MENOMINEE INDIAN TRIBE OF WISCONSIN

P.O. Box 910

Keshena, WI 54135-0910

February 2, 2018

VIA ELECTRONIC LINK:
https://miwaters.deq.state.mi.us/miwaters/#/external/publicnotice/info/3338938032851742207/comments

Michigan Department of Environmental Quality (MDEQ)
Attention: Kristi Wilson
Water Resources Division
Upper Peninsula District Office
P.O. Box 30458
Lansing, Michigan 48909-7958

RE: Wetland Permit (NREPA Part 31, 301, 303)
Application #2NN-5PE0-MT3W
Aquila Resources Inc., **Back Forty Project**

Dear MDEQ/Ms. Wilson:

The Menominee Indian Tribe of Wisconsin hereby submits the attached comments on the Back Forty Project Wetland Permit Application. ***Please note, that we provide these comments in this state forum under protest***.

Although the State of Michigan was delegated Section 404 permitting authority by the U.S. Environmental Protection Agency (EPA) in 1984, the Menominee River and its adjacent wetlands are not within Michigan's delegated authority because they are interstate waters. When delegating the authority to States, the statute explicitly notes that EPA is not able to delegate authority over waters that "are presently used, or are susceptible to use in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce shoreward to their ordinary high water mark."[1] Accordingly, we continue to assert that the subject wetlands of the

[1] 33 U.S.C. §1344 (g).

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aforementioned permit application cannot be delegated to the State of Michigan because they are interstate waters. Instead, EPA retains jurisdiction over this permit and therefore the Tribe provides these comments to MDEQ under protest.

We have prior commented on the permits for NPDES, Metallic Minerals Mining, and Air. As we have stated time and time again, the Menominee Tribe's interest is unique because our origin as a people begins as the mouth of the Menominee River, a mere 60 miles east of our present Reservation. A comprehensive cultural landscape including ancestral burial sites, ceremonial and village sites, cultural and other funerary objects are located within the footprint of the proposed site and will be impacted by this project if the wetland permit is approved. The site remains important as the birth place of our five clans, the ancestral Bear, Eagle, Wolf, Moose and Crane. We are *Kiash Matchitiwuk*—the "Ancient Ones" and we express our gravest concerns under protest about the proposed wetland permit here and in the attached documents. Respectfully, the **Tribe requests MDEQ deny the wetland permit**.

Waewaenen (thank you) for your careful consideration of our concerns. We request that MDEQ respond in detail to **each** of the points made in our comments. We also request that MDEQ promptly provide a copy of that response to us, when the agency makes a decision of **any sort**, on this matter.

Sincerely,

Gary Besaw, Chairman
Menominee Indian Tribe of Wisconsin

February 2, 2018

State of Michigan
Department of Environmental Quality
Water Resources Division
Upper Peninsula District Office
Attention: Kristi Wilson

Re: Comment by the Menominee Tribe of Wisconsin on the wetland permit application by Aquila Resources, Inc. for the Back Forty Project
Submission Number 2NN-5PE0-MT3W

Dear Ms. Wilson and whomever else it may concern:

On behalf of the Menominee Indian Tribe of Wisconsin ("Tribe"), we submit the following comments on Aquila Resources, Inc.'s ("Applicant") wetland permit application ("Application") for its proposed Back Forty Mine to be located in Menominee County along the Menominee River in a place the Tribe considers sacred. The Tribe retained Thompson & Associates Wetland Services to produce a report evaluating the Application. That report ("Thompson Report") is attached as Exhibit 1. We also attach as Exhibit 2 a written version of comments made by members of the Tribe at the public hearing. We incorporate by reference the entirety of the Thompson Report and the members' public hearing statements as if reproduced in this comment.

The Tribe provides the following comments in this state forum **under protest**. The Tribe argues, and will continue to argue, that jurisdiction for the Clean Water Act Section 404 permitting process lies with the Army Corps of Engineers and the Environmental Protection Agency, not with the state of Michigan because the Menominee River was not,

and could not have been, delegated to the State of Michigan.[1] By providing these comments the Tribe does not waive its opposition to the Back Forty Mine or its opposition to the Michigan Section 404 permitting process. The Tribe, as a sovereign nation, does not waive its right to be consulted as is required by applicable federal environmental and historic preservation statutes.

Subject to that disagreement over jurisdiction, the Tribe asks MDEQ to deny the Application, or at the very least send it back to the Applicant for numerous necessary revisions and additions. While there are significant errors and omissions throughout the Application, the Application is fatally flawed with regard to the Applicant's attempt to bypass preferred wetland mitigation options through the near exclusive use of preservation of existing wetlands. In some instances, information in the Application that purportedly satisfies a legal criterion is simply wrong; in other instances, the Applicant has provided absurdly too little information to satisfy the applicable criteria. MDEQ should not have considered this version of the Application to be administratively complete in the first instance. At this point, as a basic matter of compliance with the express wetland laws, and in line with environmental justice principles, MDEQ should deny the Application.

1. The area proposed to be degraded and destroyed is at the heart of the Menominee Indian Tribe of Wisconsin's history, culture, and sacred traditions.

The Menominee Indian Tribe of Wisconsin, a federally recognized Indian Tribe, is indigenous to what is now known as Wisconsin and Upper Michigan, parts of Illinois, Minnesota and Iowa. By the early 1800's, the start of the treaty era, the Menominee occupied a land base estimated at 10 million acres; however, through a series of several

[1] 33 U.S.C. § 1344(g).

treaties entered into with the United States Government during the 1800's, the Tribe witnessed its land base erode to little more than 235,000 acres today.

Today, the Menominee Tribe includes five communities, Keshena, Neopit, Middle Village, Zoar, and South Branch. The Menominee Nation's cultural and spiritual connection to the Menominee River goes back thousands of years, to their creation story. As Menominee's actual sacred place of origin exists within its 1836 treaty territory, at the mouth of the Menominee River which is located in the border cities of Menominee, MI and Marinette, WI. The Menominee have no migration story as their creation story begins at the headwaters of the Menominee River. Today, the Menominee's current reservation is a mere 60 minutes from their ancestral place of creation. The first Menominee was created when the Ancestral Bear came out of the Menominee River and became human. An Eagle joined the Bear, and so on until the five main clans (Bear, Eagle, Wolf, Moose, and Crane) were formed. This is the Menominee Creation Story.

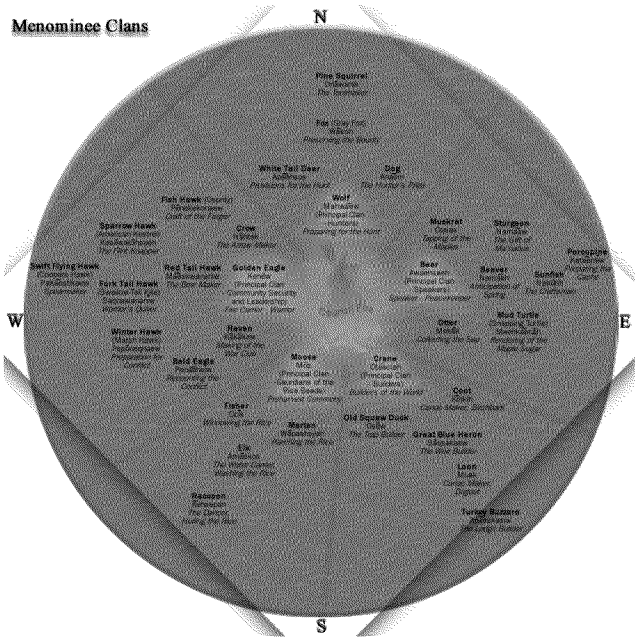
Awaesaeh (The Great Bear) in the village where the river empties into the Bay, found himself alone. He decided to call Kine'u (Eagle/Thunderers) and said, "Eagle come to me and be my brother." While they were considering whom to call upon to join them, they saw a beaver approaching. The Beaver requested to be taken into the totem of the Thunderers, but being a woman, was called Nama'kukiu (Beaver Woman), and was adopted as a younger sister of the Thunderer. Soon afterward, as the Bear and Eagle stood on the banks of a river, they saw a stranger, the Nama'o (Sturgeon), who was adopted by the Bear as a younger brother and servant. In like manner, Omas'kos (Elk) was adopted by the Thunderer as a younger brother and water-carrier.

It is also told that Bear traveling up the Wisconsin River became fatigued and sat down to rest. Nearby, there was a waterfall, from beneath which emerged Mahwaew (Wolf). While asking Bear why he was there, Ota'tshia (Crane) came wandering by. Bear called to him and said, "Crane, carry me to my people at the head of the river, and I will

take you for my younger brother." As Crane was taking Bear, Wolf called out to Bear saying, "Bear, take me also as a younger brother, for I am alone. This is how Crane and Wolf became younger brothers to Bear.

The Thunderers decided to visit the Bear village and asked Bear to join them. They promised to give corn and fire in return for wild rice which was the property of the Bear and Sturgeon. From this time on, the families united into an organized body for mutual benefit.

According to oral Menominee history, the Menominee came into possession of wild rice at the very inception of their tribal organization. When the Bear Clan & and Eagle Clan got together for the Tribe, it was with the help of Meqnapus. To the leader of the Bear Clan, Meqnapus said, "I give these things to you, and you shall always have them—the river, the fish, the wild rice, and the sugar trees."



As a result of the undeniable ties and long occupation of the Menominee River area, the Menominee have numerous sacred sites and burial mounds up and down the

Menominee River, including the area of the proposed Back Forty Mine. The banks of the river are home to miles of raised garden beds, ancient village sites, burial sites, complex raised garden beds and other sacred sites located along the Menominee River with a concentration of these sites as the Sixty Island area where the proposed mine site is located. The construction of the mine could destroy these raised beds which are historically important to understanding the techniques used to grow corn and other agricultural plants at that latitude, as well as nearby sites of worship and burial mounds. It has sacred, cultural significance, as well as ecological and environmental importance.

Today, the Tribe actively participates in educational and cultural activities at the site of our creation. More recently, the Tribe and City of Marinette have begun a collaboration to place educational kiosks in the area to educate on the Menominee Nation's creation and cultural connections to the area. Another example of their modern connection to the area occurred as recently on November 3, 2015, when the Tribe in cooperation with the City of Marinette, held a reseeding ceremony of wild rice at the mouth of the Menominee River. The Menominee Nation values the oral tradition over the written word; their history teaches us that this area where the proposed mine is located is immersed in their antiquity. Their oral history is situated along this river and in the land. There is a reason this river and County is called Menominee. They are "Kiash Matchitiwuk" - the Ancient Ones.

The Tribe maintains that a comprehensive cultural landscape including ancestral burial sites, ceremonial and village sites, cultural and other funerary objects are located within the footprint of the proposed site and will be impacted by this project if the wetland permit is approved. MDEQ should give comprehensive consideration to this issue.

2. DEQ must apply environmental justice principles to the Application particularly because of the history of environmental injustice with respect to indigenous tribes.

DEQ must not repeat what it has done in Detroit, Flint, Grand Rapids, and other communities, which is to ignore environmental justice principles as to vulnerable populations. Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."[2] The concept of environmental justice is particularly poignant and unique as applied to indigenous peoples.

> "Since explorers and white settlers began to appear in North America in the late 15th century, Native Americans have experienced a series of challenges against their reproductive, cultural, spiritual, political and environmental and, altogether, human rights. They have been forced from their homelands, first through land grabs by European settlers and later through the U.S. government's appropriation of Native territory (Isenburg 2000; Nabokov 1999) -- resettlement that resulted in involuntary livelihood changes. Additionally, Native populations experienced drastic population declines due to genocide, warfare, and introduced diseases (Fortuine 1989; Nabokov 1999; Nies 1996). Five centuries later, the relationship between Native Americans and today's dominant culture remains exploitative as non-Natives continue attempts to gain access to land, water, minerals and other raw materials from tribal governments (Nies

[2] United States Environmental Protection Agency, Environmental Justice (website), https://www.epa.gov/environmentaljustice.

> 1996; Smith and Frehner 2010). Native American lands have increasingly become targets for unwanted land uses such as dump sites, nuclear and weapons testing facilities, and resource extraction (e.g. Hooks and Smith 2004, Leonard III 1997)."[3]

Based on Michigan's own plan,[4] the concept of environmental justice applies to indigenous peoples. The plan contains a set of policies to address consultation with indigenous peoples and to ensure that environmental decision-making accounts for "traditional and cultural values, beliefs and principles of tribal members and governments."[5]

It is unfair and unjust for DEQ to take the position that its environmental justice plan applies to Federally Recognized Indian Tribes only in Michigan. Members of the Menominee Tribe and the Tribe itself consider the area where mining is being proposed to be sacred and, given the location of burial sites and cultural artifacts, literally part of its culture and traditions. The Tribe owns land in Michigan and a number of members of the Tribe reside in Michigan, so the Tribe has a significant presence in and ties to the state.

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[3] Jamie Vickery and Lori M. Hunter, *Native Americans: Where in Environmental Justice Research?*, Soc Nat Resour 29(1): 36-52 (2016).

[4] State of Michigan, Environmental Justice Plan (2010) ("Plan"). This comment does not necessarily endorse the 2010 Plan, but expects the DEQ at a minimum to implement it given that it was completed eight years ago based on an executive order from 2003. In the absence of something better, it is necessary to implement it given the Flint water crisis among other events that involved disparate impacts to minority and other vulnerable communities.

