

Zoom Guidelines & Instructions for RR Program's Issues & Trends Webinar November 18, 2020

- ✓ Please do not activate your video.
- ✓ Participants will remain muted until unmuted by a host.

Zoom Guidelines & Instructions

To ask a question, use the “Raise Hand” button.

“Chat” questions will be sent privately to the meeting host / co-hosts.

The image shows a Zoom meeting interface with several annotations. A large green arrow points from the text 'To ask a question, use the “Raise Hand” button.' to the 'Raise Hand' button in the bottom right corner of the meeting window. Another large green arrow points from the text '“Chat” questions will be sent privately to the meeting host / co-hosts.' to the 'Chat' button in the bottom center of the meeting window. The meeting window shows a list of participants on the right, including 'Craig C (Me)' and 'Ben Jaster (Host)'. The bottom toolbar includes buttons for 'Mute', 'Start Video', 'Invite', 'Participants', 'Share Screen', 'Chat', 'Record', and 'Leave Meeting'. The 'Chat' and 'Raise Hand' buttons are highlighted with green boxes.



Zoom Guidelines & Instructions

Presenters will attempt to respond to all questions and messages received.



Zoom Guidelines & Instructions

Zoom technical support at
support.zoom.us



Issues & Trends

Schedule of upcoming webinars at the
Conference & Training webpage:

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



Issues & Trends

Developing the 2021 webinar series.

Subscribe to the RR Report
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rr-report.blogs.govdelivery.com



Issues & Trends

Recordings of previous webinars
can be found in the Training Library:

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



Issues & Trends

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Section Chief



Site Investigation Toolkit

Site Investigation Toolkit

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



Site Investigation Toolkit

- SI Webpage – overview of what's available

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

- Codes and Regulations
- Planning
- Guidances
- Forms
- Reports
- *links to other resources for environmental professionals and RPs*



Codes and Regulations: Wis. Adm. Code

- NR 700: s. NR 700.11 (3g): *report submittal requirements*
- NR 712: *consultant signature, certification requirements*
- NR 716: *detailed site investigation requirements*
- NR 720: *soil performance standards, residual contaminant levels, land use and zoning identification*



Codes and Regulations: continued

- **NR 140:** Groundwater Quality

groundwater enforcement standards, required responses

- **NR 141:** Groundwater Monitoring Well Requirements

monitoring well construction, development and filling and sealing requirements

- **NR 347:** Sediment Sampling and Analysis, Monitoring Protocol and Disposal Criteria for Dredging Projects



Planning Tab

- SI Checklists (*fillable forms*)
 - 4400-316: SI workplan checklist
 - 4400-317: SI report checklist

- RR 101: SI Scoping: Identifying Contaminants of Concern



Guidances Tab

- Soil and Soil Standards
 - Use and calculation of RCLs
 - Using soil performance standards
 - RR 975 – example presentation of soil data
 - RR 060: Management of Contaminated Soil and Other Solid Wastes



Guidances tab - continued

- Groundwater
 - Sampling guidance
 - Using monitored natural attenuation for chlorinated compounds
 - Natural attenuation for petroleum compounds
 - Natural attenuation factsheet for property owners
 - NAPL and smear zone characterization



Guidances Tab - continued

□ Vapor

- RR 800: Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin (*Contains information about source control actions needed for vapor and vapor screening values.*)
- RR 986: Sub-Slab Vapor Sampling Procedures - Vapor Intrusion
- *link to Vapor Intrusion Resources for Environmental Professionals* webpage



Guidances tab - continued

□ Sediments

- RR 088: Consensus-Based Sediment Quality Guidelines

More sediment related guidances are coming...



SI Related Forms

Required DNR Forms: per s. NR 716.15 (4) (g), Wis. Admin. Code

- 4400-122: Soil Boring Log Information
- 3300-305: Well/Drillhole/Borehole Abandonment (Fill and Seal)
- 4400-89: Groundwater Monitoring Well Information
- 4400-113A and 4400-113B: Monitoring Well Construction



SI Related Forms

Required Forms: (NR 700.11 (3r))

- 4400-237: Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

When requesting a response, use this form to submit a Site Investigation Report for DNR review and response; provide the report with the applicable ch. NR 749 fee.



