Hwy 124 Pit Reclamation Plan Modification

Owner: Raymond Michels
Operator: Raymond Michels

Caleb Meyer
Chippewa County Land Resource Technician Intern

Reclamation Plan Modification for the Hwy 124 Gravel Pit

Table of Contents

Introduction

The purpose of this document is to give supporting information for the proposal to modify the existing permitted mine boundary and reclamation plan for Ray Michels Highway 124 sand and gravel pit. The pit is located in section 6, T30N – R08W, in the Town of Woodmohr, Chippewa County, Wisconsin. The plan entails adding 10.3 acres to the existing permitted mining area and modifying the final reclamation plan and timeline for the site. The post-mining land use is updated to include deep ponds, grassland prairie wildlife habitat, and low density single family residential development sites. The information in this document follows the Chippewa County Reclamation ordinance code.

Initial Site Plan

A) Initial Site Maps include:

1. Location in the township and county
   – Figure 1, Hwy 124 & 64 Plat Map

2. Topography of the affected lands
   – Figure 3, Existing Conditions Map

3. Property boundaries showing land under consideration and neighboring parcels within 660 feet
   – Figure 3, Existing Conditions Map

4. Roads within 660 feet of the proposed new site boundary
   – Figure 3, Existing Conditions Map

5. Road right of way lines
   – Figure 3, Existing Conditions Map

6. All structures within 660 feet of the new site boundary
   – Figure 3, Existing Conditions Map

7. Perennial and intermittent streams within 660 feet of the new site boundary
   – Figure 3, Existing Conditions Map
   There are no perennial or intermittent streams on or within 660 feet of the site.

8. Drainage ways/concentrated flow to or from the site
   – Figure 3, Existing Conditions Map
   There are no distinct drainage patterns on site; all runoff is concentrated toward the storm water ponds and the site is internally drained.

9. Wetlands within 660 feet of the new site boundary
   – Figure 3, Existing Conditions Map

10. Boundaries of previous excavations on site
    – Figure 3, Existing Conditions Map

11. Wells within 660 feet of the new site boundary
    – Figure 3, Existing Conditions Map

12. Groundwater elevations at the site and the source of information
    – Figure 3, Existing Conditions Map
    Groundwater elevations were determined using the Chippewa County groundwater map

13. Locations of all utilities at the site
    – Figure 3, Existing Conditions Map

B) Supporting information for initial site description

1. Owner and applicant information
   The mine is owned by Ray Michels, and operated by Michels Sand & Gravel; 13601 State Hwy 64 Bloomer, WI

2. Lease
   There is no lease required

3. Legal Description

   Primary Parcel #
   23008-0644-70062006 and 23008-0644-70062007

4. Parties of interest
   List of names and addresses of landowners within 660 feet of the new site boundary.

Charles Morning 18186 State Hwy 124 Bloomer, WI 54724	Leonard Halfman 18303 130th Street Bloomer, WI 54724
Edwin Gehring 17756 State Hwy 124 Bloomer, WI 54724	Marvin Dahlke 13674 182nd Ave Bloomer, WI 54724
Andrew Steinmetz 13334 182nd Ave Bloomer, WI 54724	Jack Stelter Inc 15330 State Hwy 124 Bloomer, WI 54724
Mathy Construction PO BOX 189 Onalaska, WI	Arthur Overgaard Inc PO BOX 189 Onalaska, WI

5. Soils Information
   Thickness of the A horizon (topsoil), E horizon (subsurface soil), and B horizon (subsoil) and the method of determination.

   The thicknesses of the soils on site were determined by using the USDA Soil Survey of Chippewa County Wisconsin. There are four different soil types on the site (refer to Figure 2, Soils Map), their names and thicknesses are as follows:

Soils	A horizon (Topsoil) Thickness (in)	E horizon (Subsurface Soil) Thickness (in)	B horizon (Subsoil) Thickness (in)
Chetek sandy loam (CkB)	8	5	7
Chetek sandy loam – eroded (CKC2)	7		12
Rosholt sandy loam (RoA)	7	17	14
Rosholt sandy loam (RoB)	8		24

Site Operations Plan

A) Site Operations Map Includes:

1. Location of mining site boundary
   – Figure 4, Site Operations Map

2. Separation boundaries and separation dimensions as referenced in Mine Siting Standards
   – Figure, 4 Site Operations Map

