

SUBGROUP: VI

Remediation and Redevelopment External Advisory Group



NOTES

Remediation and Redevelopment External Advisory Group – Vapor Intrusion

Wednesday, May 29, 2024 | 2:00 - 3:30 p.m.
State Natural Resources Building (GEF 2) | Room G09
101 S. Webster St., Madison, WI

Action items/assignments for next meeting

- **ALL:** Seeking interest for Ad Hoc Committee members for Mitigation Contractor Certification and/or Local Government Education & Outreach. Email Edmund.Buc@Terracon.com or Jennifer.Borski@wisconsin.gov to express interest or for more information.
- **Ed Buc:** Schedule Mitigation Contractor Certification Ad Hoc Committee Meeting and Local Government Education & Outreach Ad Hoc Committee Meeting.
- **ALL:** Subscribe to the RR EAG listserv to receive information about future meeting dates, agendas, resources, and other EAG-relevant items. Zoom attendees are automatically added to the listserv; if you would like to opt out, please email Coreenr.Fallat@wisconsin.gov.

Introductions

Welcome Ed Buc of Terracon as new Subgroup Chair for the Vapor Intrusion Subgroup! Thanks to Chris Bonniwell of TetraTech for his past work as the initial Chair.

In-person:

- Ed Buc, Subgroup Chairperson, Terracon
- Coreen Fallat, DNR
- Curtis Hedman, DHS
- Jennifer Borski, DNR
- Judy Fassbender, DNR
- Michael Prager, DNR
- Roxanne Chronert, DNR
- Ryan Blundon, LRS
- Sharlene TeBeest, DOT

Zoom:

- Adam Roder, GeoSyntec
- Alex Amundsun, WEC Energy Group
- Corey Pagels, Shannon & Wilson
- Grant Neitzel, DNR
- Heidi Woelfel, GZA
- Jason Lowrey, DNR
- Jim Walden, DNR
- Kurt McClung, EndPoint Solutions
- Renata Bunger
- Stephen Meer, The SIGMA Group
- Tammy Rabideau, Manco Corp
- Jason Lowery
- Jim Walden
- Frank Dombrowski, WEC Energy Group
- Matt Thompson, DNR
- David Zolp, Geosyntec

DNR Updates

- Guidance: Vapor Mitigation System Monitoring with Active Notification and Telemetry will be posted for public review and comment when ready.

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Remediation and Redevelopment External Advisory Group



Ad Hoc Committee Updates

Mitigation Contractor Certification – Indoor Environments Association (IEA) is working to develop and finalize credentials for vapor intrusion mitigation by the end of 2024. Amanda Koch with DHS is the new Indoor Air (radon) Manager. Ad hoc group will review a draft bill for radon and vapor intrusion mitigation certifications requirements in Wisconsin written by IEA and draft an issue paper for review by the EAG VI subgroup. Anticipated timeline is winter/spring of 2025.

Local Government Education & Outreach – DNR & DHS are finishing vapor intrusion communications mapping in the city of Milwaukee. Deliverables will be shared with the ad hoc committee for consideration of consider next steps.

Discussion Items

Mitigation Timeline Fact Sheet Content discussion– Discussion and recommendations for content for fact sheet (e.g., graphics, time frames, interim actions, examples). Outreach is needed to developers and trade schools.

RR-800 (Vapor Intrusion Guidance Revisions) Rollout Process discussion –

- Updates to RR-800 presented at FET’s Environment 2023 in Nov. 2023.
- Following publication, recommendation to have sessions to cover updates (e.g. Issues & Trends).
- Outreach to other audiences including the Wisconsin Builders Assoc.

