

Remediation and Redevelopment Program

Issues & Trends 2017

August 9, 2017

12:00 p.m.

Dial: 1-855-947-8255

Passcode: 6612 745#





Preview and Discussion on Revisions to DNR's Vapor Intrusion Guidance: RR-800

Alyssa Sellwood

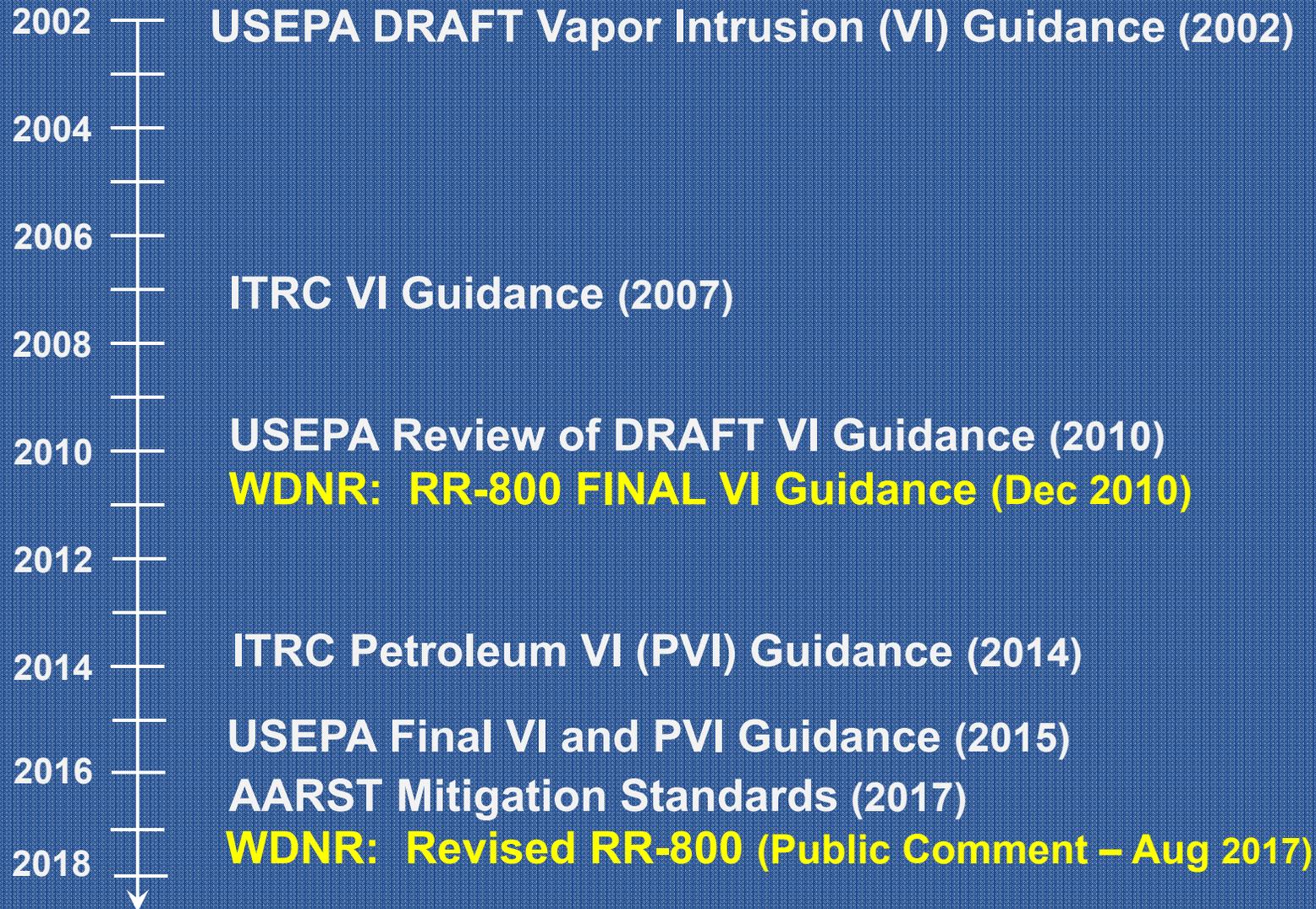
Alyssa.Sellwood@wisconsin.gov

Questions will be taken during the presentation . You may also submit questions to DNRRRComments@wisconsin.gov





