Overview of NR 135 Reclamation Program

March 5 & 11, 2003

Wisconsin Department of Natural Resources
Today’s Training - Reclamation Program
Overview

I. Background & History

II. Key Elements
- level playing field
- uniform standards implemented through reclamation permits
- self-funding - fees
- enforcement of reclamation plan & ordinance through permits
Today’s Training - Reclamation Program
Overview

III. Reclamation plan
IV. Relationship to reclamation standards
V. Financial assurance
VI. Implementation issues
VII. Discussion
Today’s Training - Reclamation Program
Overview

Key Program Elements
- reclamation plan tied to post mining land use
- public hearing opportunity
- financial assurance
- reporting
- audits
- registration
- on-going roles of DNR & RA’s
Governor Thompson signed state law in 1994.

DNR as required by that law embarks on a six year consensus rulemaking process with advice of a TAC.

DNR & advisors writes model ordinances for use by counties.

DNR focuses on technical support & audits.


**Background & History - timeline**

- December 1, 2000 - NR135 Effective Date
- Summer, 2001 - County enact ordinances
- August 1, 2001 - deadline to apply for automatic permit
- September 1, 2001 - Counties issue permits
- Aug. ‘04 - deadline: final reclamation plans
- ~ 90 days later - Issuance of Final Permits
Reclamation Program Overview

Key Program Elements - Principles

Local Control

Level Playing Field to ensure via fair applications of reclamation standards through reclamation permits

Not funded by taxpayers

Preserve Nonmetallic Resource for Future
Reclamation Program Overview
Key Program Elements - Self Funded

- Fees collected on **unreclaimed acres** only.
- Those acres currently being mined or expected to be mined in the upcoming year + those reclaimed but awaiting certification of successful reclamation
  - Includes those areas affected by: roads, storage and processing areas
  - Includes those areas where reclamation features such as soil stockpiles, sediment ponds, channels for surface water diversion
PERMITTING - Reclamation Program

Overview

Reclamation Permit

Information required

Reclamation Permits based on review and approval or conditional approval of Reclamation Plan and Financial Assurance

Use available discretion to work towards the best plan in compliance with performance based reclamation standards
Public Notice and Hearings

- Public Notice of Opportunity for Informational Hearing on Reclamation Plan for those with Standing
- Required for New Mines
- Required for New Reclamation Plans
- Discretionary Public Notice on Substantial Revisions to Existing Reclamation Plan for Mines holding Automatic Reclamation Permits
REPORTING REQUIREMENTS
Operator Annual Reports to Regulatory Authority

- Annual report within 60 days of the end of the year for all mine sites
- Basic contact information & location of nonmetallic mining site
- Acreage currently affected by extraction but not reclaimed
- Acreage reclaimed to date (both final and interim)
- Plan, map or diagram depicting site specifics
REPORTING REQUIREMENTS
Regulatory Authority Annual Reports to DNR

- Total Number of Reclamation Permits in effect
- Total acreage currently affected by extraction but not reclaimed
- Total acreage reclaimed to date (both final and interim)
- Other: permit modifications, public hearings, enforcement etc..
• The land containing a Nonmetallic Mineral Deposit may be Registered to “Freeze” Zoning
• Landowners may register property
• Definition: a marketable deposit that can be or is reasonably anticipated to be commercially feasible to mine and has significant economic or strategic value
The Long-term Program

- County or Local Programs in place

- DNR receives input from NMAC & others (Videoconference is a result of this)

- DNR Provides Technical Support (Newsletter and Guidance Publications are examples)
The Long-term Program

- DNR ensure uniform application of reclamation standards - Program audits and acts as a “fail-safe”

- Reports to Natural Resource Board on Appropriateness of fees as required by code
Important Dates

- September 1, 2001 - Counties issued automatic permits
- Before December ‘03 - DNR reports to NRB on fees
- Aug. ‘04 - deadline: final reclamation plans
- ~ 90 days later - Issuance of Final Permits
Reclamation Plans
Preparation & Review of

March 5 & 11, 2003

Wisconsin Department of Natural Resources
Abandoned sites pose risk of pollution (lubricants, metals) to groundwater