Next meeting date

- Remediation and Redevelopment External Advisory Group (EAG) – July 25, 2024

Adjourn

Vapor Intrusion Subgroup

REMEDICATION & REDEVELOPMENT
EXTERNAL ADVISORY GROUP
Thursday, May 29, 2024

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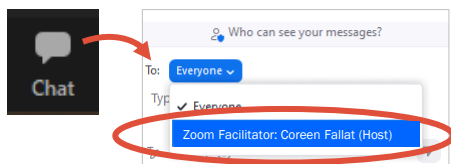
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Zoom Meeting Logistics

All attendees are muted

Written Comments/Questions

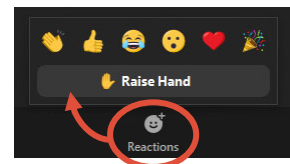
- Use **chat** and select Zoom facilitator in the “To” dropdown
- Remarks will be read out loud by facilitator



(direct message)

Verbal Comments/Questions

- **Raise hand** to request a turn to talk (* 9 on phone)
- Please unmute when your name is called (*6 on phone)



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Introductions



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Agenda

- DNR Update
 - Active Notification/Telemetry Fact Sheet
- Ad Hoc Committee Updates
 - Mitigation Contractor Certification
 - Local Government Outreach & Education
- Discussion Items
 - Mitigation Timeline Fact Sheet Content
 - RR-800 Roll Out Process
- Next Steps and Assignments
- Next Meeting Date
- Adjourn

Find agenda and meeting materials at
dnr.wisconsin.gov/topic/brownfields/rreag
 under "meetings"


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DNR Update

- Definition of active notification
- Description of telemetry
- DNR authority
- Recommendations for active notifications
- Recommendations for telemetry
- Recommendations for construction documentation
- Information for inclusion in Operation, Monitoring & Maintenance (OM&M) Plan
- Contacts for questions

Wisconsin DNR – Environmental Contamination



Remediation and Redevelopment Program

2024

Guidance: Vapor Mitigation System Monitoring with Active Notification and Telemetry


Wis. Admin. Code §§ NR 724.13(1)(d) and 722.12(1)(d)

DRAFT

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Training Library – October 25, 2023



2023 SERIES

| Date | Presentation | Audio/Video |
|---------------|---|---|
| Oct. 25, 2023 | Vapor Intrusion in Wisconsin - 2023 Updates (pdf) | Webinar recording [VIDEO length 3:12:54] [exit dnr] |

<https://dnr.wisconsin.gov/topic/Brownfields/TrainingLibrary.html>

See slides 12-21 for Vapor Mitigation Systems: Active Alarms, Telemetry & Backup Power

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Ad Hoc Committee: Mitigation Contractor Certification

- Brief meeting on 4/5
- Consultants, mitigator, DNR & DHS represented
- Draft bill reviewed – radon measurement / mitigation & soil gas (vapor) mitigation (not vapor sampling); references NR 700 Rule Series
- Discussed related issues/concerns:
 - P.E. oversight of vapor mitigation system design, installation, documentation
 - NR 700 Rules
 - Other certifications (e.g., asbestos, tank removals)
- Since 4/5: Update from Indoor Environments Assoc on VI Mitigation Credentials
- Next meeting: To Be Scheduled – Interested parties should contact Ed Buc or Jennifer Borski

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Ad Hoc Committee: Local Government Outreach & Education

- Last meeting on 4/5
- Consultants, developer, local health & DNR represented
- Reviewed vapor intrusion communications mapping effort with city of Milwaukee
- Discussed trigger points for local gov. to consider environmental contamination:
 - Property transfers
 - Occupancy permits – really too late in process
 - Encourage local gov encourage proactive construction of VMS infrastructure for new & redevelopments

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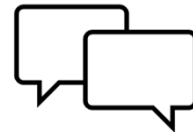
Ad Hoc Committee: Local Government Outreach & Education Continued

- Discussed similar permitting to possibly or enter process:
 - Demolition permit – asbestos checkbox
 - Stormwater permit
 - Development approvals through Planning/Community Development
- Discussed potential audiences for targeted outreach beyond local gov:
 - Commercial Assoc of Realtors Wisconsin (CARW)
 - State Bar Assoc
 - Others?
- Since 4/5: VI comms mapping wrapping up in June 2024
- Next meeting: To Be Scheduled – Interested parties should contact Ed Buc or Jennifer Borski