3. Planned cell boundaries
   – Figure 4, Site Operations Map

4. Location and extent of disturbed areas
   – Figure 4, Site Operations Map

5. Processing facilities
   – Figure 4, Site Operations Map

6. Location and discharge point of site dewatering systems
   There are no dewatering systems on site

7. Direction of flow of surface runoff
   – Figure 4, Site Operations Map

8. Vegetative and structural measures to be taken to screen the operation from view of surrounding land uses
   – Figure 4, Site Operations Map

9. Points of public road access
   – Figure 4, Site Operations Map

10. Temporary measures to limit on site erosion
    – Figure 4, Site Operations Map

B) Description of Site Operations

1. Material to be extracted
   Sand and Gravel

2. Description of the type of extraction and processing activities to be done on site
   The excavation sequence begins with the stripping of topsoil and overburden using appropriate equipment. The topsoil and overburden will be stored as berms around the site sloped 3:1 and seeded with DOT seed mix #20. These berms will act to screen the operation from view. Further berm/topsoil management is noted in the sequence and progression through new cells section. With the sand and gravel deposit exposed, extraction will occur above and below the water table. Processing operations include screening, crushing, and washing. Materials are then stockpiled before being hauled off site.

   Screening berms and tree planting is allowed within the 50 foot set back from property lines as stated in Chippewa County Siting and Development Standards.

   There is one primary access/haul road that is used for the site. It comes into the site from the east off of Highway 124 and is shown on the Operations Plan Map.

   The excavation process will be done using backhoes, bulldozers, end loaders, dredges, and draglines.

   The water table is typically 10 to 30 feet below the ground surface. Mining is done 20 to 25 feet below the water table.

   There are no high capacity wells on site and none are proposed for this operation.

   The existing approved hours of operation at this pit are 6:00 am to 9:00 pm Monday through Friday, 6:00 am to 3:00 pm Saturday, and no Sundays or holidays.

3. Estimates of the total volume of sand and gravel to be extracted by cell

Cell	Description	Sand & Gravel (cy)
1	Above Water	46,403
2	Below Water	52,963
3	Above Water	93,445
4	Below Water	96,000
Total		288,811

Estimates of the total volume of soil and overburden to be striped and stockpiled by cell.

Cell	Topsoil (cy)	Subsoil (cy)	Total (cy)
1	2,442	2,442	4,884
3	4,833	4,833	9,666
TOTAL	7,275	7,275	14,550

Calculation assumes 9" of topsoil and 9" of subsoil,
as determined by the operator based on previous excavations.

4. Topsoil management

   Topsoil and subsoil berms will be constructed during each mining phase to both screen the site and retain material for final reclamation. At a minimum, berms shall be eight (8) feet high, ten (10) feet wide on top, and have 3H:1V side slopes. Berms shall be constructed to be 50% subsoil and 50% topsoil. Immediately following installation of berms, they shall be seeded with DOT seed mix 20 to prevent erosion. Topsoil will be located on the outside perimeter of berms and subsoil will be on the inside perimeter of the berms.

5. Sequence and progression though the new planned cells and soil management
   Please refer to the Operations Plan Map to aid in this description.

   The sequence in which these cells will be mined is represented on the Operations Map as "Mine Architecture" and is as follows…

   Cell 1
   Cell 1 will be mined from the NE to the W and S to pit boundary for the layer above the water table.

   Cell 2
   Cell 2 will be mined from the S end to the N ending at the NE corner below the water table.

   Cell 3
   Cell 3 will be mined from the SE to the NW for the top layer above the water table.

   Cell 4
   Cell 4 will be mined from the NW to the SW below the water table.

6. Methods for site dewatering and effluent discharge
   All runoff is contained in the ponds on site and the site is internally drained.

7. Stormwater permits required by other agencies
   Attachment 1

8. Erosion control permits required by other agencies
   Attachment 1

9. Reclamation activities to be conducted during mining operation
   As mining commences in new cells, reclamation will begin in cells that are no longer being mined or needed for storage. Topsoil and subsoil that has been removed from the pit area will have been saved and stored as berms around the site. The topsoil and subsoil will be removed from the berms that are no longer needed for screening and will be used for reclamation. This will consist of the reapplication of subsoil and topsoil to create the slopes for the wildlife ponds.

10. Timetable for commencement and cessation of nonmetallic mining operations

    Timetable by cell:

Cell	**Mining Completion** *(years from now)*
1	5 years
2	10 years
3	15 years
4	20 years

11. Approximate reclamation timetable
    In general, reclamation will be done by cell as mining moves to new cells. Mining is currently ongoing in cell 1 and 2. As mining commences in 3 and 4, wildlife pond reclamation work will begin in 1 and 2.
    An existing reclamation bond of $25,000 is currently on file with Chippewa County LCFM.

