Rule Revisions: NR 538 Wis. Adm. Code

Public Hearings – July 25, 2019/Green Bay
July 29, 2019/Madison

Beneficial Use of Industrial Byproducts

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Wisconsin Department of Natural Resources
Regulatory Authority

- The Department of Natural Resources is required to promulgate, by rule, standards for the reuse of high-volume industrial waste per s. 289.05(4), Wis. Statutes. The rules must be designed to “…allow and encourage, to the maximum extent possible consistent with the protection of public health and the environment, the beneficial reuse of high-volume industrial waste…”.
Existing Rules

The ch. NR 538 beneficial use rule was enacted in December of 1997:

- Established a streamlined approval process for the majority of beneficial uses
- Maintained a case-specific approval option for uses and byproducts that don’t fit the streamlined approach.
Existing Rules

- Ch. NR 538 set up a mostly self-implementing approval process with the following elements:
  - Initial certification & annual reporting
  - Industrial byproduct testing to assign categories of use
  - Storage & transportation requirements
  - Specifications for use
  - Placement restrictions
  - Public participation process for large projects
  - Submittal of notification to DNR requesting project concurrence required with some projects
  - Property owner notification
Technical Advisory Committee

- Section 9142(6t) of 1995 WI Act 27, required the creation of a technical advisory committee (TAC) for the purpose of advising the DNR on the development of beneficial use rules.
- The TAC, consisting of 9 members from potentially affected parties, met in a total of 9 public meetings from March, 2016 to Sept., 2018.
- At each meeting, the DNR presented proposed rule language changes, suggested by both DNR staff and TAC members, and discussed their merits.
Proposed Rules

• The proposed rules are intended to:
  – revise the existing rules to address updated environmental standards, laws and changes in manufacturing and air pollution control processes,
  – continue encouraging the beneficial use of waste material,
  – ensure that the materials continue to be responsibly managed and reused.

• In addition, new federal rules issued on April 17, 2015 under 40 CFR Part 257, Subpart D governing the regulation of one class of industrial byproducts, coal combustion residuals (CCRs), required revisions to ch. NR 538 to ensure consistency.
Proposed Rules

• Each section of the existing rule was evaluated to determine if changes were needed:
  – Can the requirement(s) be simplified or reorganized to make compliance easier?
  – Do the standards need to be updated or revised to meet current specifications or environmental protection standards for reuse?
  – Is language needed to accommodate new uses, byproducts or activities?
Affected Industries

- Potential affected industrial byproduct **generators** include:
  - Iron, Steel and Aluminum Foundries
  - Electric Utilities with Coal-fired Boilers
  - Paper Mills
  - Lime Kilns

- Potential affected industrial byproduct **users** include:
  - Road Builders - Farmers/CAFOS
  - Cement Manufacturers - WisDOT
  - Aggregate Producers - Construction Firms
  - Drywall Manufacturers - Industrial Byproduct Brokers
  - Asphalt Producers
  - Concrete Manufacturers
Fiscal Impact

• Several of the rule changes related to testing, recharacterization, concurrences, and new uses are anticipated to result in either direct or indirect cost savings for generators and users.

• Some of the rule changes will result only in minor fiscal impacts since they are codifications of existing policy and guidance.

• An Economic Impact Analysis (EIA) was prepared by the DNR which indicated that the proposed rule revisions would result in some cost savings and some additional costs resulting in an overall minor increase in compliance costs of approximately $37,500/yr statewide.
## Rule Changes

