

APPENDIX I

RECLAMATION STANDARDS FOR NON-METALLIC MINES IN CHIPPEWA COUNTY

These reclamation standards have been developed as a consistent basis for non-metallic mine reclamation. They have been developed to meet minimum state of Wisconsin requirements (under NR135) and to aid Chippewa County in administration and review of non-metallic mining permits.

The following are minimum technical standards that apply to all permitted non-metallic mine sites.

A. SLOPES

Final slopes shall not exceed three (3) feet horizontal to one (1) foot vertical incline. This slope angle shall extend vertically six (6) feet below the lowest seasonal groundwater level if groundwater is present. In cases of bedrock quarries final slopes may be steeper than 3:1 if it can be shown that the final quarry face will be stable and safe at the proposed slope; 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.

All areas affected by mining shall be addressed in the approved reclamation plan, pursuant to s. 30-102 to provide that a stable and safe condition consistent with the post-mining land use is achieved. The reclamation plan may designate highwalls or other unmined and undisturbed natural solid bedrock as stable and safe and not in need of reclamation or designate other areas affected by mining including slopes comprised of unconsolidated materials that exceed a 3:1 slope, whether or not graded, as stable and safe. For slopes designated as stable under this subsection, the regulatory authority may require that either: a site-specific engineering analysis be performed by a registered professional engineer to demonstrate that an acceptable slope stability factor is attainable at a steeper slope, or the operator perform a field test plot demonstration to demonstrate that a stable and safe condition will be achieved and that the post-mining land use specified in the reclamation plan will not be adversely affected.

Final reclaimed slopes covered by topsoil or topsoil substitute material may not be steeper than a 3:1 horizontal to vertical incline, unless found acceptable through one or more of the following: alternative requirements are approved under s. 30-107; steeper slopes

are shown to be stable through a field plot demonstration approved as part of an approved reclamation plan; or stable slopes can be demonstrated based on site-specific engineering analysis performed by a registered professional engineer. 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.

B. TOPSOIL STORAGE AND REAPPLICATION

- (1) Topsoil shall be systematically stripped and stockpiled for future application. The A and B horizons shall be stripped and separately stockpiled, unless the applicant can prove that the full volume of the B horizon is not needed to support a proposed vegetative cover. In all cases a minimum of 8 inches of topsoil shall be stripped and stockpiled. If the site is documented to lack these minimum depths of topsoil a waiver may be allowed under which that topsoil which is present will be required to be stripped and retained.
- (2) Soil stockpiles shall be seeded down to retain soil.
- (3) Soil stockpiles shall be graded to 3:1 slope or flatter.
- (4) The location of stockpiled soil or topsoil substitute material shall be chosen to protect the material from erosion, further disturbance or contamination. Runoff water shall be diverted around all locations in which soil material is stockpiled.
- (5) In reclamation, topsoil shall be reapplied to the site as uniformly as possible. Sites which lack adequate topsoil shall have the topsoil applied preferentially to the sloped areas.
- (6) The reapplication of soil horizons (A and B) shall be such that each horizon is placed back in its original location in the profile.
- (7) Topsoil Waivers
The County may consider waivers of topsoil requirements under the following conditions:
 - (a) The site, before extraction activities begins, lacks the minimum required depth.
 - (b) The actual depth of available topsoil is documented before excavation begins and every attempt is made to strip and stockpile that amount of topsoil; and
 - (c) Other provisions approved by the county have been made to assure that the soil condition is stable for subsequent stabilization treatment. No waiver from topsoil standards will be considered if the landowner or operator, through intention or negligence allows existing topsoil to be removed from the site.

C. STABILIZATION TREATMENTS

- (1) Seeding shall be required on all exposed areas immediately following completion of topsoil reapplication. Seeding shall be completed in accordance with Appendix A, Section (1).
- (2) Planting of woody vegetation may be accepted in combination with other stabilization techniques. Species used shall be compatible with site characteristics. On flat areas or slopes less than 6:1 (17 percent) trees alone may be planted without seeding the site.
- (3) Sodding, rip-rap or other appropriate measures may be required for areas of drainageways which convey concentrated flow to, across or from the site, and for critical erosion areas as needed to correct a problem on the site. Sod shall be installed according to Appendix A, Section (2).
- (4) Mulch shall be applied to all seeded areas greater than 10:1 (10 percent) slope. Mulch is to be applied pursuant to Appendix A, Section (3).
- (5) Riprap; when required for drainageways, ditch outlets, culvert ends or bridge openings, as shown on the Site Plan, or as required by the Department to deter or correct a problem on the site; shall be installed according to Appendix A, Section (4).
- (6) Use of silt fence, sediment basins, rock weirs and similar structures and methods which require ongoing maintenance will generally not be accepted for long-term reclamation. The intent of final reclamation is to leave the site in a maintenance free and stable condition.
- (7) Any future amendments, revisions or modifications of any cited standards or appendixes incorporated herein are made a part of these standards.
- (8) In all cases, measures shall be taken to assure that soil, sediment and debris from the mine site do not leave the boundaries of the mine site.

D. WASTEWATER AND STORMWATER DISCHARGE

Water from site dewatering and washing operations will meet the conditions of the required Wisconsin Pollution Discharge Elimination System (WPDES) permit from DNR.

Stormwater runoff leaving the site will be controlled to limit sediment delivery to surface waters. Appropriate stormwater discharge or construction site erosion permits must be obtained.

E. WASTE STORAGE AT SITE

It is the duty of the landowner to remove all waste substances as may be deposited by himself or others. During the period of the permit and thereafter, no gravel pit or borrow site shall be used to receive, store, or serve as a depository for demolition materials, or solid waste except yard waste as defined in Wis. Stat. 159.01(17) and except authorized solid waste management and recycling programs consistent with local, state or federal guidelines and administered by the Chippewa County Solid Waste Management Authority.

F. PROGRESSIVE RECLAMATION

Reclamation activities are to be conducted on an ongoing and progressive basis. The county will review progress toward reclamation on an ongoing basis.