Final Site Plan

A) Final Site Map Includes:

1. Final depths, final slope angles, and slope stabilization measures
   – Figure 5, Final Site Maps

2. Areas which convey concentrated flow to, across, or from the site
   – Figure 5, Final Site Maps

3. Facilities or structures to remain in place
   – Figure 5, Final Site Map

4. Planned development features on site following closure
   – Figure 5, Final Site Map

5. Cross sections showing current ground surfaces, final slope, groundwater elevations
   – Figure 6, Cross Sections

B) Description of Final Reclamation

1. Plans for disposition of surface structures, roads and related facilities after cessation of mining
   Upon completion of mining, all operating facilities will be removed. The pit access road will be removed and 2 new shared driveways will be installed. One of the driveways will

lead to lot 5 and 6 while the other driveway will lead to lots 6 and 7. Driveways will be installed to Wisconsin DOT specs.

2. Topsoil reapplication
   The topsoil and overburden will be removed from the berms around the site and reapplied as uniformly as possible across the site and sloped 3:1. The topsoil stockpiles will also be used to create the appropriate slope requirements around the wildlife ponds as required by Chippewa County.

   Topsoil and subsoil will be separated to the best of the operators' ability and placed in the area to be reclaimed; subsoil first, then topsoil. This will be graded to 3:1 slopes or less. Trucks will be routed away from the areas where topsoil is reapplied to limit compaction and rutting. Tracked equipment will also be used in the reapplication process to limit rutting and compaction.

   According to the USDA soil Survey of Chippewa County, the average topsoil (A horizon) thickness for the site is 8 inches. The average subsurface (E Horizon) and subsoil (B horizon) varies considerably but are no less than 12 inches combined for the site. Therefore, 9 inches of reapplied subsoil and 9 inches of reapplied topsoil will be the goal for the reclaimed site.

3. Addressing long term safety of the reclaimed mine site
   The final site will have slopes of no more than 3:1 within and around the perimeter of the site. The shoreline of the ponds will have slopes ranging from 3:1 to 10:1. The rest of the site will be above the water table after the soils have been reapplied. The site will be internally drained.

4. Seeding plan
   The edges around the wild life ponds will be sloped and seeded with WI DNR Seed Mix #4. The Upland Grassland Wildlife areas (remainder of the site) will be seeded with WI DNR mix 2.
   See Attachment 2

5. Standard for verifying successful reclamation
   The extent of reclamation success for the site will be measured over the term of a prescribed evaluation period. This evaluation period will extend for a period ranging from three (3) to ten (10) years based on the intended post-mining land use, the intended cover type, and the physical characteristics of the mine site.

   Reclamation success for the Wildlife Pond Habitat will be measured periodically throughout the term of the evaluation period using the following evaluation criteria:

   a. Site stability
      i. Establishment of irregular shorelines that vary from 3:1 to 10:1 and extend a minimum of 6 feet vertically below the water line

ii. No visible erosion (rills, gullies, sluffing, etc.) around the shoreline
iii. 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

b. Plant density and species diversity
   i. 75% or more are species from the specified seed mix, 25% or less are weeds, and 2% or less are invasive weeds as measured following standardized methods during and at the end of the established performance period
   ii. No more than 50% of the total vegetation is one species from the seed mix
   iii. A minimum of 70% ground cover during the growing season
c. Soil chemistry and fertility
   i. Establishment of a soil profile with a target pH to achieve the post mining land use
   ii. Organic matter greater than 1 percent

Reclamation success for the Upland Grassland Wildlife Habitat will be measured periodically throughout the term of the evaluation period using the following evaluation criteria:

a. Site stability
   i. Slopes no greater than 3:1
   ii. No visible erosion (rills, gullies, sluffing, etc.)
b. Plant density and species diversity
   i. 75% or more are species from the specified seed mix, 25% or less are weeds, and 2% or less are invasive weeds as measured following standardized methods during and at the end of the established performance period
   ii. No more than 50% of the total vegetation is one species from the seed mix
   iii. A minimum of 70% ground cover during the growing season
c. Soil chemistry and fertility
   i. Establishment of a soil profile with a target pH to achieve the post mining land use
   ii. Organic matter greater than 1 percent

6. <u>Description of anticipated future use of the site</u>
   The future use of the site will include developed lands consisting of up to 3 low density single family residential development site along highway 124. Land W of the residential sites will be reclaimed to deep wildlife ponds surrounded by grassland/prairie habitats. Wildlife ponds will meet Chippewa County “standard for non-metallic mine sites in which ponds are created.”

Attachment 1

Attachment 2

Attachment 3

Attachment 4

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6