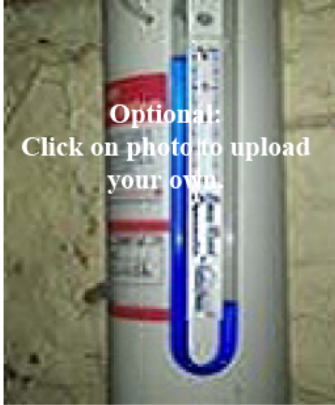
SI Related Forms

- **Required Forms:** when inspection logs are required to be submitted under ss. NR 727.05 (1) (b) 3.
 - 4400-305 Inspection Log for covers, MWs, other
 - 4400-321 VMS Inspection Log for maintenance of a vapor mitigation system



Form 4400-321 VMS Inspection Log

When completion of this form is required, submit an electronic version or a scanned copy of this completed form to the [VMS Submitter Portal](#).

SYSTEM COMPONENT	WHAT DOES IT DO?	WHAT DO I CHECK?	WHAT SHOULD I SEE?	DATE:
NAME				WHAT TO FIX?
Manometer or Differential Pressure Gauge	Measures differential pressure between vacuum side of vent pipe and indoor space. This measurement confirms there is a vacuum being pulled by the fan.	Liquid Level on Manometer or Gauge	Liquid level in manometer should be offset (not level with each other).	A change in liquid level indicates a change in the vacuum below foundation. This could be caused by failure of fan, blockage of vent pipe, change in water level below building, or other conditions. Hire a professional to identify cause and repair if needed.
PHOTO 			NOTES: (Record the reading on the gauge. Identify specific building and location description:) <input type="checkbox"/> Not Applicable	

SI Related Forms

Recommended Form:

- 4400-249: SI Sampling Results Notification: This form may be used to fulfill the sample result notification requirements of s. NR 716.14, Wis. Admin. Code.



SI Reports tab (and reporting)

- **Requirements: s. NR 700.11**
- **SI workplan:** submit within 60 days of receipt of RP letter
- **SI report:** submit within 60 days of completion of field investigation and receipt of lab data



SI Reports tab (and reporting)

- **Site progress reports** every 6 mos., starting 6 mos. after notification of discharge, *via email*

(excerpt from email)

Please click the URL below to access our online form to complete the reporting requirement by the due date listed above. A unique ID is embedded in this link that identifies the reporting period and the site listed above.

<http://dnr.wi.gov/botw/NR700ReportForm.do?rid=2007578109824708>

SI Reports tab (and reporting)

Requirements: s. NR 700.11 (3g) requires the **submittal of both a paper and electronic copy of all reports**

NOTE: DNR is temporarily suspending the requirement to **submit one paper copy** of each plan or report under Wis. Admin. Code § NR 700.11(3g). Submit documents via the online [Submittal Portal](#).

See RR 690: Guidance for Electronic Submittals for the Remediation and Redevelopment Program



SI Toolkit Summary: Web page

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

- Codes and Regulations
- Planning the SI
- Guidances
- Forms
- Reports
- *links to other resources for environmental professionals and RPs*



Thank you

Jane.Lemcke@Wisconsin.gov





SI Scoping and Identifying Contaminants of Concern

SI Scoping: Identifying Contaminants of Concern

Wisconsin DNR – NR 700 Process



Remediation & Redevelopment Program

September 2019

Site Investigation Scoping: Identifying Contaminants of Concern, Wis. Admin. Code § NR 716.07

Purpose

This guidance can help select the appropriate chemicals for analysis in a Wis. Admin. Code

In Wisconsin, responsible parties (RPs) and their environmental consultants are required to evaluate all relevant factors in scoping a site investigation under Wis. Admin. Code NR § 716.07 to ensure that the scope and detail of the field investigation are appropriate for the complexity of the site or



The Spills Law and NR 716

The state has the authority to require that contaminants of concern (COCs) are included in a site investigation:

- When there has been a discharge of a hazardous substance or there is evidence of environmental pollution, and
- There is knowledge of current or historical activities at the site that would indicate that the contaminant may be present.



Site Investigations: Wis. Admin Code ch. NR 716

Purpose:

- Ensure that site investigations provide the information necessary to define the nature, degree and extent of contamination
- Define the source(s) of contamination
- Determine whether interim, and/or remedial actions are necessary
- Allow an interim or remedial action option to be selected that complies with applicable environmental laws



Foundation for a Successful Site Investigation

- NR 716.07 – SI Scoping



- NR 716.09 – SI Work Plan



- NR 716.15 – SI Report



Site Investigation Scoping

NR 716.07 lists the relevant items which shall be considered to ensure that the scope and detail of the field investigation are appropriate to the complexity of the site or facility and includes:

- History of the site or facility
- Knowledge of the type and amount of contamination