[5] Plan at 27.

Therefore the Tribe should be considered a federally recognized Indian Tribe in Michigan.

The only fair and just decision would be for DEQ to recognize the direct relationship between the Application and the Tribe's interests and to afford the Tribe the full protections of the environmental justice plan and specifically of all of DEQ's policies that attempt to more fairly address the interests of indigenous peoples.

3. It is fundamentally unfair for DEQ to expect the public to comment on a moving target given DEQ's January 19, 2018 letter.

DEQ sent Applicant a letter dated January 19, 2018. The subject line reads "Request for Clarification & Amplification"; however, the letter requests a massive volume of new information that is fundamental to understanding the Application. DEQ asks for resolutions to major hydrologic modeling discrepancies, brand new maps, brand new tables of data, explanations about the basic justification for Applicant's position on wetland impacts, water level and other geographic data, and much more. In sending this letter, DEQ has prevented the public from having the full public notice and comment period required under Michigan law. This letter alone requires DEQ to re-open the public comment period. The practice of creating a moving application target during the public comment period, just as it has done in the most recent Nestlé withdrawal request and in many other permitting process, is unfair generally and especially unfair when done in an environmental justice context.[6]

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[6] The Tribe becomes understandably concerned when it sees items such as Senate Resolution 0085 from September 2017, which says in part "The Michigan Department of Environmental Quality has thoroughly reviewed the Back Forty Project and granted three of the four permits necessary to mine in the state of Michigan. […] The fourth and final permit is a wetlands permit[.]" DEQ and EPA have both looked at various versions of

4. DEQ scheduled the hearing too soon and provided insufficient time for public comment.

In general, Part 13 of the Michigan Natural Resources and Environmental Protection Act governs the processing of permit applications submitted to the Michigan Department of Environmental Quality and expressly applies to permits issued under section 30304.[7] Upon receipt of an application for a permit, the DEQ must determine whether the application is administratively complete.[8] This determination must be made within 30 days and, if no determination is made in 30 days, then it is presumptively considered to be administratively complete.[9]

The DEQ must either approve or deny an application for a permit by the end of the statutorily defined processing period. The processing period begins to run after the close of the application period.[10] The application period is considered closed when an application is considered by the DEQ to be administratively complete and when the applicable permit application fee has been paid.[11] The specific length of the processing

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this flawed Application. However, it is incomprehensible why the legislature would purport to speak for the DEQ and would presume to know what the DEQ has reviewed and how it has reviewed it. If anything, the January clarification letter reveals that the outcome of thoroughly reviewing this Application has been the discovery serious errors and omissions and information that do not satisfy the legal criteria. We hope DEQ will write to the Senate to assert its independence and communicate that the legislature should not presume to know how DEQ is reviewing any application.

[7] MCL 324.1301(d)(xvi); MCL 324.30304.

[8] MCL 324.1305(1).

[9] Id.

[10] MCL 324.1301(f).

[11] MCL 324.1301(a).

period varies based on the type of permit being sought. For Part 303 permits, the processing period is 90 days or, if a hearing is held, 150 days.[12] If the DEQ fails to either approve or deny a Part 303 application within the processing period, then the application shall be considered as approved.[13]

Before approving a permit, the DEQ is required to follow public notice and comment procedures specified by Part 303. The DEQ is required to prepare a biweekly list of all Part 303 permit applications made during the previous two weeks and mail a copy of each biweekly list to persons that have requested notice.[14] Any person who desires notification of pending Part 303 permit applications may receive such notification via the biweekly list described above by submitting a written request to the DEQ along with an annual fee of $25.00.[15] The biweekly lists prepared by the DEQ must state the name and address of the applicant, the location of the wetland in the proposed use or development, including the size of both the proposed use or development and of the wetland affected, and a summary statement of the purpose of the use or development.[16]

In general, the DEQ may approve or disapprove of a permit application without holding a public hearing.[17] However, if a person requests a hearing in writing within 20 days after the mailing of the biweekly notice of Part 303 applications, then the DEQ must hold a public hearing before renders a decision of whether to approve or disapprove a permit application.[18] Additionally, the DEQ may determine that a permit application is

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[12] MCL 324.1301(f)(viii).

[13] MCL 324.1307(6).

[14] MCL 324.30307(3).

[15] Id.

[16] Id.

[17] MCL 324.30307(1).

[18] Id.

of significant impact and thus warrants a public hearing before it renders a decision to approve or disapprove a permit application.[19] If a hearing is held, it must be held within 60 days after the DEQ has received the completed application and the associated fee and must be conducted in the county where the wetland at issue is located.[20]

Based on this timeline as applied to the permit application at issue, DEQ could have held the hearing on February 5 instead of January 23, providing the public an extra 12 days to prepare. The statute does not expressly address written public comments, but even if one assumes that written public comment should be due no later than the date of a hearing, scheduling the hearing on February 5 would have given the public an extra three days to submit written comment. These differences matter. Especially when making a decision in an environmental justice context where vulnerable communities will be most affected, it is crucial to provide the maximum amount of time for public input. It is not clear why DEQ chose the date that it did, cutting into the maximum possible time for public participation. Additionally, considering the recent January 19 letter issued by DEQ requesting further clarification and documentation from the applicant, there are serious concerns regarding meaningful due process for public participation.

5. The legal standards that apply to wetland permitting, particularly when using preservation of existing wetlands as the predominant or exclusive mitigation option

There are several legal criteria a wetland permit application must satisfy. The following criteria are the main ones.[21]

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[19] Id.

[20] Id.

[21] It should be said that in order to receive federal delegation of Clean Water Act § 404 authority, Michigan has agreed to abide by the EPA's Section 404(b)(1) guidelines.

First, the permit must be in the public interest.[22] Determining whether the permit is in the public interest is based comparison of the reasonably foreseeable benefits of the project weighed against the reasonably foreseeable detriments.[23] That balancing considers various criteria.[24]

Memorandum of Agreement Between the Michigan Department of Environmental Quality and the United States Environmental Protection Agency, Region 5 – Administration of Section 404 of the Clean Water Act by the State of Michigan (Nov 2011). Any of Michigan's rules, policies, permitting, and enforcement related to the delegation must adhere to these guidelines, and they are among legal criteria that this Application fails to satisfy.

[22] MCL 324.30311(1).

[23] MCL 324.303.11(2).

[24] MCL 324.30311(2). The relative extent of the public and private need for the proposed activity; the availability of feasible and prudent alternative locations and methods to accomplish the expected benefits from the activity; the extent and permanence of the beneficial or detrimental effects that the proposed activity may have on the public and private uses to which the area is suited, including the benefits the wetland provides; the probable effects of each proposal in relation to the cumulative effects created by other existing and anticipated activities in the watershed; the probable effects on recognized historic, cultural, scenic, ecological, or recreational values and on the public health or fish or wildlife; the size of the wetland being considered; the amount of remaining wetland in the general area; proximity to any waterway; economic value, both public and private, of the proposed land change to the general area. Part of the failure of this Application process is that, in the public interest balancing, DEQ has not required any serious consideration of the cultural interests of the Menominee Tribe.

Second, the permit must be necessary to realize the benefits derived from the activity.[25]

Third, the activity is otherwise lawful.[26]

Fourth, there must be no "unacceptable disruption" to aquatic resources.[27] Determining whether a disruption to aquatic resources is unacceptable requires consideration of two sets of criteria.[28]

Fifth, either the proposed activity must be primarily dependent upon being located in a wetland, or there does not exist a feasible and prudent alternative.[29] An activity is primarily dependent upon being in the wetland if the activity is the type that requires a

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[25] MCL 324.30311(1).

[26] MCL 324.30311(1).

[27] MCL 324.30311(4).

[28] MCL 324.30311(4). The first set of criteria consists of the nine public interest criteria from Section 30311. The second set of criteria consist of the following: Flood and storm control by the hydrologic absorption and storage capacity of the wetland; wildlife habitat by providing breeding, nesting, and feeding grounds and cover for many forms of wildlife, waterfowl, including migratory waterfowl, and rare, threatened, or endangered wildlife species; protection of subsurface water resources and provision of valuable watersheds and recharging ground water supplies; pollution treatment by serving as a biological and chemical oxidation basin; erosion control by serving as a sedimentation area and filtering basin, absorbing silt and organic matter; sources of nutrients in water food cycles and nursery grounds and sanctuaries for fish. MCL 324.30302(1)(b).

[29] MCL 324.30311(4)(a) & (b).

location within a wetland and wetland conditions to fulfill its basic purpose.[30] An alternative is feasible and prudent if the alternative is available and capable of being done after taking into consideration cost, existing technology, and logistics, and if the alternative would have less adverse impact on aquatic resources.[31] An alternative can include a different location or configuration, another size, or another method that will accomplish the basic project purpose.[32]

Sixth, the plan must include the use of all practical means to minimize impacts to wetlands, which may include the permanent protection of wetlands on the site not directly impacted by the proposed activity.[33]

Seventh, and most pertinent to our comment, are the criteria for mitigation. Where mitigation is required, there is an order of preference for the kind of mitigation. Acquiring credits from a wetland bank is the most preferred kind of mitigation, followed by restoration of a previously existing wetland and creation of new wetlands.[34]

The very least preferred kind of mitigation is preservation of existing wetlands.[35] Preservation can only be utilized if other opportunities do not exist. The wetlands to be preserved must be "exceptional".[36] Exceptional wetlands are wetlands of a rare or

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[30] Mich Admin Code R 281.922a(5).

[31] Mich Admin Code R 281.922a(6)(a) & (b).

[32] Mich Admin Code R 281.925(2)(c).

[33] Id.

[34] MCL 324.30311d(1).

[35] MCL 324.30311d.

[36] Mich Admin Code R 281.925(4)(d)(i).

endangered ecological type.[37] Rare wetland types such as lakeplain wet prairies, or wetlands that provide habitat for listed threatened or endangered species, can qualify.[38]

They can also be wetlands that provide physical or biological functions essential to the natural resources of the state *and* that may be lost or degraded if not preserved through an approved site protection and management plan for the purposes of providing compensatory wetland mitigation.[39] The demonstrable threat of loss or substantial degradation must be due to human activities that are not under the control of the applicant *and* that are not otherwise restricted by state law.[40]

The preservation of the exceptional wetlands must ensure the permanent protection of the wetlands that would otherwise be lost or substantially degraded.[41] Preservation should take place in the immediate vicinity of the permitted activity, which means in the same drainage area, unless DEP determines that that is infeasible and impractical.[42]

It cannot be stated enough that **preservation is the least preferred option, which means that an applicant must use banking, restoration, and creation to the maximum extent possible for as many acres as possible before using preservation for the remaining acres**. As MDEQ itself has stated formally, mitigation through preservation

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[37] Id; MDEQ, *MDEQ Wetland Mitigation Banking Handbook*, 22 (Sept 2001) ("Handbook").

[38] Handbook at 22.

[39] MCL 324.30301(c) & Mich Admin Code R 281.925(4)(d)(i).

[40] Mich Admin Code R 281.925(4)(d)(ii).

[41] Mich Admin Code R 281.925(4)(d)(iii).

[42] Mich Admin Code R 281.925(7)(b).

results in a "net loss of wetland resources."[43] For that reason, mitigation banking credits are not offered for preservation-based projects.[44]

6. The Applicant failed to exhaust its wetland banking options or to sufficiently explain why it could not utilize wetland banking for some or all of its mitigation.

One potential wetland mitigation method that Part 303 permittees may undertake is the acquisition of approved credits from a wetland mitigation bank. A mitigation bank is a site where wetlands are restored, created, or preserved expressly for the purpose of providing compensatory mitigation in advance of the unavoidable loss of wetlands in perpetuity.[45] Any person may establish a mitigation bank and may buy, sell, or use mitigation credits.[46] A person who decides to establish a mitigation bank must enter into a written mitigation banking agreement with the DEQ that contains specific elements and provisions provided by the Michigan Administrative Code prior to construction of the mitigation bank or any sale or use of credits.[47] Once a mitigation bank has been developed and the DEQ has certified that the mitigation bank meets its performance standards, then the DEQ shall issue a specific number of wetland credits to the mitigation bank for sale to Part 303 permit applicants.[48]

A Part 303 permit applicant, with the approval of the DEQ, may provide all or a portion of its required compensatory wetland mitigation through the acquisition of

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[43] Handbook at 21.

[44] Id.

[45] Mich Admin Code R 281.954(1).

[46] Mich. Admin Code R 281.953(1).

[47] Mich Admin Code R 281.955(2).

[48] Mich. Admin Code R 281.957.

approved credits from a wetland mitigation bank.[49] In determining whether credits from a particular mitigation bank may be used in connection with a particular Part 303 permit, the DEQ must consider the location of the mitigation bank relative to the permitted wetland impact, the wetland types represented in the bank, the sustainable wetland functions provided by the bank, and the area of wetland provided as mitigation relative to the impact.[50] Additionally, when mitigation bank credits are used, they generally must be used to provide for "in-kind mitigation" as opposed to "out-of-kind mitigation." In-kind mitigation is defined as the replacement of unavoidably lost wetland resources with created, restored, or, in exceptional circumstances, preserved wetlands of a similar physical/biological type.[51] Out-of-kind mitigation is defined as the replacement of unavoidably lost wetland resources with created, restored, or, in exceptional circumstances, preserved wetlands that are physically or biologically different than the wetlands that were lost.[52] The Michigan Administrative Code also requires a mitigation bank to define a "service area," which is defined as an area in which a bank can reasonably be expected to provide appropriate compensatory mitigation for impacts to wetlands.[53] A mitigation banks service area is defined on a watershed or ecoregion basis and such definition will be incorporated into the mitigation banking agreement by and between the bank sponsor and the DEQ.[54]

While Part 303 and the Michigan Administrative Code establishes that Part 303 applicants may be eligible to purchase credits from mitigation banks in its same

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[49] Mich Admin Code R 281.925(12).

