

ISSUES & TRENDS



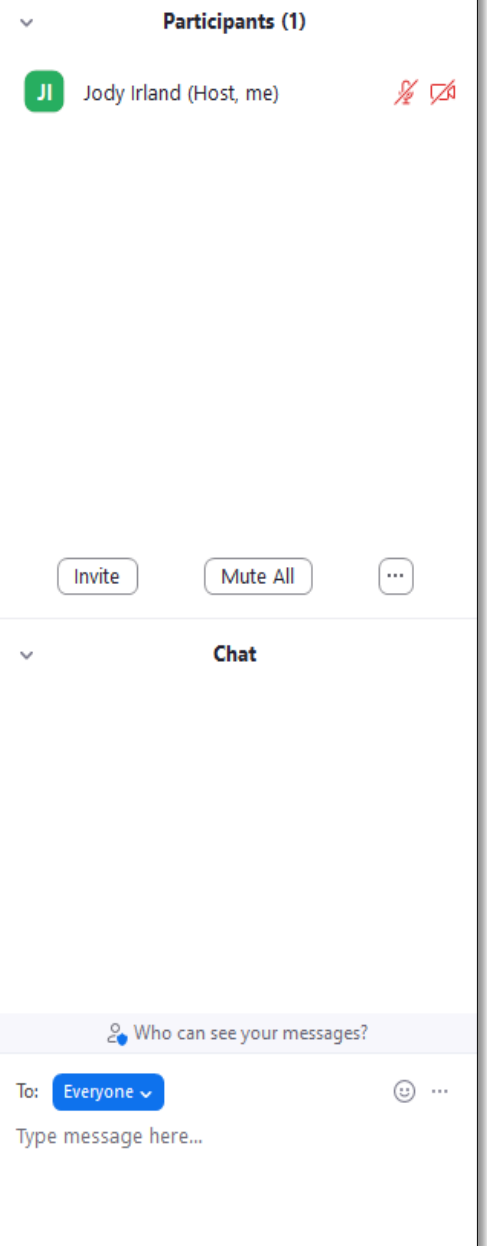
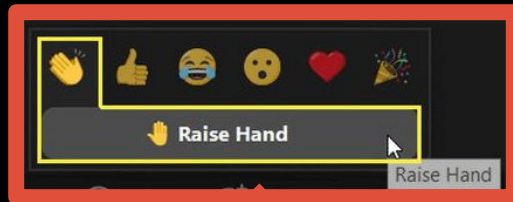
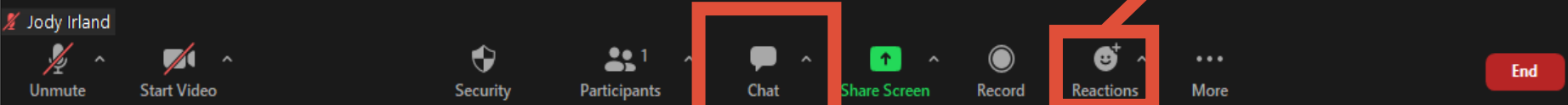
When Should a Site Investigation Enter Surface Water

Remediation & Redevelopment Program

Jan. 31, 2024

Zoom Logistics

- ❑ All attendees muted
- ❑ To comment or ask questions, use **chat** or **raise hand**
- ❑ Send questions to **Carrie Webb**
- ❑ Q&A session open at end of presentation



Program Announcements

Congrats, Roxanne Chronert!

Roxanne accepted a new position as the RR Policy and Program Operations Director, stationed in the Green Bay office.



Rulemaking



Molly Schmidt, DNR

- Rulemaking may begin - scope statements approved Jan. 24 NRB meeting
- RR-14-23: Definitions, notifications, fees, agreements, reports and procedures for interim action and remedial action **continuing obligations**; and
- RR-15-23: Definitions, land use classifications, procedures for identifying environmental **standards for soil and soil cleanup standards**.

