

NONMETALLIC MINING RECLAMATION PERMIT

This permit is issued under the Chippewa County Nonmetallic Mining Reclamation Ordinance and Wisconsin Administrative Code NR135.

Operator: Superior Silica Sands

Owner: Anthony Glaser, et al; Chris Culver & Dennis Culver; Kevin Pietz; Lary & Anna Boese; Robert Hass; David & Bonnie Dobbs

Permit Number: 2011-02

Date: October 5, 2017

Permit Conditions

1. Standards & Implementation

- a. All mining and reclamation shall be conducted in compliance with the Reclamation Plan that is comprised of the following documents:
 - i. “Non Metallic Mining Reclamation Plan Narrative; Superior Silica Sands; Town of Auburn, Chippewa County, Wisconsin”; dated May 2, 2011
 - ii. Four (4) 24” x 36” maps titled “Initial Site Map”, “Operations Site Map”, “Final Site Map”, and “Final Site Profiles”; all dated May 2, 2011.
 - iii. Plan Amendment I dated May 6, 2011; titled “Reclamation Plan Date Change”
 - iv. Plan Amendment II dated February 10, 2012; titled “Revised Storm Water Management Plan Recommendations for Site Improvements”
 - v. Plan Amendment III dated April 24, 2013; titled “Operations - Addendum”
 - vi. “Non-Metallic Mining Reclamation Plan; Superior Silica Sands – Mine Expansion”, dated and received December 21, 2012.
 - vii. Six (6) 24” x 36” maps titled “Existing Site Plan”, “Existing Site Contours”, “Operations Site Plan”, “Final Site Plan”, ‘Cross Sections”, and “Cover Type”; all dated December 21, 2012.
 - viii. Plan Amendment IV dated July 19, 2017 (untitled).
 - ix. “Storm Water Pollution Prevention Plan”, dated August 10, 2017.
 - x. Two (2) maps, as referenced the Storm Water Pollution Prevention Plan, titled “Drainage Base Map” and “Site Infrastructure and Land Cover”, dated August 2, 2017.
 - xi. “SSS Auburn Mine Standard Operating Procedure for Water Discharges Off-Site”, received August 22, 2017.
- b. This permit applies to the Combined Mine Site area as documented in the “Operations Site Plan” dated December 21, 2012. This permit incorporates and superceeds the previous permit issued May 6, 2011 and the permit amendments issued January 13, 2012, April 24, 2013, November 8, 2016, and April 26, 2017.
- c. All mining and reclamation shall be conducted in compliance with all provisions and standards of the Chippewa County Nonmetallic Mining Reclamation Ordinance and Wisconsin Administrative Code NR135.

- d. All mining and reclamation shall be conducted to meet or exceed provisions of Reclamation Standards for Non-Metallic Mines in Chippewa County (July 2007) and Plan Content Specifications and Engineering Requirements for Non-Metallic Mine Construction in Bedrock (9/17/2009).
- e. To monitor the extent of contemporaneous reclamation, a Reclamation Report & Activities Plan shall be filed with the Department of Land Conservation & Forest Management for each calendar year. The report shall be submitted no later than 30 days from the end of the permit year. The plan shall contain the items listed in Appendix G of the reclamation plan including: a) the extent of current mine development, b) the groundwater elevations as recorded in the groundwater monitoring wells, c) the dates and results of reclamation and stormwater facility inspections, d) activities implemented to provide groundwater protection, e) dates and results of stormwater discharge monitoring, f) reclamation and stormwater management activities planned, g) a daily record of the type, volume, and use of material brought to the mine; and h) any other items as required by this permit.

2. Financial Assurance

- a. Financial Assurance in the form of Surety Bond or Irrevocable Letter of Credit meeting the requirements of the Chippewa County Nonmetallic Mining Reclamation Ordinance and NR135.40 shall be submitted by the operator for approval prior to any mining activity at the site. Financial Assurance is required throughout the life for the mine.
- b. The amount of financial assurance shall equal as closely as possible the cost to Chippewa County of hiring a contractor to perform reclamation activities according to the approved reclamation plan. The amount of financial assurance shall be reviewed periodically by the Department of Land Conservation & Forest Management to assure it equals the current estimated reclamation costs.