Loss of Property Values

Safety Hazards
What the Reclamation Permit Program Requires

• No mining without a permit - NR 135 & ordinances require that a permit based on a reclamation plan
• Contents of reclamation plan
• Post mining land use
• Connection of reclamation plan to uniform standards
• Success criteria and financial assurance
What the Reclamation Permit Program Does Not Require

- NR 135 Adds to the Status Quo
- It doesn’t affect local land use decisions
- Siting, as always, is based on location of the deposit and local zoning
- Dose NOT regulate mine operations - these are regulated by local ordinances (hours of operation, truck traffic, noise etc.)
**WHAT IS RECLAMATION?**

*Reclamation* is a process that renders a nonmetallic mining site capable of supporting the approved post-mining land use(s) in accordance with an approved reclamation plan.

*Reclamation* is accomplished in a manner so as to prevent any pollution or other environmental impacts while carrying out reclamation activities.
Site grading and backfilling
Reclamation- Final Grading
Reclamation- Final Grading
Surface prepared for seeding
Hydroseeding in Reclamation
Early Reclamation Results
Reclamation plan: post-mining land use

Wildlife habitat: pond, forest, meadow, prairie
TARGET POST MINING

LAND USE

- key in determining all aspects of the reclamation plan.
- demonstrates compliance with uniform reclamation standards in the context of the local physical and socioeconomic environment.
- dictates final grades, site hydrology, seed mix,
- sediment control, fate of structures, etc.
Reclamation Keyed to Local Environment

Local environmental factors (soils, groundwater, wildlife and vegetation) and location of manmade structures are among other variables important in the design of the mine reclamation plan.
The reclamation plan is a “blue print” used to return the site to one or more (i.e. a combination) of land uses, including:

- **Passive recreation**: green space, hiking, biking, skiing or nature trails
- **Wildlife habitat**: pond, forest, meadow, prairie
- **Agriculture**: pasture, row crops, forestry
- Reclaimed lake shoreline w/ or without development
- Many other options; be imaginative
Post-mining land use
Agriculture
Post-mining land use
Pond & Recreation
Post-mining land use
Wildlife Habitat
Content of Reclamation Plan

- Maps of:
  - Pre-mining topography
  - Groundwater and surface water
  - Mine operation and erosion control measures
  - Post-mining topography with post mining land use(s)
Content of Reclamation Plan

Maps of:

- Previously mined areas, if applicable, including stockpiles, wash ponds and sediment basins
- Geologic composition and depth of deposit
- Topsoil distribution and thickness
Content of Reclamation Plan

- Biological Information:

- Operators will need to provide information regarding the biological resources, plant communities and wildlife present at and adjacent to the mining site.

- This section should be based on information gathered from existing resources.
Content of Reclamation Plan
Topsoil distribution and thickness
Content of Reclamation Plan: maps of Geologic composition and depth of deposit
Plan - sequence of mining & reclamation

Figure 5. Mining phases below the water table.
Plan - topsoil management & handling sequence
Contents of a Reclamation Plan

Description of the proposed earthwork and reclamation measures that will address the following:

- final slope angles,
- high wall reduction,
- benching,
- terracing,
- or any other structural slope stabilization measures
Description of the proposed reclamation earthwork:
Reclamation plan: More Information

*A Guide to Developing Reclamation Plans for Nonmetallic Mining Sites in Wisconsin.*


http://www.dnr.state.wi.us/org/aw/wm/publications/mining.html
RECLAMATION PLAN

• Preparation & Review of reclamation plan to:
  • demonstrate that the target land use is achieved
  • demonstrate that all necessary reclamation activities are in compliance with the performance-based, statewide uniform reclamation standards.
RECLAMATION STANDARDS

* Refuse and other solid waste removal
* Minimization of the area disturbed
* Public health, safety and welfare
Reclamation Standards
Contemporaneous Reclamation
RECLAMATION STANDARDS

* Habitat restoration

* Compliance with environmental regulations

* Surface water and wetlands protection

* Groundwater protection
Drainage Diversion Above Mine Routes Water Around Disturbed Area
Reclamation plan shows how erosion & sediment control will be done

Partial list of best management practices used to reduce or eliminate erosion and control sedimentation.

