

# NR 538 TAC: Proposed Code Changes, NR 538.10

Fourth TAC Meeting, Fitchburg Service Center  
December 08, 2016

Philip Fauble, Beneficial Use Coordinator  
Bureau of Waste and Materials Management





# Proposed Appendix I Changes

## A Few Minor Changes:

- Aluminum addition request for coal ash
- Iron in foundry sand; analytical issues
- Manganese in foundry slag

All secondary contaminants per EPA; welfare standards per NR 140; not identified as COC's in EPA studies.

- Changes in BU Methods Table; reflects NR 538.10 changes





# Proposed Appendix I Changes

TRC report on direct contact standards from WCMA:

- “one size fits all” vs. activity specific
- hazard quotient of 0.2 vs. 1.0
- modification of industrial exposure scenerios





# Proposed Appendix I Changes

## Concerns about elimination of Category 3

- Small percentage of byproduct material
  - Category 2 – 46%
  - Category 3 – 1.6%
  - Category 4 – 43%

## Overall view of proposed changes

- Proposing additional testing while simplifying code requirements
- Eliminate Cat. 1 testing
- Focus on COC's



# Laura Fell

Haley & Aldrich, Inc.

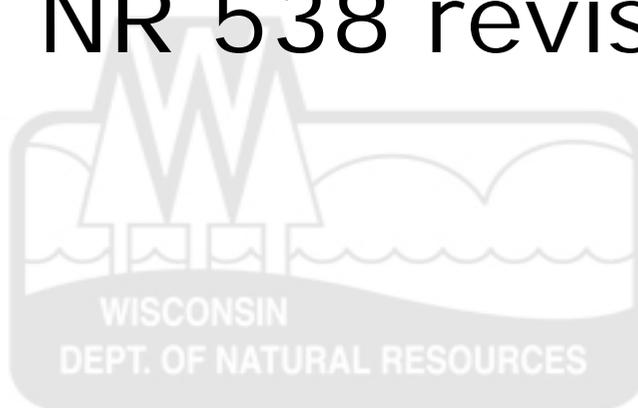
Wisconsin Utilities Association  
white papers on contaminant  
standards



# TAC Member

## TAC Sub-committee

Collaborated comments on  
proposed NR 538 revisions





# Rule Language Changes

- NR 538.10(5)(5) Confined Fill
  - Confined geotechnical fill material in accordance with the project criteria and uses specified in this subsection. If more than 5,000 cubic yards are to be used in an individual project, prior written notification in accordance with s. NR 538.14 (4) and concurrence by the department are needed. If the department does not respond to the notification within 10 business days, concurrence is considered to be granted. **The use of a clay capping layer or geomembrane as an impervious surface in accordance with the design criteria of s. NR 504.07 for confined geotechnical fill must be approved in accordance with s. NR 538.08(7).**



# Rule Language Changes

- NR 538.10(5)(5)(a) Confined buildings
  - ) ~~Base course, subbase or s~~ **Subgrade** fill for the construction of commercial, industrial or non-residential institutional buildings **provided the design and use of the building prevents the percolation of liquid through the byproduct layer**. The placement of the industrial byproduct may not extend more than 4 feet beyond the outside edge of the concrete slab or the frostwalls of the building. Placement of the concrete floor or frostwalls shall be completed as soon as practical after placement of the fill material **in accordance with s. NR 538.12(2)(d)**. Any area where industrial byproducts are not directly beneath the building shall be sloped to prevent ponding of water **and** covered with 2 feet of native soil. **The upper six inches shall consist of including topsoil and seeded or other cover as approved by the department and placed** as soon after placement as is practical.





# Rule Language Changes

- NR 538.10(5)(5)(d) Base Aggregates
  - (d) Base aggregates for the construction of a paved federal, state or municipal roadway that meet the Wisconsin department of transportation Section 301 standard specifications for base aggregates. The use of industrial byproducts as paved roadway base aggregate is prohibited in residential areas, unless used in a roadway designed with a rural type cross-section.
- Eliminate utility trench backfill (d)
- Eliminate bridge abutment backfill (e)