VI GUIDANCE TIMELINE





OVERVIEW

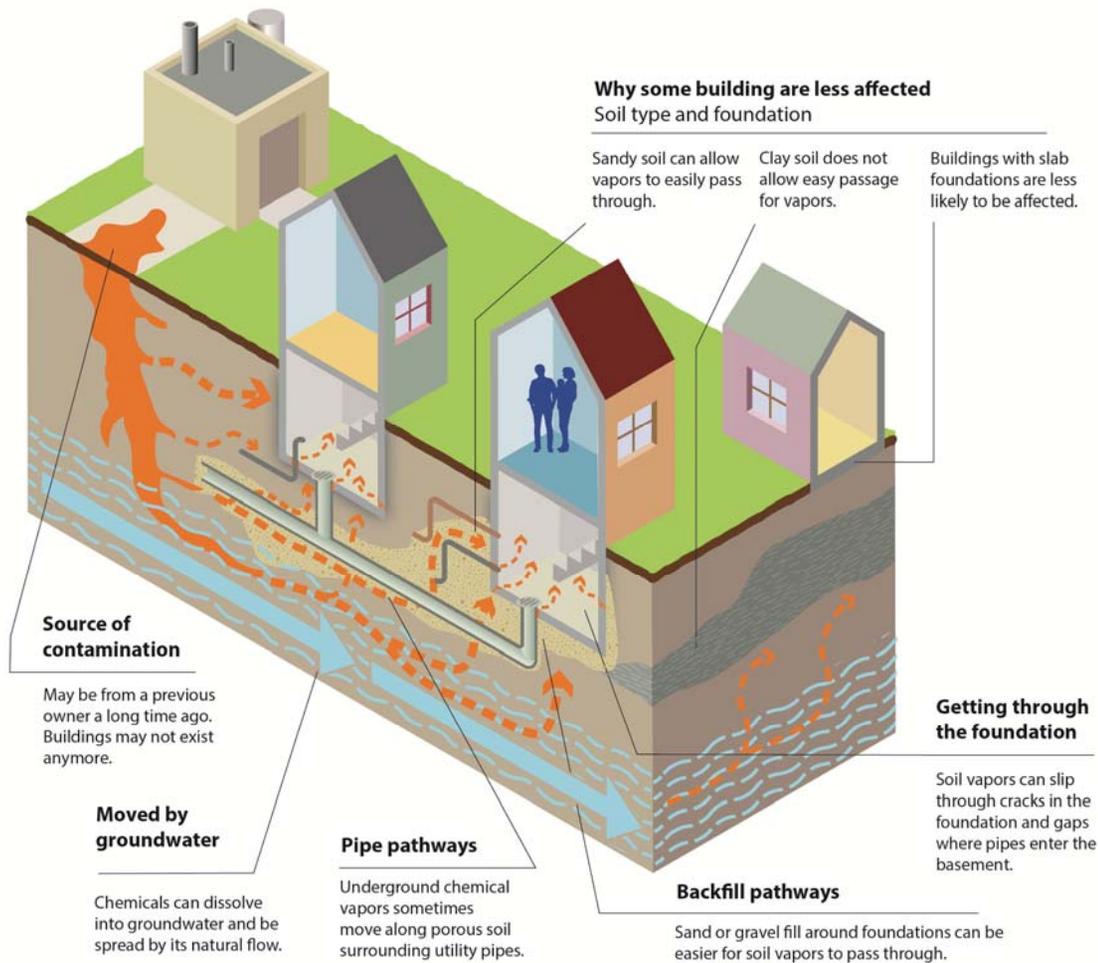
✓ Updates

- New *guidance* from EPA, ITRC, and AARST
- *Requirements* in NR 700
 - Public notification
 - NR 724: Mitigation design, performance, and O&M

✓ Format: Can't you make it shorter?

