



(715) 726-7920
www.co.chippewa.wi.us

711 North Bridge Street
Chippewa Falls, WI 54729-1876

Ethan J. Hau
Land Resource Technician
office: (715) 738-2592
e-mail: ehau@co.chippewa.wi.us

August 7, 2019

Tom Gapinske
Northern Sands Wisconsin, LLC
923 S. Hastings Way #310
Eau Claire, WI 54701

Thank you for the timely submittal of the additional information contained in the report dated June 14, 2019, for the Albertville Valley mine, to meet the requirements of Nonmetallic Mine Reclamation Permit #2015-01.

The Department of Land Conservation and Forest Management (LCFM) has reviewed this resubmittal, and has determined that while it provides most of the information required under the LCFM's letter of review dated November 1, 2018, some deficiencies and ambiguities persist, that require further clarification.

The following letter of review has been prepared by the LCFM to document the extent of conformance with the requirements established in the November 1, 2018 request from the LCFM.

The following letter of review contains the text from the November 1, 2018 letter of review, where core deficiencies were identified and requests for additional information were established.

For ease of understanding, those core deficiencies are depicted here in grey bulleted type.

Comments shown in **red** indicate areas of remaining deficiency that must be met to satisfy the requirements of Permit #2015-01.

Directives shown in bulleted **red italics** require additional information from Northern Sands Wisconsin (NSW) to clarify ambiguities.

Bulleted comments shown in **bolded black** indicate that the information provided in the June 14, 2019 report, as provided by NSW, meets the requirements established in the November 1, 2018 review letter.

The results of the current review are as follows:

The LCFM's November 1, 2018 Review Letter states on pages 3-4:

- "The Follow-up report proposed that a full inventory of seeps, springs, wetlands, and surface waters on adjacent properties was not necessary because the hydrologic features would likely not be hydrologically impacted as a result of mining.

This rationale used by Northern Sands WI for not doing the full inventory was that hydrologic features would be upgradient of the mine and that surface flow to these features would not be disrupted as a result to mining.

The rationale does not account for infiltration and associated subsurface lateral flow that may be contributing to these features.

- The Wetland Delineation Report, submitted by Northern Sands Wisconsin dated July 22, 2018, identifies multiple wetlands at an elevation of approximately 1100 ft MSL. Because these wetlands appear at a consistent elevation, it is reasonable to assume that there are one or more restrictive layers that occur at or near the interface of the Tunnel City and Wonewoc sandstone formations, which is mapped at approximately 1100 ft MSL.

These restrictive layers may cause infiltration permeating through the Tunnel City sandstone formation to be intercepted and conveyed as preferential lateral flow along bedding planes, before being discharged to the surface. This surface discharge likely contributes to the hydrology of the identified wetlands.

The Northern Sands Reclamation Plan identifies one area in Phase 1, located near the west property boundary, where mining will partially remove the Tunnel City formation. This mining activity, which is planned to occur at approximately 1120 ft MSL, may intercept a bedding plane and modify the route of subsurface lateral flow. Altering the route of subsurface lateral flow may impact hydrologic features in the landscape, even though surface flow to the features may not be disrupted.

Because of this possibility, it is necessary for Northern Sands WI to conduct the full hydrologic inventory to determine the location of all seeps, springs, wetlands, and surface waters on all properties adjacent to the areas that will be excavated in Phase 1. The properties to be evaluated for Phase 1 are shown in Attachment 1.

This full inventory will allow Northern Sands WI to work directly with the appropriate regulatory authorities to mitigate impacts through established permitting processes."

- **Recognizing the information provided in pages 6-9 of the NSW report dated June 14, 2019, the LCFM has determined that a full hydrologic inventory has been conducted on all properties adjacent to the areas that will be excavated in Phase 1, as identified in Attachment 1 of the November 1, 2018 letter to Northern Sands WI. The results are depicted on Figures 6, 7, and 8 of the report dated June 14, 2019.**

This full hydrologic inventory meets the requirements of the November 1, 2018 review letter.

The LCFM's November 1, 2018 Review Letter states on pages 4-5:

- “The report did not include a sub-watershed delineation of each hydrologic feature or set of features to determine the water source and the approximate percent contribution from each water source to the feature.

To address this shortfall, Northern Sands WI must conduct the sub-watershed delineation as required.”

- **Recognizing the information provided in pages 5-6 of the report dated June 14, 2019, LCFM has determined that a sub-watershed delineation has been conducted. The results are depicted in Figure 7 of the report dated June 14, 2019.**

This sub-watershed delineation meets the requirements of the November 1, 2018 review letter.