3. Size & Scope

- a. The total permitted area of the mine site is 475 acres as shown in the reclamation plan on the "Operations Site Plan" map dated December 21, 2012. The mine site includes all areas of nonmetallic mineral extraction, haul roads, stormwater ponds, soil berms, and other areas meeting the definition of "nonmetallic mining site" or "site" in the Chippewa County Nonmetallic Mining Reclamation Ordinance.
- b. The floor elevation and excavation limit of the mine shall be no lower than 1100 MSL as shown in the reclamation plan on the "Cross Sections" map dated December 21, 2012.
- c. Changes to the areal extent or depth of the mine, or changes to the operation that may affect the capacity to meet reclamation standards of NR 135 and Chippewa County Nonmetallic Mining Reclamation Ordinance as documented in the Reclamation Plan shall require a revised Reclamation Plan and permit modification under NR 135.24.

4. Stream & Wetland Protection

- a. The location of areas of concentrated flow, waterways, and areas that convey direct runoff to Trout Creek, and the corresponding jurisdictional authority to regulate those areas under state and federal law, shall be determined by Chippewa County and the Wisconsin Department of Natural Resources (WI DNR) through the Wisconsin Pollution Discharge Elimination System (WPDES) permit process following the criteria established in the Chippewa County Shoreland Zoning Ordinance and WI Stats. Chapters 23, 30, 31, and 281.

- b. The location and boundary of all wetlands as defined by Wisconsin State Statute Chapter 23, including mapped wetlands shown on the "Operations Site Map" dated December 21, 2012 of the Reclamation Plan shall be delineated by a recognized wetland delineator following procedures in the 1987 edition of the Army Corps of Engineers Wetlands Delineation Manual.
 - c. Wetland delineations shall be completed and submitted to the Department of Land Conservation & Forest Management for review and approval before 10-1-2013. Upon approval, the operator shall file a plan amendment map that shows the delineated boundary of the wetlands.
 - d. A Continuous vegetative buffer shall be established along all streams and wetlands to prevent environmental pollution and meet standards for surface water and wetland protection, as established in NR 135.07.
 - i. The buffer shall be established to be 300 feet from the ordinary high watermark of streams or 100 feet from the boundary of wetlands whichever is greater. No mining or mine-related site disturbing activities are permitted within this buffer.
 - ii. The stream and wetland buffers shall be monumented with permanent markers for the life of the mine. Pre-existing agricultural uses including cultivated cropland fields and agricultural pastures shall be allowed within the buffer.
 - e. The approximate location and boundaries of the stream and wetland vegetative buffer areas are shown in the reclamation plan on the "Operations Site Plan" map dated December 21, 2012. This map shall be updated by the operator to reflect actual conditions based upon field determinations of the watercourse and wetlands and the jurisdictional determinations of the responsible regulatory authority. The updated map shall be submitted to the Department of Land Conservation & Forest Management before 12-31-2013, or before an alternative date as mutually agreed upon.
 - f. In the event that unique conditions exist where mining activities cannot be conducted to avoid or minimize the impacts to streams or wetlands, the operator will seek the appropriate permits for any impacts that could occur as a result of mining and processing activities. Such permits could include wetland mitigation measures as dictated by the applicable state or federal laws.
 - g. In circumstances where wetland mitigation is required Chippewa County will encourage and support the concept of on-site, in-kind wetland mitigation pursued through the nonmetallic mine site reclamation process.
 - h. Final reclamation of each of the mine phases as identified in the reclamation plan shall establish grades that restore the watershed boundaries, to the extent practicable, that existed prior to mining.
5. Stormwater Management
- a. The operator shall fully comply with the terms of the WI DNR WPDES General Permit to Discharge, WI-B046515-6 (Nonmetallic Mining Operations for Industrial Sand Mining and Processing) and any subsequent permit revisions.
 - b. A stormwater management system shall be designed, installed, and maintained to meet the nonmetallic mine standards established for surface water and groundwater protection in NR135.07 & 135.08, and shall provide sufficient capacity to store and infiltrate runoff for all rainfall events smaller than the 100 year, 24 hour event (6.38 inches).
 - c. Stormwater ponds shall be constructed with a stable rock lined outlet that will safely accommodate runoff events up to the 100 year, 24 hour event (6.38 inches).

