Clean Soil Management: A Self-Implementing Option for Soil Excavated During a Response Action under Wis. Admin. Code chs. NR 700 through NR 750 (RR-103)
Wisconsin Department of Natural Resources
April 2018

This draft document is available for public comment for 30 days. Following completion of the public comment period, all comments will be carefully considered and revisions will be made as appropriate. A comment response summary and a final document will be posted on this web page within 45 days of the end of the comment period.

In addition, the RR Program will host a question and answer session on this clean soil management guidance scheduled for April 20, 2018, at 10:30 a.m. Meeting logistics and agenda can be found on the DNR’s public meetings calendar (dnr.wi.gov search “public meetings”).

Send comments concerning this document to Christine Haag at Christine.Haag@wisconsin.gov.

This guidance is intended solely for use by responsible parties (RPs), as defined in Wis. Admin. Code § NR 700.03(51), who are managing soil excavated as part of a response action¹ pursuant to Wis. Stats. ch. 292 and Wis. Admin. Code chs. NR 700 - 754.

This guidance does not apply to soil excavated as part of a construction project, utility project or transportation project. However, if those projects also involve an NR 700 response action, this guidance only applies to the soil excavated as a direct result of the response action.

¹ “Response” or “response action” means any action taken to respond to a hazardous substance discharge or to environmental pollution, including emergency and non–emergency immediate actions, investigations, interim actions and remedial actions.

This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.
Wisconsin DNR – NR 700 Process

Remediation and Redevelopment Program

Clean Soil Management: A Self-Implementing Option for Soil Excavated During a Response Action under Wis. Admin. Code §§ NR 700 through NR 750

Applicability

This guidance is intended solely for use by responsible parties (RPs), as defined in Wis. Admin. Code § NR 700.03(51), who are managing soil excavated as part of a response action1 pursuant to Wis. Stats. ch. 292 and Wis. Admin. Code chs. NR 700 - 754. This guidance does not apply to soil excavated as part of a construction project, utility project or transportation project. However, if those projects also involve an NR 700 response action, this guidance only applies to the soil excavated as a direct result of the response action.

Purpose

Environmental cleanups occur throughout Wisconsin on a daily basis. Often, these cleanups involve management of soil that may or may not have been impacted by a hazardous substance discharge or by the presence of environmental pollution. The management of soil at cleanups sites often results in segregating soil into different management categories, such as those soils that: (1) must be managed as a hazardous waste; (2) those that may be managed as a solid waste at a licensed facility or require a site-specific, department exemption; (3) federally regulated waste; or (4) as soil that does not require department approval prior to managing and placing that material.

This document provides an optional approach for responsible parties2 and their environmental consultants to use when soil is characterized and excavated as part of a response action (i.e., cleanup action), and the soil does not need to be managed at a licensed solid waste facility or through a site-specific exemption. This document provides responsible parties (RPs) more clarity on what types of substances – if identified in soil - could generally be managed as “clean soil” in accordance with state law without the Department’s pre-approval or tracking. However, the person placing or accepting the soil would need

1 “Response” or “response action” means any action taken to respond to a hazardous substance discharge or to environmental pollution, including emergency and non-emergency immediate actions, investigations, interim actions and remedial actions.

2 “Responsible party” or “responsible parties” means any of the following: (a) Any person who is required to conduct a response action under ch. 292, Stats. (b) Persons liable to reimburse the department for the costs incurred by the department to take response action under chs. 289 and 292, Stats. (c) Owners and operators of solid waste facilities that are subject to regulation under ch. NR 508, [NR 700.03(51)]

Related Guidance

The following documents may be useful to responsible parties and their consultants when determining the proper protocol for managing soil, contaminated soil, and other solid wastes, during response actions:

- Exempting Low-Hazard Wastes from Solid Waste Regulations, WA-1645
- Obtaining DNR Approval Prior to Use of Imported Soil and Other Fill Materials on Voluntary Party Liability Exemption Sites, Wis. Stats. § 292.15, RR-041
- Waste Determinations & Recordkeeping, WA-1152
- PCB Remediation in Wisconsin under the One Cleanup Program Memorandum of Agreement, RR-786
- Guidance for Hazardous Waste Remediation, RR-705
- Management of Contaminated Soil and Other Solid Wastes, Wis. Admin. Code §§ NR 718.12 and NR 718.15, RR-060
- Immediate Reporting Required for Hazardous Substance Spills, RR-560
- Soil Residual Contaminant Level Determinations Using the U.S. EPA Regional Screening Level Web Calculator, RR-890
- Risk Assessment Approach for Calculating cPAH Non-Industrial Direct Contact RCLs - Wis. Admin. Code § NR 722.11 (1), RR-079
- Calculating Soil RCLs for PAHs Wis. Admin. Code § NR 722.11 (1), RR-087
- Compliance Averaging of Soil Contaminant Concentration Data under Ch. NR 720, Wis. Admin. Code, RR-091
to comply with limited locational criteria. The department believes that providing this guidance will help responsible parties and their environmental consultants to save money, and make more timely and consistent decisions on how to manage this type of excavated soil during a Wis. Admin. Code ch. NR 700 cleanup action.