# Rule Language Changes

- NR 538.10(6) Feed and Manure Storage
  - Fill material used for the construction of feed and manure storage structures at livestock operations. The feed and manure storage structures shall be constructed in accordance with applicable Natural Resources Conservation Service Conservation practice standards. Larger operations are also subject to NR 243 requirements. If more than 5,000 cubic yards are to be used in an individual project, prior written notification, including copies of construction plans that detail how the byproduct material will be incorporated into the project, in accordance with s. NR 538.14 (4) and concurrence by the department are needed. If the department does not respond to the notification within 10 business days, concurrence is considered to be granted.
  - Note: Natural Resources Conservation Service (NRCS) conservation practice standard Code 313 applies to the construction of waste storage facilities and NRCS conservation practice Code 629 applies to construction of feed storage pads. Copies of these and other conservation practice codes can be obtained online from the NRCS Field Office Technical Guide, [www.nrcs.usda.gov/wps/portal/nrcs/site/wi/home](http://www.nrcs.usda.gov/wps/portal/nrcs/site/wi/home). Copies are also available at the Wisconsin NRCS State Office or the Wisconsin Land and Water Conservation Association Office.





# Rule Language Changes

- NR 538.10(7) Transportation Embankments

- ~~Clay capped and sidewalled~~ Transportation facility embankments constructed under the authority of the Wisconsin department of transportation, or a municipality, that meet the criteria in this subsection. Examples include linear roadway sound and sight barrier berm embankments, airport embankments and roadway bridge or overpass embankments. **Any area where industrial byproducts are beneficially used as an embankment shall be sloped to prevent ponding of water, covered with 2 feet of native soils including a minimum of 6 inches of topsoil, or other cover approved by the department, and seeded with an approved Wisconsin department of transportation seed mix as soon as practical after placement of the industrial byproducts.**

- Existing NR 538.10(6) for fully encapsulated embankments is eliminated.
- Embankments will only be allowed to use new Category 1 byproduct materials.





# Rule Language Changes

- NR 538.10(8) Unconfined Geotechnical Fill
  - Unconfined geotechnical fill material used as fill material for sight, sound, **safety** and structural berms, ~~reclamation of nonmetallic mines~~, public recreational trails, construction of sporting venues, limited use parking areas, access lanes, utility trenches or other beneficial uses demonstrated to be acceptable by the department. Any area where industrial byproducts are beneficially used as unconfined geotechnical fill shall be sloped to prevent ponding of water, covered with 2 feet of native soils including **a minimum of 6 inches** of topsoil, or other cover approved by the department, and seeded as soon as practical after placement of the industrial byproducts. **Gravel or other granular material may be substituted for topsoil if necessary for the final use as long as the total fill cover is at least 2 feet. If more than 5,000 cubic yards are to be used in an individual project, Pprior** written notification in accordance with s. NR 538.14 (4) and concurrence by the department are needed ~~for all unconfined geotechnical fills.~~





# Rule Language Changes

- NR538.10(9) Mine Reclamation

- Geotechnical fill material used in the reclamation of nonmetallic mining sites. Any area where industrial byproducts are beneficially used in the reclamation of a nonmetallic mine site shall be sloped to prevent ponding of water, covered with 2 feet of native soils including a minimum of 6 inches of topsoil, or other cover approved by the department, and seeded in accordance with the reclamation plan as soon as practical after placement of the industrial byproducts. Prior written notification in accordance with s. NR 538.14 (4) and concurrence by the department are needed for all nonmetallic mine reclamation projects. Concurrence by the department will be based on specific site conditions and good engineering practice. If the department does not respond to the notification within 10 business days, concurrence is considered to be granted. The beneficial use of industrial byproducts in the reclamation of nonmetallic mines is prohibited in residential areas or areas where residential construction is planned as a post-reclamation land use.





# Rule Language Changes

- NR538.10(9) Reclamation, continued
  - (a) The use of fill materials at nonmetallic mining sites with a permit issued under ch. NR 135 shall be in accordance with the approved reclamation plan required under s. NR 135.19. If the reclamation plan does not specify the use of industrial byproducts as fill material, the plan shall be modified in accordance with s. 135.24 to reflect the use of these byproducts. The reclamation plan modification must be approved by the regulatory authority before applying for concurrence by the department.
  - (b) Nonmetallic mining sites where mining ceased prior to August 1, 2001 and are not subject to ch. NR 135 proposing the use of industrial byproducts as part of reclamation of the mine site shall submit a reclamation plan prepared in accordance with s. NR 135.19(1)-(4) for the portion of the mine site that will accept fill material. Mine reclamation projects at mine sites that do not have an approved reclamation plan issued under ch. NR 135 using more than 10,000 cubic yards of industrial byproduct fill material shall be approved in accordance with s. NR 538.08(7).