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Discussion Items



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Mitigation Timeline Fact Sheet Content

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Purpose

- Inform non-technical stakeholders of basic steps & expectations
- Estimate general timelines
- Communication tool for environmental consultants with clients
- Assist redevelopment planning

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Overall Information

- Complex buildings include but are not limited to:
 - Dirt floor
 - Mixed foundation types
 - Variable foundation thicknesses (e.g., industrial buildings)
 - Building additions (i.e., multiple footers)
 - Cinder block walls
 - Preferential pathways beyond standard perimeter gaps and foundation cracks
- At least one commissioning event occurs during winter heating season (consider cold weather & extreme weather conditions where stack effect is greatest)
- DNR does not have authority to issue occupancy permits or certificates

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Mitigation at Existing Buildings

Assumption: Investigation identified mitigation is necessary

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Steps for Traditional Active Vapor Mitigation System at Existing Straight-Forward Building

1. Perform building survey & diagnostics
2. Design VMS
3. Install VMS (prior DNR approval not required)
4. Collect commissioning round #1 (pressure field extension (PFE) & indoor air)
5. Collect commissioning round #2 (PFE & indoor air)
6. Collect commissioning round #3 (PFE & indoor air)
7. Submit Construction & Commissioning Documentation Report with Operation, Monitoring & Maintenance (OM&M) Plan for DNR review and approval
8. Obtain DNR approval & assignment of continuing obligations
9. Transition to long-term stewardship

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Steps for Other Mitigation and/or at Existing Complex Building

1. Perform building survey & diagnostics
2. Design mitigation
3. Submit Mitigation Design Plan for DNR review and approval
4. Obtain DNR approval
5. Install mitigation
6. Collect commissioning round #1 (PFE & indoor air)
7. Collect commissioning round #2 (PFE & indoor air)
8. Collect commissioning round #3 (PFE & indoor air)
9. Submit Construction & Commissioning Documentation Report with OM&M Plan for DNR review and approval
10. Obtain DNR approval & assignment of continuing obligations
11. Transition to long-term stewardship

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Mitigation at New Buildings

Assumption: Post-construction vapor investigation identified mitigation is necessary

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Steps for Traditional Active VMS at New Straight-Forward Building

1. *Recommended:* Select & design VMS during construction plan development
2. *Recommended:* Install VMS infrastructure during construction with environmental consultant oversight, including sub-slab vapor ports
3. *Optional:* Collect initial sub-slab vapor sample when building enclosed
4. Perform sub-slab vapor investigation following construction with occupied building conditions replicated (i.e., HVAC operational, kitchen/bath exhaust fans, windows closed, etc.)
5. Install VMS (prior DNR approval not required)
6. Collect commissioning round #1 with occupied building conditions replicated (PFE & indoor air)
7. Collect commissioning round #2 with occupied building conditions replicated (PFE & indoor air)
8. Collect commissioning round #3 with occupied building conditions replicated (PFE & indoor air)
9. Submit Construction & Commissioning Documentation Report with OM&M Plan
10. Obtain DNR approval & assignment of continuing obligations
11. Transition to long-term stewardship

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Steps for Other Mitigation and/or at New Complex Building

1. *Recommended:* Select & design mitigation during construction plan development
2. *Recommended:* Submit Mitigation Design Plan for DNR review and approval
3. *Recommended:* Install mitigation infrastructure during construction with environmental consultant oversight, including sub-slab vapor ports
4. *Optional:* Collect initial sub-slab vapor sample when building enclosed
5. Perform sub-slab vapor investigation following construction with occupied building conditions replicated (i.e., HVAC operational, kitchen/bath exhaust fans, windows closed, etc.)
6. Submit Mitigation Design Plan for DNR review and approval (if not already done)
7. Obtain DNR approval

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Steps for Other Mitigation and/or at New Complex Building Continued