- d. Site specific design documentation for stormwater ponds and conveyances including construction drawings and hydraulic computations shall be submitted to the Department of Land Conservation & Forest Management for review and approval prior to development of each mine phase.
- e. Whenever changes to the stormwater management system are proposed or required the operator shall retain a Professional Engineer to re-design the storm water management system. The re-design documentation shall include computations to show that the changes to the stormwater management system will meet the design requirements. This information shall be submitted to the Department of Land Conservation & Forest Management for review and approval prior to construction of the changes.
- f. The stormwater management system shall be routinely inspected and maintained by the operator to assure the system continues to function as designed.
 - i. Sediment that accumulates in stormwater ponds shall be fully removed from the stormwater pond bottom after major storm events or as needed to maintain the design storage capacity.
 - ii. Sediment removed from stormwater ponds shall be stockpiled, seeded, stabilized, and used in mine site reclamation.
- g. In the event that stormwater runoff exceeds the capacity of the stormwater management system and stormwater runoff leaves the mine site, the operator shall immediately contact the Department of Land Conservation & Forest Management.
- h. Upon approval in 2016, stormwater contained in the mine bottom and stormwater ponds may be discharged from the mine site for the purpose of reestablishing the design capacity of the existing stormwater system. This discharge shall be managed for the purpose of field application and irrigation of adjacent agricultural fields.

To be allowed, this stormwater discharge must meet all of the following requirements:

- i. The mine operator shall provide to the County a map showing the location of the agricultural fields to receive the discharge, and signed authorization from each land owner receiving the discharge prior to commencing the discharge.
- ii. As a function of its source and location, water contained in the mine site shall be managed under one of three categories: 1) stormwater contained within stormwater ponds, 2) stormwater contained in the mine bottom, and 3) stormwater mixed with process water contained in the mine bottom or in existing process water ponds.

Prior to the initial discharge, a sample from each category shall be taken and analyzed at an approved laboratory. As agreed to by Superior Silica Sands and the County, samples shall be analyzed for the following parameters:

bacteria count, n+n nitrates, pH, alkalinity, hardness, chloride, conductivity, corrosivity index, and metals (As, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, SO₄, Zn)

The results of the chemical analysis with source location shall be submitted to the County within 30 days of commencing the discharge and shall be submitted to the County as part of the Reclamation Report and Activities Plan defined in Section 1.e..

- iii. The mine operator shall notify the County 48 hours prior to commencing the discharge.

- iv. The mine operator shall maintain a record that documents the rate of discharge and the total volume of discharge for each managed water source.

These stormwater discharge records shall be compiled and submitted to the County as part of the Reclamation Report and Activities Plan defined in Section 1.e..

- v. The mine operator shall manage and continuously monitor the stormwater discharge to assure that there is no surface ponding or runoff leaving the agricultural field. If runoff is observed, either in the form of sheet flow or channelized flow, the irrigation rate shall be immediately reduced to eliminate runoff.
- vi. The mine operator shall obtain all state and federal authorization to perform the stormwater discharge.
- i. Beginning in 2017, the County may allow an extension of the stormwater management practice established in Section 5.h. as part of ongoing stormwater management measures. To obtain this authorization, the mine operator shall:
 - i. Submit a written proposal requesting the authorization to regularly restore the capacity of stormwater ponds by discharging stormwater to agricultural fields.
 - ii. Meet condition requirements 5.h. (i.–vi.).
 - iii. Submit an approved nutrient management plan for each crop and field receiving the stormwater discharge. Plan shall be prepared by a certified crop adviser applying the most current version of the nutrient management module (Snap Plus).
 - iv. Other conditions as agreed to by the County and Superior Silica Sands.
- j. Storm water contained in the mine bottom and in storm water ponds may be discharged from the active mine site to groundwater within the mine total permit boundary for the purpose of reestablishing the design capacity of the existing storm water system.

To be allowed, this stormwater discharge must meet the requirements of permit conditions 5.h.iii., 5.h.iv., 5.h.v., and 5.h.vi., as established in Permit Amendment 1 (dated November 8, 2016), except the phrase “agricultural field”, as referenced in condition h.v., shall be replaced with “mine total permit boundary” for the purpose of this condition.