[50] Mich Admin Code R 281.956(1)(a)-(d).

[51] Mich Admin Code R 281.951(e).

[52] Mich Admin Code R 281.951(j).

[53] Mich Admin Code R 281.951(k).

[54] Id.

watershed or ecoregion to satisfy its compensatory wetland mitigation requirement, it does not require Part 303 applicants to only purchase credits from such mitigation banks. Notably, the Michigan Administrative Code outlines four criteria that the DEQ must consider in determining whether credits from a particular mitigation bank may be used to meet the requirements of Part 303. While these factors instruct the DEQ to consider the location of the mitigation bank relative to the permitted wetland impact, it does not require the mitigation bank to be located in the same watershed or ecoregion as the permitted wetland impact. Additionally, while the Michigan Administrative Code requires a mitigation bank to define its service area, by definition that service area is only meant to define to provide an area in which a bank can "reasonably be expected to provide appropriate compensatory mitigation for impacts to wetlands."[55]

However, a mitigation bank's service area is not meant to be limiting and nothing in the Michigan Administrative Code describes service areas as such. A mitigation bank's service area establishes the areas where a bank can be expected to provide appropriate compensatory mitigation for impacts to wetlands within that service area. Still, a mitigation bank may provide appropriate compensatory mitigation for impacts to wetlands outside of its service area. Subsequently, before the DEQ allows the use of credits from a mitigation bank to provide compensatory mitigation outside of its service area, it must closely analyze whether the proposed use of credits with the four criteria in the Michigan Administrative Code to ensure the particular mitigation bank may be used by the Part 303 permittee to meet the requirements of Part 303. In some instances, the use of credits from a mitigation bank outside the watershed or ecoregion of the impacted wetland will be improper because it will be impossible for the wetlands in the mitigation bank to replace the ecological and physical functions of the impacted wetlands based on the distance between the mitigation bank and the permitted wetland impact. Yet, in some

[55] Id.

instances the use of a wetland mitigation bank outside of the watershed or ecoregion of the impacted wetland to satisfy wetland mitigation requirements, either in whole or in part, may be preferable to other compensatory wetland mitigation options.

In this instance, the Applicant incorrectly asserted that it could not utilize mitigation bank credits based on there being no mitigation bank in the watershed or ecoregion of the impacted wetland. However, a mitigation bank does exist in relatively close proximity to the impacted wetland and it may be possible for the mitigation bank to provide credits to the applicant to satisfy at least a portion of its Part 303 wetland mitigation requirements. Clearly, the Applicant has failed to exhaust its wetland banking options or to sufficiently explain why it could not utilize wetland banking for some or all of its mitigation and therefore DEQ should deny the permit based on this failure.

7. **The Application's attempt to justify preservation as the exclusive option for wetland mitigation is fatally flawed. At times, the Applicant fails to include necessary information. When the Applicant attempts to include necessary information, that information is demonstrably wrong.**

The Applicant has the burden to include enough information in its Application to satisfy the permitting criteria.[56] The Thompson Report demonstrates that the Applicant has not come close to meeting its burden to satisfy the numerous criteria that apply to using preservation as a mitigation strategy. At times, the Applicant fails to include necessary information. When the Applicant attempts to include necessary information, that information is demonstrably wrong. Taken together, they lead one to believe that exclusive preservation of existing wetlands at the chosen site was a fait accompli, and that the portions of the Application about banking, restoration, and creation were

[56] *National Wildlife Federation v Dep't of Environmental Quality (No 2)*, 306 Mich App 369, 382-84; 856 NW2d 394 (2014).

completed in the service of reaching that pre-determined conclusion. Below, we highlight certain aspects of the Thompson Report, but the report details numerous other problems with the Application that must also be considered.

7.1 The Applicant provided erroneous or insufficient information in its attempt to prove that neither restoration nor creation were possible to at least partially provide mitigation of impacts.

Many of the omissions and errors in the Application are particularly egregious since they are made in the sections of the Application that purport to justify the Applicant completely skipping over banking, restoration, and creation to reach the least preferred preservation option. In other words, since preservation is so disfavored, the Applicant has an especially heavy burden to prove that mitigation can be done with preservation alone, and so any missing pertinent information shines an even brighter light on the Applicant's failure to meet the heavier burden. In this case, it is inconceivable that the Applicant could not identify any opportunities for restoration and creation that would have had the effect of minimizing use of the disfavored preservation option.

As to the so-called site search conducted to identify candidates for restoration or creation, the Applicant failed to include entire Site Search Maps.[57] This kind of omission should have rendered the Application administratively incomplete.

The site search for restoration and creation opportunities is obviously inadequate. Using one year of aerial photography instead of ten, limiting itself to a cursory Zillow search, failing entirely to address the possibility of wetland creation, and the crude

[57] Thompson Report at 3.

mapping reveal that the choice of exclusively using preservation at the chosen site was a fait accompli.[58]

The Applicant erroneously stated that the topography and other conditions in the area make it more difficult for restoration and creation. The Applicant overlooked a clearly available option for wetland restoration, which the expert team points out in the Thompson Report, which is to identify farmland at the base of drumlins and address the soil deposition on the wetlands beneath.[59]

7.2 The Applicant provided erroneous or insufficient information in its attempt to meet its burden of satisfying all of the preservation criteria.

The Applicant could have and should have better assessed the possibilities for wetland banking, restoration, and creation **before** moving on to the preservation option. The Thompson Report details the Applications errors and omissions in that regard, and even identifies a restoration opportunity that the Applicant ignored. Even if the Applicant had done what it needed to do to bypass banking, restoration, and creation, the Applicant has not met its burden to satisfy the criteria that apply to the disfavored option of preservation.

The Applicant failed to meet its burden to prove that the wetlands are rare or threatened or exceptional. In part because the predominant or exclusive use of preservation yields a net loss of wetlands, which goes against the core objectives of Part 303, preservation must be reserved for wetlands that are truly rare or endangered or exceptional because their loss would be more serious than the loss of other wetland types.

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[58] Id at 3-5.

[59] Id at 2-4.

Although the Applicant itself references the Michigan Natural Features Inventory scores, the fact is that none of the wetlands in the preservation area are part of what the state considers to be the Rare Wetland Natural Community.[60] Nor are they recognized by any official body as being rare or threatened or particularly exceptional.[61] In fact, the biorarity score of the preservation area is not only low, it is lower than that of the project area.[62] The wetlands to be destroyed are in this sense more valuable than the wetlands to be preserved.

The Applicant failed to meet its burden to prove that logging, recreational vehicle use, invasive species, or waterfront development are **demonstrable threats of loss or substantial degradation** to the preservation wetlands due to human activities beyond the control of the Applicant **and are not otherwise restricted by Michigan law**.

With regard to its claimed threat of logging, the Applicant failed to provide a forest inventory to prove that the preservation wetlands are at risk of clear-cut logging. Every time the Applicant references logging, it provides no details whatsoever – Why is this area in particular vulnerable to logging? Why would the logging be clear-cut logging? What evidence exists of interest in logging the area? There is no attempt to answer those basic questions. To the contrary, notwithstanding the fact that MiRAM assessments should not be the basis for calculating preservation value, the Applicant itself references the MiRAM assessments as identifying "evidence of historical logging and creation of access roads through wetlands" but no "recent significant disturbances to the wetlands".[63] That there may have been historic logging is not evidence that the area is under a demonstrable threat from current or imminent or even future logging. At any

[60] Id at 6.

[61] Id.

[62] Id at 6-7.

[63] Application's Wetland Mitigation Plan at 12.

rate, without a forest inventory, it is impossible to know the likelihood that anyone would want to clear-cut or otherwise the preservation area.[64]

In fact, as the Thompson Report points out, there is evidence that some of the tree species in the preservation area are not as commercially valuable as others.[65] For various reasons, some to do with vulnerability to disease, "[t]he fair market values of balsam fir and ash are currently not very high". The fact that the trees in the preservation area do not have high commercial value contradicts Applicant's claim that clear-cut logging of these trees is a demonstrable threat.[66]

With regard to invasive species, the Applicant has significantly overstated its case. The proportion of the preservation area Applicant claims is threatened by invasive species is just over an acre.[67] The threat is minimized by the fact that the area is an intact, low-nutrient watershed.[68] This is not proof of a demonstrable threat of loss or substantial degradation.

When it comes to the claimed threats of recreational vehicles and waterfront development, the Applicant provides even less information. As the Thompson Report points out,[69] the information provided about current development lacks important detail; the geography of the waterfront area would make it difficult to develop; and it is not true that Michigan law would not regulate development since so much of it could trigger, among other laws, Part 303 and 301, and Part 31's stormwater management regulations.

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[64] Thompson Report at 9.

[65] Id at 9-10.

[66] Id at 9-11.

[67] Id at 12.

[68] Id.

[69] Id at 11-12.

8. Conclusion

In conclusion:

- In a context where environmental justice principles clearly apply, DEQ must appropriately account for the interests of the Tribe and other indigenous peoples and consider the harm to their cultural artefacts and sacred sites.
- Particularly in an environmental justice context, DEQ should have provided more time for public participation.
- DEQ should not have deemed the Application to be administratively complete in December 2017, and its January clarification letter supports that.
- The Application does not contain a serious attempt to explore the use of all the preferred mitigation options for as many wetland acres as possible, or an adequate justification for its immediate use of preservation.
- DEQ must respond to each of the points raised in this comment, which incorporates the Thompson Report and public hearing statements.

DEQ must deny this Application. Apart from this proposed mine being a terrible idea that will destroy one of the most sacred places to Menominee Tribe, the Application simply fails to satisfy many of the minimum legal criteria for wetland applications.

Submitted on behalf of the Menominee Indian Tribe of Wisconsin by,

GREAT LAKES ENVIRONMENTAL LAW CENTER

Oday Salim
Executive Director & Managing Attorney
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Exhibit 1

Alice Thompson, MS, PWS
Thompson & Associates Wetland Services
1514 Menomonee Ave.
South Milwaukee WI 53172
414-571-8383

February 1, 2018

Lindzey A. Spice
Director, Department of Legal Services
Menominee Indian Tribe of Wisconsin
P.O. Box 910
Keshena, WI 54135

Dear Ms. Spice,

We were retained by the Menominee Indian Tribe of Wisconsin to review the Aquila permit to impact wetlands at the Back 40 Mine, Menominee County, Michigan. Though our main office is in South Milwaukee, Wisconsin, we have two staff members who are based in Marquette, Michigan.

Our report that was focused on the Aquila Mitigation Proposal found the following major concerns with the December 8, 2017 Aquila permit package:

1. Major Concern A: The Approach For Finding Mitigation Sites Was Cursory and Not Compatible with Historic Land Use.
2. Major Concern B: The Preservation Proposal Does Not Meet Standards Outlined in Michigan Admin. Code R 281.925 4(d).
3. Major Concern C: The Back 40 Mine MiRAM Does Not Acknowledge Important Cultural Value Of The Site.
4. Major Concern D: The Aquila Back 40 Mitigation Plan Will Result In A Net Loss of Wetland Acres.
5. Major Concern E: The Components Of The Restoration Plan Lack Detail Required for Accountability And The Performance Standards Are Not Strong Enough To Ensure Restoration Success.

Each of these concerns is described in the attached report. Also attached are Figures 1-4, References and our Biographies.

Sincerely,

Alice Thompson

Alice Thompson, MS, PWS
Owner and Senior Wetland Scientist

Attachment

EPA-R5-2018-009055_0000157_0028

Alice L. Thompson, Senior Wetland Ecologist & Owner

Alice Thompson, lead author for this report, founded Thompson and Associates Wetland Services, LLC in 1998. She consults on projects throughout Wisconsin for diverse clients including private landowners, developers, municipalities, counties, tribes, non-profits, and utilities. Ms. Thompson is a Professional Wetland Scientist (PWS) as certified by the Society of Wetland Sciences Certification Program and an Assured Professional Wetland Delineator as determined by the Wisconsin Department of Natural Resources (WDNR) since 2006. She is also certified as an Endangered Resource Reviewer by WDNR. She is the principal author of the award-winning Wetland Restoration Handbook for Wisconsin Landowners, in its third printing by the WDNR. She has taught a series of wetland restoration workshops for landowners, most recently in 2015 at the University of Wisconsin - Milwaukee (UWM) Field Station, Saukville, WI. She taught a workshop on wetland delineation at the UWM Field Station in September 2017.

Ms. Thompson completed five on-site wetland mitigation projects in the period of time (2001-2005) when the WDNR was authorizing such projects. She was responsible for design, oversight of installation, monitoring and 5-year management. All sites were accepted as completed mitigation credit. Thompson consults for the Village of Mt Pleasant (Racine, Wisconsin) on native vegetation and wetland issues for the award-winning Pike River Restoration Project, one of the largest stream bank restoration projects in the Midwest. This multi-year project, which was recently completed, restored 5.2 miles of the Pike River with native plant habitats including wetlands, prairie and pike spawning habitat.