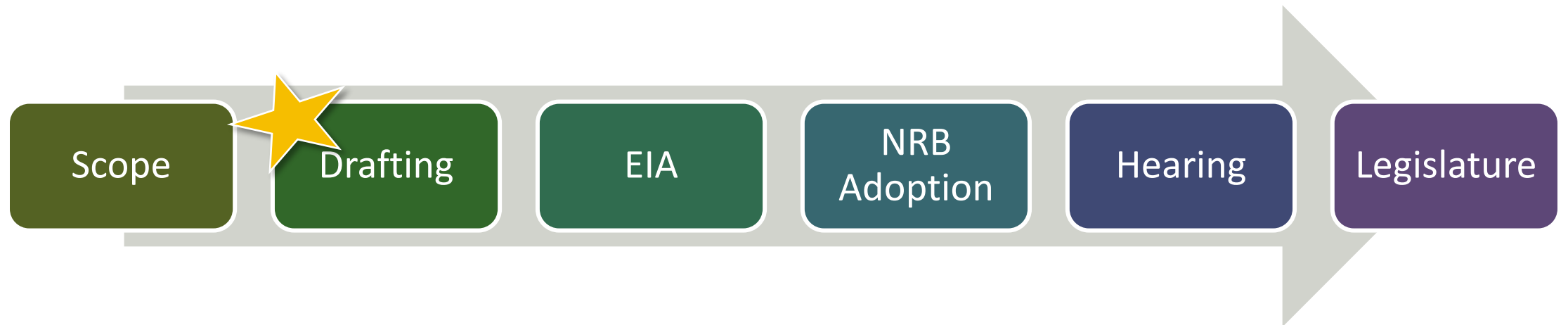
Subscribe for NR700 rulemaking notifications

dnr.wisconsin.gov/topic/Brownfields/RuleChanges.html

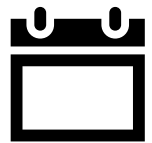
Rule Drafting

Rule drafting ~ 8 months

- Rule drafting starting Feb. 2024
- RR Program to be advised by Rule Advisory Committee (appointed by DNR Secretary)



Rule Advisory Committee



First meetings Feb. 23

- 9-11 a.m. Continuing Obligations (RR-14-23)
- Noon – 2 p.m. Soil Standards (RR-15-23)



Open to the public



In person (@GEF 2 in downtown Madison) or via zoom

RAC Meeting Information/Registration

dnr.wisconsin.gov/topic/Brownfields/RuleChanges.html

DNR Guidance

- Guidance: Tips and Reminders for a Complete Closure Submittal (RR-979)
- Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin (RR-800)
- Guidance: Mechanical and Chemical/Biological Spill Response Methods (RR-710)
- DNR Staff Provide Spill Response and Support (RR-559)
- Immediate Reporting Required for Hazardous Substance Spills (RR-560)
- Guidance on Soil Cleanup Standards (RR-0145)
- Soil RCL Determinations Using the U.S. EPA Regional Screening Level Web Calculator (RR-890)
- RCL Spreadsheet (RR-052h)

Wisconsin DNR – Vapor Intrusion and Dry Cleaners

Remediation and Redevelopment Program March 2023

Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin

Wis. Stat. ch. 292, Wis. Admin. Code chs. NR 700-799

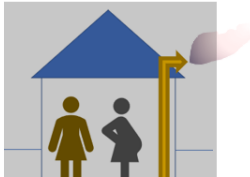
Purpose
This guidance is for persons who perform investigation and remediation of sites with environmental contamination under Wisconsin Administrative Code (Wis. Admin. Code) chs. NR 700-799 and Wisconsin Statute (Wis. Stat.) ch. 292. Specifically, this guidance is intended for responsible parties, property owners, environmental consultants, and attorneys who involved with the investigation, remediation, or mitigation of vapor contamination.

This guidance applies to sites with volatilized subsurface contaminants (i.e., vapors) that have migrated to or have the potential to migrate to occupied buildings or buildings may become occupied.

This guidance identifies conditions that indicate an assessment of the vapor intrusion pathway is necessary at contaminated sites. It recommends guidelines 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.

Related Guidance
Wisconsin Department of Natural Resources (DNR) publications and forms referenced in this document include a number beginning with "RR-" or "4400-". Locate these publications and forms by visiting dnr.wi.gov and search for the number.