- Meets request to put info in one place
 - Table of contents: Directs you to what you need
 - Appendices with details
- Supplemental VI guidance still available

1. INTRODUCTION



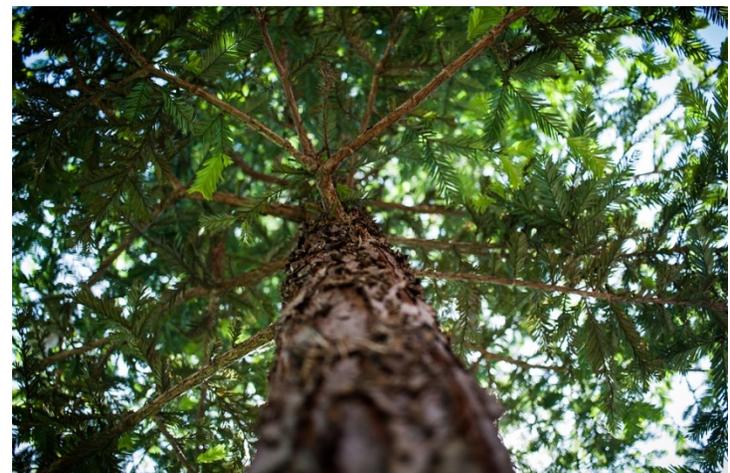
- ✓ New references
 - EPA Guidance
 - ITRC Guidance
 - Reference Section
- ✓ DNR publications
 - Factsheets
 - Templates
 - Videos

Source: Minnesota Pollution Control Agency



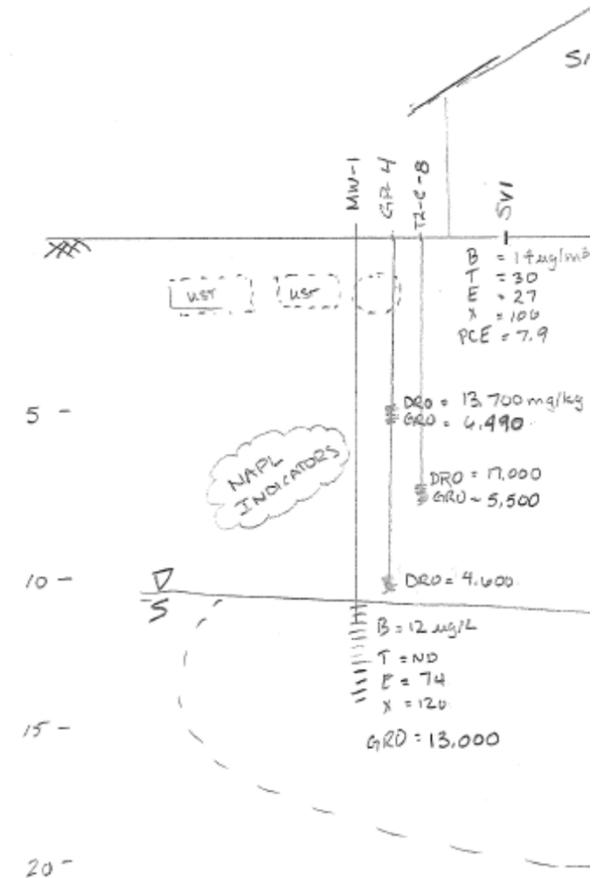
2. FRAMEWORK & DELIVERABLES

- ✓ The Big Picture
- ✓ Easy Reference to Code Requirements
 - Public notifications
 - Work plans
 - SI reports
 - Documentation reports
 - Maintenance plans