Stefanie M Nadeau, Associate Scientist

Stefanie Nadeau, second author for this report, is a wetland ecologist and earned a Master's Degree in Water Resource Science from the University of Minnesota in 2002. Since then she has performed wetland delineations and natural area assessments, developed wetland mitigation and restoration plans, conducted rare species field surveys, and provided utility environmental oversight and permitting. Ms. Nadeau is a WDNR-Certified Endangered Resource Reviewer, which allows her to conduct Endangered Resource Reviews that have sign-off from the WDNR. She has successfully completed the Basic and Advanced Wetland Delineation Course offered by the University of Wisconsin (UW) – Lacrosse (2008), Critical Methods in Wetland Delineation offered by the WDNR (2008, 2009, 2010, 2011), and Wisconsin Compensatory Wetland Mitigation Training offered by the WDNR (2005). She has worked out of Marquette, Michigan for the past 5 years.

Andrea M Caron, Associate Scientist

Andrea Caron is a forestry graduate of University of Wisconsin-Stevens Point and earned her Master's Degree in Community Services from Michigan State University in 2011. Her thesis was an Ecological approach to Positive Youth Development Programs. She currently works out of Marquette, Michigan, having previously worked for the United States Forest Service in Alaska, and as a forestry consultant covering northern Minnesota, Wisconsin and the U.P. of Michigan. Her professional interests include land management, entomology and overall forest health. She provided forestry expertise for this report.

Aaron J Menke, Associate Scientist

Aaron Menke earned a Bachelor's degree in Applied Environmental Geography from University of Wisconsin-Parkside and holds a Certificate in Geographic Information System (GIS, 2013). Mr. Menke has worked in wetland consulting for Thompson and Associates for the past three years. His specialty includes utility environmental oversight, permitting, and construction monitoring, which included the high profile We Energies Germantown-Mequon Gas Main Replacement. Menke also assists with wetland delineation and management. He has successfully completed the Basic Wetland Delineation course offered by the University of Wisconsin-La Crosse in 2014. He attended Critical Methods in Wetland Delineation offered by the Wisconsin Department of Natural Resource (UW-La Crosse) in 2015, 2016 and 2017. Mr. Menke provided mapping expertise for this report.

Stephan Andrew McGuire, Associate Scientist

Stephan Andrew McGuire holds a PhD from the University of Wisconsin- Milwaukee (2016) in Biological Sciences and assisted Thompson on the Pike River Restoration Project during the 2017 field season. He researched relevant scholarly articles that are referenced in this report.

Alice Thompson, MS, PWS
Stefanie Nadeau, MS
Andrea Caron, MS
Aaron Menke, BA

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February 1, 2018

REVIEW OF APPLICANT RESOURCE INC. BACK 40 WETLAND MITIGATION PLAN

Thompson and Associates Wetland Services was retained by the Menominee Indian Tribe of Wisconsin to review the Mitigation portion of the Wetland permit documents associated with the Back 40 Mine in Menominee County, Michigan. This review and our comments are based on the Permit Documents as of December 8, 2017. We also used other maps and GIS websites to review the data. We have listed our major concerns and then commented on each major concern in following sub groups. Page numbers refer to the PDF page of the Permit Document.

In the Compensatory Mitigation section (Section 2-R, page 349) of the Feasible and Prudent Alternatives Analysis document, Applicant Resources, Inc. (referred to Applicant herein) proposes an "in-kind" mitigation strategy to preserve wetland and upland forest areas in a parcel located downstream from the proposed mine site. They state that opportunities for mitigation are limited because there are few farmed wetlands in the area. They also contend that creating wetland via excavating/grading presents a "formidable challenge" due to the rolling topography of the area. They feel preservation is a viable option due to threats from logging, development, and invasive species. We will address each of these statements below.

EPA-R5-2018-009055_0000157_0030

Major Concern A: The Approach For Finding Mitigation Sites Was Cursory and Not Compatible with Historic Land Use

A1. The Mitigation Restoration Approach did not Account for Historical Land Use

The "Understand the Natural Potential of the Watershed" principle described on the USEPA Principles of Wetland Restoration website indicates that establishing restoration goals for a waterbody requires knowledge of the historical range of conditions that existed on a site prior to degradation, as well as understanding what future conditions might be. This information can then be used in determining appropriate goals for the restoration project.

The Menominee River watershed was shaped by glaciation, resulting in glacial till plains with large areas of organic soils and outwash plains with poor drainage. Upland drumlins—oval mounds of till material—are oriented in a north east to south west direction. Streams are running parallel to these mounds in the same direction. The wetlands are located in the valleys between drumlins and are subsequently narrow features. These features are visible on the topographic maps (Figures ES-1 & 4-1, page 43 & 44 of pdf 3-R) and site search figures presented in the mitigation site search. The watershed was timbered in the 1800's as part of the "cutover region" that extended from the Upper and Lower Peninsula of Michigan through northern Wisconsin and northeastern Minnesota. Red and eastern white pine forests in the uplands were first cut, then northern hardwood and lowland coniferous swamps were harvested. Timber harvest began in 1865, peaking in 1889, and ending in 1917 (USDA SCS, 1989, page 12 of 233). The 2000 Census Data indicated that 14 percent of the county was in agricultural production in 2000 (MDARD, 2014). The 1989 Menominee County Soil Survey indicated that most cropland occurred on the well-drained soils in the uplands as the poorly drained organic soils were generally not cultivated due to "excess water, a scarcity of adequate drainage outlets, and the hazards of soil blowing and subsidence after a drainage system [was] installed" (USDA SCS 1989, page 23 of 233).

The restoration approach implied in Section 2.0 Mitigation Site Selection (page 16 of pdf 3-R) is to find a drained organic or hydric soil unit in a farm field and break tile or fill ditches in order to reverse the drainage and re-wet the soils. This is an appropriate approach in many midwestern watersheds where drained farm fields are abundant, but this approach is restrictive in this watershed where tiled and ditched fields are scarce. Instead of a one-size-fit's-all approach to wetland restoration, a more nuanced approach needs to be considered.

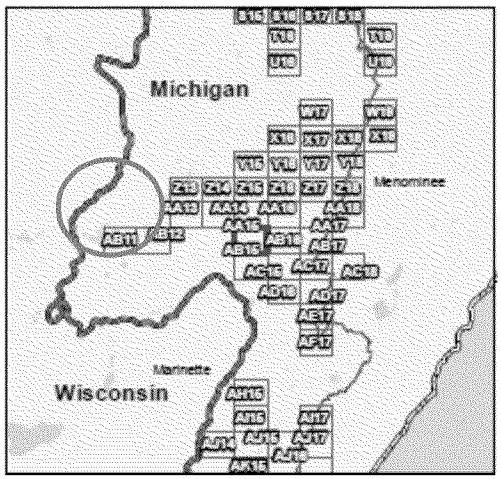
Brown-colored soil deposition over the original hydric (dark-colored) soil layer. Waukesha County, WI

Menominee County contains a wooded landscape where the most significant degradation that occurred was the clearcutting of timber in the 1800's, as discussed above. In this setting, erosion of the upland soils into lowlands, wetlands and streams, was a common impact. We counter that the rolling topography of the area is not a "formidable challenge" to restoration, but rather conditions that produce buried wetland soils, and thus restoration opportunities. A more appropriate

restoration approach in this landscape is to seek out farmland at the base of drumlins, just upslope of existing wetlands, where soil deposition that occurred as a result of clearcutting and poor farming methods could be scraped off. Using field work to locate groundwater seeps would identify additional sources of hydrology. Creating microtopography within the scraped area, and combining it with tree plantings would promote restoration of a wetland forest community.

A2. The Figures Describing the On-site or Near-Site Restoration/Creation Site Search are Missing

Applicant references an on-site and adjacent site mitigation survey in Section 2 of the Proposed Wetland and Stream Mitigation Plan (PDF Document 3R, page 16). The site search is stated to be summarized on Figures Z10, Z11, AA10 and AA 11, however those maps are not provided in the Site Search Maps. It is impossible to review this site search without those missing maps.



Location map insert from Figure AB15 showing the location of all figure maps in the south-central portion of the Menominee Watershed. Figures Z10, Z11, AA10, and A11 should be located within the area circled orange.

A3. The Near-Site Mitigation Site Search was Incomplete and Restrictive

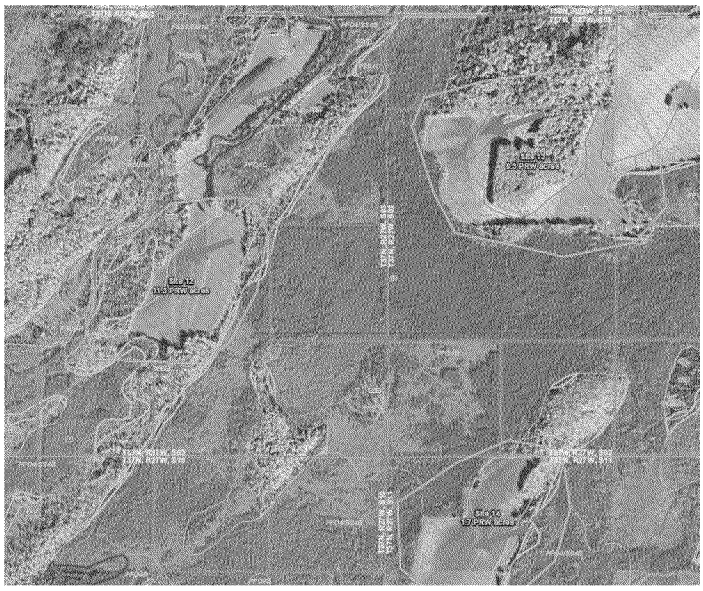
The Applicant conducted a GIS-based mitigation site search in the Menominee River Watershed (BSA 50) and identified 31 potential restoration sites (see Section 2 or page 16 of pdf 3-R). These sites were then excluded from consideration based on the site selection criteria or lack of a current property sale listing on Zillow.com. However, identification of suitable mitigation sites involves multiple steps, including: 1)consultations with local conservation agencies or organizations to understand local restoration priorities, 2)reviews of historical aerials to understand land use changes and to identify drainage tile and ditching, 3) discussions with local landowners who own potential mitigation sites, and 4) field work or site reconnaissance to better understand soils, hydrology, current vegetation and land use (Thompson & Luthin 2010). More specific ways the site search was incomplete include:

i. *Identification of artificial drainage from one year of aerial photography is inadequate.*

The Applicant plan indicates that artificial drainage of farmland was identified using aerial photography interpretation, presumably from the 2014 aerial which is used as the base layer for the site search figures (p 60-61 of 3-R). Drainage tiles can be identified as parallel dark lines within farmland, visible best on aerial photography taken during wet years. The US Army Corp of Engineers requires a review of at least 10 years of historical aerials in order to determine whether drainage tiles are functioning and whether or not sufficient hydrology is present to delineate farmed wetlands (USACE, 2012). The use of the 2014 aerial as the sole means to identify artificial drainage is therefore inadequate. Furthermore, aerial photography can provide indications of drainage tile, but discussions with landowners and field verification are the only way to definitively determine the presence of drain tile (Thompson & Luthin, 2010).

ii. *The site search criteria were too restrictive for a landscape where agricultural lands are limited.*

In 2000, agricultural land made up 14 % of the county (MDARD, 2014). The site search criteria were limited to large areas of cropland with hydric soils (minimum of 35 acres of wetland restoration area). Due to the rolling topography, the lowland farm fields in this watershed are often smaller and in linear segments along the drumlin boundary. A broader approach would be to conduct a series of restorations in nearby farmed areas along existing stream corridors (see photo to the right).



Restoration potential (indicated by an orange arrow) at Sites 12, 13, & 14 on Figure R16 (page 78 of pdf 3-R) could be combined to achieve mitigation credits.

The site search was also limited to areas adjacent public land, which may be convenient for Michigan Department of Natural Resource (MDNR) management if the property is to be given to MDNR, but not a requirement of mitigation sites and unnecessarily restrictive in a landscape where farmland is a minor component. An example of a potential site that was not considered is shown at left. The site is not bordered by public land but is adjacent an existing wetland/stream corridor.