Find additional DNR guidance on vapor intrusion by visiting dnr.wi.gov and searching "vapor."



Publication: RR-800
dnr.wi.gov

This document should be retained in any number of relevant files.

Wisconsin DNR – NR 700 Process

Remediation and Redevelopment May 2023

Guidance: Tips and reminders for a complete closure submittal

This document includes reminders and tips for a correct and complete closure submittal under Wisconsin Administrative (Wis. Admin.) Code ch. NR 726. This document is a supplement to Form 4400-202, *Case Closure*, and Wis. Admin. Code ch. NR 726, and in no way should be used independently for completing a case closure request. If you have questions on a specific case, please contact your assigned project manager.

This document is intended solely as guidance and does not contain any mandatory requirements except where requirements are found in statute or administrative code as referenced. Any regulatory decisions made by the DNR in any matter addressed by this guidance will be made by applying the governing statutes and administrative codes to the relevant facts.


DNR forms referenced in this document include a number beginning with "4400." To locate these forms, visit dnr.wi.gov and search for the form number. Visit the RR program [Publications and Forms](#) web page for instructions and helpful hints using DNR PDF fillable forms. This guidance document replaces previous DNR publications *Improve Your Closure Request: Maintenance Plans & Maps* (RR-983) and *DNR Frequently Asked Questions (FAQs): Administrative Completeness Review at Closure*, ch. NR 726 (RR-975).

General Information	
<input type="checkbox"/> Required	Form 4400-202, Case Closure Use of 4400-202 is required under Wis. Admin. Code § NR 726.09(1). If you have any questions on what is required for a certain section, contact your assigned DNR project manager. This form is subject to periodic updates; make sure you are using the most current version by searching "4400-202" on the DNR website. Do not use a version saved on your desktop.
<input type="checkbox"/> Encouraged	Document Submittal In 2020, DNR temporarily suspended the requirement to submit hard copies of case closure requests. Customers are strongly encouraged to submit a complete electronic closure request packet via the RR Submittal Portal (https://dnr.wi.gov/portal/RR/RR-Submittal.html). For additional submittal instructions, please review RR-690, Guidance for Electronic Submittal for the Remediation and Redevelopment Program . Visit dnr.wi.gov , search "RR-690."
<input type="checkbox"/> Required	Fees Appropriate fees under Wis. Admin. Code ch. NR 749 must be submitted with the case closure request per Wis. Admin. Code § NR 726.05(2). This includes both the review fee and applicable database fees. The DNR accepts checks and electronic payments for fees. More information on RR Program services and fees is available online RR Services and Fees website. Visit dnr.wi.gov , search "RR Fees." Additional instructions

Publication: RR-979
dnr.wi.gov Search: "closure submittal"

Public Input Opportunities

The screenshot shows the Wisconsin Department of Natural Resources website. At the top, there is a navigation bar with social media icons and a search icon. Below this is the department's logo and name, followed by a menu of topics: HUNTING, FISHING, PARKS, CLIMATE, ENVIRONMENT, FORESTRY, LICENSES, NEWS, ABOUT, and CONTACT. The main content area is titled "REMEDICATION & REDEVELOPMENT PROGRAM PUBLIC NOTICES". It includes a breadcrumb trail: Home » TOPIC » BROWNFIELDS: REDEVELOPMENT OPPORTUNITIES. The text states that Remediation & Redevelopment (RR) Program public notices and public comment opportunities are listed below. It provides links for "External advisory group" meeting information and "RR Program presentations & trainings". A sidebar on the right is titled "Brownfields: Redevelopment Opportunities" and lists: RR Report Newsfeed, Find Contaminated Land Activities, Request Green Team Assistance, and Submit Files Related to ch. NR. At the bottom of the main content area, there are two tabs: "Program Guidance" and "Public Notices". The "Public Notices" tab is active, showing a "PROGRAM GUIDANCE" section with text about public input and a table of guidance. Two yellow callout boxes are overlaid on the bottom right of the screenshot, providing links to subscribe to the RR Report and to find public notices.