6. Site Clearing

- a. The Department of Land Conservation & Forest Management shall be contacted at least 72 hours prior to commencement of any new land clearing or stripping activities in undisturbed areas of the mine site.
- b. All topsoil, subsoil and overburden in areas of mining shall be systematically and individually stripped and stockpiled for future use in reclamation. The location of these stockpiles shall be identified with permanent signage or shall be identified on a map that shows the location of all stockpiles of topsoil, subsoil, and overburden. This map shall be submitted to the Department of Land Conservation & Forest Management after initial site stripping and after any changes in stockpile management.
- c. No topsoil, subsoil, or overburden material shall leave the site during the entirety of the site operations.

- d. Burning of stumps, or any other material, in the mine is prohibited. All residual woody biomass that is the byproduct of timber harvesting, excluding stumps, shall be retained and when practical, composted on site, and used as a soil amendment during final reclamation.

7. Groundwater & Surface Water

- a. The operator shall install a groundwater monitoring wells to augment the existing monitoring well network for the purpose of establishing the actual groundwater elevation at the mine site, monitoring changes to the groundwater elevation over time, and if required for monitoring water quality.
- b. The new network shall be planned and designed by a Professional Hydrologist or Professional Engineer, in cooperation with the LCFM, to triangulate the elevation of the water table surface and to establish the direction of groundwater flow at the site.
- c. The new network shall consist of a minimum of 13 monitoring wells as shown in the "Operations Site Plan" dated 12-21-2012 and may be installed in its entirety at the onset of operations in the expanded mine area, or may be installed in stages over time to coincide with the planned phases of mine development and reclamation.
- d. The operator shall provide the Department of Land Conservation and Forest Management with boring logs or well constructors reports from the construction of each monitoring well that document the subsurface geology, the construction methods, and well depth. This information shall be provided within one month of the wells construction.
- e. The elevations of the water table surface in each of the monitoring wells shall be recorded no less than monthly the first year of operations and quarterly thereafter for the life of the mine. This information shall be submitted to the County as part of the Reclamation Report and Activities Plan defined in Section 1.e..
- f. Using the information gathered from the monitoring well network the operator shall prepare a site specific groundwater elevation map. The operator shall provide this map to the Department of Land Conservation & Forest Management as part of the Reclamation Report and Activities Plan defined in Section 1.e..
- g. The groundwater elevation map shall be refined as mine development progresses, and additional information becomes available from additional monitoring wells, or from other sources.
- h. The operator shall provide a copy of any application and permit for a high capacity well that is subject to state permit requirements. The application and permit shall be provided to the Department of Land Conservation & Forest Management within 30 days of permit issuance.
- i. Production wells installed at the mine site shall be constructed to limit the potential for groundwater movement between aquifers and to limit impacts on surface waters near the mine. Wells shall be cased from the surface through the lowest extent of the Eau Claire sandstone formation to an elevation no higher than 960 feet above (Mean Sea Level).
- j. The operator shall keep records of pumping rates and volumes for all high capacity wells at the mine site on a monthly basis following procedures established in NR 820.13. The operator shall provide a copy of those records to the Department of Land Conservation & Forest Management as part of the Reclamation Report and Activities Plan defined in Section 1.e..

- k. The operator shall prepare a Water Conservation Plan to limit consumptive use of groundwater. The plan shall include a water budget for the operation that shows the typical annual volume of gains and losses to mining and reclamation activities. The plan shall also describe the processes and best management practices that the operator will follow during mining and reclamation to reduce the consumptive use of groundwater at the mine site.
- l. In the event that offsite monitoring shows that mining or reclamation activities at this site have caused a lowering of the water table that results in adverse effects on surface waters or a significant reduction in the quantity of groundwater reasonably available for future users of groundwater, the operator will mitigate these effects by revising the Water Conservation Plan to limit the pumping frequency, rate or volume of groundwater or to implement water conservation practices to restore groundwater elevations. Any changes to the Water Conservation Plan are subject to review and approval by the Department of Land Conservation & Forest Management.