3. VAPOR SCREENING

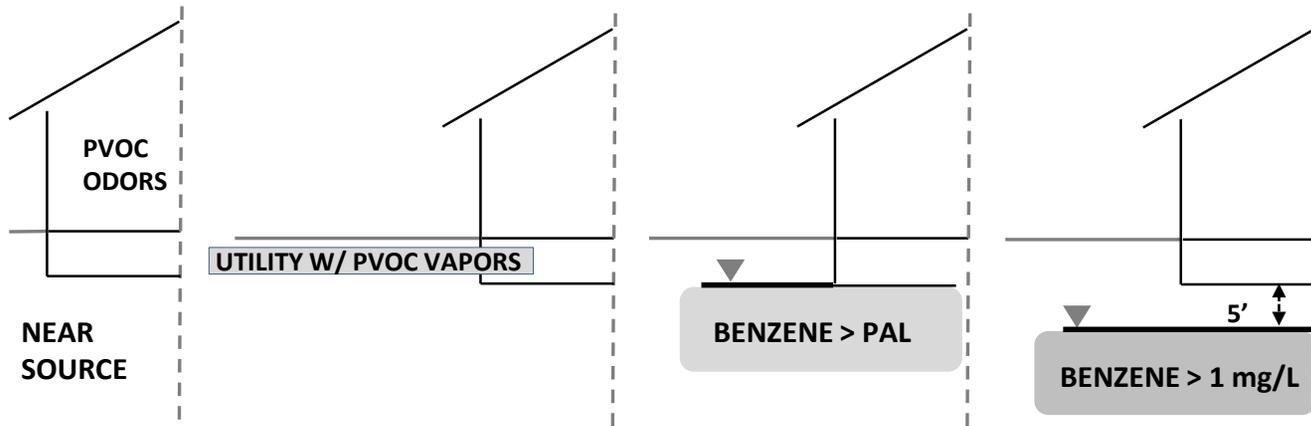
- ✓ PVOC
 - ITRC screening criteria
 - Able to screen out more sites
- ✓ TCE acute risk
- ✓ Provide us your evaluation
 - Drawing/sketch may help
 - Justification to rule out VI, or
 - Scope of VI investigation



3. SCREENING CRITERIA FIGURES

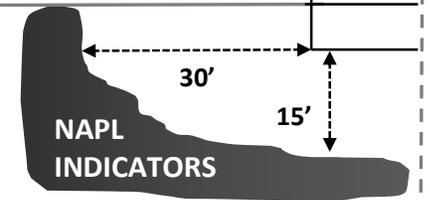
SITUATIONS WHERE A VAPOR INVESTIGATION IS NEEDED