Subscribe to RR Report 
dnr.wisconsin.gov/topic/Brownfields/News.html

Find Public Notices
dnr.wisconsin.gov/topic/brownfields/publicnotices.html

ISSUES & TRENDS



Today's recording will be available at dnr.wi.gov, search "**RR Training Library**"

Subscribe to **RR Report Newsfeed** for Email Notifications



dnr.wisconsin.gov/topic/Brownfields/News.html



Issues & Trends 2024

When Should a Site Investigation Enter Surface Water

Carrie Webb

Remediation & Redevelopment Program

Jan. 31, 2024



Site Investigation Scoping

Wisconsin Administrative Code § NR 716.07

- History of the site or facility & previous discharges
- Type and amount of contamination
- Environmental media affected



Site Investigation Scoping (cont'd)

- Potential or known impacts to receptors
 - Species, habitat, or ecosystems
 - Wetlands
 - Historical & archaeological sites
- OHWM if necessary

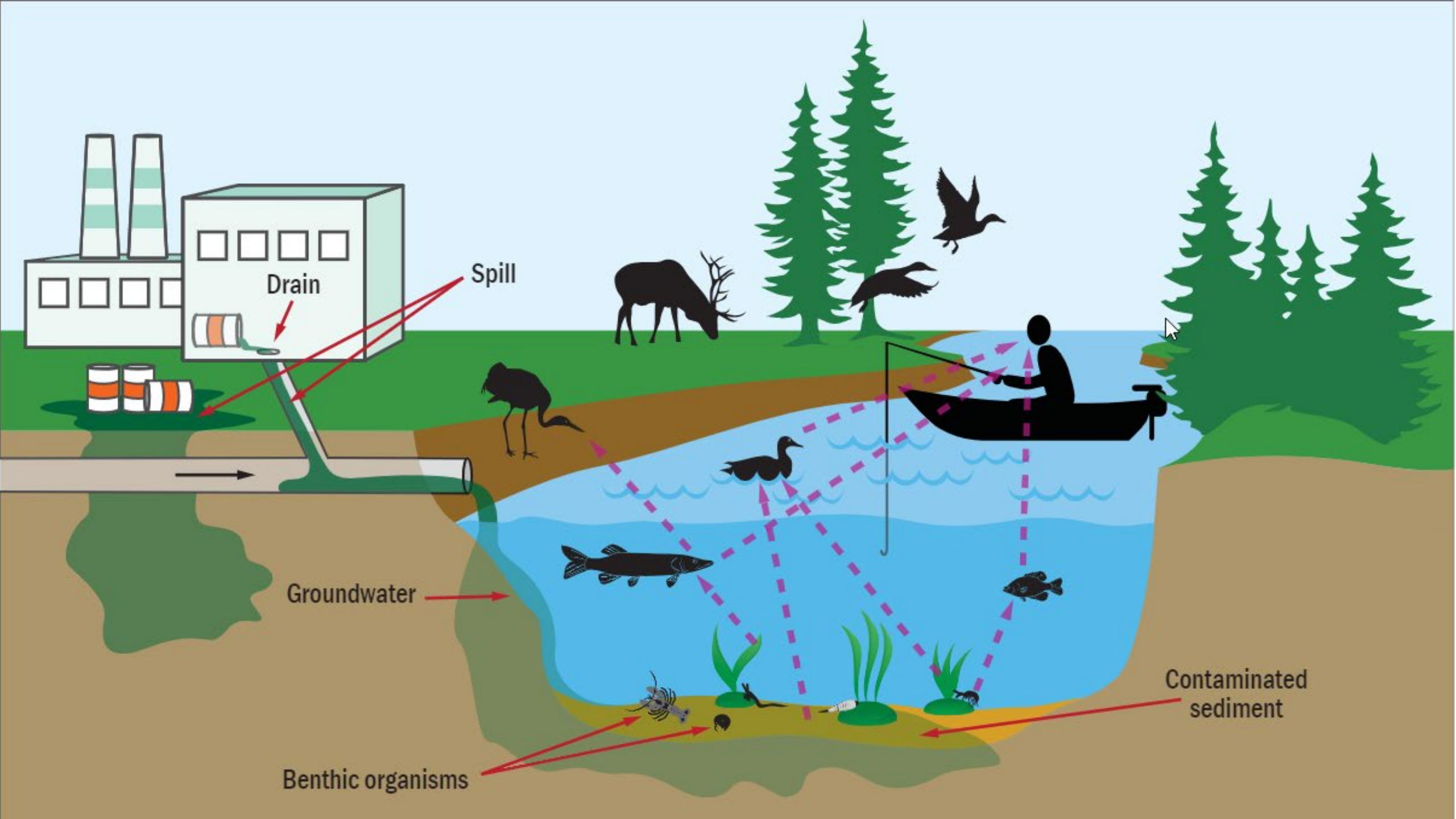




Site Investigation Scoping (cont'd)

- Background water quality information
- Bathymetry & topography
- Location of past or present flood drains, outfalls, utilities, ponds





Considerations

- Define vertical and horizontal extent
- Evaluate multiple lines of evidence
- Determine appropriate screening levels and/or remedial action levels



Tools to Improve SI Completeness

Checklists
4400-316
&
4400-317

<i>The following content is applicable to sediment sites and should be included:</i>	
<input type="checkbox"/> 716.07(8)(a)	Potential or known impacts to the food chain from persistent, bioaccumulate or toxic substances including: <ul style="list-style-type: none"> • Fish consumption advisories • Waterfowl consumption advisories • Piscivores • Insectivores • Any other organism in the air, land or waters of the state
