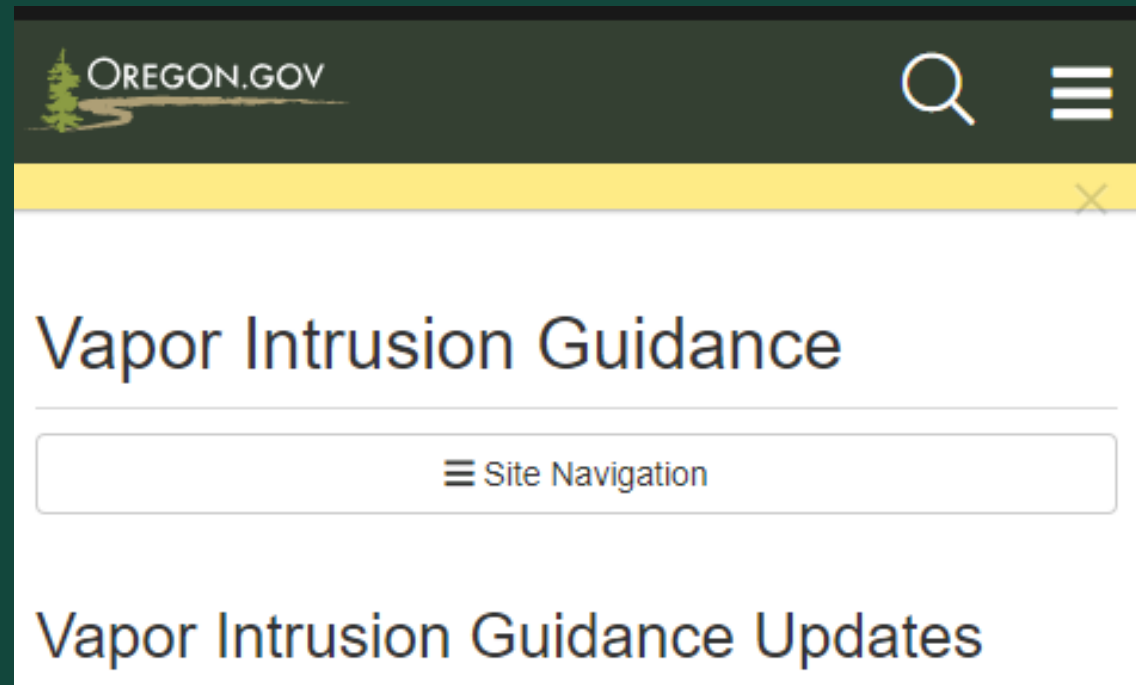
Public Review Period & Next Steps



Public Review Period

Informal public review period – ends May 31, 2024

- Not a formal public comment period
 - No written comment responses





Thank You!

Feedback? Questions? Comments? Please reach out to the VI team at
VIworkgroup@deq.oregon.gov



Where to find help during transition?

- DEQ: <https://www.oregon.gov/deq/hazards-and-cleanup/env-cleanup/pages/vapor-intrusion.aspx>
- EPA: <https://www.epa.gov/vaporintrusion>
- ITRC: <https://itrcweb.org/teams/training/vapor-intrusion-mitigation-training>
- Your DEQ Team at VIworkgroup@deq.oregon.gov



Extra Slides



Your DEQ Online (YDO)



Online Services

DEQ's mission is to be a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

Home > Online Services > How to Enter Submittals in Your DEQ Online > Environmental Cleanup In Your DEQ Online

Environmental Cleanup In Your DEQ Online

Modernization Project Underway:
Your DEQ Online

Programs participating in Your
DEQ Online

Your DEQ Online Account
Registration

HOW TO ENTER SUBMITTALS
IN YOUR DEQ ONLINE

Your DEQ Online Payments

Your DEQ Online Public Records

Your DEQ Online Public
Involvement

ABOUT YOUR DEQ ONLINE
PROJECT

Starting April 16, 2024 responsible parties may [establish individual user accounts](#) and select the "Cleanup and Site Remediation" submittal group in their account access.

The following submittals are available through Your DEQ Online:

- [Cleanup Program Document](#)
- [Cleanup Prospective Purchaser Agreement Eligibility Form](#)
- [Cleanup Program Intake](#)



Your User Account

[Your DEQ Online Account Registration](#)



Login to Public Portal

Enter username and password to log directly into the Your DEQ Online Public Portal.



Your DEQ Online Help Desk

Get help from customer support for technical and submittal issues.