Emerging Contaminants

- Reminder to consider emerging contaminants
- Some COCs may not have cleanup standards
- If no enforcement standard exists, sampling and analysis is still required
- Site-specific cleanup levels may need to be developed for all contaminated environmental media.
- Contact DNR early in the investigation/cleanup process for approval



Land Use and Activities

Identify historical uses and activities on the site

- Industrial
- Commercial
- Landfill
- Other waste disposal activities



Field Sampling and Laboratory Analysis

Field Activities

- Consider potential sources of contamination
- Identify appropriate sample collection methods
- Identify appropriate decontamination techniques and materials
- QA/QC considerations

Laboratory Methods

- WI certified lab
- Work with lab to select appropriate reporting limits and sample preparation techniques
- List of chemicals reported should be kept broad initially and then focused



Extent of Contamination

Media Impacted

- Soil
- Groundwater
- Surface water
- Sediment
- Vapor

Contaminant Migration

- Potential for impacts which have migrated beyond property boundaries
- Utility corridors and other preferential pathways



RR-101 Identifying Contaminants of Concern

Wisconsin DNR – NR 700 Process



Remediation & Redevelopment Program

September 2019

Site Investigation Scoping: Identifying Contaminants of Concern, Wis. Admin. Code § NR 716.07

Purpose

This guidance can help select the appropriate chemicals for analysis in a Wis. Admin. Code ch. NR 716 site investigation. Identifying the potential contaminants of concern is an important first step in any site investigation and is needed to comply with the following regulatory requirements:

- Scope and develop a workplan for a site investigation based on knowledge of the type of contamination (Wis. Admin. Code §§ NR 716.07 and 716.09(2)(f)).
- Select and use laboratory methods that are suitable for the type and anticipated levels of contamination (Wis. Admin. Code § NR 716.13).

In Wisconsin, responsible parties (RPs) and their environmental consultants are required to evaluate all relevant factors in scoping a site investigation under Wis. Admin. Code NR § 716.07 to ensure that the scope and detail of the field investigation are appropriate for the complexity of the site or facility. Wis. Admin. Code §§ NR 716.09 and NR 716.15 require RPs to develop and submit to the department both a site investigation (SI) work plan and report which evaluate the “history of the site or facility, including industrial, commercial or other land uses that may have been associated with one or more hazardous substance discharges at the site or facility.”

This guidance was developed to assist RPs and consultants identify the types of hazardous substances and/or environmental pollution that may be appropriate to include in the SI workplan and report based on a site or facility’s history and use. Table 1 of this guidance summarizes substances commonly associated with certain types of industry and/or land use. This table functions as a general guide for department staff, RPs, and consultants, and should not be used as a definitive list of substances that will always be present or absent at a site.

It is important to note that inclusion of a type of industry or land use on the table does not mean a discharge of a hazardous substance or environmental pollution has or has not occurred at a

facility or site. The table is simply a guide to present common substances that may be associated with a particular industry or land use. Analysis for all parameters listed in the table for a specific site activity is not required. However, if listed parameters are not included in the SI workplan and report, consultants may wish to provide an explanation of why a given parameter was omitted. For example, if an RP is addressing contamination at a dry-cleaning facility, the department expects the RP to sample for tetrachloroethene (PCE). Further, if an RP is submitting an SI workplan for a shooting range, the department expects the RP to include sampling for lead in the work plan.

Contaminants with and without Numeric Cleanup Standards

The potential contaminants of concern for a site may include chemicals that currently do not have promulgated numeric cleanup standards. This is often the case for emerging contaminants such as per and poly-fluoroalkyl substances (PFAS). Contaminants resulting from environmental pollution and/or a hazardous substance discharge to the environment must be assessed in an investigation even if they do not have a cleanup standard.

Publication Number: DNR-RR-101E

dnr.wi.gov, search “brownfield”

- RR-101 is intended to support the scoping process by providing users with information on the types of contamination which may be present at a site based on current and historical activities and land uses.
- It is NOT a definitive list of substances that will always be present or absent at a site.



RR-101 Identifying Contaminants of Concern

- Emphasizes that knowledge of site activities is critical
- Reminds you to consider emerging contaminants
- When a COC is excluded from a site investigation and is typically associated with an activity, a rationale should be provided detailing variables and considerations



Table 1 – Potential COCs

- Contaminants are organized by category (metals, organics, inorganics, etc.)