Several wet areas (dark spots) within a farm field are shown on a 1998 aerial (source: MDEQ Wetlands Map Viewer). This area was excluded from the site search presumably because it is not bordered by public land.

iii. *The site search failed to discuss the potential for wetland creation.*

Wetland restoration is preferred in the state statutes over creation, but a combination of restoration and wetland creation could be used to achieve mitigation credits in the manner proposed in Major Concern A1. The Applicant site search failed to evaluate the potential for wetland creation.

iv. *Only one method (Zillow.com) was used to find sellers of potential mitigation sites.*

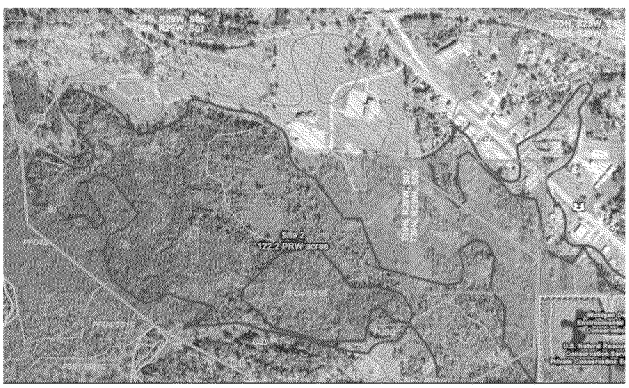
Approaching land owners is an important task to finding a wetland mitigation site, and the Applicant plan appears to have relied solely on

Zillow.com listings. The use of Zillow is limiting in that an owner may be open to the sale of land or a portion of land but may not be currently listing it, or may be utilizing other land broker sites, or real estate agencies.

v. *Mapping of the potential mitigation sites was not clearly described.*

In many instances, the size of the yellow polygons that outline the potential mitigation sites on the site search figures don't match the acreage that is labeled for that area. For example, Site 13 on Figure R16 on page 84 of pdf 3-R (also shown on the previous page of this review) is labeled as 0.3 PRW acres, but the polygon contains approximately 150 acres. It is difficult to ascertain exactly what part of the polygon was considered restorable wetland. As size was used to rank the potential mitigation sites, better delineation of the restorable area, or at least a description of how the size of the restorable areas was determined should be provided.

In addition, many polygons do not meet the authors site search criteria because they include non-agricultural land or structures. For example, at Site 2 (shown on page 66 of 3-R), the blue-shaded areas are identified as existing wetland on the 2005 National Wetlands Inventory. None of the area is used for agriculture (the 1st site search criterium). The MDEQ Highest Potential Wetland Restoration Layer (shaded red in the right photo below) accounts for approximately 60 acres in the outlined polygon area (shown in the below left photo). The yellow polygon is labeled as being 122 acres (presumably the restorable wetland area). It is unclear why this site is included or how it was arrived at.



View of Site 2, which is outlined in yellow. The red outline indicates potentially restorable areas with muck soils (> 10 acres). The polygon is labeled '122.2 PRW acres'.

View of the Site 2 area showing the Potential Wetland Restoration layer on the MDEQ Wetlands Map Viewer. Red indicates the highest potential, yellow indicates high potential, and orange indicates moderate potential.

Major Concern B: The Preservation Proposal Does Not Meet Standards Outlined in *Michigan Admin. Code R 281.925 4(d).*

The Wetland and Stream Mitigation Plan proposes to use preservation to mitigate for wetland impacts at the proposed mine site. Preservation may only be used in certain circumstances, listed below from Michigan Code 281.925 4(d):

(d) In certain circumstances, the preservation of existing wetlands. The preservation of existing wetlands may be considered as mitigation only if the department determines that all of the following conditions are met:

(i) The wetlands to be preserved perform exceptional physical or biological functions that are essential to the preservation of the natural resources of the state or the preserved wetlands are an ecological type that is rare or endangered.

(ii) The wetlands to be preserved are under a demonstrable threat of loss or substantial degradation due to human activities that are not under the control of the applicant and that are not otherwise restricted by state law.

(iii) The preservation of the wetlands as mitigation will ensure the permanent protection of the wetlands that would otherwise be lost or substantially degraded.

The plan does not meet all the conditions described in the statutes. Each inadequacy is described below.

B1. The Proposed Preservation Site Does Not Contain Wetlands That Meet the Definition of Rare or Endangered

i. *The state imperilment rankings of the mitigation wetlands do not indicate them to be rare, endangered, or of exceptional function.*

The Michigan Natural Features Inventory (MNFI) is a program of Michigan State University Extension that partners with the Michigan Department of Natural Resources to conduct surveys of Michigan's natural resources and maintain a database of the location and quality of these resources. The MNFI website lists the state imperilment rankings for every natural vegetation community within Michigan. The rankings range from S1 (critically imperiled because of extreme rarity) to S5 (common and widespread). The Michigan Rapid Assessment Method for Wetlands (MiRAM) is a MDNR tool for determining the functional value of a wetland (MDNRE, 2010). It classifies a Rare Wetland Natural Community Type as having a state rank of S1 or S2, or containing old-growth/mature wetland forest. Wetlands are also considered to have exceptional ecological value if they are designated as US Fish and Wildlife Service Critical Habitat, are a Great Lakes Coastal Wetland, or contain Threatened or Endangered Species.

The wetlands within the proposed mitigation site do not meet any of these criteria. The wetlands are ranked as S3 (Vulnerable to extirpation), S4 (uncommon but not rare), and S5. Only one community within the preservation area has a lower state ranking and it is an upland community (dry sand prairie – S1). Though S3 communities are listed as vulnerable and recognized has having high ecological function, they are NOT considered rare or endangered, as is required by state statute. S3 communities are given value in the quantitative portion of the MiRAM, but the S3 listing is not a sole indication of exceptional function. Furthermore, the MiRAM User Manual states that quantitative score "should not be considered an inherent and absolute evaluation of a Wetland's quality" but rather must be used in consideration with other available information.

ii. *The mitigation site has a low Biorarity Sum score (and lower than the Back 40 Mine Site).*

The MNFI has created a data layer called 'Biorarity Sum', which incorporates known occurrences of rare species and high quality natural features with global and state imperilment

rankings in a model to measure an area's contribution to biodiversity (Schools, et al. 2014). This model was designed for land use planning to show the areas that are worthy of conservation efforts. A higher Biorarity Sum value indicates a greater biological interest, which may be attributed to the presence of a very rare species, several species that may be somewhat rare, a high quality habitat, or a combination of these, etc.

As shown on Thompson Figure 1, the Biorarity Sum value for the eastern portion of the mitigation site is 3.75; the western portion of the site is not given a value. Higher values are shown surrounding the site, including at the mine site. The Back 40 mine site has Biorarity Sum Values ranging from 1.75 in the southeast portion of the site to 35 in the southwest portion of the site. This tool indicates that there are other areas within the watershed with greater biological interest, and therefore more worthy of protection, including the Back 40 Mine site.

The Applicant states that the *"landscape associated with the mitigation area is unique because of its geologic riverine setting which has created an ecologically diverse mix of upland and wetland habitats*" (3R page 18). If the mitigation area were "unique", then this should be reflected in a higher BioRarity Sum value. In addition, the diverse mix of upland and wetland habitats is present adjacent many segments of the Menominee River, as evident on the topography map, Figure ES-1 (page 44 of 3R). The Applicant has not demonstrated why this particular area is more unique than the other similar areas.

B2. Data To Prove That The Mitigation / Preservation Site Has 'Exceptional Function' is Lacking

Section 4 of the Permit Documents (3-R, page 22) describes the baseline conditions of the mitigation/preservation site. Data provided for the site include mapping, delineation sheets, a survey of physical disturbances, a stream survey including habitat assessments and longitudinal profile surveys, species lists of the wetland communities, and a MiRAM evaluation. This data presented is not detailed enough to prove that the site is "exceptional" and therefore worthy of protection for mitigation credit. Note that we were not able to visit these sites ourselves, and thus can only respond to the written comments found in document 5R and available maps.

i. MiRAM scores are not intended as an evaluation of preservation value.

As described in the MiRAM user manual: *"The Quantitative Rating's numeric score should not be considered an inherent and absolute evaluation of a Wetland's quality….Given that the MiRAM is primarily a tool for evaluating a Wetland's condition, function, and value**, users should be especially cautious in applying the results of the MiRAM in any other context, such as evaluation of preservation value…**"* (MDNRE, 2010). Furthermore, the MiRAM User Manual states that "*the numeric score must be considered in light of other available information about the nature of the Wetland.*"

The use of MiRAM scores as justification for preservation is an inappropriate use of the MiRAM tool. Data that could be used in conjunction with the MiRAM scores to prove that the site is exceptional and therefore worthy of preservation could include: comprehensive vegetation surveys, use of floristic quality assessments (FQA), photographs, surveys for threatened and

endangered species, soil and hydrological information, as well as disturbance history. Such materials were not provided.

ii. MiRAM scores are inconsistent, confusing, and not clearly explained or justified with additional data.

Since we did not field review the sites, we can only respond to data made available by the Applicant. MiRAM documents were presented for the Back 40 Mine site and the Mitigation site, and both were reviewed in an attempt to better understand how scores were arrived at. However, we found that the scores at both sites were not backed up by data or evidence such as more comprehensive species data, photographs, or evidence from historical aerial photography reviews. In addition, the MiRAM wetlands were not cross referenced with the available wetland delineation data. An example of problems identified with the MiRAM evaluations is presented for the preservation site.

Preservation Site

An example from the Preservation site is the MiRAM scores for "Rich Tamarack Swamp" (5R, p. 483). According to the Michigan Natural Features Inventory (MNFI, 2018): *"Rich tamarack swamp is a groundwater-influenced, minerotrophic, forested wetland dominated by tamarack (Larix laricina) that occurs on deep organic soils predominantly* ***south of the climatic tension zone in southern Lower Michigan****.* This community type is said to occur only infrequently in the Upper Peninsula of Michigan, and the range shown in Cohen, et al. (2015) indicates that the preservation site is located just outside the area where this community may occur. The rich conifer forest found in the Upper Peninsula of Michigan is typically dominated by white cedar. In fact, as shown on the Land Survey Map (Thompson Figure 4), the vegetation as of 1852 was "Mostly Cedar and Tamarack". This 1852 Survey Map was created by the Public Land Survey maps of early surveyors. As described in the Michigan Natural Features Inventory: *"Rich conifer swamp is a groundwater-influenced, minerotrophic, forested wetland dominated by northern white-cedar (*Thuja occidentalis*) that occurs on organic soils (i.e., peat) primarily north of the climatic tension zone in the northern Lower and Upper Peninsulas. The community is also referred to as cedar swamp."*

A species list and the MiRAM evaluation provided limited information regarding this community. We know this site was in the cutover region, however historic logging was not referenced as it was in the Back 40 MiRAM sheets. The only disturbance indicated was that of road beds in or near the wetland (5R, page 488). The species list (5R, page 460) identifies a total of only 8 species (in all stratum), which are all considered dominant. The species are tamarack, black spruce, black ash in the tree strata, tag alder in the shrub strata, and cattail, tussock sedge, lake sedge and blue flag in the understory.

Only one small photograph (5R, page 455) was provided for a wetland that is listed as being 92.78 acres in size (Figure 4-5, page 48 of 5-R). Though the MiRAM indicates that a wetland delineation was conducted for this wetland, data sheets were not provided.

The natural areas community key (Cohen, et al, 2015) describes Rich Tamarack Swamp as dominated by tamarack with a tall well-developed shrub layer of winterberry and poison sumac (common to abundant). This does not match the community described by the Applicant. Rich

Conifer Swamp is described (Cohen, et al, 2015) as being dominated by northern white cedar which is not present in the community and tag alder in the shrub layer- which is in the applicant species list. If the community labeled as 'Rich Tamarack Swamp' is actually a Rich Conifer Swamp (i.e., cedar swamp, as indicated by the 1852 survey map), then the absence of cedar would devalue the current condition of the wetland, and historic logging should have been indicated in the comment section. The species data mentioned in the Applicant description of the swamp is very sparse compared to the description of either swamp type. Rich Conifer Swamp is described by the MNFI as having tall and short shrubs, and a ground layer that can be "*especially diverse in sedges, ferns, orchids, forbs, liverworts, and mosses.*" This does not match the data presented in the MiRAM document.

Both Rich Conifer Swamp and Rich Tamarack Swamp systems are described as being groundwater influenced (Cohen, et al., 2015), but groundwater was not indicated as a source of hydrology in the Hydrology Metric of the MiRAM (5R, page 487). Another possible community type—Hardwood/conifer swamp is also described as groundwater influenced (Cohen, et al, 2015). The hydrology data is described as "perennial surface water" and "permanently inundated" which explains the presence of cattail and blue flag in the understory which are common to marshes. There is a lack of soil or hydrologic information to support the wetland community type determination.

Since there is not enough data presented to understand what the community type is— we do not understand why the community is listed as "best of type" (5R, page 490).

iii. *Comparison of mine site and mitigation site similarity uses faulty logic.*

The Applicant document (5R, page 235) states that *"The functioning value of wetlands on the Project Area are comparable to wetlands impacted by the proposed mine project".* This logic is faulty in that the state regulations allow preservation as a tool for mitigation ONLY when the mitigation site to be preserved is rare, endangered, or of exceptional functional value. Preservation is not meant to be used as a 1:1 (apples to apples) replacement of values, because it essentially results in an overall loss of wetland function and extent (see Major Concern D).

<u>B3: The Threat of Logging Has Not Been Adequately Demonstrated.</u>

Applicant states that the mitigation site is at risk of logging. We found several issues with this statement:

i. *No detailed forest inventory was presented by Applicant.*

Applicant failed to present a detailed forest inventory analysis, which would include tree diameters, age, density and heights within the preservation area, specifically within wetlands. Without having a forest inventory analysis, it is impossible to determine the economic value of the timber within the proposed area. This data would be used to determine the fair market value of a specific timber sale. The prices paid for a specific stand of timber will vary considerably due to such factors as size, species, quality, quantity, logging conditions, distance to the mill, end product, demand and competition.

Timber on a property will not likely be cut unless the proposed economic gains meet the landowner's objectives. As the economic value of the timber on the mitigation site has not been assessed, the risk of logging cannot be evaluated.

ii. Trees present in the wetlands currently have low market value - particularly balsam fir and black ash.