Overview

RPs are required to determine the nature and extent of any discharges of hazardous substances and presence of environmental pollution (the “contamination”) in accordance with the site investigation requirements in Wis. Admin. Code ch. NR 716. Based on the characterization of the contamination at the site investigation phase, the RP will develop response actions to address the contamination. When soil will be excavated as part of a selected response action, it must be managed in accordance with local, state and federal law. Soils excavated as part of a Wis. Admin. Code ch. NR 700 response action by RPs generally is managed as:

- Solid waste under the Wis. Admin. Code chs. NR 500 rule series, including any exemptions;
- Hazardous waste under Wis. Admin. Code chs. NR 600 rule series;
- Toxic Substance Control Act (TSCA) material;
- Contaminated soil under Wis. Admin. Code ch. NR 718; or
- Soil management under Wis. Admin. Code § NR 500.08.

There may be response action sites or facilities where a soil determination renders some of the soil excavated as “clean soil,” some as “contaminated soil” having to be managed, for example, as a solid waste, and other soil as having to be managed as a hazardous waste. The focus of this guidance is on managing excavated soil as “clean soil” rather than requiring management as “contaminated soil” in a licensed solid waste facility or by a department-issued exemption.

This guidance provides RPs and their consultants with the following information:

- Site Discovery and Notification of a Discharge, in relation to “clean soil” concentrations;
- NR 700 Soil Determinations and Documentation as Part of a Response Action;
- Self-Implementing Option for Managing Response Action Soils as Clean Soil under Wis. Admin. Code ch. NR 500; and
- Placement requirements.

Site Discovery and Notification of a Discharge

Responsible parties are required to immediately report hazardous substance discharges to the department pursuant to Wis. Stats. §292.11 and Wis. Admin. Code ch. NR 706. The “clean soil” guidelines described in this guidance or the Residual Contaminant Levels (RCLs) developed for soil cleanup standards pursuant to Wis. Admin. Code ch. NR 720 should not be used as “reportable quantities” or “de minimis exemptions”. All discharges of hazardous substances are to be reported to the department, so that the department may determine whether a site investigation will be required to define the overall extent of contamination.
Information on how to immediately report a discharge of a hazardous substance, either a spill that needs an immediate response or a historic discharge discovered through sampling, can be found at dnr.wi.gov and search spills. Also refer to *Immediate Reporting Required for Hazardous Substance Spills, RR-560*, for further details regarding reporting requirements.

**NR 700 Soil Determinations and Documentation as Part of a Response Action**

When there is confirmation of a discharge of a hazardous substance to soil or environmental pollution has impacted soil at a response action site, analytical testing of soil pursuant to Wis. Admin. Code NR §§ 708, 716 and/or 718 will be conducted to determine how the excavated soil will be managed. There may be response action sites or facilities where a soil determination renders some of the soil as “clean soil,” and some as contaminated soil having to be managed as a “solid waste” or a “hazardous waste.” Accurate delineation of these areas is necessary to ensure that all soil excavated as part of conducting a response action will be managed in a manner required by applicable law.

Professional judgement should be used to determine how soil excavated as a result of a response action is to be characterized and whether the proposed management of the excavated soil will require a department review and approval. This is generally referred to as making a “soil determination” and is typically based on the RP and consultant’s knowledge of the material and the location being excavated. Prior to conducting a response action involving soil excavation, a responsible party may request that the department review and approve their soil determination/soil management plan to ensure that the material will be properly segregated for management as clean soil, contaminated soil, solid waste, special waste (e.g., PCBs) or hazardous waste under applicable laws. Assistance from the department may be requested by submitting a *Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request (Form 4400-237)* form to the department, along with the appropriate Wis. Admin. Code ch. NR 749 review fee.

During an NR 700 response action, excavated soil should be characterized and segregated so that it can be appropriately managed according to applicable laws. The number of samples required to characterize a given volume of contaminated soil excavated as part of a response action is outlined in Wis. Admin. Code § NR 718.12 (1)(e). Generally, the sampling frequency is one sample for every 100 cubic yards of contaminated soil for the first 600 cubic yards with a minimum of 2 samples being collected and for volumes of contaminated soil that exceed 600 cubic yards, one sample for each additional 300 cubic yards. Samples should be obtained and analyzed for all contaminants likely to be present.