Metals and CN		Organics										Inorganics				Other			Screening		
Metals	Cyanide	VOCs	VOC (n-nonane)	VOC (1,4-Dioxane)	CVOCS	PVOCs	SVOCs	PAHs	PCBs	PFAS	Dioxin/Furan	Glycol	Ammonia	Nitrate	Phosphorus	Asbestos	Pesticides	Radiation	Explosives	GRO (C ₆ - C ₁₀)	DRO (C ₁₀ - C ₂₈)



Table 1 - Potential COCs by Site Activity

**Table 1
Potential Contaminants of Concern**

Current & Historical Site Activity	Metals and CN		Organics										Inorganics				Other			Screening		
	Metals	Cyanide	VOCs	VOC (n-nonane)	VOC (1,4-Dioxane)	CVOCS	PVOCs	SVOCs	PAHs	PCBs	PFAS	Dioxin/Furan	Glycol	Ammonia	Nitrate	Phosphorus	Asbestos	Pesticides	Radiation	Explosives	GRO (C ₆ - C ₁₀)	DRO (C ₁₀ - C ₂₈)
Adhesives			•					•		•		•									•	•
Agricultural ⁽¹⁾	• As, Hg, Pb													•	•	•		•				
Airports			•	•	•							•									•	•
Anti-fogging films										•												
Auto/Boat Manufacturing or Repair	• RCRA 8 ⁽²⁾		•						•	•											•	•
Cement Additives	• RCRA 8 ⁽²⁾							•		•		•										
Chemical Production ⁽³⁾								See Note 3														
Cleaning Products (Industrial & Household)			•							•				•		•						



Examples

- Drycleaners
- Metal Plating
- Wood Treatment
- Shooting ranges
- Fire suppression
- Scrap metal recyclers
- Chemical manufacturers
- Warehouse/short term storage facility



DNR Review of SI Work Plan and SI Report

- DNR recommends submittal of the SI workplan and SI report with fee for review
 - Best way to get input early in the process
 - Get on track, stay on track
 - Reduce delays at closure due to incomplete SI
 - Reduce costs associated with addressing issues later in the process



Thank you



DNR Remediation and Redevelopment



Site Investigation Checklists

A tool for meeting NR 716
requirements for
SI work plans and reports

Site Investigation Checklists

Incomplete site investigations are a primary cause of 'closure not recommended' determinations.

- Form 4400-316 – Site Investigation Work Plan Checklist
- Form 4400-317 – Site Investigation Report Checklist

Purpose of SI Checklists

- A tool to ensure all required elements of a site investigation work plan or report are addressed.
- Recommended for use by both consultants and agency staff
- SIR Checklist also provides a reminder for closure related issues
 - ▣ All affected media assessed
 - ▣ All migration pathways addressed
 - ▣ Continuing obligations identified
- The checklists can be used to provide a framework or format for the SI work plan or SI report.
 - ▣ The rules do not require or provide a standard report format.

Using the Checklists

- Use of these tools is recommended, but NOT required.
 - ▣ for newer staff and consultants to help identify required information.
 - ▣ for experienced staff to track which requirements have been met, and which may need additional work to fully meet requirements.

- Use with other site investigation related guidance, which can be found at the Site Investigation Toolkit webpage, at:
<https://dnr.wisconsin.gov/topic/Brownfields/SIToolkit.html>

SI Work Plan Checklist

Save...

Clear Data

Note: In order to fill and save this form electronically, it must be opened using Adobe Reader or Acrobat software. Save a copy of the file, open Adobe Reader, select File > Open and browse for the file you saved.

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Site Investigation Work Plan Preparation Checklist Wis. Admin. Code § NR 716.07

Form 4400-316 (R 07/19)

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April 2019



SI Work Plan Checklist

- Reminders of the purpose of the work plan are identified up front.
 - ▣ Nature, degree and extent of contamination
 - ▣ Source identification
 - ▣ Identify need for interim or remedial actions
 - ▣ Provide information for remedy selection

- Check the box if these have been completed, or use the Comment field to identify information that is still needed.