8. Water Quality

- a. In the event that offsite monitoring shows that mining or reclamation activities at this site have caused groundwater quality standards of Wisconsin Administrative Code NR140 to be exceeded at a point of standards application the operator will seek to mitigate these effects by altering site operations.
- b. This permit does not relieve the owner or operator of the responsibility for compliance with all provisions of Wisconsin State Statute 281, Wisconsin Administrative Code NR 820, or Wisconsin Administrative Code NR 812, as they may pertain to waters of the state and the operation of any private wells on neighboring properties, and any associated liability under state law.

9. Settling & Process Water Ponds

- a. In the event that the operator uses flocculants, coagulants, or other chemicals as part of mining or wash plant operations the operator shall perform all of the requirements contained under permit condition 9.a.
 - i. Select chemical products that limit the potential for groundwater pollution, as may be identified on recognized product lists available from Wisconsin DNR, EPA, or other agencies.
 - ii. The type, and volume of flocculent, coagulant, or other chemicals used shall be included as part of the Reclamation Report and Activities Plan defined in Section 1.e..
 - iii. Use chemical products in accordance with the product label requirements to limit the potential for water pollution.
 - iv. Line settling and process water ponds and associated conveyances to limit the infiltration and leaching of chemical constituents that may be used in mining processes. Liners shall be designed by a Professional Engineer and constructed under their supervision to meet standards and specifications of Wisconsin Administrative Code NR 213.
 - v. Test the process water and associated sediment accumulated in the mine site settling and process water ponds for pH, nitrate-nitrogen, phosphorus, potassium, chloride, fluoride, sulfate, total coliform, aluminum, arsenic, barium, boron, calcium, copper, iron, lead, manganese, magnesium, sodium, strontium, and zinc, and concentrations of residual materials associated with the type of chemicals used. Testing will be performed annually or at any time when there are changes to the type of chemicals used. These test results will be included as part of the Reclamation Report and Activities Plan defined in Section 1.e..

- vi. Implement best management practices that limit the potential for damaging settling and process water pond liners during dredging or excavation of accumulated sediment. The settling and process water pond liners shall be maintained defect free and repairs shall be made as necessary to maintain the integrity of the liner.
 - vii. Apply appropriate best management practices when managing liquids and sediment removed from the settling and process water ponds. In selecting the best management practices for materials management, storage, and disposal, the operator shall consider the results of material testing and material characterization, and shall apply these practices to minimize the potential for groundwater leaching of soluble materials during or after mine reclamation.
 - viii. Settling and process water ponds liners shall be removed at the time final reclamation. Liners shall be disposed of in accordance with all federal, state, and local laws. Earthen liner material shall be land applied or used as a soil amendment.
- b. The operator shall establish a Maximum Operating Level for each process water pond that includes 1 foot of freeboard and the additional depth required, at a minimum, to hold the rainfall and runoff volume from a 10 year 24 hour storm event.
 - i. The operator shall install Maximum Operating Level Markers on each of the process water ponds in a minimum of two separate locations. One marker shall be located at the inlet to the pond and one shall be located at the outlet.
 - ii. For each process water pond the operator shall provide a written description of the Maximum Operating Level Markers, their elevations, and the top of embankment elevations to the Department of Land Conservation & Forest Management prior to using the pond.
 - c. Settling and process water ponds that are also designed to manage stormwater shall be operated so that they are routinely maintained at or below the Maximum Operating Level as described in the Plan Amendment III, dated April 24, 2013, of the Reclamation Plan.

10. Alternative Settling & Process Water Pond Liner

- a. In the event that the operator uses flocculants, coagulants, or other chemicals as part of mining or wash plant operations the operator may, as an alternative to meet condition 9.a.iv., choose to line the settling and process water ponds and associated conveyances with earthen materials of high silt and clay content. The earthen liners shall meet the design and construction specifications contained in Attachment I, titled: Alternative Settling Pond Liner Specification, (LCFM 9/29/09).
- b. In circumstances where the alternative liner is selected the operator shall design, implement, and maintain a groundwater monitoring system and sampling program with the explicit purpose of detecting and measuring the concentration of acrylamide that may enter the groundwater from the existing settling ponds. The sampling frequency shall be once every three months. The sampling frequency may be reduced upon mutual agreement by the operator and the Department of Land Conservation & Forest Management.
 - i. Samples shall be collected and handled following the methods prescribed in the Wisconsin Department of Natural Resources "Groundwater Sampling Field Manual".

