

# NON-METALLIC MINING RECLAMATION PLAN

**Operator:** Haas Sons, Inc.

**Owner:** Leonard & Laura Halfman

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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 79.5-acre field located west State Highway 124, south of State Highway 64 and east of 130<sup>th</sup> Street in the township of Woodmohr. The land is currently used for agricultural production and managed for crop production.

The operator will mine sand and gravel that is located on glacial outwash that is characterized as meltwater stream sediment from the Chippewa Lobe. A majority of the site will be mined below the water table and reclaimed as a wildlife pond. A small portion the site will be mined above the water table and will be reclaimed to wildlife habitat and agricultural land uses.

## A. Site Information

### 1. Landowner

Landowner: Leonard & Laura Halfman  
Address: 18303 130<sup>th</sup> St.  
City, State, ZIP: Bloomer, WI 54724

Applicant: Haas Sons, Inc.  
Address: 203 E. Birch Street  
City, State, ZIP: Thorp, WI 54771

**2. Lease:**

The operator has signed a lease with the landowner for the purpose of mining sand and gravel on their property for 10 years.  
See attached lease (Appendix C).

**3. Legal Description**

Tax Parcel Number(s): 23008-0624-00020000, 23008-0631-00000000

Described as follows: SE ¼ of the NW ¼ of Section 6, Township 30 North, Range 8 West, EXCEPT the North 6.5 Rods thereof; and EXCEPT CSM 2720 recorded in V, 12, page 203, as Document No. 686606; but including that part of the SW ¼ of the NE ¼ of Section 6-30-8W lying west of CSM 2720; and NE ¼ of the SW ¼ of Section 6, Township 30 North, Range 8 West;

**4. Property Owners Within 660 Feet of Project Sit**

Francis & Judith Jenneman	Haas Sons Properties	Raymond & Lanna Michels
Eric & Debi Lewis	Joseph & Beulah Koehler	Michael Erickson
Andrew & Shannon Steinmetz		

**5. Soil & Groundwater Information**

Soil Survey of Chippewa County shows the soils at the mine site are mapped as Rosholt Sandy loam (RoA), (RoB) and Sattre loam (SbA). RoA soils have approximately 7 inches of topsoil and 14 inches of subsoil. RoB soils have approximately 8 inches of topsoil and 24 inches subsoil. Approximately 36 acres of RoA and 16 acres of RoB are mapped as Rosholt sandy loam soils at the mine site. Sattre loam soils have approximately 9 inches of topsoil and 23 inches of subsoil. Approximately 22 acres of the mine site are mapped as Sattre loam soils.

During site investigations the operator documented the following soils horizon thicknesses in the test holes.

A horizon – 6 inches of topsoil

B horizon - Approx. 10 inches of red/brown clay (SbA, RoA, RoB)

Using the soil survey estimates the maximum volume of topsoil for the entire mine site is 59,693 cubic yards of topsoil and 99,090 cubic yards of subsoil.

Groundwater elevation was determined by pervious mining in the initial Halfmans pit as well as test holes that that were dug in the expansion.

**B. Site Operations**

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

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

## **2. Extraction and Processing to be Conducted at the Site**

The existing driveway will be used from County Highway 124. Sand & gravel will be mined, crushed, washed, and removed from the site. A portable crushing & washing 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, draglines, and conveyors.

Sand and gravel will be excavated from the mine above the water table in one lift approximately 15 feet deep. An area in the floor of the mine will be excavated below the water table to create wash ponds. Water for sand and gravel washing process will be pumped from these ponds. 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.

## **3. Volumes of Materials**

A sequence 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.

Cell	Area (acre)	During 1 <sup>st</sup> two years (cubic yards)	During Full Life of Operation (cubic yards)
1	28	Approx. 100,000 yds.	1,120,000
2	18	0	720,000
3	13.5	0	540,000
4	14.5	0	580,000
Total	74	Approx. 100,000	2,960,000

## **4. Site Dewatering and Effluent Discharge**

This will be an internally drained site located in glacial outwash plain. No site dewatering or effluent discharge will take place. It is anticipated that sand and gravel will be mined below the water table in all cells.

## **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 storm water will be contained within the mine boundaries for all rainfall events according to the 25 year, 24 hour frequency storm (4.87 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**

All topsoil and subsoil stockpiles will be graded to a slope of 3:1 or flatter and stabilized as soon as conditions allow to conserve soil and limit erosion. Silt fence will be installed along all soil stockpiles to control erosion. 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 (Appendix F).

## **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 Cell sequence.

Cell 1 and Cell 2 will be restored as Cell 3 is being mined. Cell 3 and Cell 4 will be restored at the end of mining operations.

At the beginning of the mining operations for each cell all the topsoil (estimated 9 inches) will be stripped and stockpiled in berms. Following topsoil stripping operations all the subsoil (estimated 23 inches) will be stripped and stockpiled in berms that are separate from the topsoil berms. All berms will be shaped to a 3:1 slope or flatter and seeded with DOT Seed Mix 20. Mining operations will then excavate, process, and remove sand and gravel from the site.