The Delineation Data sheets (starting on PDF page 402 of 5R) indicate a prevalence of balsam fir and black ash within the wetland areas of the mitigation site. Balsam fir *(Abies balsamea)* is not currently a highly sought-after species (MDNR, 2017). The markets are saturated with this species due to a recent infestation of the spruce budworm (SBW) (*Choristoneura fumiferana*) and therefore has a lower fair market value. Spruce budworm (SBW) (*Choristoneura fumiferana*) is one of the most destructive native insects in the northern spruce and fir forests of the Eastern United States and Canada (MDNR, 2015. Periodic outbreaks of the spruce budworm are a part of the natural cycle of events associated with the maturing of balsam fir. The insect prefers balsam fir, but white and black spruces are also hosts with some feeding on tamarack, pine, and hemlock. The spruce budworm limits the longevity of balsam fir-dominated and mixed spruce/fir forests in northeastern North America. The budworm larvae primarily defoliate balsam fir and white spruce. Every 30 to 50 years large scale SBW outbreaks cause widespread top kill and tree mortality.

Black Ash *(Fraxinus nigra)* suffers from the certain threat of emerald ash borer (EAB). Emerald ash borer (*Agrilus planipennis Fairmaire*) is an exotic beetle that was discovered in southeastern Michigan near Detroit in the summer of 2002 (MSU et al., 2015). Ash trees in North America have no immunity to the insect, and as such, the insect has decimated ash stands throughout much of Michigan. Menomonee County, including the proposed preservation area, is quarantined, and surrounded by three counties that are known to have EAB (Thompson Figure 2). Those counties are Dickinson, Delta and Marquette. Once infected, the ash tree will not survive, and will spread easily from tree to tree. The market is therefore saturated with ash, as it is from balsam fir (MDNR, 2017).

The fair market values of balsam fir and ash are currently not very high. As these species are not commercially desirable for loggers or mills, the threat of logging forest dominated by these species is presumed to be low.

iii. Logging is not an irreparable threat to forested wetlands if MDNR Best Management Practices are used.

The Michigan Department of Natural Resources has developed Best Management Practices (BMPs) for Forestry that "protect our soil and water resources while allowing appropriate use of our forest resources (MDNR, 2009). The Michigan Department of Natural Resources strongly encourages their use by everyone involved with growing, managing and harvesting trees, such as loggers, foresters and forest landowners."

This BMP manual accounts for all aspects of timber harvesting done on all forest types. Specific to cutting in wetter areas, there are guidelines for riparian management zones, stream

crossings, and construction of culverts. The manual also outlines site preparations, reforestation and forest protection guidelines.

The Applicant plan does not demonstrate why the mitigation site is threatened by logging, and clear-cut logging in particular. The State of Michigan does not consider logging in and of itself a threat to wetlands if MDNR BMPs are used.

B4. The Other Threats of Loss or Substantial Degradation Have Not Been Adequately Demonstrated.

Applicant states that the mitigation site is under threat from waterfront development, recreational vehicle usage, and expansion of invasive species, but they do not give reasoning for each of these threats. Michigan Code 281.925 4(d) indicates that such threats must be demonstrated.

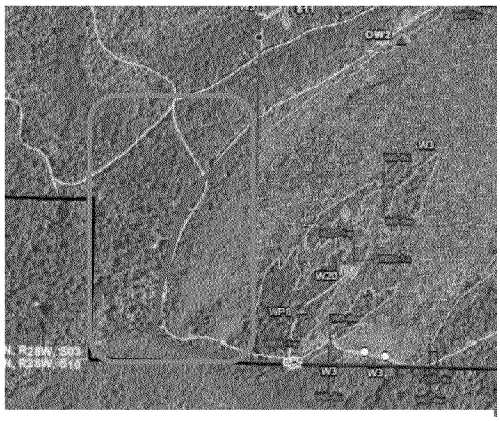
i. *Threat of Waterfront Development*

Appendix D in PDF 5-R (Figure 1, p 15) contains a map showing the proximity of structures to the mitigation site as evidence of development pressure. It does not show the year that these structures were built, so we are unable to assess whether this development happened primarily in the past, or if more development is occurring now and is encroaching the site. Some of these buildings may be abandoned such as on the subject property. More detail is required in order to show how current the threat of waterfront development is to the mitigation site.

Secondly, most of the mitigation area consists of wetland and floodplain, which are both protected and regulated under state law (See Thompson Figure 3). The waterfront area is a very narrow strip of upland surrounded by floodplain forest. The northernmost area contains about 3 acres or so of upland which could support development, but it is not clear if the upland river edge to the south is broad enough to support structures. These areas are mapped floodplain, and as such, any structure would require a floodplain permit and flood insurance, which will drive up the cost of development. These areas are also small, restricting the size of any potential development, and therefore the impact of such development.

Although potential development could occur on uplands surrounding the inner onsite wetlands, state and county erosion control and storm water regulations would need to be followed. Impacts to the wetlands would likely be confined to the outer boundaries of the wetlands and not result in substantial degradation of the large on-site wetland complex. Thoughtful development adjacent these wetlands could result in minimal impact.

Finally, the proposed mitigation area does not fully protect the wetland labeled as W3. As shown on Figure 4-1 (3Rk, page 41; excerpt shown at the right), neither the southwestern portion of the conifer swamp nor the adjacent upland buffer would be protected by the proposed mitigation plan. There is no discussion regarding what action is proposed for the remainder of the Applicant property, so it is conceivable that this area could be sold and developed. If the wetlands are threatened by development as the plan indicates, then it does not make sense to leave a portion of the wetland and associated upland buffer unprotected.



The southwest portion of the mitigation area, as shown on Figure 4-1. The orange area outlines the area of wetland that would not be protected by the mitigation plan. The purple line approximates the wetland boundary.

i. Recreational Vehicle Usage

The use of ATV's is a very general threat that is not specific to this site. Evidence of current or historic ATV use at the site has not been described, thus we have no way of evaluating how severe this threat is to the on-site wetlands. The plan appears to provide a remedy for possible ATV use by pulling out culverts and installing signage discouraging ATV use—both of these measures offers minimal protection. Signage without enforcement is not likely to discourage ATV use, and since ATV's are equipped for off-road use, removing culverts and some roads will not present a barrier. Finally, Applicant notes the area to contain high quality habitats worthy of preservation. If this is the case, then current and historic ATV traffic has not substantially destroyed the habitat value to date.

ii. Expansion of Invasive Species

The invasive species documented in the plan are plants that spread along roadways, in floodwaters, and by wind. The plan (3R, page 26) lists 0.06 acres of spotted knapweed (not a wetland invasive), 0.06 acres of giant reed grass (also known as *Phragmites*), 0.03 acres of reed canary grass and 1 acre of marsh thistle—all relatively small areas. Although controlling invasive species is an important task for any land manager, it is not a specific threat to this site but a ubiquitous problem that cannot be solved by land preservation because infestations can occur even after a site is preserved. Furthermore, since the land has low disturbance currently and has an intact, low nutrient watershed, it is unlikely that that the invasive species described in the plan will overrun the forested wetlands and lead to substantial degradation.

B4. Permanent Protection of the Mitigation Site Will Not Protect the Wetlands From the Emerald Ash Borer

A wetland delineation was conducted at the proposed mitigation site and datasheets for the delineation data points are presented beginning on PDF page 408 of 5R. Ash species make up 3-85% of the canopy within the delineated wetlands, as summarized from the delineation data sheets in the table below.

As described above in Major Concern B2.ii., the Emerald Ash Borer is an invasive insect that has decimated ash stands throughout Michigan. It has yet to be detected in Menominee County, but has been detected in adjacent counties (Thompson Figure 2). Once infected, an ash tree will not survive, and the infestation will spread easily from tree to tree. Preservation of the site will not remove this threat. As ash is a primary component of many wetlands in the mitigation site, the wetland forests will be substantially altered in the next decade regardless of site preservation.

Percent of Canopy for Ash Species, as summarized from the wetland delineation datasheets in PDF 5-R.		
Wetland ID	**Species**	**Percent of Canopy**
W 5	Black Ash	25-40
W3	Black Ash	60-85
W 7	Black Ash	15-35
W8	Black Ash	30
W11	Black Ash	70
W 15	Black Ash	55
W 16	Black Ash	40
W 12	Green Ash	3
W2	Green Ash	15
W3	Black Ash	35 – 65
W18	Black Ash	20
W 19	Black Ash	60
W 20	Black Ash	40
W 21	Black Ash	60
W 24	Black Ash	15

Major Concern C: Back 40 Mine MiRAM Does Not Acknowledge Important Cultural Value Of The Site

The Applicant permit documents contain a series of Michigan Rapid Assessment data sheets for the Back 40 Mine Site and the Preservation/Mitigation site (east and west side). The MiRAM states:

"The Michigan Rapid Assessment Method for Wetlands (MiRAM) is a tool to determine the "functional value" of a particular wetland and to assign a rating level to that wetland as compared to other wetlands. The goal of this rating system is to assess individual wetlands on an equal scale regardless of ecological type."

In the Back 40 Mine site Rapid Assessment data sheets (MiRAM) located in Documents 5R, there is an evaluation of fifteen wetland areas within the mine project area. Of all fifteen wetland areas assessed by Applicant, none of the assessments acknowledge the cultural significance of the wetlands. The checkbox found on the final sheet of each 13-page MiRAM evaluation is to be checked if the following is true:

> *"7c. **Cultural/Historical:** The Wetland, or any part of the Wetland, has been recognized as having important cultural or historic value (assign 1 point)."*

NONE of the fifteen wetland MiRAM data sheets had this box checked or assigned a value of 1 point (maximum total allowed). Despite the cultural significance of this area to the Menominee Tribe of Wisconsin—our client—this MiRAM process does not capture or give any value to the known tribal history, cultural value and historical significance of the project area.

Major Concern D: Applicant Back 40 Mitigation Plan Will Result In A Net Loss of Wetland Acres

Preservation is the least favored mitigation option under Michigan state statute. As discussed in numerous publications *"Awarding credits for preservation is justly discouraged by natural resource agencies and ecologists because it does not replace lost wetland values and functions -- it allows a "net loss."* (ELI 1994, page 44)

As stated by Sibbing (2005*) "Another promise of the 1995 definition was that preservation of existing wetlands would only be used to generate bank credits in exceptional circumstances. After all, preservation of existing wetlands as mitigation leads to a net loss of both wetland acreage and function, an outcome contrary in all senses to the national goal of no net loss."*

In a handbook for Land Trusts (ELI & LTA, 2012) the discussion on wetland preservation includes this statement *"…if we allow for wetland or stream losses without replacing them, our vital aquatic resources will continue to be eroded through a death by a thousand cuts. And so, with the full understanding that undisturbed wetlands and streams remain at risk, the federal agencies nonetheless prefer to compensate impacts with restoration rather than preservation."*

The Back 40 Mine Project as proposed by Applicant will result in a net loss of wetlands and their functions from direct and indirect impacts on the Back 40 Mine site and within the Menominee River watershed that are not replaced by this preservation plan. This is "death by a thousand cuts" as so aptly described above.

Major Concern E: Components Of The Restoration Plan Lack Detail Required for Accountability And Performance Standards Are Not Strong Enough To Ensure Restoration Success

In assessing "in lieu fee" wetland mitigation, Kihslinger, Woolsey & Gaudioso (2014) state the following in the 12 components for a wetland mitigation plan: "The depth of information and analysis included should depend on the scope and scale of the proposed impacts." Certainly, the scope and scale of a proposed open pit copper mine on the banks of the Menominee River should merit very detailed information. Our analysis of the plan raises the following concerns:

E1: The Performance Standard, Monitoring, and Management Periods are Too Short For Forested Wetland Mitigation Credit.

Typically, any plan seeking wetland forested mitigation credit requires Performance Standards, Monitoring, and Management to be scheduled for 20 years. There are multiple reasons why re-forestation requires a 20-year commitment: tree and shrub plantings can be impacted by deer rubbing, herbivory, flooding, and other site factors. This plan only offers 5 years, despite tree and shrub plantings being planned.

E2. The Description Of Road And Culvert Removal Is Insufficient.

The level of detail on Figure 4-6 (3R, Page 49) is insufficient to identify the extent of restoration efforts in each location. For example, approximately "one acre" of road removal is discussed (3R, page 27), but we cannot identify the extent of the removal areas from this Figure. There is also a lack of detail regarding what actions are proposed and where. There is no detail on the height of the road, width, and materials. There is no upland location designated for the road spoils to be hauled to. The Short Term Work Plan (3R, page 27) plan states that topsoil may be imported to raise the grade if the road removal areas do not have native soil beneath the road material. There is no description as to what steps will be used to ensure that invasive species are not carried in as weed seed or propagules with the fill material. Furthermore, this would require an additional fill permit or more detail within this permit application. This overall lack of detail makes it impossible to judge the effectiveness of restoration efforts and will make it difficult to hold Applicant and its contactors accountable.

The Short-Term Work Plan (page 27 of 3-R) indicates that existing roads in the upland are to be "abandoned" and roads within the wetland are to be removed, including 8 culverts and 1 bridge located within the wetland portion of the road. Figure 4-6 shows the locations of the culverts and bridge, but it also indicates that 2 culverts within wetland are to be re-sized. We question why, if the roads are to be removed, new culverts would be installed. The plan fails to describe the procedure of abandonment or what it entails.

E3. The Erosion Control Plan in The Permit Documents Is Missing.