- Check dams, Energy dissipaters
- Buffer areas
- Straw bales, Erosion control blankets, Mulch or artificial surface cover
- Silt fences
- Sediment basins
- Surface water diversions
- Cover crop of vegetation

If you need additional resources, please access the Wisconsin Stormwater Management Program webpage at:

http://www.dnr.state.wi.us/org/water/wm/nps/staff.htm
Sediment Basin During Site Development
Energy Dissipators Work in Tandem With Sediment Control Features During Site Development
Erosion and Sediment Control During Site Development
* Topsoil management
* Final grading and slopes
* Topsoil redistribution for reclamation
Removal of Valuable Topsoil Before Mining
The topsoil will be stockpiled where necessary and in as close proximity as possible to the site where it will be used to support the post mining land use. Any topsoil stockpile(s), will be located immediately protected so as to avoid contamination and erosion.
Site grading and topsoil redistribution

The topsoil will be redistributed on a properly sloped and prepared surface awaiting reseeding to support the post mining land use.

All recently topsoiled surfaces will be immediately protected from erosion.
Site grading and backfilling
Site grading according to reclamation plan
Redistribution of Topsoil Following Site Grading
Surface Graded and Prepared Prior to Seeding
RECLAMATION STANDARDS

* Re-vegetation and site stabilization
* Assessing completion of successful reclamation
* Intermittent mining
* Maintenance
Stable Slopes Offer Habitat for Wildlife After Reclamation
Revegetation Plan Contains

- Plant selection - *Please see Appendix C in Reclamation Plan Guidance.*
  
  - timing, rates and methods of seeding
  - seedbed preparation, including application rates and types of soil amendments,
  - description of mulching, netting or any other stabilizing
  - Equipment & techniques to be used.
Yellow Coneflower in Restored Wildlife Habitat - grows well in clay soils
Reclamation Test Plots
TYPICAL SEED MIX FOR WILDLIFE HABITAT/ PASSIVE RECREATION

GRASSES/SEDGES AND SIMILAR PLANTS

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Species Name</th>
<th>Amount *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big Bluestem</td>
<td>Andropogon gerardi</td>
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</tr>
<tr>
<td>Canada Wild Rye</td>
<td>Elymus canadensis</td>
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<tr>
<td>Switchgrass</td>
<td>Panicum virgatum</td>
<td>1</td>
</tr>
<tr>
<td>Indiangrass</td>
<td>Sorghastrum nutans</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 8#

FORBS AND LEGUMES **

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Species Name</th>
<th>Amount *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purple Prairie Clover **</td>
<td>Dalea purpurea</td>
<td>2</td>
</tr>
<tr>
<td>Canada Tick-trefoil **</td>
<td>Desmodium canadensis</td>
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</tr>
<tr>
<td>New England Aster</td>
<td>Aster novae-angliae</td>
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<tr>
<td>Purple cone flower</td>
<td>Echinacea purpurea</td>
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<tr>
<td>Dotted Mint</td>
<td>Monarda punctata</td>
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</tr>
<tr>
<td>Bergamot</td>
<td>Monarda fistulosa</td>
<td>5</td>
</tr>
<tr>
<td>Yellow coneflower</td>
<td>Ratibida pinnata</td>
<td>3</td>
</tr>
<tr>
<td>Blackeyed Susan</td>
<td>Rudbeckia hirta</td>
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</tr>
<tr>
<td>Blue Vervain</td>
<td>Verbena hastada</td>
<td>1</td>
</tr>
</tbody>
</table>

Total: 24.5 oz.
Revegetation Plan - Soil

Topsoil and Substitute Soil - *Commodity or Resource?*

- including specifications for building a substitute soil - again, highly dependent on target land use
- the rates and types of soil amendments,
- mixing with other materials to achieve specifications and generate a viable substitute soil
- Equipment & techniques to be used.
Hydroseeding Makes Seeding on Steep Slopes Easier
Straw mulch applied to protect reclaimed area
Reclamation plan: content

• The operator is required to include some detailed success criteria in their reclamation plans.

• Success Criteria may include cover, productivity, diversity and other measures.

• Please Refer to Appendix D of Guidance
Success Criteria - *Keep as Simple as Possible*

- Cover (can be as simple as 70% of area covered by vegetation)
- Productivity (yield)
- Diversity
- Survival
- Others
One Meter Hoop Used In Monitoring Revegetation - For Cover - Success Criteria
Financial Assurance

It is important to understand the relationship of the approved reclamation plan to the financial assurance requirement.