P
V
O
C
S



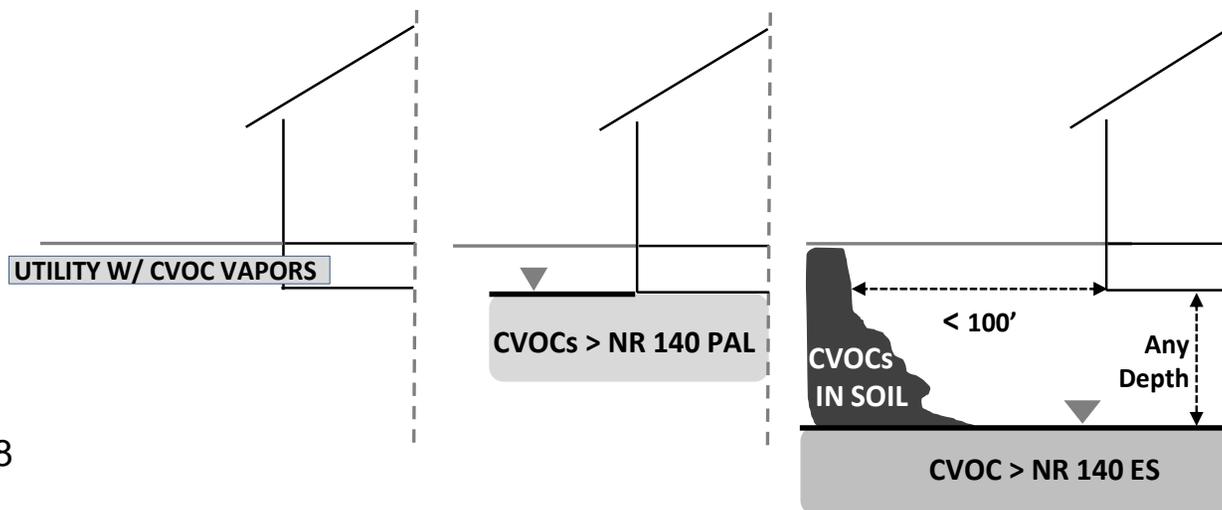
NAPL INDICATORS

Free or residual phase NAPL
 LIF response in LNAPL range
 Benzene > 5 mg/L or 10 mg/kg
 Naphthalene > 5 mg/kg
 BTEX > 20 mg/L or 10 mg/kg
 TPH > 30 mg/L or 250 mg/kg
 PID > 500 ppm

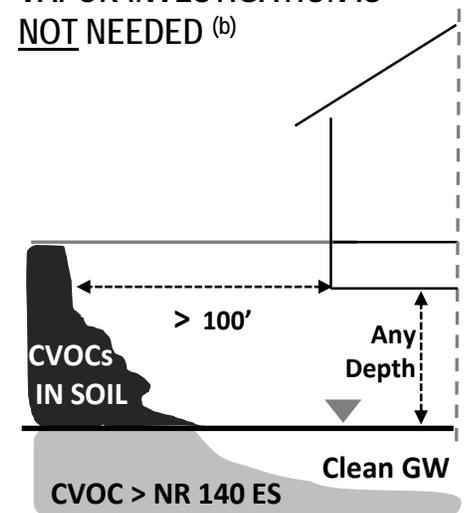


SITUATIONS WHERE A VAPOR INVESTIGATION IS NEEDED

C
V
O
C
S



* SITUATION WHERE VAPOR INVESTIGATION IS NOT NEEDED (b)



4. OUTREACH

- ✓ Outreach tools
 - ✓ Template & factsheets
 - ✓ Videos
- ✓ Best faith effort
 - At least 2 attempts
 - Personal approach
 - Document efforts
- ✓ What to do if access is denied
 - 3rd try by DNR
 - Note to file
 - Evaluate time b/w note and closure?



5. VAPOR INVESTIGATION



- ✓ Methods
 - High Purge Volume
 - Passive Sampling
 - TO-17
- ✓ Scoping
 - Tables 5a, 5b, 5c
 - Indoor air, when?
 - Criteria based on land use

6. VAPOR DATA EVALUATION

- ✓ Link to Quick Look-up Table
- ✓ Option for site-specific attenuation factor
- ✓ Details on tracer tests (App. B)
- ✓ General characteristics for large commercial



Site Specific Attenuation Factor =

$$\frac{\text{Concentration}_{\text{radon - indoor air}}}{\text{Concentration}_{\text{radon - subslab}}}$$



7. RESPONSE ACTIONS

- ✓ No preemptive mitigation
- ✓ Criteria defined for
 - Immediate Action
 - Mitigation
 - Remediation
i.e. source control
- ✓ New Construction

**Preemptive Mitigation =
Incomplete SI**



Mitigation ≠ Remediation



**Closure Requires
Completed SI
and
Mitigation + Remediation
(if needed)**

8. MITIGATION DESIGN

- ✓ How soil gas moves indoors
- ✓ Options for mitigation

SETTING	MITIGATION CATEGORY			EFFECTIVENESS LIKELIHOOD
	ACTIVE DEPRESSURIZATION	ACTIVE INDOOR AIR CONTROLS	PASSIVE CONTROLS	
EXISTING BUILDING				
Residential	Yes	No	No	
Lg /Mixed Use	Yes	Depends	No to Depends	
Non-Residential	Yes	Depends	No to Depends	
NEW CONSTRUCTION				
Residential	Yes	Depends	Depends	
Lg /Mixed Use	Yes	Depends to Yes	Depends	
Non-Residential	Yes	Yes	Depends to Yes	



