

NON-METALLIC MINING RECLAMATION PLAN NARRATIVE

Operator: Haas Sons, Inc.

Date: 4-24-2017

Owner: David and Kim Bernir

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Summary

This reclamation plan has been developed to provide information about the existing site of the proposed mine, the proposed site operations, and how the mine will be reclaimed to the proposed post mining land use.

This reclamation plan is for a 52 acre field located on the south side of state hwy 178, just west of 170th street, in the town of Eagle Point. The land is currently used and managed for agricultural row crop production.

The operator will mine a sand and gravel deposit that is located on glacial outwash which is characterized as meltwater stream sediment from the Chippewa Lobe. Areas mined will be seeded to native grasses for a wildlife habitat.

1. **Soil Information**

A horizon – 4”-6” of topsoil

B horizon – 24”-60” clay subsoil

Source of information: The USDA soil survey indicates that there is approximately 6" of topsoil and 30" of subsoil at the site. There were also test holes dug on the site to verify the soil depth. See attached soils map.

There are no known utilities at this site.

2. **Description of Materials to be Extracted**

Sand and gravel will be extracted and processed at the site.

3. Extraction and Processing to be Conducted at the Site

Sand and gravel will be mined crushed, washed and then removed from the site. A portable crushing plant will be used to process the material and stockpile it on site. Materials within the mine will be excavated and transported using bulldozers, excavators, loaders and conveyers.

Sand and gravel will be excavated from the mine above the water table in one lift approx. 15-20 feet deep. No high capacity wells will be installed or used to support sand and gravel processing.

No flocculants or other chemicals will be used to support sand and gravel processing. No waste materials that are generated off-site will be hauled to the mine, stockpiled or used in site reclamation.

4. Volumes of Materials

Sequences of mine cells are planned to systematically mine and reclaim the site. The anticipated area of disturbance and estimated volume of raw materials to be removed during the life of the mine is as follows.

(Estimated Cubic Yards of Raw Material)

pit	Area (acre), includes berms, roads, etc.	During 1 st two years	During Full Life of Operation
Total	48.25 Acres	200,000 cubic yards	1,544,000 cubic yards

5. Stormwater Permits/Management

The operator will obtain a Wisconsin DNR Nonmetallic Mining stormwater permit and manage stormwater in accordance with the standards established in the permit. At a minimum stormwater will be contained within the mine boundaries for all rainfall events according to the 25 year 24 hour frequency storm (4.86 inches).

Soil berms created during topsoil and subsoil stripping will be stabilized and used to contain and direct stormwater runoff towards the excavated floor of the mine where it will infiltrate. Stormwater will be managed this way over the entire life of the mine. A notice of intent will be sent to the DNR.

6. Erosion Control & Permits

Silt fence will be installed around topsoil pile and berms during site operation. All topsoil and subsoil piles will be graded to a slope of 3:1 or flatter and seeded to further control erosion during site operation.

Berms will be stabilized using best management practices including seeding, mulching, erosion control mat, hydro-seeding, etc. Erosion and sediment control best management practices will be installed as determined by the Wisconsin Erosion Control Product Acceptability List (PAL) Channel and Slope Erosion Control Matrices.

7. Reclamation Activities During Operations

A process of contemporaneous reclamation will be used to systematically mine and reclaim the site. Under this process the site will be reclaimed as soon as possible after materials have been extracted and processed using the planned sequence.

East boundaries will partially restored as mining continues West. South boundaries will be partially restored as mining continues North

At the beginning of the mining operations all of the topsoil (estimated 6 inches) will be stripped and stockpiled in berms. Following topsoil stripping operations all of the subsoil (estimated 20-60 inches) will be stripped and mostly stockpiled. Some subsoil may be piled in berms along with the topsoil. After subsoil is piled, leveled, and sloped, some topsoil will be applied and area will be seeded. All berms will be shaped to a 3:1 slope or flatter and seeded with DOT Seed Mix 20. Mining operations will take place in 5 to 10 acre sections, starting from the entrance road, and moving west until the west boundary is reached. Once the west boundary is reached, rough grading work will be performed to create slopes around the perimeter of the mine that are 3:1 or flatter. Mine floors will be graded as flat as possible. Subsoil will then be place over the slopes and flat lying areas of mine to a depth of 10 inches or more.

Topsoil will then be placed over the subsoil to a depth of 6 inches or more
The site will then be seeded. Areas with slopes steeper than 3:1 will have straw mulch applied. Areas flatter than 3:1 will not receive mulch, unless it is determined that mulch is needed for stabilization.

8. Timetable/Sequence of Operations

Location Activity

Start mining at the east end of the site operations map. We will mine west and through the pit evenly, In 5 to 10 acre sections, at an elevation above groundwater (approx. 946) to the west boundary.

9. Timetable

Estimated period of operation/extraction:

pit	30 years
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(C) Site Reclamation

1. Disposition of Structures and Roads

A paved Asphalt driveway will come West off of 170th st. and will be approximately 60 ft long. The driveway will provide access to the field area.

Structures such as the scale house, and scale will be removed prior to final reclamation. There are no areas of concentrated flow entering, leaving, or within the reclaimed mine site.

2. Soil Reapplication

Overburden piles will be leveled off or used on slopes. This work will be done with scrapers or bulldozers. Slopes will be stabilized using best management practices including seeding, mulching, erosion control mat, hydro-seeding, etc. Erosion and sediment control best management practices will be installed as determined by the Wisconsin Erosion Control Product Acceptability List (PAL) Channel and Slope Erosion Control Matrices (attached).

Subsoil material will then be removed from the berms with excavators or loaders and transported in dump trucks to the area in the mine to be reclaimed. Trucks will be routed to limit traffic over areas where subsoil has already been applied. Trucks will dump subsoil and bulldozers will spread the material to be 24 inches thick on the slopes and floor of the mine. The use of tracked equipment while spreading subsoil will limit soil compaction.

Topsoil material will then be removed from the berms with excavators or loaders and transported in dump trucks to the area in the mine to be reclaimed. Trucks will be routed to limit traffic over areas where subsoil or topsoil has already been applied. Trucks will dump topsoil and bulldozers will spread the material to be 6 inches thick on the slopes and floor of the mine. The use of tracked equipment while spreading topsoil will limit soil compaction.

In the event that rubber tire equipment cannot be routed to prevent subsoil and topsoil compaction deep tillage equipment will be used to alleviate compaction in the upper 12 to 14 inches of the soil profile.

Soils testing will be performed following procedures established in the Wisconsin Nutrient Management Standard 590 to determine the organic matter, phosphorus, potassium and PH. Soil amendments (including lime and fertilizer) will be applied based on the soil test results to meet the fertility requirements needed to achieve the intended post mining land use.

3. Safety Assurances

Given the slopes on the reclaimed mine site and the post mining land uses there are very limited safety concerns. Areas reclaimed as Wildlife habitat will have 3:1 slopes.

4. Seeding Plan

Seeding will be selected to achieve the post mining land use that is planned for each designated area. Areas that will be reclaimed to wildlife habitat will be seeded to native grasses. Seed will be broadcast seeded and rolled to improve seed – soil contact. DNR Seed Mix 2 will be used in these areas and applied at the rates listed (see attached).

5. Future Use

The mine site will be reclaimed to establish a post mining land use as native grass prairie, as shown on the Final Site Map.