Specific analysis conducted on the samples should consider what compounds, products, and hazardous substances or environmental pollution may have been used, mixed, generated, stored, spilled, or disposed on the site. Records such as safety data sheets, hazardous waste reports, and toxic release inventory data may also provide useful information to select analytical tests. Please refer to department guidance RR-060 for further information on Wis. Admin. Code §§ NR 718(1) and (2) with respect to management of contaminated soils. RPs may be able to characterize and segregate a portion of the material excavated as “clean soil”. In doing so, they may elect to use the self-implementing clean soil management option in this guidance.

The department recommends that RPs document and maintain a record of their contaminated soil determinations. For response action sites, this is required under Wis. Admin. Code §§ NR 708, 718, 722. In addition, Wis. Admin. Code ch. NR 662 does require the generator to maintain documentation of a waste determination involving hazardous waste. Wis. Stat. § 291.21 requires that “any person generating solid waste shall determine if the solid waste is a hazardous waste.” Thus, where it is reasonably expected that the solid waste may be a hazardous waste, documentation of the hazardous waste determination is required in accordance with Wis. Admin. Code § NR 661.02.
Self-Implementing Option for Managing Response Action Soils as Clean under Wis. Admin. Code ch. NR 500

The department’s Remediation and Redevelopment Program has the authority pursuant to Wis. Stats. § 292.55, when requested, to provide written, technical assistance on a site-specific basis to RPs. Often, RPs request department review and approval of soil management plans and determinations at response sites. This can require RPs to wait for the department’s approval prior to managing any of the soil excavated at a response action site. Thus, the approach outlined in this guidance will allow RPs to use a “self-implementing option” to properly manage excavated soil if the soil concentrations are below those described as being able to be managed as “clean soils”. Where soil concentrations are at or above the levels in this guidance, RPs may request the department’s approval of a site-specific determination, if the RP proposes not to manage those soils at a solid waste facility licensed to accept those soils. Those contaminated soils may be eligible for a contaminated soil exemption under Wis. Admin. Code § NR 718.12.

As part of the Wis. Admin. Code ch. NR 700 self-implementing process, responsible parties may manage soil that is excavated as part of an environmental response action as “clean soil” if:

- **Non-Naturally Occurring Compounds**: The soil does not contain compounds that are not naturally occurring (e.g., volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), pesticides, and other non-naturally occurring contaminants (e.g., arsenic concentrations at a former apple orchard or lead concentrations at a former battery plant) at concentrations above the laboratory limit of quantification (LOQ) levels (as defined in Wis. Admin. Code § NR 149.03(42));

- **Naturally Occurring Compounds**: The soil contains naturally occurring metals with established Wisconsin background threshold values (BTVs) such as arsenic, barium, cadmium and lead, at concentrations less than the BTVs, or less than the most restrictive NR 720 residual contaminant level (RCL), if that level is greater than the BTV.

If other naturally occurring compounds including metals or other inorganics without BTVs are present, soil may be managed as clean soil under this optional approach if concentrations are below the NR 720 non-industrial direct contact and groundwater pathway RCLs. In all cases, RCLs are to be calculated using default parameters as specified in Wis. Admin. Code ch. NR 720, Wis. Adm. Code, and department guidance document RR-890, “Soil Residual Contaminant Level Determinations Using the U.S. EPA Regional Screening Level Web Calculator”. Please refer to Table 1 in this guidance for soil concentrations that may be compared to excavated soil analytical results when making appropriate soil management determinations.

- **Polycyclic aromatic hydrocarbons (PAHs)**: If the soil contains polycyclic aromatic hydrocarbons (PAHs), which may or may not be naturally occurring, and the soil concentrations:
  - Do not attain or exceed the groundwater pathway RCLs in Wis. Admin. Code ch. NR 720;
  - Do not pose a direct contact risk if all PAH concentrations do not attain or exceed compound-specific, non-industrial direct contact RCLs in Wis. Admin. Code ch. NR 720; or
  - Are approved by the Department as part of a Wis. Admin. Code § NR 722.11 risk assessment approach for carcinogenic PAHs on a cumulative basis (as described in department publications RR-079 and RR-087); the PAH concentrations may not pose a non-industrial, direct contact risk when assessed on a cumulative basis.