### Definitions

<table>
<thead>
<tr>
<th>Encapsulated use (new)</th>
<th>Byproduct is bound into a solid matrix</th>
<th>Aligns with federal definition in 40 CFR Part 257</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excess quantities (new)</td>
<td>Volumes that exceed the project purpose</td>
<td>Aligns with federal definition; included at request of TAC</td>
</tr>
<tr>
<td>Industrial byproduct</td>
<td>Added a list of exclusions and better definitions to clarify what materials could be regulated under ch. 538; note added to explain other regulations used to approve beneficial uses</td>
<td>Codify existing policy and guidance; conform to Act 285 exclusion for ferrous slag; note included at request of TAC</td>
</tr>
<tr>
<td>Productive manner (new)</td>
<td>Criteria for determining if a use can be considered a “beneficial use”</td>
<td>Clarifies statutory language</td>
</tr>
<tr>
<td>Soil or plant additive (new)</td>
<td>Definition language from ATCP 40, Subchapter III</td>
<td>New use category; will eliminate need for case-specific approvals</td>
</tr>
</tbody>
</table>
## Rule Changes

### Eligible Uses

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geotechnical fill</td>
<td>All covered uses considered the same; simplified highway embankments; added use at livestock operations; reduced topsoil from 6” to 4” per DOT</td>
<td>Simplified and updated standards; better defined use standards; adjusted to meet DOT standards for use</td>
</tr>
<tr>
<td>Nonmetallic Mine Reclamation</td>
<td>Uses restricted to what is necessary to restore the site to a “stable and safe condition”; must have a reclamation plan; 5 foot separation distance to water table; Silurian dolomite</td>
<td>Added definitions to conform to ch. NR 135 mine reclamation standards; address TAC concerns; groundwater sensitivity</td>
</tr>
<tr>
<td>Private well setback for fill projects</td>
<td>Reduced setback from 200’ to 100’ from geotechnical fill sites</td>
<td>Reduction based on UW modelling; ~80% contaminant reduction after 100 feet</td>
</tr>
<tr>
<td>Construction uses</td>
<td>Moved some previously “confined” uses; added “base aggregates”; eliminated bridge abutments and fully encapsulated highway embankments</td>
<td>Updated to meet DOT specs and policy changes; update ASTM references</td>
</tr>
<tr>
<td>Unconfined uses</td>
<td>Update surface course uses and winter road abrasives; added manufacture soil blends; eliminate decorative stone</td>
<td>Updated to meet DOT specs; added soils at request of WCMA; little stone demand</td>
</tr>
</tbody>
</table>
# Rule Changes

## Reporting

<table>
<thead>
<tr>
<th>Initial Certification</th>
<th>Concurrence from the DNR will now be required to confirm eligible uses; DNR response in 10 days</th>
<th>Provides an accurate list of who is participating in the BU program; aligns with other States; risk management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recharacterization</td>
<td>Consolidate 1-5 year sampling schedule to a uniform 4-year schedule; exemption for generators under 1000 cy per year; DNR confirmation of eligible uses</td>
<td>Less testing for most byproducts will reduce costs; requested by TAC to reduce burden on smaller generators</td>
</tr>
<tr>
<td>“Unconfined” geotechnicalfills</td>
<td>Geotechnical fills with a soil cover will only have to obtain a concurrence if projects exceeds 5000 cy</td>
<td>Cost savings and reduction in reporting for smaller projects</td>
</tr>
<tr>
<td>Surface course material</td>
<td>Eliminates need for concurrence for both bonded and unbonded uses</td>
<td>Cost savings and reduction in reporting</td>
</tr>
</tbody>
</table>
### Rule Changes

#### Reporting

| Geotechnical Fills greater than 5000 cy | New information submittal requirements for projects to provide GIS locational information | GIS locational information will allow future excavations to avoid expensive investigations |
| Annual reporting | New requirements that generators report the uses and names of byproduct recipients | Will assist in tracking material; assure public that the material is being properly reused |
| Modifications | New requirement that some requested modifications to approved projects obtain a concurrence | Formalizes the process of requesting modifications and DNR responses; more certainty |
| Property owner notification | Simplified notification procedure by consolidation into one form; information will be submitted to DNR | Verify that owner was notified; creates record to facilitate redevelopment at sites; do not have to rely on property owner to maintain records |
## Rule Changes