The LCFM's November 1, 2018 Review Letter states on page 5:

- “Upon completing the updated hydrologic inventory and sub-watershed delineation, Northern Sands WI must reevaluate the potential for mining operations to affect seeps, springs, wetlands, and surface waters, including the following:
 - Hydrologic features located at or near elevation 1100 ft MSL, as they may be affected by removing material above that elevation.
 - Hydrologic features located at or near the elevation of the regional water table, mapped at approximately 1000 ft MSL, as they may be affected by the disruption of surface water flow during mining operations.”
- The NSW report, dated June 14, 2019, states on page 5, “Seeps, spring, wetlands and surface waters on the properties west of Phase 1 (Wagner, Frisch and Stahl properties) are either topographically above proposed mining activity in Phase 1, or are in a different drainage basin, and will not be impacted by mine activity.”

NSW concludes on Page 6 that, “there is therefore no possibility for mining operations to affect seeps, wetlands and surface waters on adjacent properties to the west, north and east of the mine area, as these areas are upgradient, and represent a source of surface and subsurface water into the mine area.”

Results of the sub-watershed delineation completed by NSW show that portions of sub-watersheds 1, 31, 42, 51, and 100 transect the western mine boundary and extend onto adjacent parcels owned by Wagner, Frisch, and Stahl. (See Figure 7, page 15)

Results of the full hydrologic inventory completed by NSW show that there are mapped wetlands located within several of these sub-watersheds, which are hydrologically connected and extend contiguously across the western mine boundary. (See Figures 6, 7, and 8, pages 14-16)

Figures 6, 7, and 8 of the NSW report, dated June 14, 2019, do not clearly identify surface elevations or show the extent or location of Phase 1 excavation and mining activities, as they may affect surface runoff and wetlands.

Figure 7 of the NSW report, dated June 14, 2019, and Figure 11a of the Reclamation Plan, received June 17, 2015, suggest that excavation and mining activities are planned to occur within the permitted mine boundary on a portion of sub-watersheds 1, 31, 42, 51, and 100.

- *Please provide further information, either in map figures or in text, that details the furthest areal extent of mining in proximity to mapped wetlands and surface water features that transect the western mine boundary. In addition, please include any anticipated separation distances or setbacks from the mine boundary and mapped wetlands, where no excavation or mining activities will occur.*
- *Please provide further information, either in map figures or in text, that details the surface elevations of mapped wetlands and the anticipated surface elevation (in feet Mean Sea Level) of excavations planned adjacent the western mine boundary.*
- *Please provide an explanation of how surface runoff, contributed from watersheds and wetlands within sub-watersheds 1, 31, 42, 51, and 100 will be managed as part of mining activities, including:*
 1. *Any measures that will be used to manage stormwater runoff contributed to the mine from the adjacent parcels, and*
 2. *Any measures that will be used to avoid, minimize, or mitigate possible impacts to mapped wetlands resulting from planned mining activities, using stormwater management, contemporaneous mine reclamation or other measures to mitigate any wetland takings. Please note this is required under condition 4.b.(ii) of Permit #2015-01.*

The LCFM's November 1, 2018 Review Letter states on page 6:

- "An updated wetland delineation was conducted during the appropriate growing season for the parcels within Phase 1 of the permitted mine boundary.

Northern Sands WI must perform additional delineations on adjacent properties for Phase 1, as described under 4.a.(i).

Additional wetland delineations will be required for each subsequent phase of mining. These delineations must be completed and filed with the LCFM, then reviewed and approved prior to beginning mining in each phase."

- **Recognizing the information provided on pages 7-9 of the June 14, 2019 report, LCFM has determined that an off-site general wetland assessment on neighboring parcels has been conducted. The results are depicted on Figures 6, 7, and 8 in the report dated June 14, 2019.**

This assessment meets requirements of the November 1, 2018 review letter.

To maintain compliance with Permit #2015-01, please submit all required information to the LCFM prior to the start of mining, and no later than September 16, 2019.

To provide continuity in the record of previous submittals and responses, the LCFM requests that these remaining points of clarification be submitted in a letter of response that will serve as an addendum to the NSW report dated June 14, 2019.

I am available to address any questions you may have regarding these remaining points of clarification and can be reached at (715) 738-2592.

Thank you for your ongoing cooperation in this matter.

Sincerely,



Ethan Hau
Land Resource Technician

c: D. Masterpole, Dept. Director/County Conservationist
T. Pauls, Chippewa Co. Asst. Corporation Counsel
S. Haake, Howard Town Clerk