8. Install mitigation
9. Collect commissioning round #1 with occupied building conditions replicated (PFE & indoor air)
10. Collect commissioning round #2 with occupied building conditions replicated (PFE & indoor air)
11. Collect commissioning round #3 with occupied building conditions replicated (PFE & indoor air)
12. Submit Construction & Commissioning Documentation Report with OM&M Plan
13. Obtain DNR approval & assignment of continuing obligations
14. Transition to long-term stewardship

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Mitigation Timeline Fact Sheet Next Steps

- Take EAG VI Subgroup comments back to DNR
- Incorporate information from vapor intrusion communications mapping effort with city of Milwaukee
- Develop draft fact sheet

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RR-800 Roll Out Process Input

- Review of upcoming guidance revisions
- Request for input on roll out to document users

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Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin, RR-800

Wisconsin DNR – Vapor Intrusion

Remediation and Redevelopment Program January 2018

Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin
Wis. Stat. ch. 292; Wis. Admin. Code ch. NR 700

Purpose
The purpose of this guidance is to provide approaches for complying with the requirements in Wis. Stat. ch. 292 and Wis. Admin. Code ch. NR 700 that relate to vapor intrusion. This guidance identifies the conditions where assessment of the vapor intrusion pathway is necessary at contaminated sites; sets out the criteria for evaluating health risk, identifies appropriate responses, explains long-term stewardship, and clarifies when sites with a complete or potential vapor migration pathway may achieve closure.

This guidance is applicable to contaminated sites where volatilization of subsurface contaminants has migrated or has the potential to migrate to current or future occupied buildings. Unless otherwise noted, all provisions in this guidance apply to the responsible party (RP) and/or property owner of a contaminated site.

Related DNR Guidance

- RR-452, DNR Case Cluster: Contaminant Obligations: Vapor Intrusion
- RR-386, Sub-346, Vapor Sampling Procedures

Related DNR Factsheets

- RR-487, Vapor Intrusion Investigation – Information Sheet for Neighbors
- RR-492, What is Vapor Intrusion?
- RR-493, Why Test for Vapor Intrusion?
- RR-514, What to Expect During Vapor Intrusion Sampling
- RR-577, Understanding Chemical Vapor Intrusion From Roadways
- RR-514, Who Should I Contact About Vapor Intrusion Investigations?
- RR-572, Environmental Contamination & Your Real Estate

Overview of Vapor Intrusion

Vapor intrusion generally refers to subsurface contamination that can volatilize and the vapors enter the breathing space of buildings. Vapor intrusion can also occur when contaminated groundwater infiltrates buildings and contaminants directly volatilize into the indoor air. Vapors can migrate through air space in permeable soils, fractures in bedrock or clay fills, utilities, sumps, or cracks in the building foundation.

How vapor intrusion happens: a complex path

Publication: RR-800 dnr.wi.gov Search: vapor intrusion

- December 2010 - Investigation
- January 2018 – Investigation (expanded) and Mitigation (added)
- Version 3 – coming soon!

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Brief Overview of Guidance Revisions

| Topic | RR-800 v. Jan 2018 | RR-800 Revised |
|--|--|---|
| Vapor intrusion conceptual site model | Not included | Included |
| Passive samplers | Briefly mentioned | Detailed guidance included |
| Chlorinated volatile organic compounds (CVOCs) screening criteria for soil | CVOCs in soil \leq 100 ft from building foundation | CVOCs in soil \leq 100 ft (open ground) CVOCs in soil \leq 150 ft (primarily impermeable) |
| Chlorinated screening criteria for groundwater | Wis. Admin. Code ch. NR 140 Standards or 0.001/0.0001 attenuation factor | Specific values for Tetrachloroethene (PCE), Trichloroethene (TCE), attenuation factors based on depth to groundwater |
| Active notifications and telemetry | Not included | Included |

