

# Requirements Of A Nonmetallic Mining Reclamation Plan

Note: Plans may, by reference, incorporate existing plans and materials that meet the requirements of ch. [NR 135 Wis. Adm. Code](#).

## **1. Site Information**

### A. Maps

1. General location
2. Property boundaries
3. Aerial extent
4. Geologic composition and depth of mineral deposit
5. The distribution, thickness and type of topsoil
6. Approximate elevation of groundwater
7. Location of surface waters
8. Existing drainage patterns
9. Existing topography – contour maps (intervals should be at 10 to 20 ft)
10. Location of manmade features on or near the site (ex. Structures, roads ponds)
11. **Existing Mines Only:** Plan view drawing showing location & extent of land previously affected by mining activity including stockpiles, wash ponds and sediment basins.

Note: Maps may be combined where appropriate. Sources of information for maps include Wood County Soil Survey Maps, topographic maps, County Aerial Maps, USDA maps, zoning maps, wetland inventories (DNR, WGNHS), UWEX, NRCS, ASCS.

B. Biological resources, plant communities, and wildlife use at and adjacent to the proposed or operating site (based on available resources)

Note: Information on biological resources can be obtained from UWEX LCD soil survey, NRCS, FSA, DNR, USF&W.

## **2. Post-mining Land Use: (ex. residential, wildlife habitat, pond)**

A. Proposed post-mining land use must be consistent with local land use plans and zoning or propose a change to land use or zoning. It must also comply with any applicable federal, state or local laws in effect at the time of submittal (ex. water regulations, farmland preservation act).

Note: If land is zoned pursuant to s. 91.75, Stats., as an exclusive agriculture property, it must be returned/restored to agriculture unless rezoned.

## **3. Reclamation Measures:**

A. Description of proposed earthwork and reclamation including:

1. Final slope angles including high wall reduction, benching or terracing measures, or other slope stabilization methods. (Minimum 3:1 unless able to justify alternate)

B. Method of topsoil or topsoil substitute removal, stabilization, and conservation practices to be used.

Note: Topsoil or topsoil substitute material required to support re-vegetation for reclamation can be identified using soil surveys or other available information.

C. Plan sheet or map showing proposed final topography and any water impoundments or artificial lakes to support proposed future land use.

D. Plan sheet or map showing surface structures roads and related facilities that will remain for final land use.

E. Re-vegetation plan with techniques to accomplish soil and slope stabilization including:

1. Method of seed bed preparation
2. Rates and kinds of soil amendments
3. Seed application timing
4. Methods and rates of seeding
5. Mulching, netting or other conservation practices to stabilize soils

F. Set quantifiable standards for re-vegetation for support of approved post-mining land use. (ex. percent vegetative cover, productivity, plan density, diversity)

G. Plan sheet or map and narrative showing conservation practices for erosion control measures to be used to minimize erosion and pollution of surface and groundwater.

H. Description of areas (if applicable) that will be reclaimed on an interim basis and may qualify for the waiver in s. NR 135.41, Wis. Adm. Code and will be later disturbed for final reclamation.

I. Estimated cost of reclamation for each stage of project or the entire site if staging is not planned.

#### **4. Discussion of criteria for assuring successful reclamation including:**

A. Re-vegetation success (comparison to reference area, baseline data, pre-approved technical standard)

B. Success based on a predetermined baseline if returning to pre-mining condition.

C. Re-vegetation with indigenous plants.

#### **5. Certification of plan:**

A. Provide a signed certification that the reclamation plan will be carried out as approved. Landowner and lessee (if different from operator) must also provide signed certification that they concur with the plan and will allow implementation.

B. The landowner or lessee need not provide a signed agreement in the following cases:

1. The mine operator has submitted a reclamation plan after receiving an automatic permit.
2. If the lease agreement or memorandum of lease was in place prior to August 1<sup>st</sup>, 2001.

#### **6. Approval:**

A. The regulatory authority shall approve, approve conditionally, or deny the plan in writing in no less than 30 days nor more than 90 days (ch. NR 135.21(1)(f), NR 135.31(2), NR 135.21(3), NR 135.22).