- ii. The test method used for detection of acrylamide in groundwater samples shall be EPA Method 8032A. Alternative methods may be used with prior approval from the Department of Land Conservation & Forest Management. A certified copy of all laboratory results will be submitted to the Department of Land Conservation & Forest Management within two weeks of receipt.
- c. In circumstances where the alternative liner is selected and the operator proposes to use chemicals other than polyacrylamide the operator shall provide an engineering analysis to document the potential for groundwater pollution. The engineering analysis shall be conducted to assess the risk of groundwater pollution based on the physical properties of the liner and the chemicals that are proposed for use. The engineering analysis shall be submitted to the Department of Land Conservation & Forest Management for review and approval prior to their use.
 - i. The engineering analysis shall document the potential risk of surface water and groundwater pollution associated with using the chemicals as they may apply to water quality standards as established in NSF Standard 60 and NR 140.
 - ii. The engineering analysis shall identify the best management practices that can be used to limit the risk of surface water and groundwater pollution.
- d. In the event that the results of the engineering analysis show a significant risk of surface water or groundwater pollution, the operator shall prescribe a sampling and testing protocol to document and verify the effectiveness of the best management practices as proposed.

11. Offsite Water Discharge

- a. All wastewater discharges must meet the requirements of the General Discharge Permit WPDES Permit No. WI-B046515-6 Section 5, and all other applicable DNR requirements and state standards.
- b. The operator shall install and maintain a recording rain gage at the site for the purpose of recording rainfall and managing stormwater and contaminated stormwater. The continuous record of daily rainfall for the previous year shall be submitted to the County as part of the Reclamation Report and Activities Plan defined in Section 1.e..
- c. Stormwater, contaminated stormwater, and wastewater may be discharged from the permitted mine to either groundwater or surface water. To be permitted, discharges must meet the requirements of the most current Storm Water Pollution Prevention Plan (SWPPP) and Standard Operating Procedure (SOP) filed with Chippewa County, as referenced in Section 1.a..
- d. Modifications to the Storm Water Pollution Prevention Plan or Standard Operating Procedure shall be approved by the LCFM prior to implementation.
- e. The operator shall notify Chippewa County 24 hours prior to commencing an offsite discharge.
- f. On an annual bases, and prior to commencing any discharge from the mine, one representative sample of contaminated stormwater and one representative sample of wastewater shall be taken following established state sampling protocol, and tested for the following parameters:

bacteria count, n+n nitrates, pH, alkalinity, hardness, chloride, conductivity, corrosivity index, and metals (As, Ca, Cu, Fe, Pb, Mg, Mn, K, Na, SO₄, Zn)

The results of the chemical analysis with source location shall be recorded and submitted to the County as part of the Reclamation Report and Activities Plan defined in Section 1.e..

- g. In circumstances when stormwater or contaminated stormwater in a stormwater pond exceeds the established maximum operating level (MOL) of the pond, the contaminated stormwater in the stormwater pond shall be monitored and tested for total suspended solids (TSS) within 3 days of the end of the rain event.
 - i. If, within 3 days of the end of the rain event, the contaminated stormwater is at or below 40 mg/L TSS, the water shall be discharged from the mine site or pumped to another location within the mine to restore water level to the MOL. The rate and duration of discharge shall be monitored and recorded to ensure no channelized erosion occurs in areas of concentrated flow. The controlled discharge shall be completed before the next anticipated or forecasted rain event.
 - ii. If, within 3 days of the end of the rain event, the contaminated stormwater stored above the MOL remains above 40 mg/L TSS, the water above the MOL shall be pumped to a wastewater pond and be treated as wastewater, or used as makeup water in wash plant process.
- h. A record of all discharges, including the pond name, start and stop time of discharge, estimated discharge rate, and all other sampling requirements in the SWPPP and SOP shall be recorded and submitted to the County as part of the Reclamation Report and Activities Plan defined in Section 1.e..