Basic Submittal Requirements

Receipt of Site Investigation Work Plan NR 716.09 (1)		Comments
<input type="checkbox"/> NR 716.09 (1)	Within 60 days of receipt of RP letter, or other notification that a site investigation is required	
<input type="checkbox"/> NR 716.09 (1), NR 700.11 (3g)	One paper copy	
<input type="checkbox"/> NR 716.09 (1), NR 700.11 (3g)	One electronic copy	
<input type="checkbox"/> NR 749	Review fee, if review by DNR is requested	



Basic Location and Contact Information

Contents	
NR 716.09 (2)	
<input type="checkbox"/> NR 716.09 (2) (a)	Site name and address
<input type="checkbox"/> NR 716.09 (2) (a)	Site location – ¼ ¼ section, Township, Range, County
<input type="checkbox"/> NR 716.09 (2) (a)	WTM coordinates
<input type="checkbox"/> NR 716.09 (2) (b)	RP's name and address (May be more than one RP – current property owner, lessee, operator, other RP.)
<input type="checkbox"/> NR 716.09 (2) (b)	Consultant or contractor's name and address
<input type="checkbox"/> NR 716.09 (2) (c)	Site location on a USGS topo map
<input type="checkbox"/> NR 716.09 (2) (c)	Site layout map(s) with: buildings, roads, discharge location & other relevant site features



Site History and Hazardous Substances

<input type="checkbox"/> NR 716.07 (1)	<ul style="list-style-type: none">History of the site or facility, including land uses that may have one or more associated hazardous substance discharges or environmental pollution, including emerging contaminants such as PFAS
--	---

- Remember to include scoping statement providing information related to emerging contaminants



Contents (continue)

NR 716.09 (2)

<input type="checkbox"/> NR 716.07 (3)	<ul style="list-style-type: none">• History of previous hazardous substance discharges or environmental pollution
<input type="checkbox"/> NR 716.07 (4)	<ul style="list-style-type: none">• Environmental media affected or potentially affected by contamination
<input type="checkbox"/> NR 716.07 (5)	<ul style="list-style-type: none">• Location of the site or facility and its proximity to other sources of contamination
<input type="checkbox"/> NR 716.07 (6)	<ul style="list-style-type: none">• Need for permission from property owners to allow access to the site or facility and to adjacent or nearby properties
<input type="checkbox"/> NR 716.07 (7)	<ul style="list-style-type: none">• Potential or known impacts to receptors, including buildings, utilities or other subsurface improvements, and water supply wells within 1,200 feet of outermost edge of contamination
<input type="checkbox"/> NR 716.07 (8) (a), (b), (c), (d)	<ul style="list-style-type: none">• Potential for impacts to sensitive species, habitats or ecosystems, wetlands, resource waters, sites of historical/archaeological significance
<input type="checkbox"/> NR 716.07 (9)	<ul style="list-style-type: none">• Potential interim and remedial actions applicable to the contamination
<input type="checkbox"/> NR 716.07 (10)	<ul style="list-style-type: none">• Immediate or interim actions taken or in progress, including any evaluations made of whether an interim action is necessary
<input type="checkbox"/> NR 716.07 (11)	<ul style="list-style-type: none">• Any other items, including climatological conditions and background water or soil quality info that may affect the scope or conduct of the investigation

History & Vicinity



Setting – Geology and More

<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.	<ul style="list-style-type: none">• Existing topography, including prominent topographic features	
<input type="checkbox"/> NR 716.09 (2) (e) 2.	<ul style="list-style-type: none">• Surface water drainage patterns and significant hydrologic features, such as surface waters, springs, drainage basins, divides, wetlands, floodplain or floodway	
<input type="checkbox"/> NR 716.09 (2) (e) 3.	<ul style="list-style-type: none">• Texture and classification of surficial soils	
<input type="checkbox"/> NR 716.09 (2) (e) 4.	<ul style="list-style-type: none">• Nature and distribution of geologic materials, including the thickness and type of unconsolidated materials and type and nature of bedrock	
<input type="checkbox"/> NR 716.09 (2) (e) 5.	<ul style="list-style-type: none">• General hydrogeologic information	
<input type="checkbox"/> NR 716.09 (2) (e) 6.	<ul style="list-style-type: none">• Potential hazardous substance migration pathways	



Sampling Strategy

<input type="checkbox"/> NR 716.09 (2) (f)	Sampling and analysis strategy to be used during the field investigation, including:
<input type="checkbox"/> NR 716.09 (2) (f) 1.	<ul style="list-style-type: none">• Description of the investigative techniques to be used to characterize the site or facility
<input type="checkbox"/> NR 716.09 (2) (f) 2.	<ul style="list-style-type: none">• Site layout map(s), in planimetric and vertical views, with locations from which samples of environmental media will be obtained or a description of the strategy to be used for determining sample locations