### Standards

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination of “Categories”</td>
<td>Categories 1-5 will be eliminated and replaced with “eligible uses” approved by the DNR</td>
<td>Response to user and public confusion regarding the category designations; eligible uses allows for use of specific materials in certain uses; aligns with approach of other States; less reliance on numeric standards</td>
</tr>
<tr>
<td>Appendix format</td>
<td>Appendix is simplified; number of tables reduced</td>
<td>Simplified and clarified for ease of use and compliance</td>
</tr>
<tr>
<td>Water leach standards</td>
<td>Table 1A standards set at NR 140 ES groundwater quality; Table 1B at 5x the NR 140 ES standards</td>
<td>Updated to reflect the latest groundwater quality protection standards</td>
</tr>
<tr>
<td>Totals standards for unconfined uses</td>
<td>Table 2 standards set from DHS specific ingestion/inhalation exposure models</td>
<td>Updated to reflect human health protection standards</td>
</tr>
</tbody>
</table>
## Rule Changes

### Standards

| Storage sites | Runoff calculations removed – refer to stormwater permits; exempt small municipal storage yards; exempt temporary or staged storage sites used for less than 16 months; better defined storage management requirements; an impervious surface is required for byproducts that exceed Table 1B standards; storage areas for byproducts less than Table 1B standards may use compacted soil or an aggregate surface | Clarify storage requirements; small storage yard exemption at request of municipalities; defer runoff requirements to stormwater management permits; define when an impervious surface is necessary and how that surface is defined |
## Rule Changes

### Standards

<table>
<thead>
<tr>
<th>Geotechnical fill sites</th>
<th>Cover exposed byproduct with final or intermediate cover within 12 months of placement; 16 months if site is secured by fencing</th>
<th>Necessary to prevent potential ingestion/inhalation exposure; 12 months at request of DHS reviewers in lieu of new exposure standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGD gypsum for soil amendment</td>
<td>FGD gypsum must meet USDA contaminant standards in Table 3</td>
<td>Maximum contaminant standards in Table 3 developed from published USDA study and guidance document for land application of FGD byproducts</td>
</tr>
<tr>
<td>Soil and Plant Additives</td>
<td>Newly added uses for FGD gypsum and liming agents; adhere to DATCP standards for use</td>
<td>Will eliminate need to issue case-specific approvals; cost savings for generators</td>
</tr>
</tbody>
</table>
# Separation to Water Table

## Existing Rules
- Minimum separation to water table of 3 feet at time of placement and
- DNR concurrence required for separation distances less than 5 feet
- Applies to “confined” geotechnical fill projects greater than 5000 cy
- Applies to all categories of byproducts except Cat. 1

## Proposed Rules
- Minimum separation to water table of 3 feet at time of placement for Table 1A or less byproducts
- Minimum separation to water table of 5 feet at time of placement for Table 1B or less byproducts or any byproduct used in mine reclamation projects
- Applies to all geotechnical fill projects under 538.10(2)
Separation to Water Table

• Proposed Rule
  – Simplifies a confusing standard; adds clarity to aid in concurrence determinations
  – Protects groundwater quality:
    • 3-foot separation standard based on UW research showing vadose zone is necessary for 80% reduction of contaminants leaching from industrial byproducts
    • 5-foot separation necessary to account for groundwater table fluctuations; no need to establish a seasonal high water table level
    • 5-foot separation aligns with federal rules for placement of CCR materials
Revised Rules

- Maintains a streamlined approval process for the majority of beneficial uses
- Adds additional uses.
- Creates a mechanism for future management after initial use.
- Maintains a case-specific approval option for additional byproducts and uses that don’t meet the rule standards.
Proposed revisions of the NR 538 rule can be viewed at the Department of Natural Resources Administrative Rules website:  [https://dnr.wi.gov/news/input/ProposedPermanent.html](https://dnr.wi.gov/news/input/ProposedPermanent.html)

Search:  WA-11-15

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