<input type="checkbox"/> 716.09(2)(e)	A map of site features including: <ul style="list-style-type: none"> • Bathymetry • Potential or known structural impediments • Identification of free product • Areas of sediment deposits • Texture and classification of sediment • Publicly available information on water levels, floodplains, wave heights, water temperature, water quality and wind • Geomorphological processes
<input type="checkbox"/> NR 716.09(2)(e)	Physiographical and geological setting of the site necessary to choose sampling methods and locations, including:
<input type="checkbox"/> NR 716.09(2)(e)1.	Existing topography including prominent topographic features
<input type="checkbox"/> NR 716.09(2)(e)2.	Surface water drainage patterns and significant hydrologic features, such as surface waters, springs, drainage basins, divides, wetlands, floodplain or floodway

Tools to Improve SI Completeness

- Recommend submitting SI WP/SI with fee: incomplete SI is the primary reason for closure denial
- RR-101 – *Identifying Contaminants of Concern*
- RR-0124 – *Contaminated Sediment Guidance*

Site Investigation Toolkit

dnr.wisconsin.gov/topic/Brownfields/SIToolkit.html





When should a site investigation enter surface water

- Overland flow
- Waste material





When should a site investigation enter surface water

- Flooding



When should a site investigation enter surface water

- Conduits such as pipes, sewer lines, outfalls, ditches
- Groundwater migration to surface water
- Industry that directly discharged to waterway
- Permitted discharges