Page 29 (3R) of the Short-Term Work Plan refers to an erosion control plan. This is missing from the permit documents. An erosion control plan is necessary to ensure that Best Management Practices are used during the restoration efforts.

E4. Details Within The Planting Plan Are Minimal.

Planting plans are included but it is not clear on Figure 4-6 where the plantings will occur. Again, the lack of detail makes it difficult to hold Applicant and its contractors accountable. There are no specifications on how white cedar plantings will be protected from deer herbivory—a common problem to those plantings. Also troubling is the inclusion of black ash in the planting plans despite the threat to ash from the invasive Emerald Ash Borer. Size classes of trees and shrubs, and other details on planting procedures are absent.

F4. The Performance Standard For Invasive Species Is Not Strict Enough To Remove The Threat of Invasive Species In The Mitigation Site.

The MDNR classifies marsh thistle as a B-List Species within the Western Upper Peninsula: Infestations are mostly local (found in some areas but not others), and should be designated for eradication, suppression, or containment based on specific management goals (Higman & Campbell, 2009). This is in contrast to A-List species which are mostly isolated and should be treated wherever found, and C-list species which are widespread so no action is recommended.

Giant reed grass (*Phragmites australis*) is listed as an A-List species; reed canary grass (*Phalaris arundinacea*) and spotted knapweed (*Centaurea maculosa*) are classified as C-List species. Both Giant reed grass and Reed canary grass are difficult to control because they can spread by underground "rhizomes" and re-invade a site over time. A significant work effort involving a multi-season approach and multiple techniques is required, making these two species problematic long term issues.

The Performance Standards in Section 8.0 (3-R, p 33) call for the percent cover of target wetland invasive species in combination to be limited to less than 10 percent within each wetland type in the wetland restoration areas and at other locations documented in Figure 4-4 (3-R, page 47).

As the protection of the site from invasive species is one of the rationales for using preservation for mitigation credit, this value allowing up to 10% invasive cover is too high.

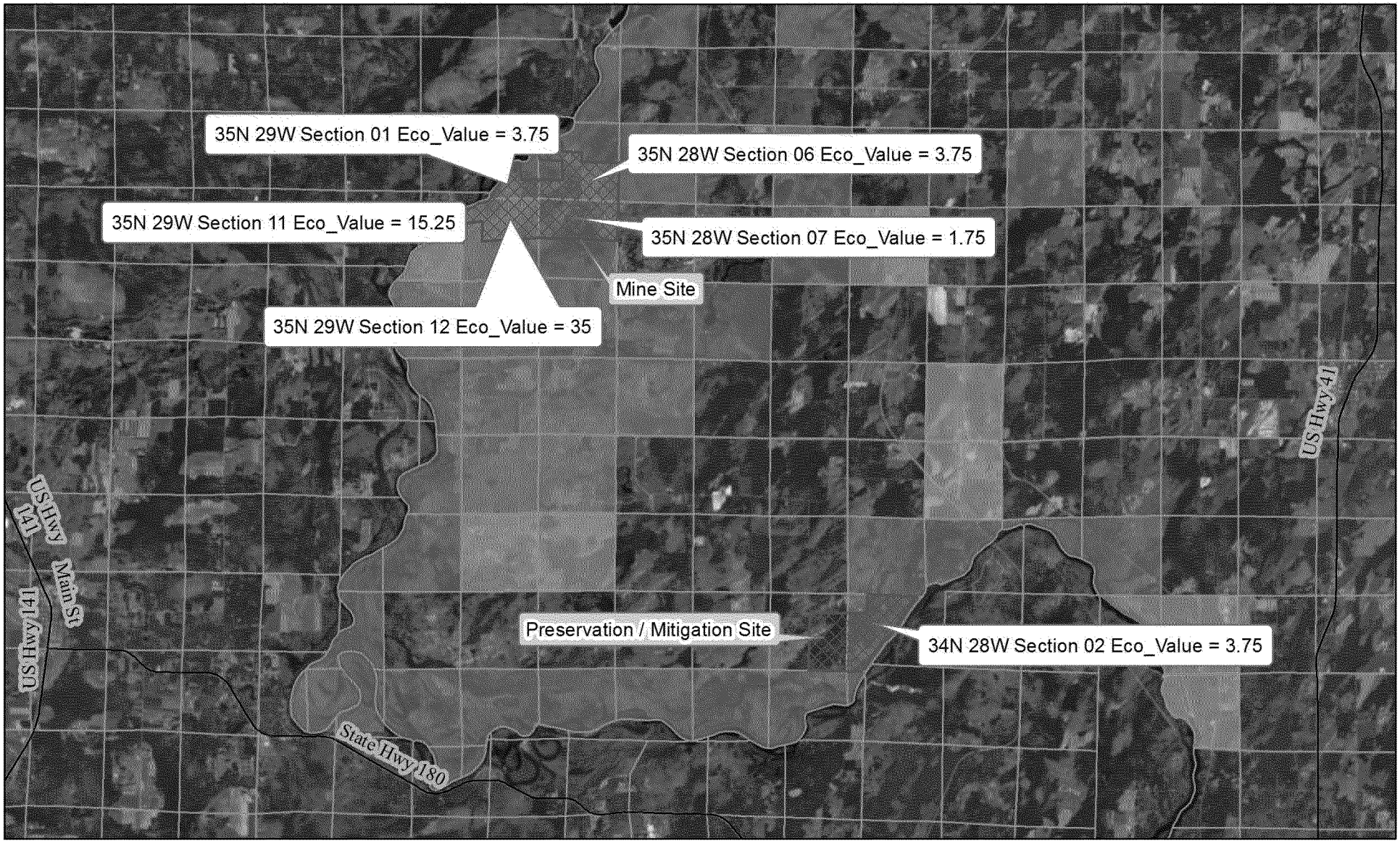
In fact, depending on how large an area is used to determine "10%" then the standard may be meaningless for enforcing. A more appropriate standard would be that all wetland invasive species, including reed canary grass and all species characterized as A-List or B-List species (including *Phragmites* and marsh thistle) shall be **absent** from the mitigation area at the end of the management period. Otherwise, invasive species in the site will have a seed source for re-infestation.

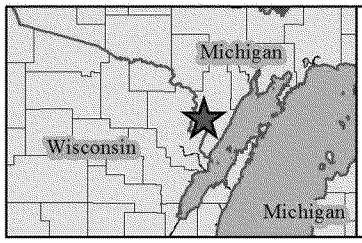
We also note that Marsh Thistle is not listed as a target species for treatment in the performance standards. This appears to be an omission (3R page 33).

F5. The Woody Performance Standards are Not Robust.

The woody performance standard is a count of trees and shrubs only. There is no standard for the trees and shrubs that relates to the health and viability of the species. Multiple parameters can provide assurance that the planted woody community will survive into the future, well beyond the management period. Such parameters include: leaf out, viability, height, and size, as well as diameter at breast height (DBH) for trees or multi-stem characteristics for shrubs. In addition, the performance standard should prove that the narrow tree planting corridors match the intact forest on either side, both in terms of

species and diversity. Finally, twenty years of monitoring and management should be required to demonstrate this.





Legend

- Major Highways
- PLSS Sections

Biorarity sum

- 0.00
- 0.01 - 10.00
- 10.01 - 20.00
- 20.01 - 50.00
- 50.01 - 100.00
- 100.01 - 200.00
- 200.01 - 350.00