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Brief Overview of Guidance Revisions

| Topic | RR-800 v. Jan 2018 | RR-800 Revised |
|--|-----------------------|----------------|
| Building Decision Matrix (based on indoor air and sub-slab vapor data) | Not included | Included |
| State of the Science | Included | Updated |
| History of dry cleaners & other sources | Not included | Included |
| Evacuated canister sub-slab sampling | Not included (RR-986) | Included |
| Recommended vapor investigation status map | Not included | Included |

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When to Apply Large Commercial / Industrial Attenuation Factors

- Thicker, competent slab ≥ 6 inches
- High ceilings ≥ 10 feet
- Large rooms typically $\geq 25,000$ sq. ft.
- Well managed heating, ventilating & air conditioning (HVAC), typically ≥ 4 air exchanges per hour
- Overhead doors frequently utilized
- No interior spaces with small meeting rooms or bathrooms with active vents where vapors could accumulate

Details included in revised RR-800

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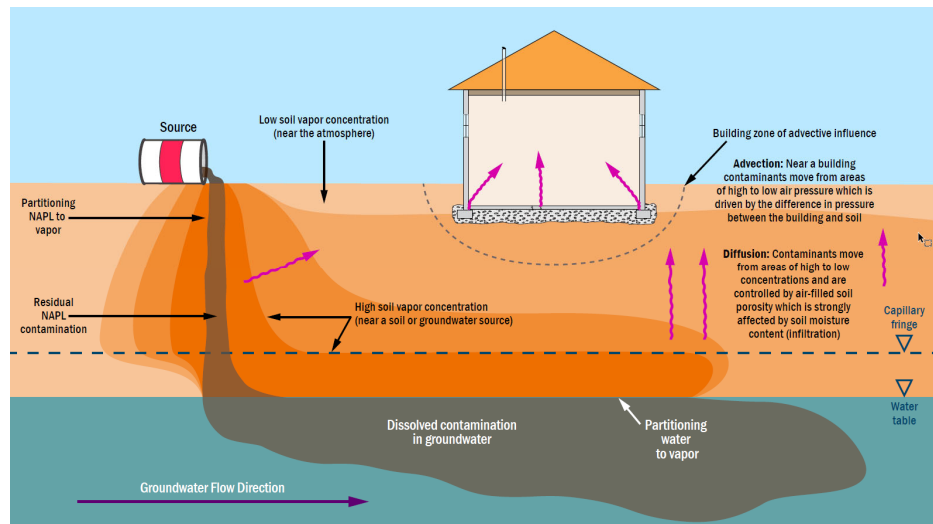
Other Guidance Revisions

- Chlorinated solvent mitigation expectations:
 - **Active** mitigation
 - Annual inspection by Sept. 30
 - Submittal of annual inspection log by Oct. 15
- Assignment of vapor continuing obligations at interim action (Wis. Stat. § 292.12(2))
- Other long-term stewardship recommendations

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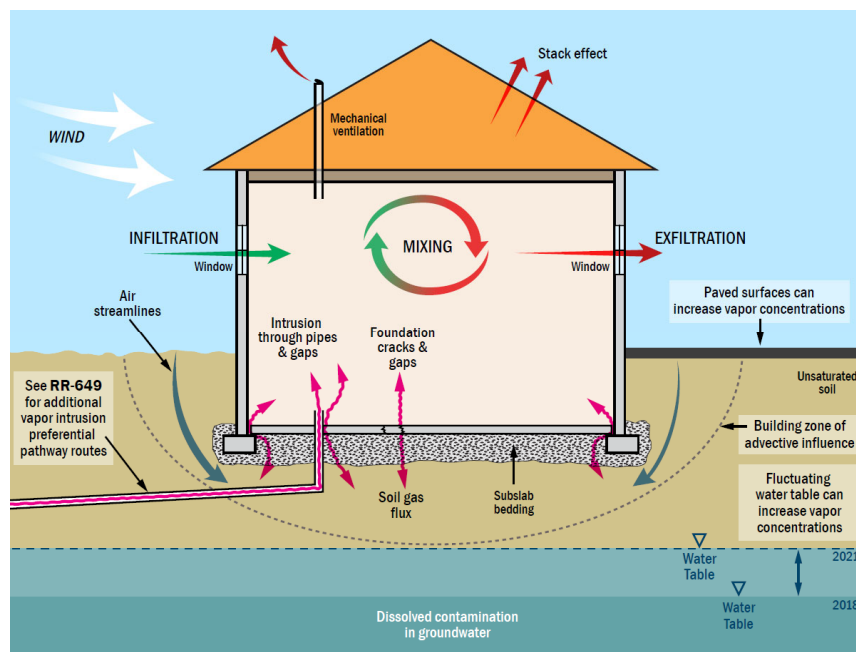
Figures for Revised RR-800