DEQ

Accessing Public Records in YDO



<https://ordeq-edms-public.govonlinesaas.com/pub/login>

1

YOUR DEQ ONLINE

Public Portal

Environmental Data Management System (EDMS)

Username

Password (Forgot Password?)

Login

Register Account

Public Records Services

For assistance, please contact:
✉ YourDEQOnline@deq.oregon.gov
🔗 [Online Help](#)

[Terms of Use](#) + [Privacy Statement](#)

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Public Submittal Records

Search

Statement

Please note: Published submittals appear in Map mode only if latitude and longitude are included with site/facility data. System improvement efforts are underway. If you are unable to find the information you need, please visit the [DEQ Public Records Request system](#).

Search Criteria

Public Notice Only

Keywords

Filter by Submittal ID, Site ID, Site/Property Name, Site/Property Address

Environmental Interest

Submittal Status

Submittal Types

Region

All

Submittal RID	Site/Location	Dept./E.L./Submittal Type	Submittal Date /Submitter/Public Notice Date	Status
15305	Element Materials Technology 4949 SE JOHNSON CREEK BLVD, MILWAUKIE, OR 97222	Land Quality Hazardous Waste/UO/UW Hazardous Waste Generation and Management Annual Report	4/16/2024 Today Alex Berry	Approved
16099	Portland International Airport Term Bldg 7000 NE AIRPORT WAY, PORTLAND, OR 97218	Land Quality Hazardous Waste/UO/UW Hazardous Waste - Site Identification Notification	4/16/2024 Today Erin Anderson	Approved
38715	Wheeler Fuel Distribution 2421 W Wapato Rd, Wapato, WA 98951	Air Quality Gasoline Transporter Gasoline Transporter Permit (GTP) Application	4/16/2024 Today Colleen Martin	Approved
38714	Wheeler Fuel Distribution 2421 W Wapato Rd, Wapato, WA 98951	Air Quality Gasoline Transporter Gasoline Transporter Permit (GTP) Application	4/16/2024 Today Colleen Martin	Approved
68354	Hidden Hills Subdivision Phase II 3370 Viewpoint Drive, Medford, OR 97504-5094	Water Quality NPDES- Stormwater (Construction) Stormwater Construction: Apply for 1200-C NPDES General Permit	4/16/2024 Today Denis Hickey	Approved
38711	Marlin Transport LLC 601 McCarthy Blvd, Newbern, NC 28562	Air Quality Gasoline Transporter Gasoline Transporter Permit (GTP) Application	4/15/2024 Yesterday Jeff Sharp	Approved
38710	Marlin Transport LLC 601 McCarthy Blvd, Newbern, NC 28562	Air Quality Gasoline Transporter Gasoline Transporter Permit (GTP) Application	4/15/2024 Yesterday Jeff Sharp	Approved
15115	East Side Plating Inc Plants 1, 2 & 3 8400 SE 26TH PL, PORTLAND, OR 97202	Land Quality Hazardous Waste/UO/UW Hazardous Waste Generation and Management Annual Report	4/15/2024 Yesterday David Humphrey	Approved



Finding Project Locations in YDO



Public Project Records 3

Search 1 - 20 of 61709 Name (A-Z) 20

Return Result: 500 (max)
Total Result: 57966

Please note: Published permits appear in Map mode only if latitude and longitude are included with site/facility data.

System improvement efforts are underway. If you are unable to find the information you need, please visit the DEQ Public Records Request system.

Criteria

Keywords
Filter by id, name, number, site, location .

Project Type 4

- 401 Dredge and Fill
- 401 Hydropower Project
- Cleanup Project
- Leaking Heating Oil Tank
- Leaking Underground Storage Tank**

Found: 5



A note on Your DEQ Online (YDO)



Need Help?

For technical and submittal assistance:



Contact Your DEQ
Online Helpdesk

For Your DEQ Online questions email:
YourDEQOnline@deq.oregon.gov

Happening Now!

- Starting **April 3, 2024**, DEQ moved from the **Online Petroleum Release Reporting (OLPRR)** system to reporting releases in YDO.
- Starting **April 16, 2024**, DEQ will move the ECSI database to YDO and reports will be submitted electronically through YDO.

Helpful Links

- [Your DEQ Online account registration](#): Establish your Responsible Official account to submit documents and report releases.
- [Your DEQ Online Public Records](#): Look up information in YDO and learn about the transition from LUST to Your DEQ Online.
- [How to Enter Submittals in Your DEQ Online](#): Resources to get started in the Your DEQ Online Public Portal.