Sampling Methods

Contents (continue) NR 716.09 (2)	
<input type="checkbox"/> NR 716.09 (2) (f) 3.	<ul style="list-style-type: none">• Description of sampling methods to be used, including methods for collecting, preserving, and delivering samples and leak detection methods (for vapor sampling)
<input type="checkbox"/> NR 716.09 (2) (f) 4.	<ul style="list-style-type: none">• List of the parameters for which samples will be analyzed, analytical methods to be used including method detection limits
<input type="checkbox"/> NR 716.09 (2) (f) 5.	<ul style="list-style-type: none">• Description of quality control and quality assurance procedures to be used per sampling method, including the items listed in NR 716.13



Schedule and Signature

<input type="checkbox"/> NR 716.09 (2) (h)	Schedule for conducting the field investigation and reporting the results to the DNR
<input type="checkbox"/> NR 712	Certification of professional(s) that will conduct or supervise the work necessary to obtain data, develop conclusions and recommendations, and prepare the site investigation submittal, per Wis. Admin. Code NR 712



SI Report Checklist

Save...

Clear Data

Note: In order to fill and save this form electronically, it must be opened using Adobe Reader or Acrobat software. Save a copy of the file, open Adobe Reader, select File > Open and browse for the file you saved.

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Site Investigation Report Preparation Checklist Wis. Admin. Code § NR 716.15

Form 4400-317 (R 07/19)

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Wisconsin DNR – NR 700 Process

Remediation and Redevelopment Program

April 2019



Basic Submittal Requirements

Receipt of Site Investigation Report NR 716.15 (1)		Comments	Closure Form
<input type="checkbox"/> NR 716.15 (1) (a)	Within 60 days after completion of the field investigations and receipt of lab data		
<input type="checkbox"/> NR 716.15 (1) (b), NR 700.11 (3g)	One paper copy		
<input type="checkbox"/> NR 716.15 (1) (b), NR 700.11 (3g)	One electronic copy (see RR-690)		
<input type="checkbox"/> NR 749, NR 700.11 (3r)	Review fee, if DNR review is requested. Use DNR Form 4400-237 to submit report with fees for review.		

SI Report Checklist

□ Executive Summary

- ▣ Description + Conclusions + Recommendations:
tell the story about contamination at the site.

Executive Summary NR 716.15 (2) (b)		Comments	Closure Form
<input type="checkbox"/> NR 716.15 (2) (b)	Description of site investigation results		Sec. 3
<input type="checkbox"/> NR 716.15 (2) (b)	Conclusions		Sec. 3
<input type="checkbox"/> NR 716.15 (2) (b)	Recommendations for future actions		Sec. 3
<input type="checkbox"/> NR 716.15 (2) (b)	NR 712.09 certifications		Sec. 3

What is the “Ask”?

Cover Letter NR 716.15 (2) (a)		Comments	Closure Form
<input type="checkbox"/> NR 716.15 (2) (a)	BRRTS #		p.1
<input type="checkbox"/> NR 716.15 (2) (a)	Purpose of submittal		
<input type="checkbox"/> NR 716.15 (2) (a)	Desired action or response by DNR		



SIR: General Information

- ▣ Provide updated contact and site locational information, as appropriate
- ▣ Make sure maps include all details required in rule
- ▣ Make sure the map key identifies all required features

General Information (Introduction) <i>(continued)</i>	Comments	Closure Form
NR 716.15 (2) (c)		
<input type="checkbox"/> NR 716.15 (2) (c) 4.	Site location – ¼ ¼ section, Township, Range, County	
<input type="checkbox"/> NR 716.15 (2) (c) 4.	WTM coordinates (and metadata) for the site	p.1
<input type="checkbox"/> NR 716.15 (2) (c) 5.	Location map* (see *Visual Aids - Figures)	Att. B.1.a.
<input type="checkbox"/> NR 716.15 (2) (c) 6.	Site layout map(s)* with:	Att. B.1.a., b.
<input type="checkbox"/>	• property boundaries	B.1.a.,b.
<input type="checkbox"/>	• roads/access points	B.1.b.
<input type="checkbox"/>	• surface water features	B.1.b.
<input type="checkbox"/>	• underground utilities <i>(and overhead, as needed)</i>	B.1.b.
<input type="checkbox"/>	• buildings	B.1.b.
<input type="checkbox"/>	• public & private wells	B.1.a.
<input type="checkbox"/>	• land uses on adjacent properties	
<input type="checkbox"/>	• known & potential contamination sources	B.1.b.
<input type="checkbox"/> NR 716.15 (2) (c) 7.	Geographic position (WTM coordinates) of all properties within or partially within area of contamination, submitted in accordance with NR 716.15 (5) (d)	B.1.a,b. Att. G