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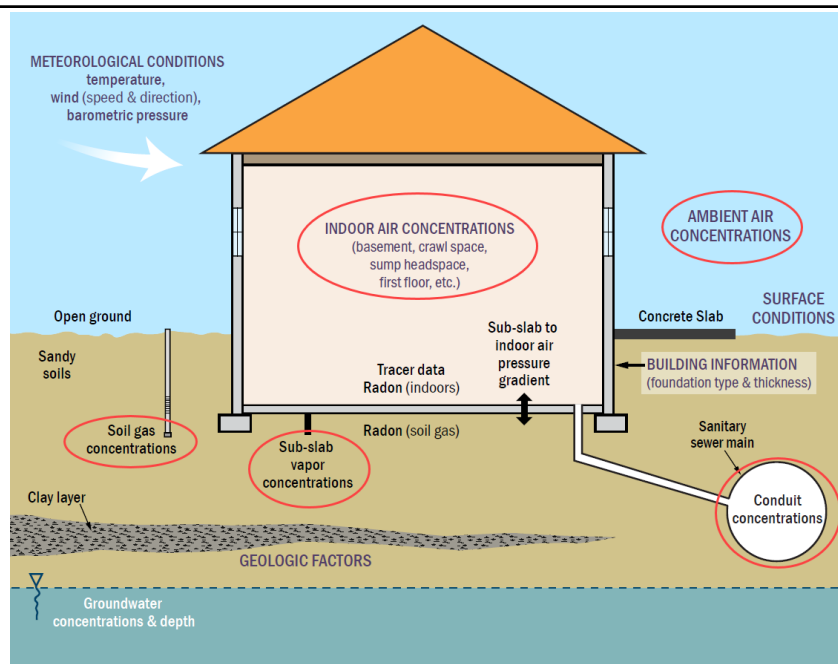
Figures for Revised RR-800



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Figures for Revised RR-800



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Next Steps

1. Complete internal editing, formatting and routing process
2. Public review and comment for a minimum 30 days
3. Edits based on public comment; draft removed from web
4. Final publication
5. What version to use during education period:
 - Sites submitted for closure prior to final publication – Jan 2018 version
 - Sites performing remedy – site-specific decision by DNR
 - Sites in investigation phase or planning remedy – updated version
 - New sites created after final publication – updated version

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Input on Roll Out Process

Current Communication Platforms:

- RR Report Announcement
- Issues & Trends Series (typically 1 hr)
- Consultants' Day

Discussion

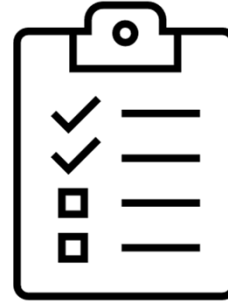


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Next Steps and Assignments

- Next steps
- Assignments



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Future Meeting Dates

Sign up
to receive notifications for RR EAG
and subgroups
dnr.wi.gov/topic/brownfields/rreag

RR EAG – July 25, 2024

- 9 a.m. – noon
- Milwaukee DNR Service Center

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CONNECT WITH US

Thank you!
DNR RR Program Contacts:
dnr.wi.gov/topic/Brownfields/Contact.html



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OFF THE RECORD"