12. Solid Waste & Spills

- a. The import, storage or disposal of any solid waste, recyclable materials or nonmetallic mine refuse generated outside the mine site is subject to the registration provisions of Chapter 30-77 of the Chippewa County Nonmetallic Mining Reclamation Ordinance.
- b. A waste utilization plan shall be developed to optimize the use of any reject materials generated from offsite processing facilities that are proposed to be used in reclamation prior to that material being hauled to the mine. The plan will characterize the physical properties and chemistry of waste products from off-site processing facilities following the intent and procedures established in Wisconsin Administrative Code Chapter NR 518.06(1), and will include a general assessment of benefits or possible adverse effects of the material's use following the intent and procedures established in NR 518.06(2). If polyelectrolytes are used in association with the production of these materials, annual testing will be required for the appropriate polyelectrolyte contaminants identified in NSF/ANSI Standard 60.
- c. Material characterization and test results will be evaluated by the operator, working through a professional licensed geologist, hydrologist, or engineer with the objective of meeting standards for groundwater quality management and protection, as established in Wisconsin Administrative Code Chapter NR 140 and NSF/ANSI Standard 60.
- d. In the event that leachate concentration from reject material test results exceeds the preventive action limits referenced in NR 140 or the allowable concentration in drinking water referenced in NSF/ANSI Standard 60, the mine operator shall:
 - i. Design and implement a groundwater monitoring system and sampling program with the explicit purpose of detecting and measuring the concentration of constituents that have the potential to leach and cause groundwater pollution.

- ii. In the event that groundwater monitoring shows that the preventive action limits referenced in NR 140 or the allowable concentration in drinking water referenced in NFS/ANSI Standard 60 have been exceeded the operator shall dispose of the the reject material at a different location in accordance with federal, state, and local laws and seek to remediate the associated groundwater pollution.
- e. Material tests will be conducted: 1) prior to disposition of any off-site material; 2) on an on-going basis at least once per year; 3) at the time of any changes to the properties or chemistry of the waste products associated with new sources of waste materials or new processing additives, including flocculants.
- f. Fueling of equipment inside of the mine shall be discouraged and limited to vehicles such as tracked equipment that cannot readily access an off-site fueling station. Fueling of highly mobile equipment such as rubber tired loaders, scrapers and trucks shall occur in areas that pose a reduced risk of groundwater pollution. In all cases spill containment practices such as drip pans, absorbent pads, or other recognized practices shall be used to contain drips and spills during fueling.
- g. In the event of fuel spills or other hazardous waste spills the operator shall immediately contact the Department of Land Conservation & Forest Management.

13. Agricultural Operations

- a. Existing agricultural fields and pastures located within the mine boundary may, at the discretion of the operator, remain in agricultural production or may be taken out of production. No agricultural operations shall be conducted within the boundary of an active mine phase. For agricultural fields and pastures that remain in production, the operator shall assure that agricultural operations are conducted in accordance with all applicable local, state and federal laws, and administrative rules.
- b. For those agricultural fields and pastures that remain in production, the agricultural producer and mine operator shall, before March 15, 2014 develop and submit to the Dept. of Land Conservation & Forest Management a nutrient management plan that meets the specifications of WI NRCS Technical Guide Standard 590.
- c. The nutrient management plan shall be implemented by the responsible agricultural producer(s) to assure that agricultural operations meet or exceed state agricultural nonpoint pollution control standards, as specified in WI Admin. Rule NR 151. The agricultural producer(s) and mine operator shall report and certify on an annual basis that the nutrient management plan is being followed and that the agricultural pollution control standards are being met.

14. Site Reclamation & Post-Mining Land Use

- a. The post mining land use for the original mine site area, as documented in the "Operations Site Map" dated May 2, 2011, shall be established as agricultural row crop, other agricultural, or wildlife habitat.
- b. The post mining land use for the Mine Site Expanded Area, as documented in the "Operations Site Map" dated December 21, 2012, shall be established as passive recreation and wildlife habitat.
 - i. In persuing the post mining land use as wildlife habitat the mine site shall be restored, to the extent practicable, to a condition at least as suitable as that which existed before the lands were affected by nonmetallic mining operations.