## Specific Reclamation Standards

### Required In Ch. NR 135, Wisconsin Administrative Code

- A. **Refuse and Other Solid Wastes**: Nonmetallic mining refuse shall be reused in accordance with a reclamation plan. Other solid wastes shall be disposed of in accordance with applicable state and local regulations.
- B. **Area Disturbed and Contemporaneous Reclamation**: Nonmetallic mining reclamation shall be conducted, to the extent practicable, to minimize the area disturbed by mining and to provide for reclamation of portions of the mining site while mining continues on other portions of the property.
- C. **Public Health, Safety and Welfare**: All nonmetallic mining sites shall be reclaimed in a manner that will comply with federal, state and local regulations governing public health, safety and welfare.
- D. **Habitat Restoration**: When the land use required by the reclamation plan approved pursuant to an applicable reclamation ordinance requires plant, fish or wildlife habitat, it shall be restored, to the extent practicable, to a condition at least as suitable as that which existed before the lands were affected by mining operations.
- E. **Compliance With Environmental Regulations**: Reclamation of mining sites shall comply with any other applicable federal, state and local laws including those related to environmental protection, zoning and land use control.
- F. **Surface Water and Wetlands Protection**: Reclamation shall be conducted and completed in a manner that assures compliance with water quality standards for surface waters and wetlands contained in chs. NR 102 through 105. Before disturbing the surface of a nonmetallic mining site and removing topsoil, all necessary measures for diversion and drainage of runoff from the site to prevent pollution of waters of the state shall be installed in accordance with the reclamation plans approved pursuant to an applicable reclamation ordinance. Diverted or channelized runoff resulting from reclamation may not adversely affect neighboring properties.
- G. **Groundwater Protection**: (1) *Groundwater Quantity* – a mining site shall be reclaimed in a manner that does not cause a permanent lowering of the water table that results in adverse effects on surface waters or a significant reduction in the quantity of groundwater reasonably available for future users of groundwater. (2) *Groundwater quality* – mining reclamation shall be conducted in a manner which does not cause groundwater quality standards in ch. NR 140 to be exceeded at a point of standards application.
- H. **Topsoil Management**: (1) *Removal* – topsoil and topsoil substitute material shall be removed, protected and redistributed to support reclamation and site stabilization. Topsoil shall be managed as specified in the reclamation plan in order to achieve reclamation to the approved post-mining land use. Topsoil and topsoil substitute material removal shall be performed, as required by the reclamation plan, prior to any mining activity associated with any specific stage of the mining operation. (2) *Volume* – the operator shall obtain the volume of soil required to perform final reclamation by removal of on-site topsoil or topsoil substitute material or by obtaining topsoil or substitute material as needed to make up the volume of topsoil as specified in the reclamation plan. (3) *Storage* – Once removed, topsoil or topsoil substitute material shall, as required by the reclamation plan, either be used in contemporaneous reclamation or stored in an environmentally acceptable manner. The location of stockpiled topsoil or topsoil substitute material shall be chosen to protect the material from erosion or further

disturbance or contamination. Runoff water shall be diverted around all locations in which topsoil or topsoil substitute material is stockpiled.

- I. **Final Grading and Slopes:** (1) All areas affected by mining shall be graded in accordance with the approved reclamation plan to achieve a stable and safe condition consistent with the post mining land use. The reclamation plan may designate areas such as stable slopes and rock faces that do not require final grading. (2) Final reclaimed slopes covered by topsoil or topsoil substitute material may not be steeper than a 3:1 horizontal to vertical incline, unless alternative requirements are approved under s. NR 135.26, and stable slopes can be demonstrated based on site-specific engineering analysis. The engineering analysis shall show that a minimum acceptable slope stability factor is attainable at a steeper slope and that the post-mining land use specified in the reclamation plan is not adversely affected. When the slope occurs at the edge of a body of water, this approved slope shall extend vertically 6 feet below the lowest seasonal water level. A slope no steeper than 3:1 shall be created at a designated location or locations, depending on the size of the water body to allow for a safe exit. (3) All areas in the nonmetallic mine site where topsoil or topsoil substitute material is to be reapplied shall be graded or otherwise prepared prior to topsoil or topsoil substitute material redistribution to provide the optimum adherence between the topsoil or topsoil substitute material and the underlying material.
- J. **Topsoil Redistribution for Reclamation:** Topsoil or topsoil substitute material shall be redistributed in accordance with the approved reclamation plan in a manner, which minimizes compaction and prevents erosion. Topsoil or topsoil substitute material shall be uniformly redistributed except where uniform redistribution is undesirable or impractical. Topsoil or topsoil substitute material redistribution may not be performed during or immediately after a precipitation event until the soils have sufficiently dried.
- K. **Re-vegetation and Site Stabilization:** Except for permanent roads or similar surfaces identified in the reclamation plan, all surfaces affected by nonmetallic mining shall be reclaimed and stabilized by re-vegetation or other means. Re-vegetation and site stabilization shall be in accordance with the approved reclamation plan and shall be performed as soon as practicable after mining activity has permanently ceased in any part of the mine site.
- L. **Assessing Completion of Successful Reclamation:** The criteria for assessing when reclamation is complete and, therefore, when the financial assurance may be released shall be specified in the reclamation plan. Criteria to evaluate reclamation success shall be quantifiable. See ch. NR 135.13(2) through (5) for more specific criteria.
- M. **Intermittent Mining:** Intermittent mining may be conducted provided that the possibility of intermittent cessation of operations is addressed in an operator's reclamation permit, no environmental pollution or erosion of sediments is occurring, and financial assurance for reclamation pursuant to s. NR 135.40 is maintained covering all remaining portions of the site that have been affected by nonmetallic mining and that have not been reclaimed.
- N. **Maintenance:** During site reclamation, after the operator has stated that reclamation is complete but prior to release of financial assurance, the operator shall perform any maintenance necessary. This includes measures to prevent erosion, sedimentation or environmental pollution, comply with the standards of this subchapter, or to meet the goals specified in the reclamation plan.