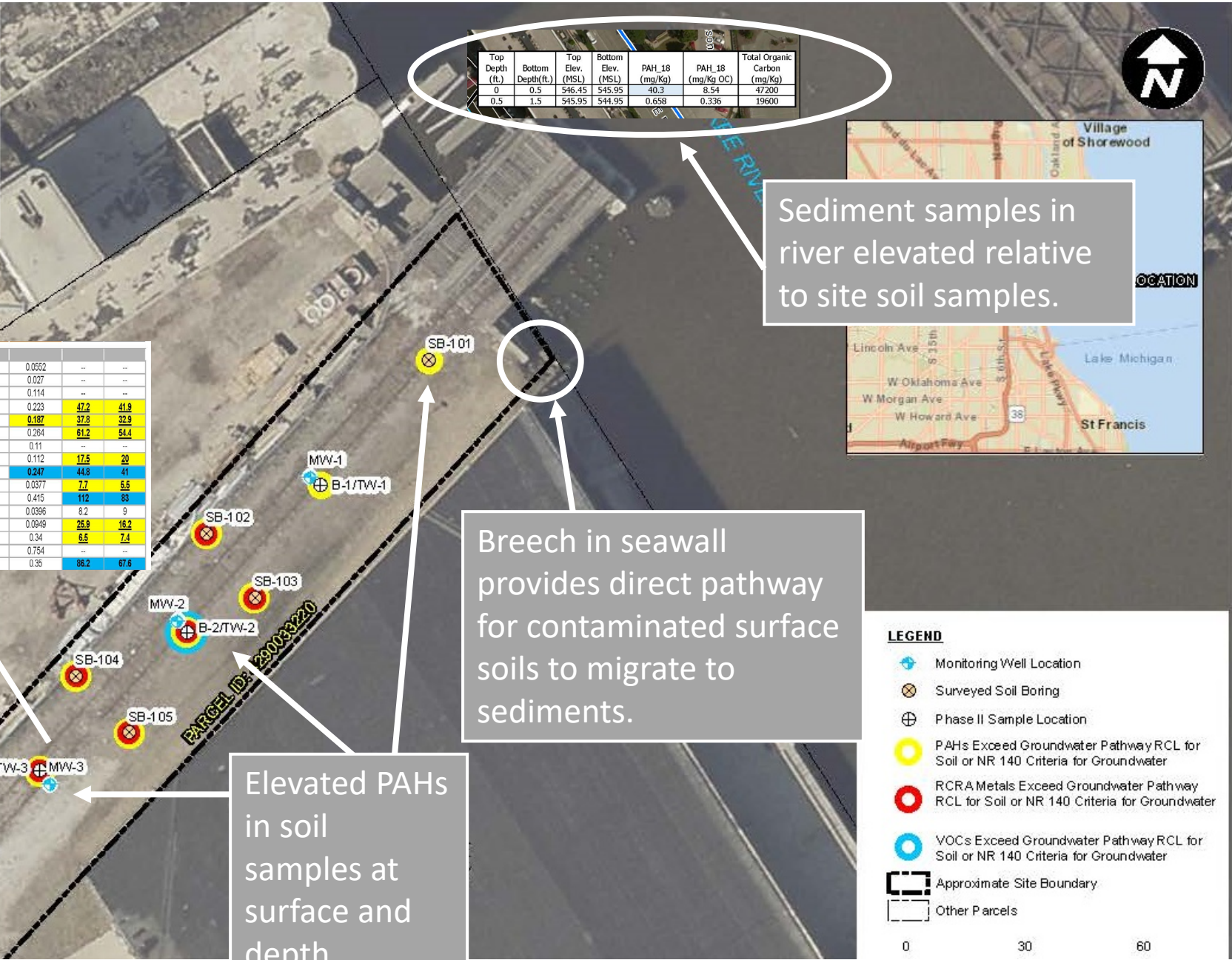


When should a site investigation enter surface water

- Degree and extent of soil and groundwater contamination
- Geology, topography, drainage patterns, groundwater flow patterns
- Characteristics of the groundwater plume
- Hydrology and hydraulics



Example site where peer review determined that investigation should extend into sediments.



Top Depth (ft.)	Bottom Depth (ft.)	Top Elev. (MSL)	Bottom Elev. (MSL)	PAH_18 (mg/Kg)	PAH_18 (mg/Kg OC)	Total Organic Carbon (mg/Kg)
0	0.5	546.45	545.95	40.3	8.54	47200
0.5	1.5	545.95	544.95	0.658	0.336	19600

Sediment samples in river elevated relative to site soil samples.