Basic Information

Closure Form Reference



SIR: Background Information

- Provide the history of known and potential discharges
- Identify any response actions taken
- Identify any other information relevant to events at the site

Background Information NR 716.15 (2) (d)		Comments	Closure Form
<input type="checkbox"/> NR 716.15 (2) (d) 1.	Potential cause and date(s) of discharge (time, duration, type, quantity of contaminant(s), etc.)		1.D., E.
<input type="checkbox"/> NR 716.15 (2) (d) 2.	Previously reported discharges or response actions with dates		1.G.
<input type="checkbox"/> NR 716.15 (2) (d) 3.	Completed response actions with reference to previous reports		4. A., B.
<input type="checkbox"/> NR 716.15 (2) (d) 4.	Other info relevant to response actions		4.A, Att C

SIR: Investigation Methods

- Describe all procedures used to collect information IF DIFFERENT from the work plan
- Identify methods used to collect data for soil, groundwater, vapor, sediment and surface waters
- Identify methods used to evaluate the sample results

Investigation Methods – Descriptions of techniques used to characterize the site or facility NR 716.15 (2) (e)	Comments	Closure Form
<input type="checkbox"/> NR 716.15 (2) (e)	Procedures used if different from methods described in the work plan or DNR guidance	3.A.i.
<input type="checkbox"/> NR 716.15 (2) (e)	Soil - Boring and probe methods (e.g., borings, test pits, hand auger)	3.A.i.
<input type="checkbox"/> NR 716.15 (2) (e)	Groundwater – Well installation and construction, well development procedures, well & aquifer testing methods	3.A.i. Att. A
<input type="checkbox"/> NR 716.15 (2) (e)	Sample collection, handling, analytical techniques (all media) and leak detection methods (vapor intrusion)	3.A.i. Att. A

SIR: Investigation Methods

- Natural Attenuation (NA):
- Identify if the compounds are likely to attenuate
- The NA evaluation should include:
 - ▣ a discussion of the results of the geochemical indicators and parameters,
 - ▣ trends analysis if enough data is available,
 - ▣ relationship of concentrations to water level trends,

□ NR 716.13 (13)	• If natural attenuation is a potential remedy, results of geochemical indicators and parameters (e.g., DO, nitrates, dissolved Mn, total and ferrous Fe, sulfate, methane, alkalinity, ORP, pH, temperature, conductivity)
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SIR: Results

- Narrative summary of sample results for each medium

Results NR 716.15 (3)	
<input type="checkbox"/> NR 716.15 (3) (a)	Detailed narrative of results collected during investigation scoping pursuant to NR 716.07:
<input type="checkbox"/> NR 716.07 (1)	<ul style="list-style-type: none"> History of the site, including uses that may have been associated with hazardous substance discharges
<input type="checkbox"/> NR 716.07 (2)	<ul style="list-style-type: none"> Knowledge of the type and amount of contamination
<input type="checkbox"/> NR 716.07 (3)	<ul style="list-style-type: none"> History of previous discharges or environmental pollution
<input type="checkbox"/> NR 716.07 (4)	<ul style="list-style-type: none"> Environmental media affected or potentially affected by contamination
<input type="checkbox"/> NR 716.07 (5)	<ul style="list-style-type: none"> Location of the site or facility and its proximity to other sources of contamination
<input type="checkbox"/> NR 716.07 (7), NR 716.11 (5) (b), NR 716.15 (3) (h)	<ul style="list-style-type: none"> Potential or known impacts of contamination to receptors, including buildings and other cultural features, and utilities and other subsurface improvements

SIR: Field Investigation

Field Investigation NR 716.11 (5)	
<input type="checkbox"/> NR 716.11 (5)	Evaluation of all the following (see NR 716.11 (3) for purpose of field investigation):
<input type="checkbox"/> NR 716.11 (5) (a)	Potential pathways for migration of the contamination, including drainage improvements, utility corridors, sediments, bedrock and permeable material or soil along which vapors, free product or contaminated water may flow
<input type="checkbox"/> NR 716.11 (5) (b)	<ul style="list-style-type: none">• Impacts of contamination upon receptors
<input type="checkbox"/> NR 716.07 (8), NR 716.11 (5) (c)	<ul style="list-style-type: none">• The known or potential impacts of contamination on any resources in NR 716.07 (8) identified during scoping process as having the potential to be affected by the contamination. <i>Sensitive habitats or ecosystems, wetlands, resource waters, sites of historical or archeological significance</i>

SIR: Conclusions and Recommendations

- Include information on all affected media.
- If media was not assessed, provide justification for non assessment.