# Rule Language Changes

- NR538.10(9) Reclamation, continued
  - (c) For all nonmetallic mine sites, geotechnical fill shall not be placed within 5 feet of the post-reclamation water table level or the pre-mining water table level if a post-reclamation water table level is not determined in the reclamation plan.
  - (d) Coal combustion residuals such as coal fly ash, bottom ash, slag and flue gas desulfurization byproducts shall not be used for nonmetallic mine reclamation.





# Rule Language Changes

- NR538.10(11) Bonded Surface Course

- Bonded surface course material used in accordance with the criteria of this subsection. This use includes placement of industrial byproducts as a bonded surface course material such as seal coats **and chip seals** in paved ~~federal, state or municipal~~ roadways, **driveways, parking areas and trails** ~~specified in sub. (5) (c)~~. Industrial byproducts used as a bonded surface course shall conform to the Wisconsin department of transportation standard specifications for highway and structure construction applicable to asphaltic pavements. **Bonded surface course material must contain less than 2 percent passing the P200 sieve and applied at a rate no greater than 18 pounds per square yard.** Within 48 hours of application of the industrial byproduct, the surface shall be rolled to thoroughly embed these materials into the asphaltic mastic.
- Prior concurrence is no longer needed; also applies to unbonded surface course.





# Rule Language Changes

- NR538.10(15) Soil or plant additives
  - Soil or plant additives to be managed, applied and licensed in accordance with the Wisconsin department of agriculture, trade and consumer protection ch. ATCP 40, Subchapter II or ATCP 41 requirements. Prior written notification in accordance with s. NR 538.14 (4) and concurrence by the department are needed for all soil or plant additives used in accordance with this section. If the department does not respond to the notification within 10 business days, concurrence is considered to be granted. The applicant shall demonstrate, as part of the required written notification, the following:
    - (a) The byproduct, as demonstrated through research projects approved under s. NR 518.04(2) or previously published research, has value as a soil or plant additive and will not result in detrimental effects to the soil or vegetation at the rates and mixtures proposed. If the additive is part of a mixture, the physical and chemical nature of the other materials in the mixture must be described in the submittal as well as the relative percentages of each material.





# Rule Language Changes

- NR538.10(15) Additives, continued
  - (b) The byproduct or byproduct mixture will not be applied at rates such that excessive accumulation of hazardous substances occur in soil or vegetation, or cause a detrimental effect on surface water quality, or cause a detrimental effect on groundwater quality that would result in an exceedance of the groundwater quality standards in s. NR 140.
  - (c) The byproduct or byproduct mixture will be applied in accordance with accepted agricultural practices.
  - (d) Byproducts that are intended for use as agricultural liming materials to be managed, applied and licensed in accordance with ATCP 41 will meet the requirements of this section and do not contain contaminant concentrations in excess of the values listed in Table 3 of s. NR 204.07(5)(c).





# Rule Language Changes

- NR538.10(15) Additives, continued
  - (e) Flue gas desulfurization gypsum does not contain contaminant concentrations in excess of the values listed in Table 5 of ch. NR 538, Appendix I and will be applied in accordance with USDA Code 333 or other references as approved by the department.
  - Note: USDA Code 333 is the guidance document “Amending Soil Properties with Gypsum Products”, Natural Resources Conservation Service, Conservation Practices Standard Code 333 (333-CPS-1), June 2015 available through the United States Department of Agriculture website:  
“[https://efotg.sc.egov.usda.gov/references/public/OH/Amending\\_Soil\\_Properties\\_with\\_Gypsum\\_Products\\_Standard\\_\(333\).pdf](https://efotg.sc.egov.usda.gov/references/public/OH/Amending_Soil_Properties_with_Gypsum_Products_Standard_(333).pdf)”.





# Questions?

Philip Fauble, WDNR, Beneficial Use Coordinator

(608) 267-3538

[philip.fauble@wisconsin.gov](mailto:philip.fauble@wisconsin.gov)