- **Default Clean Soil Concentrations Table**: The self-implementing option for clean soil management is available if the soil excavated during the response action has concentrations levels below the following:
Default Clean Soil Concentrations Table:
Maximum Allowable Concentrations (mg/kg) of Specific Metals in Soil Excavated at Response Action Sites

<table>
<thead>
<tr>
<th>Metal</th>
<th>Non-industrial direct contact RCL (mg/kg)</th>
<th>RCL for the protection of groundwater (mg/kg)</th>
<th>Background Threshold Value (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td></td>
<td></td>
<td>28,721</td>
</tr>
<tr>
<td>Arsenic</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Barium</td>
<td></td>
<td></td>
<td>364</td>
</tr>
<tr>
<td>Cadmium</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Calcium</td>
<td></td>
<td></td>
<td>14,536*</td>
</tr>
<tr>
<td>Chromium III</td>
<td>100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobalt</td>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>Copper</td>
<td></td>
<td></td>
<td>91.6</td>
</tr>
<tr>
<td>Iron</td>
<td>54,800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td></td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>Magnesium</td>
<td></td>
<td></td>
<td>8,290*</td>
</tr>
<tr>
<td>Manganese</td>
<td></td>
<td></td>
<td>2,937</td>
</tr>
<tr>
<td>Nickel</td>
<td></td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>Strontium</td>
<td>46,900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vanadium</td>
<td></td>
<td></td>
<td>85</td>
</tr>
<tr>
<td>Zinc</td>
<td>23,500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* - no RCLs have been established for calcium or magnesium (background threshold values included for reference)

Placement Requirements

Soil excavated as part of a response action with concentrations that are below the concentrations listed in the Default Clean Soils Concentrations Table above, or satisfy the narrative standards described above for naturally occurring compounds, non-naturally occurring compounds or PAH soils may be managed as “clean soil” per Wis. Admin. Code § NR 500.08(2), under this self-implementing option. Clean soil can generally be reused on the response action site it was excavated from or at another location without prior department review or approval as long as the soil is used in a nuisance-free and aesthetic manner and is in compliance with the location and performance standards in Wis. Admin. Code § NR 500.08(2). The locational criteria prohibit placement of the soil within a floodplain (Wis. Adm. Code § NR 504.04(3)(c)). However, impacts to wetlands or the placement of soil in floodplains may be addressed through applicable permitting processes, such as a US Army Corps of Engineering permits (ACOE) and other wetlands permits.

Further, Wis. Admin. Code § NR 504.04(4) prohibits placement of soil where there is a reasonable probability that the soil will cause:

- Significant adverse impacts to wetlands.
- A take of an endangered or threatened species.
- A detrimental effect on surface water.
• A detrimental effect on groundwater quality or cause or exacerbate a groundwater quality standard exceedance (Wis. Admin. Code ch. NR 140 (enforcement or preventive action limit).
• Migration and concentration of explosive gases.
• Emission of any hazardous air contaminant.

Other Considerations
Other rules and regulations may also apply to the management of clean soil, contaminated soil, or other solid waste material at locations other than licensed landfill facilities. These may include, but are not limited to, the requirement to obtain storm water permits, U.S. ACOE permits, and wetland permits. Impacts to wetlands and/or effects on floodplains or surface water may be addressed through the applicable permitting processes.

It is in the best interest of any property owner who accepts soil and RP to ensure that an acceptable soil determination has been made and that the soil is managed in accordance with applicable law. The RP and the receiving property owner could be held responsible for cleaning up the contamination in accordance with Wis. Stat. ch.292 if the material would result in a discharge of a hazardous substance or environmental pollution. The department is able to provide assistance to RPs through our technical assistance program.

RR Program Contacts
General questions regarding managing waste excavated at response action sites should be made to:
• Statewide: Paul Grittner, Paul.Grittner@wisconsin.gov, (608) 266-0941
• Northeast Region: Tauren Beggs, Tauren.beggs@wisconsin.gov, (920) 662-5178
• Northern Region: John Hunt, JohnT.Hunt@wisconsin.gov, (715)392-3126
• South Central Region: Mike Schmoller, Michael.Schmoller@wisconsin.gov, (608) 275-3303
• Southeast Region: Nancy Ryan, Nancy.Ryan@wisconsin.gov, (414) 263-8533
  Linda Michalets, Linda.Michalets@wisconsin.gov, (414) 263-8757
• West Central Region: Matt Thompson, Matthew.Thompson@wisconsin.gov, (715) 839-3750

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The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services, and functions under an Affirmative Action Plan. If you have any questions, please write to Chief, Public Civil Rights, Office of Civil Rights, U.S. Department of the Interior, 1849 C. Street, NW, Washington, D.C. 20240.

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