Polycyclic Aromatic Hydrocarbons (PAHs)	3,590	45,200	--	0.241 J	0.0036 J	2.19	21.4	<0.0026	0.0552	--	--
Acenaphthylene	--	--	--	0.0720 J	<0.0025	0.625 J	6.77	<0.0026	0.027	--	--
Anthracene	17,900	100,000	196,9492	0.654	0.0091 J	5.76	40.1	<0.0025	0.114	--	--
Benzo(a)anthracene	1.14	20.8	--	1.0	0.0146 J	7.37	48.4	0.0226	0.233	47.2	41.9
Benzo(a)pyrene	0.115	2.11	0.47	0.804 J	0.0121 J	5.96	38.9	0.0065 J	0.187	37.8	32.9
Benzo(b)fluoranthene	1.15	21.1	0.4781	1.06	0.0146 J	7.07	46.9	0.0070 J	0.264	61.2	54.4
Benzo(g)hperylene	--	--	--	0.42	0.0071 J	2.91	18.5	<0.0036	0.11	--	--
Benzo(k)fluoranthene	11.5	211	--	0.428	0.0077 J	3.81	21.3	0.0033 J	0.112	17.5	20
Chrysene	115	2,110	0.1442	1.01	0.0160 J	7.81	47.2	0.0221	0.247	44.8	41
Dibenz(a,h)anthracene	0.115	2.11	--	0.141 J	<0.0028	1.01 J	6.47	<0.0028	0.0377	7.7	5.8
Fluoranthene	2,390	30,100	88,8778	2.44	0.0324	18.2	108	0.0203	0.415	112	83
Fluorene	2,390	30,100	14,8299	0.211 J	0.0029 J	2.06	28.1	<0.0024	0.0396	8.2	9
Indeno(1,2,3-cd)pyrene	1.15	21.1	--	0.39	0.0063 J	2.71	17.5	<0.0042	0.0949	25.9	16.2
Naphthalene	5.52	24.1	0.6582	0.207 J	0.0063 J	2.78	31.8	0.0144 J	0.34	6.5	7.4
Phenanthrene	--	--	--	2.5	0.0322	19.8	160	<0.0023	0.754	--	--
Pyrene	1,790	22,800	54,5456	1.82	0.024	13.7	86.4	0.0309	0.35	86.2	67.6

Breach in seawall provides direct pathway for contaminated surface soils to migrate to sediments.

Elevated PAHs in soil samples at surface and depth.

LEGEND

- Monitoring Well Location
- Surveyed Soil Boring
- Phase II Sample Location
- PAHs Exceed Groundwater Pathway RCL for Soil or NR 140 Criteria for Groundwater
- RCRA Metals Exceed Groundwater Pathway RCL for Soil or NR 140 Criteria for Groundwater
- VOCs Exceed Groundwater Pathway RCL for Soil or NR 140 Criteria for Groundwater
- Approximate Site Boundary
- Other Parcels

0 30 60

Example site where peer review determined that investigation does not need to extend into sediments.

TEST PITS
10/04/2023

Competent seawall with no direct pathway for contaminated surface soils to migrate to sediments.

Interval (ft bss)	tPCB	tPAH-17	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
0.0 - 0.5	2.14	1.95	5.7 J	1.7	44.4	44.3	111	0.11 J+	17.5	183 J
0.5 - 1.5	2.71	8.44	7.2 J	3.3	78.4	87.8	261	0.35 J+	28.2	364 J
1.5 - 2.5	6.75	23.81	9.2	6.1	147	96.7	521	0.78 J+	32.6	413
2.5 - 3.5	46.5	16.78	10.5	6.5	237	127	385	0.94 J+	49.8	544
3.5 - 4.5	95.9	12.9	15.9	6	169	119	424	1.6 J+	38.8	565
4.5 - 6.5	1.05	10.59	10.4	4.8	104	75.6	256	1.2 J+	30.8	319
6.5 - 8.5	0.43	13.48	19	4.6	207	76.3	294	0.69 J+	29.9	380
8.1 - 9.1	0.09	--	20.8	1.39	351	174	476	31.1	11.5 J	475
8.5 - 9.5	0.05	19.24	76	4.8	1800	103	421	0.91 J+	23.2	431
9.1 - 10.1	1.3	--	37.4	2.46	712	67.3	438	1.31	12.4 J	391

Surface EL = 571.2

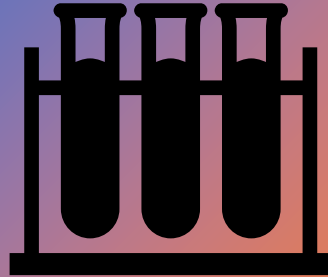
Sediment samples in river have different contaminant profile than upland site.