The financial assurance is intended to guarantee that the reclamation plan is faithfully executed.
RELATIONSHIP TO RECLAMATION PLAN

A GUIDE TO PREPARING AND REVIEWING FINANCIAL ASSURANCE FOR RECLAMATION OF NONMETALLIC MINING SITES IN WISCONSIN

PUBL-WA-835  2002
The proposed proof of financial assurance is provided at the same time that a completed reclamation plan is submitted to the RA.

The purpose of financial assurance (FA) is to ensure that the regulatory authority has access to enough funds to perform the site reclamation.
Success criteria in the reclamation plan provide an objective basis for the RA to make decisions regarding the success of reclamation and thus the release of the financial assurance.
Financial Assurance

The amount of financial assurance will vary depending on the size and complexity of the site.

FA must be in effect for reclamation permit to be valid.

FA reflects the cost of the RA to hire an outside contractor to do the work, not the cost if an operator completed the work.
The best way to calculate and present the anticipated costs is in a table that breaks down each activity and the cost associated with each one.

Please see PUBL-WA-835 2002 “A Guide to Preparing and Reviewing Financial Assurance for Reclamation of Nonmetallic Mining Sites in Wisconsin”

Also, consult with references and local contractors to obtain realistic cost estimates for your area.
## Financial Assurance

<table>
<thead>
<tr>
<th>Element / Reclamation Activity</th>
<th>Dollar Amount</th>
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</thead>
<tbody>
<tr>
<td>A. Earthwork and Grading</td>
<td></td>
</tr>
<tr>
<td>B. Topsoil Management</td>
<td></td>
</tr>
<tr>
<td>C. Revegetation Plan</td>
<td></td>
</tr>
<tr>
<td>D. Erosion Control: Stabilization of Soil Conditions</td>
<td></td>
</tr>
<tr>
<td>E. Maintenance and Monitoring Prior to Release of Financial Assurance and Until Declaration Of Completion (DOC)</td>
<td></td>
</tr>
<tr>
<td>F. Management of Refuse or Other Solid Waste (may Include Removal of Structures, Roads, Foundations, etc.)</td>
<td></td>
</tr>
<tr>
<td>G. Other Reclamation Activities (List as Many as Necessary)</td>
<td></td>
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</tbody>
</table>

**GRAND TOTAL**
Financial Assurance - *Many forms to choose from*

- Bonds
- Cash
- Certificates of Deposit
- Irrevocable Letter of Credit
- Irrevocable Trusts
- Escrow Accounts
- Net Worth Tests
- Government Securities
- Combination of above or others
Completion of Reclamation

Reclamation Success Criteria & Relationship to Retrieval of Financial Assurance

(pursuant to NR 135.13 standards) as documented in the reclamation plan).
Was Reclamation Successful?

Upon completion of reclamation activities, for a portion of a mining site or for the entire mining site, the RA will inspect the site to verify that reclamation to date is successful enough to concur that site evaluation period ought to begin.
Process for the Release of Financial Assurance

- **NOC** - Notice of Completion given to the RA by the operator - begins evaluation period (site maintenance conducted)
- The RA completes evaluation of reclamation
- **COC** - Certificate of Completion given to the operator by the RA acknowledges that success has been achieved.
Release of Financial Assurance

Once the reclamation is complete and certified by the regulatory authority, the financial assurance funds will be released back to the operator.
IMPLEMENTATION ISSUES

• FEES
• PERFORMANCE BASED v. PRESCRIPTIVE STANDARDS
• GENERIC TARGET POST-MINING LAND USE
• ZONING VERSUS RECLAMATON
• HIGHWALLS
Public Notice and Hearings

• Public Notice of Opportunity for Informational Hearing on Reclamation Plan for those with Standing
• Required for New Mines
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• Discretionary Public Notice on Substantial Revisions to Existing Reclamation Plan for Mines holding Automatic Reclamation Permits
IMPLEMENTATION ISSUES

• PUBLIC HEARINGS
IMPLEMENTATION ISSUES

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DISCUSSION