- ii. All disturbed areas (with the exception of possible wetland mitigation sites), including abandoned agricultural fields, shall be restored to establish a forested or native prairie land cover as planned.
- c. On or before January 31, 2014 the mine operator shall develop and submit, to the Department of Land Conservation & Forest Management for review and approval, a freestanding site restoration and property management plan. The plan shall be prepared and implemented by the operator to guide ongoing efforts to systematically manage, restore, and monitor the mine property as a management unit. At a minimum, the plan shall include:
 - i. A description of the methods that will be used to restore and manage areas disturbed by mining, including: 1) the methods that will be used to limit soil compaction and facilitate soil profile development through the addition of soil amendments and biological conditioning, 2) the methods, plant species, and densities that will be used to establish and maintain the planned forested and native prairie cover types, 3) the methods and materials that will be used to control noxious weeds and invasive species.
 - ii. A project design and implementation schedule that explains how onsite test plots and undisturbed control plots will be used to demonstrate the feasibility of achieving the proposed site reclamation and post mining land uses as planned.
 - iii. A vegetative cover map of the permitted area showing the approximate boundaries of disturbed and undisturbed areas, the anticipated post-mining surface contours, the vegetative cover types that will be maintained or established on the undisturbed and disturbed areas of the mine, and the proposed locations of onsite test plots and undisturbed control plots to be used in site reclamation.
- d. The operator shall develop and implement a system of field test plots using the project design established in the site restoration and property management plan. These test plots will be established, planted, and maintained to demonstrate methods to be used in site reclamation, and to evaluate the success of site restoration. The operator shall maintain records that document:
 - i. The methods and materials used to establish the test plots, and undisturbed control plots.
 - ii. The physical and biological characteristics of the test plots and control plots, as initially established and monitored over time.
- e. The successful reclamation of restored areas shall be determined by the Department of Land Conservation & Forest Management using the following criteria: site stability, plant density and species diversity, plant rooting depth and density, soil chemistry and fertility, the type and amount of soil organic matter, soil depth, and the extent of soil profile development.
- f. The completion of successful reclamation shall be determined through physical site inspections. In making the determination of successful reclamation, Department of Land Conservation & Forest Management may take into account other supporting information including information generated from onsite test plots or from other areas of the mine site that have been previously reclaimed.
- g. When applying the criteria and evaluating the quality of the site reclamation, the Department of Land Conservation & Forest Management shall recognize and consider the physical site conditions and limitations that existed at the restored site before mining.

15. Certification of Reclamation

- a. Parcels subject to permit requirements may be released from the reclamation permit upon satisfaction of mine lease obligations as determined by the operator, and upon certification that reclamation requirements and standards have been met, as determined by the County.
- b. Upon certification of site reclamation and release from the reclamation permit, all future land use decisions shall be at the discretion of the landowner and shall comply with all applicable laws, ordinances, and administrative rules that may apply to the use of the land at the time of release.
- c. If a lease is cancelled on a parcel that has not been certified as reclaimed, and the lease cancellation occurs for any reason other than the purchase of the parcel by the operator, the operator shall immediately reclaim the parcel in accordance with the reclamation plan. If the operator fails to reclaim the parcel in accordance with the nonmetallic mining reclamation plan, the operator's financial assurance will be forfeited for that parcel and will be used by the County to reclaim the site.

16. Permit Evaluation and Amendments

- a. The Department of Land Conservation & Forest Management shall periodically evaluate the extent of contemporaneous reclamation achieved through mining operations, and the extent of compliance with reclamation standards.
- b. The Department of Land Conservation & Forest Management may allow for design variations and may amend or alter operational conditions that do not significantly alter the scope of the reclamation plan or the reclamation permit issued under the authority of Sec. 30-105 of the Chippewa County Non-Metallic Mining Reclamation Ordinance.
- c. All permit alterations or amendments shall be mutually acceptable and agreed to by the Department of Land Conservation & Forest Management and by the operator. Reclamation of areas designated with an agricultural post mining land use shall comply with all Wisconsin Administrative Code NR 151 standards (and any subsequent revisions) standards as they apply to non-point source pollution control.

As the operator, or authorized representative of the operator, I hereby acknowledge and agree to the above permit conditions.


Signature

Oct 5 2017
Date

Josh Clements
Printed Name - Operator

Director of operations
Title

Permit approval by Department of Land Conservation & Forest Management


Signature

10/5/2017
Date

CHRISTIEN HUPPERT
Printed Name - Authorized Staff

PROJECT ENGINEER II
Title