Test pit soil data has elevated PAHs but lower levels of metals and PCBs.

Acenaphthene	<67.0	ug/kg	189	67.0	1	10/06/23 11:53	10/09/23 20:19	83-32-9
Acenaphthylene	<67.4	ug/kg	189	67.4	1	10/06/23 11:53	10/09/23 20:19	208-96-8
Anthracene	83.1J	ug/kg	189	30.2	1	10/06/23 11:53	10/09/23 20:19	120-12-7
Benzo(a)anthracene	198	ug/kg	189	29.3	1	10/06/23 11:53	10/09/23 20:19	56-55-3
Benzo(a)pyrene	194	ug/kg	189	69.2	1	10/06/23 11:53	10/09/23 20:19	50-32-8
Benzo(b)fluoranthene	221	ug/kg	189	32.5	1	10/06/23 11:53	10/09/23 20:19	205-99-2
Benzo(g,h,i)perylene	112J	ug/kg	189	65.0	1	10/06/23 11:53	10/09/23 20:19	191-24-2
Benzo(k)fluoranthene	91.6J	ug/kg	189	45.2	1	10/06/23 11:53	10/09/23 20:19	207-08-9
Benzyl alcohol	<70.1	ug/kg	189	70.1	1	10/06/23 11:53	10/09/23 20:19	100-51-6
4-Bromophenylphenyl ether	<39.6	ug/kg	189	39.6	1	10/06/23 11:53	10/09/23 20:19	101-55-3
Butylbenzylphthalate	<78.6	ug/kg	189	78.6	1	10/06/23 11:53	10/09/23 20:19	85-68-7
4-Chloro-3-methylphenol	<58.8	ug/kg	189	58.8	1	10/06/23 11:53	10/09/23 20:19	59-50-7
4-Chloroaniline	<31.1	ug/kg	189	31.1	1	10/06/23 11:53	10/09/23 20:19	106-47-8
bis(2-Chloroethoxy)methane	<50.9	ug/kg	189	50.9	1	10/06/23 11:53	10/09/23 20:19	111-91-1
bis(2-Chloroethyl) ether	<59.0	ug/kg	189	59.0	1	10/06/23 11:53	10/09/23 20:19	111-44-4
bis(2-Chloroisopropyl) ether	<48.7	ug/kg	189	48.7	1	10/06/23 11:53	10/09/23 20:19	108-60-1
2-Chloronaphthalene	<24.3	ug/kg	189	24.3	1	10/06/23 11:53	10/09/23 20:19	91-58-7



+



Total Organic Carbon normalization

Analysis results for contaminant concentrations in sediment will **not** be normalized to TOC content for the purpose of reporting, assessment, establishing cleanup levels, development of remedial performance standards, defining extent of contamination and remedial options evaluation.



Questions?

- ❑ All attendees muted
- ❑ To comment or ask questions, use **chat** or **raise hand**
- ❑ Send questions to **Carrie Webb**

The toolbar at the bottom of the Zoom window contains several icons. The 'Chat' icon (a speech bubble) and the 'Reactions' icon (a smiley face with a plus sign) are both highlighted with red rectangular boxes. Other icons include 'Unmute', 'Start Video', 'Security', 'Participants', 'Share Screen', 'Record', 'More', and 'End'.

A close-up view of the Reactions menu. It shows several reaction icons: clapping hands, thumbs up, laughing face, neutral face, heart, and party popper. The 'Raise Hand' option, represented by a hand icon, is highlighted with a yellow rectangular box. A red arrow points from the 'Reactions' button in the toolbar to this menu.

The sidebar on the right side of the Zoom window. At the top, it says 'Participants (1)' and lists 'Jody Irland (Host, me)' with a muted microphone icon. Below this are buttons for 'Invite', 'Mute All', and a three-dot menu. The 'Chat' section is visible below, showing a header 'Who can see your messages?' and a dropdown menu set to 'Everyone'. There is a text input field labeled 'Type message here...' and a smiley face icon.

CONNECT WITH US

Carrie Webb

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"WILD WISCONSIN:
OFF THE RECORD"