8. MITIGATION DESIGN

Active Depressurization

Preferred for residential

- Sub-slab
- Sub-membrane
- AARST Standard

Active Indoor Controls

Usually non-residential

- Building Pressurization
- HVAC optimization
- Parking Garage
- Indoor air treatment

Passive Controls

Possible in new construction

- Passive ventilation
- Vapor barrier
- Elevators



8. MITIGATION DESIGN



- ✓ How it works
- ✓ Qualified Professionals
- ✓ Performance Metrics
- ✓ Design Elements
- ✓ **Appendix C**
 - Design Guidelines
 - References

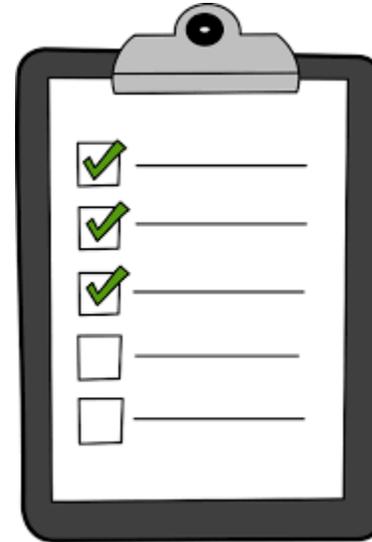
9. COMMISSIONING

- ✓ Performance Verification
 - Under normal HVAC
 - Multiple events
 - *Required* to show vapor pathway is interrupted
- ✓ Baseline conditions
- ✓ **Appendix D**
 - Verification guidelines
 - Contingency



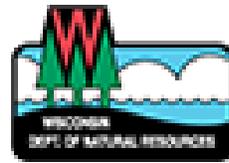
10. LONG-TERM OM&M

- ✓ Timeline
- ✓ Responsibility
 - Before closure = RP
 - After closure = Owner
 - Private agreement OK
Copy required at closure per 292.12
- ✓ Maintenance plans
 - Not an afterthought
 - User friendly
 - **Appendix E** (Guidelines)
 - **Appendix G** (Example)