Conclusions and Recommendations NR 716.15 (3), NR 716.15 (6)	
<input type="checkbox"/> NR 716.15 (6)	Summary of site investigation results
	Data Interpretations:
<input type="checkbox"/> NR 716.15 (3) (h)	• Characterize geologic and hydrogeologic characteristics
<input type="checkbox"/> NR 716.15 (3) (f)	o Stratigraphy [soil and rock types, moisture contents, high and low water table elevations, smear zone depth and location, contaminant source location(s)]
<input type="checkbox"/> NR 716.15 (3) (e)	o For sites with 3 or more water table observation wells include depth to water table, groundwater flow directions, flow rates and variability
<input type="checkbox"/> NR 716.11 (3) (a), NR 716.11 (4), NR 716.11 (5), NR 716.15 (3) (g), NR 716.15 (3) (h)	• Areal and vertical degree and extent of contamination in all environmental media
<input type="checkbox"/> NR 716.11 (5) (e)	o soil
<input type="checkbox"/> NR 716.11 (5) (f)	o groundwater
<input type="checkbox"/> NR 716.11 (5) (d)	o bedrock
<input type="checkbox"/> NR 716.11 (5) (g), (h)	o vapor (from soil or groundwater) and in indoor air, to assess occupied buildings
<input type="checkbox"/> NR 716.07 (2) (e) 2.	o surface water
<input type="checkbox"/> NR 716.11 (5) (d)	o sediment

SIR: Maps, Figures, Tables

Visual Aids – Figures*		Comments	Closure Form
<p>NR 716.15 (4) * Include these figures to clarify and support the results and data interpretations. Include figure number, title, scale, north arrow and legend; locations and data used to prepare figure (e.g., water elevation and datum or concentration and units); origination date and figure source (original preparer). Use a distinguishing symbol, such as a dashed line or question mark, to depict inferred or uncertain data. Use national geodetic survey data for all elevations.</p>			
<input type="checkbox"/> NR 716.15 (4) (a) <input type="checkbox"/> NR 716.15 (4) (b) 1. <input type="checkbox"/> NR 716.15 (4) (b) 2.	<p>Water table map(s) for sites with 3 or more wells depicting water table elevation, groundwater flow, and variations</p> <p>Potentiometric surface map(s) with 3 or more piezometers depicting water table elevation, groundwater flow, and variations</p>		<p>B.3.c.</p> <p>B.3.c</p>
Visual Aids – Tables		Comments	Closure Form
<p>NR 716.15 (4) (e) Include data tables for all measured data or sampling-derived data. Include table number, title, explanation of footnotes, date of sampling, units of measurement. Distinguish any results that equal or exceed an environmental standard. All visual aids must be legible, referenced in text, and used as needed to support results and interpretations.</p>			
<input type="checkbox"/> NR 716.15 (4) (e) 5. <input type="checkbox"/> NR 716.15 (4) (e) 6.	<p>Soil – indicate depth (of sample interval) and soil type for soil sample summary tables</p> <p>Groundwater – indicate each well's top and bottom screen elevation on groundwater elevation tables</p>		<p>A.2.,3</p> <p>A. 6.</p>

SIR: Photographs, Forms, Deeds and Locational Information

- Deeds with legal descriptions are needed for each property affected by contamination

Visual Aids – Well and Borehole Documentation NR 716.15 (4) (g)		Comments	Closure Form
<input type="checkbox"/> NR 716.15 (4) (g) 1.	4400-89 Groundwater Monitoring Well Info		Att. E
<input type="checkbox"/> NR 716.15 (4) (g) 2.	4400-113A Monitoring Well Construction		Att. E
<input type="checkbox"/> NR 716.15 (4) (g) 3.	4400-113B Monitoring Well Development		Att. E
<input type="checkbox"/> NR 716.15 (4) (g) 4.	4400-122 Soil Boring Log Information		
<input type="checkbox"/> NR 716.15 (4) (g) 5.	3300-5B Well/drillhole/borehole abandonment		

Visual Aids – Photographs (Included only if needed to clarify or support results and conclusions.) NR 716.15 (4) (f)		Comments	Closure Form
<input type="checkbox"/> NR 716.15 (4) (f)	Color photographs of a size to clearly represent the purpose of the photo and labeled with date, orientation and topic		B.5, D.3.

Questions?

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THANK YOU!