When excavation of sand and gravel in a Cell is complete rough grading work will be performed to create slopes around the perimeter of the mine that are 3:1 or flatter. Rough grading will also be performed to establish reclamation grades for the mine floor. Subsoil will then be placed 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. Upon completion of subsoil and topsoil re-application, 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.

The site will then be seeded. Areas with slopes steeper than 10:1 will have straw mulch applied. Areas flatter than 10:1 will not receive mulch.

Reclamation test plots will be established within the first two years of mining. Test plots will be established for each post mining land use. These test plots will be monitored and used to help determine success in future areas of mine reclamation.

## **8. Timetable/Sequence of Operations**

### Location   Activity

- Cell 1      Plant will be set in existing Haas pit and we will mine and establish the initial stockpile and plant area. We will start on the east boundary of that area and mine towards the south until we reach the mine boundary. This will take approx. 5 years.
- Cell 2      We will set and pile south of the initial stockpile and plant area. Then we will mine out the initial area from east to west. This will take approximately 3 years. While mining this area, we will restore the south boundary of Cell 1.
- Cell 3      We will set plant in Cell 1 on the northeast end. Then we will mine Cell 3 from south to north. This will take approx. 2 years. We will restore the west and south boundary of Cell 2 while mining this area and pile into Cell 1.
- Cell 4      We will then set the plant in Cell 3 and mine from east to west. We will restore the west boundary of Cell 4 once mining is complete. This will take about 3 years.

## **9. Timetable**

Estimated period of operation/extraction for each cell:

Cell 1	5    years
Cell 2	3    years
Cell 3	2    years
Cell 4	3    years
<b>Total _____</b>	<b>13    years</b>

## **C. Final Site**

### **1. Disposition of Structures and Roads**

A gravel paved driveway approximately 2500 feet long will remain in place at the location of the mine access road connection to County Highway 124. The driveway will

provide access to the agricultural field and wildlife habitat areas.

Structures such as the scale, scale house, and scale will be removed prior to final reclamation. The ponds created in Cell 1, Cell 2, Cell 3, and Cell 4 will remain in place as shown on the Final Site Map (See Appendix A – Cross Sections). There are no areas of concentrated flow entering, leaving, or within the reclaimed mine site.

## **2. Soil Reapplication & Reconditioning**

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 (Appendix F).

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 10 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. The pond will have a 3:1 slope that extends 6 feet below the water line. Areas reclaimed as Wildlife habitat will have 3:1 slopes. Areas reclaimed to Agricultural use will be nearly flat.

#### **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 Appendix B). The wildlife pond area will be allowed to vegetate using below the water line natural seed distribution without seeding by the operator.

Areas that will be reclaimed to agricultural row crop production will be planted to a crop rotation of alfalfa and corn. A crop rotation of four years of alfalfa, and four years of corn will be implemented. To establish the rotation the initial seeding will be alfalfa with a cover crop of oats. Seeding rates will be 15lb/ac. for alfalfa and 15lb/ac for oats. The seeding rate for corn will be 30,000 seeds per acre.

#### **5. Future Use**

The mine site will be reclaimed to establish two different post mining land uses including upland grassland wildlife habitat and wildlife pond habitat. The approximate location of each post mining land use is shown on the Final Site Map.

##### Upland Grassland Wildlife Habitat Post Mining Land Use

Steep slopes around the perimeter of the mine will be reclaimed to an Upland Grassland Wildlife Habitat.

The proposed performance measures used to determine reclamation success are:

- a. The establishment of a mine soil profile with a minimum of 6 inches of topsoil and 10 inches of subsoil.
- b. The establishment of full plant rooting depth.
- c. The establishment of target soil chemistry and fertility to achieve and sustain the post mining land use.
- d. The establishment of the seeding so that:
  - i. All species in the seeding are present.
  - ii. No more than 50% of the total vegetation is one species from the seed mix.
  - iii. Biomass shall be a minimum of one ton per acre per year.

Site monitoring will be conducted to assess the success of the seeding and monitor the site for invasive or noxious plant species. Areas of failed seeding shall be examined to determine the cause of the failure. Invasive or noxious species will be spot treated with herbicide according to the product label or hand removal and disposed of properly.

##### Wildlife Pond Habitat Post Mining Land Use

Areas of the mine that are below the water table will be reclaimed as a Wildlife Pond.

The proposed performance measures used to determine reclamation success are:

- a. The establishment of irregular shorelines that vary in shape and slope.
- b. The establishment of shoreline slopes that vary from 3:1 to 10:1 and extend a

- minimum of 6 feet vertically below the water line.
- c. The establishment of a minimum of 6 inches of topsoil placed along the shoreline and on the slope a minimum of two feet vertically below the water line to encourage vegetative growth.

Site monitoring will be conducted to assess the success of vegetation establishment and monitor the site for invasive or noxious plant species. Areas poor vegetation establishment shall be examined to determine the cause. Invasive or noxious species will be spot treated with herbicide according to the product label or hand removal and disposed of properly.

**Attachments**

- APPENDIX A: Cross Section
- APPENDIX B: Seeding Plan
- APPENDIX C: Land Lease
- APPENDIX D: Land Location Map
- APPENDIX E: Soils & Groundwater Map
- APPENDIX F: PAL Erosion Control Matrices