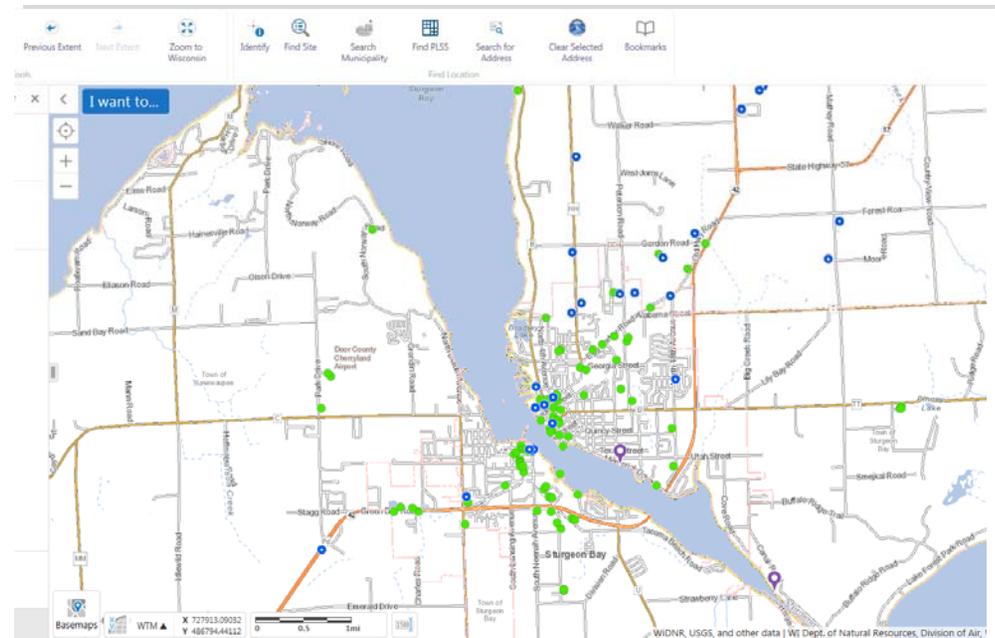


11. LONG-TERM STEWARDSHIP

- ✓ Continuing obligations
 - Five categories
 - At interim or remedial action approval
 - At closure
- ✓ Audits
- ✓ Decommissioning
 - **Appendix F**
 - May be desirable to keep mitigation



RR Sites Map





SUMMARY

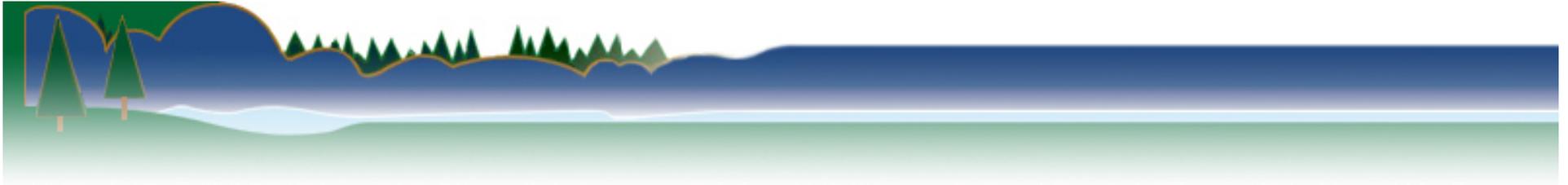
- ✓ Balance science, protection & reasonableness
- ✓ **Requirements** in Wis. Admin. Code NR 700
 - How to achieve closure
 - Expectations and required deliverables
- ✓ **Guidance** from national standards (e.g. EPA, ITRC, AARST)
 - Addresses common questions
 - Adds new information
 - Expands on mitigation options
 - Explains how to show mitigation is protective



PUBLIC COMMENT PERIOD

- ✓ We are interested in your feedback
- ✓ Open for comment for 30 days
- ✓ Feedback/Q&A meeting: ***Look for invite***
- ✓ Send written comments to Alyssa Sellwood
 - Response to comments will be published
 - Guidance then finalized



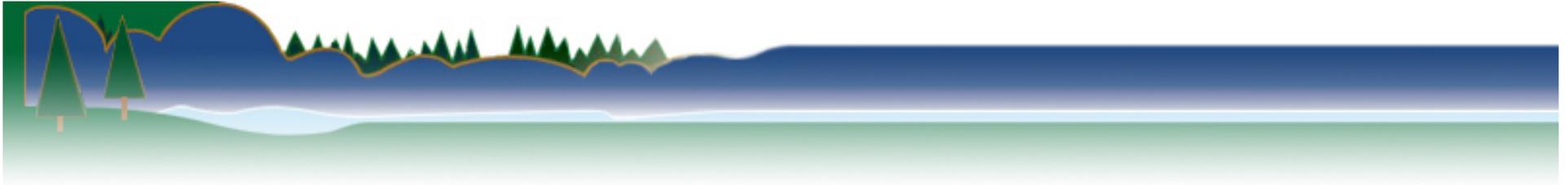


Contact Information

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Issues & Trends 2017

TBA

Audio and information from today's presentation and future *Issues & Trends Series* events can be found on the RR Program Training Webpage at:

[Http://dnr.wi.gov/topic/Brownfields/Training.html](http://dnr.wi.gov/topic/Brownfields/Training.html)

Questions/Comments/Suggestions regarding the
Issues & Trends Series can be submitted to:

DNRRCComments@wisconsin.gov