N

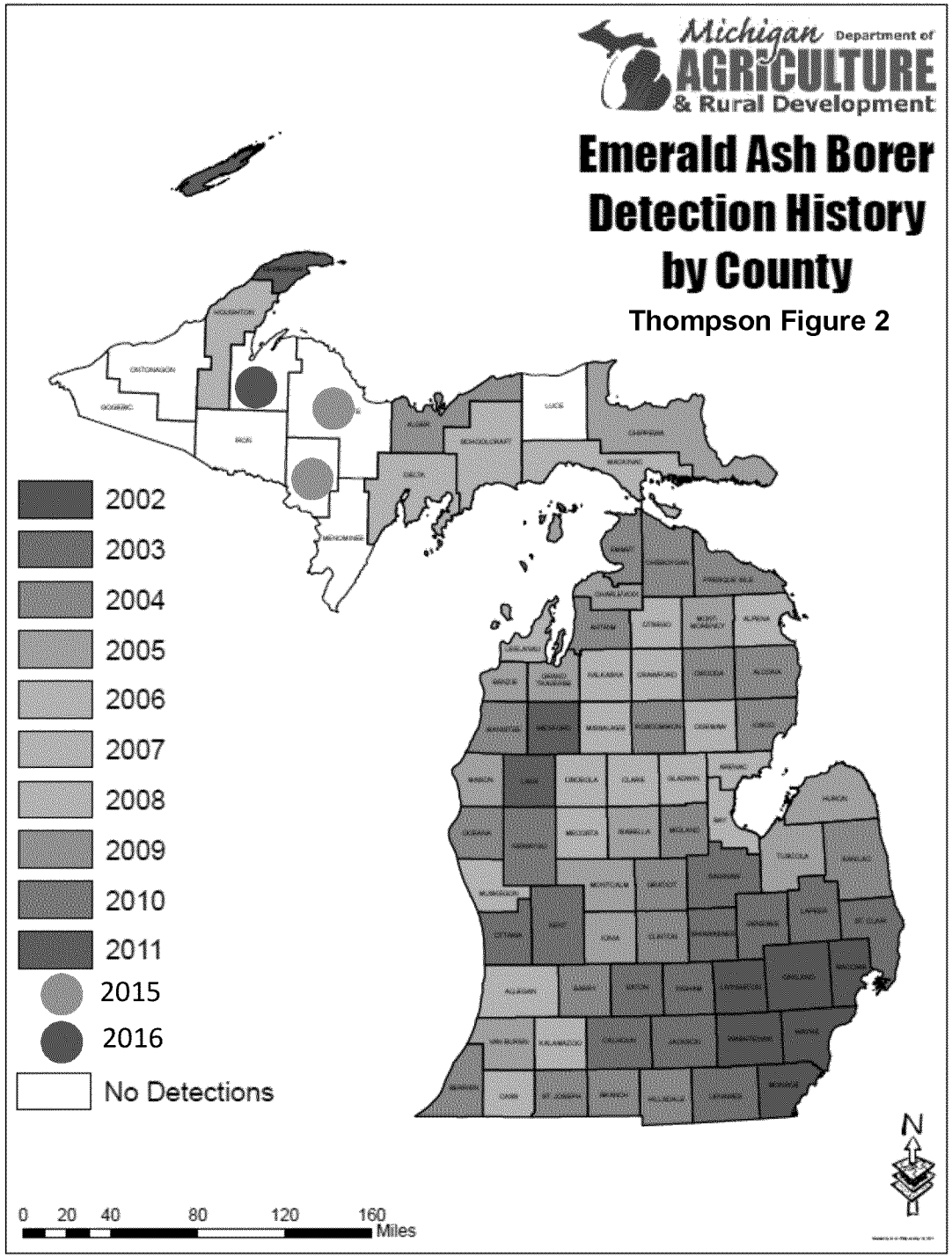
Back 40 Mine Biorarity Sum

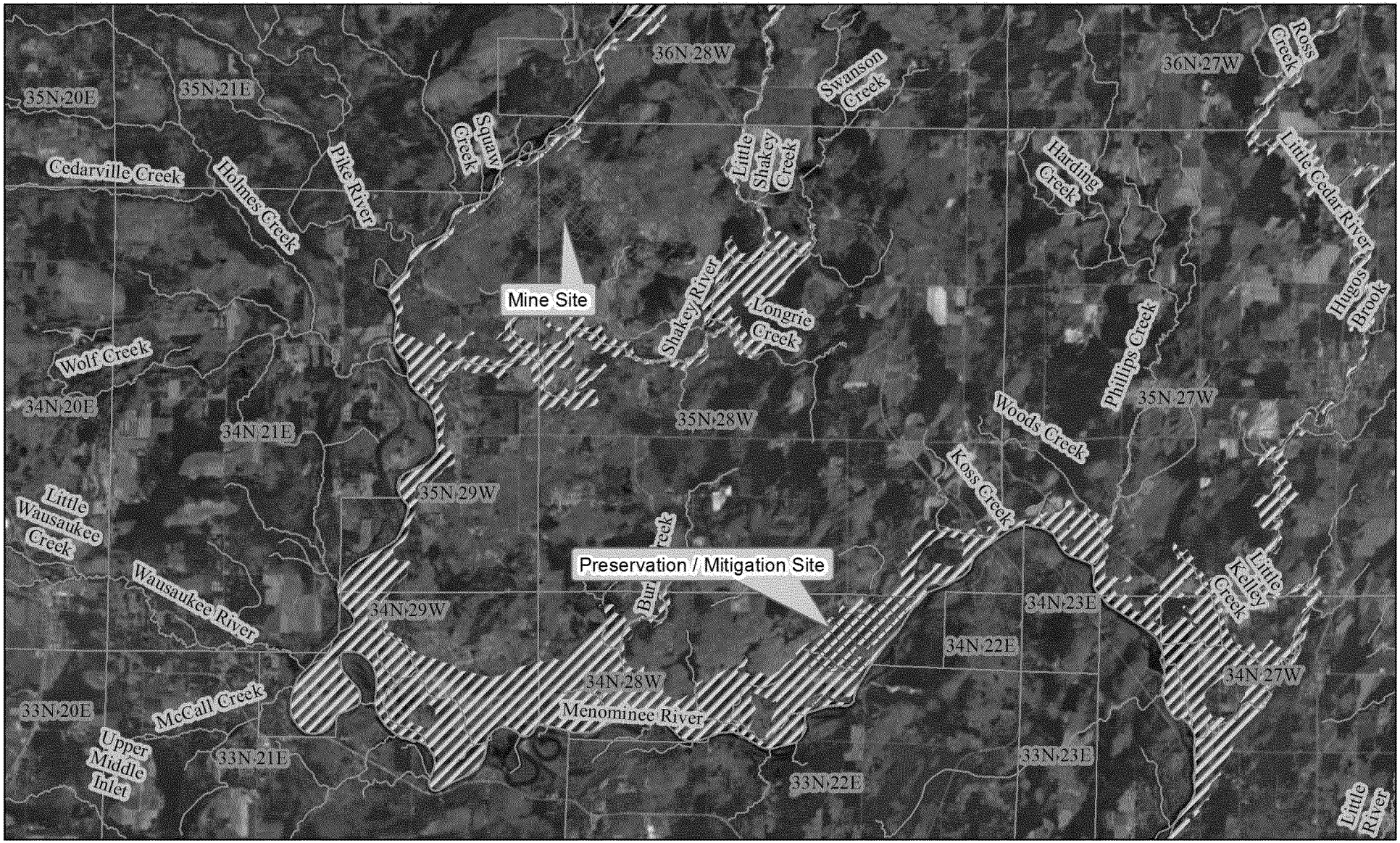
Thompson Figure 1

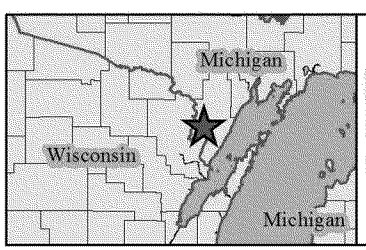
0 3,400 6,800 13,600 20,400 27,200 Feet

0 950 1,900 3,800 5,700 7,600 Meters

Thompson & Associates


Michigan Department of
AGRICULTURE
& Rural Development
Emerald Ash Borer
Detection History
by County
Thompson Figure 2
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2015
2016
No Detections
0 20 40 80 120 160
Miles
N





Legend

- Back 40 Mine Site
- Preservation Site
- 1% Annual Chance Flood Hazard
- USGS National Hydrology Dataset
- PLSS Townships

N

Back 40 Mine FEMA National Flood Hazard Layer

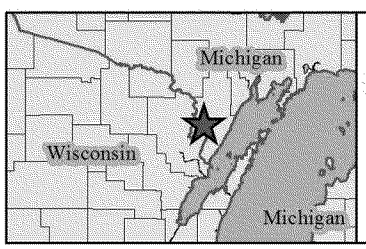
Thompson Figure 3

0 3,400 6,800 13,600 20,400 27,200 Feet

0 950 1,900 3,800 5,700 7,600 Meters

Basemap Source: FEMA GIS Data Servies

Thompson & Associates



Legend

Mine & Preservation / Mitigation Site

N

Back 40 Mine Preservation/Mitigation Site1852 Survey Map

Thompson Figure 4

0 650 1,300 2,600 3,900 5,200 Feet

0 190 380 760 1,140 1,520 Meters

Basemap Source: MIDNR

Thompson & Associates

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Exhibit 2

PUBLIC HEARING BACK FORTY MINE WETLAND PERMIT APPLICATION
JANUARY 23, 2018

MENOMINEE INDIAN TRIBE OF WISCONSIN
MENOMINEE TRIBAL LEGISLATURE

We believe that under the federal Clean Water Act, the State of MI cannot assume Clean Water Act permitting authority for the Menominee River and its wetlands. The way in which the DEQ is proceeding with this permit application is contrary to the public's interest and this process should be placed on hold pending the outcome of the federal litigation filed by the Menominee Indian Tribe of Wisconsin. Therefore, I make my comment under protest.

ENVIROMENTAL CONCERN

- The planned layout in the wetland appli cation has drastically changed from the layout in the mining application and permit. The environmental analysis submitted with the mining permit, is not an environmental review of the proposed layout in the wetland application. Without an environmental review of this layout, the DEQ cannot conduct its least environmentally damaging practicable alternative analysis. There is no environmental foundation to measure alternative facilities such as offsite ore processing, moving facilities out of wetland areas an d other reasonable alternatives.

- Thus, to accurately review the environmental impacts of this layout, the DEQ should require a sufficient environmental prior to continuing with this process.

FEASIBILITY

- Despite years of statements about an imminent feasibility study of the project, the Company has yet to develop a full feasibility study. Rather the financial assumptions for the project are based on a 3+ year old Preliminary Economic Analysis, which is far from a feasibility study. This outdated informa tion from the 2014 PEA highlights the fact that the company does not understanding the feasibility of the proposed project. Without this information the DEQ lacks a foundation to review the reasonable alternatives in conducting the required alternatives analysis.

CULTURAL

- In reviewing the cultural value of wetlands in the application, we have noticed the lack of a cultural significance value assigned to the wetlands. Our tribe has made clear that this project sits in the heart of a cultural landscape of the Menominee people . The cultural value of these sights cannot be understood absent meaningful dialogue with the tribe.

The tribe will be submitting written comments to further elaborate on these and other points.

MENOMINEE INDIAN TRIBE OF WISCONSIN
P.O. Box 910
Keshena, WI 54135-0910

Chairman Besaw Comments MDEQ Wetlands Permit Public Hearing

Posoh Netaenewemakenak.Oskipaewis Eniq 'aes wihseyan.
Netotem inuaq eyawit Awaehsaeh.
My name is Gary Besaw, Chairman of Menominee Nation. Our home is the Menominee Reservation in NE Wisconsin, and historically, as well as currently, landowners… and taxpayers, here in Menominee County MI.

The Menominee believe that under the Clean Water Act, the State of MI cannot assume Clean Water Act permitting authority for the Menominee River or its wetlands. The way DEQ is proceeding in the permit application is contrary to the public's interest and this entire process should be placed on hold pending the outcome of the federal litigation filed by the Menominee. Therefore, I make my comments under protest.

The strategy, or ability, for Aquila as applicant to follow directions in this application and other permit applications should raise a red flag.

The current wetland application was submitted over a year ago, January 13, 2017, and despite DEQ finding the application administratively complete December 8, 2017…as recently as January 19, 2018…last week…the DEQ found significant, unacceptable inconsistencies in the permit application. These

inconsistencies in Aquila's analysis show that in two or more areas of the same application Aquila's figures on the same water resource contradict each other. This has been a consistent and telling pattern. This raises serious concerns about the ability for regulators to trust any of the information submitted, and causes us to wonder if information is being arbitrarily modified to seek a desired outcome. The public is left trying to track moving targets through this entire confusing permitting process.

For over a year, Aquila has shown an ongoing lack of capacity to self-identify these inconsistencies. DEQ has had to identify these inconsistencies for Aquila. In the real world of operating a mine as lethal as proposed, Aquila can't rely on others to identify Aquila's problems that will then lead to catastrophe. Left to themselves, the damage will surely happen and will be irreversible.

The fact that Aquila will presumably be submitting additional and different information not currently in the application and privy to the public for review, this public hearing should not even be occurring at this time. Once the additional and different information has been submitted, a new public hearing should be scheduled.

Menominee will send in volumes of technical written comment as 3 minutes does not do justice even to our process concerns. Waewaenen.

Statement of

Mr. Douglas Cox

Legislator, Menominee Tribal Legislature

Environmental Program Coordinator

Menominee Indian Tribe of Wisconsin

Before the

State of Michigan - Department of Environmental Quality

On

Aquila Resources Back Forty Project– Wetland Permit

January 23, 2018

Stephenson High School

W526 Division Street

Stephenson, MI 49887

I. Introduction

Good Evening, my name is Douglas Cox and I serve as a Menominee Tribal Legislator and hold a Professional Position as Environmental Program Coordinator. Thank you for the opportunity to provide comments on the wetland permit on the Back Forty Project. First of all; I believe that the way in which the DEQ is proceeding with this permit application is contrary to the public's interest and this p rocess should be placed on hold pending the outcome of the federal litigation filed by the Menominee Indian Tribe of Wisconsin. Therefore, I make my comm ent under protest.

II. Mine Permit Amendment

Within the wetland permit report; Feasible and Prudent (Least Environmentally Damaging Practicable) Alternatives Analysis, there are areas identified that have significantly changed the original project scope of the previously approved mine permit . Section 5.3 has reference to newly purchased lands that will be accommodating tailings and waste rock storage are entirely new aspects to the proposal that haven't been previously introduced. This change should certainly require the mine permit to be reopened and reanalyzed, which must include a public comment period.

III. Floodplain Analysis

In the information provided in Appendix b-7, there is no evidence that the floodplain analysis included an analysis of the effects from the White Rapids Dam which is directly above the proposed project site and pit. The Dam is currently a FERC licensed project and should have been included in preparation of materials submitted for review to determine the flood risk if a failure were to occur. White Rapids should have a Potential Failure Mode Analysis (PFMA) which would have been completed as part of its license requirement and would have information from the PFMA that would be used to analyze the flood risk.

IV. Invasive Species Management Plan

Within the Feasible and Prudent (Least Environmentally Damaging Practicable) Alternatives Analysis, Section 5.7 there is discussion related to the Invasive Species Management Plan (ISMP), which seems oddly out of place in a section that is intended to assess Erosion impacts and protection of water quality. There are a number of errors in the ISMP description starting with the statement in the first sentence,

"The ISMP defines monitoring practices for all of the identified invasive species". In examination of the ISMP there is only statements that the plans "will be" or "shall be" developed. Secondly, there is no plan that is in either this section or within the ISMP that describes how post closure monitoring will be completed for all invasive species. Lastly, there is contradictory language on page 2 of 7 that indicates there are not high risk species onsite, yet the next page 3 of 7 provides a list of high risk species that are in fact "onsite".

The Menominee Tribe does not agree with this permit and the resulting poisoning for our ancestral territory. We are opposed to the issuance of this permit and to quote Frank Ettawageshik, esteemed Michigan Odawa Leader;

"For native people, caring for the water is not a matter of practicality; we lived on this earth for thousands of years without relying on oil. We can live without gold, but we cannot live without water.

Thank you.

Wetland Permit Review Comments Submitted by Douglas Cox, MITW Environmental Program Coordinator

General Issue; Will the changes to the overall development of the mine result in the requirement to revisit the mine permit for an amendment or reapplication?

1. **Feasible and Prudent (Least Environmentally Damaging Practicable) Alternatives Analysis**

   A. **Section 4. Proposed Action and Alternatives Analysis**
      a. There is no comparison given to indicate that any alternatives will result in a net gain of protection to wetlands and aquatic resources. Table 4.1 only lists the number of acres affected and does not give a summary comparison to the proposed action.
      b. There is no description identifying what wetland values of would be traded for each alternative, for example if alternative C is selected and there is a net gain in wetlands what are the functional values being gained and are they different than those being lost?
      c. Alternative E indicates that there was a change in the volume of waste rock, resulting in the need to acquire additional lands. It is not clear on the Figure 4-8 where the new lands acquired are located and additionally if new changes were made that have deviated from the original mine plan, then DEQ should be requiring the company to file a new or amended application that address this change.
      d. Alternative D & E include a section that is titled "Economic Viability Criteria", but in review of the entire description, there is no mention of or conclusion provided, that is related to the Economies of the alternative.
      e. Alternative F, G & H include a heading description for examination of "Constructability and Technical Feasibility Criteria". Within the paragraph, there is contradictory language that in the first sentence points out"constructability concerns", but then in the final sentence it concludes that the alternatives are "constructible"? There is no clarification provide for the determination or how to explain the contradiction between the competing statements.

   B. **Section 5. Summary of Actions Taken to Avoid and/or Minimize Impacts**
      a. Part 5.1, Pit perimeter optimized to protect the Menominee River– this section title is very misleading and has mixed information that tends to mislead the reader. It is evident that "optimization" is referring to a setback between the pit and the river. This section discusses the distance of the pit from the river edge, calling it a "setback", which at its closest is merely 165 feet from the river. But there is a reference to the setback being outside of the "10,000-year floodplain", which again is unusual and confusing language, since there are no other references to the 10,000-year floodplain anywhere in the application package including the section detailing the required floodplain delineation and permitting in Appendix B-7. In the information provided in Appendix b-7, there is no evidence that the floodplain analysis included an analysis of the effects

from the White Rapids Dam, which is directly above the proposed project site and pit. The Dam is currently a FERC licensed project and should have been included in preparation of materials submitted for review to determine the flood risk if a failure were to occur. White Rapids should have a Potential Failure Mode Analysis (PFMA), which would have been completed as part of its license requirement and would have information from the PFMA that would be used to analyze the flood risk. In the last sentence of this section there is a statement indicating that the "buffer area" also protects the cultural resources, but does not expand on how this protection is justified. These cultural sites in the area have a high spiritual value to the Menominee Tr ibe and simply providing a buffer does not protect our traditional and spiritual values that have specific meanings to the Menominee for the hundreds and in some cases thousands of years the sites have been there.

b. Section 5.2 Cut-off Wall to Minimize Impacts of Mine Dewatering and Mine Pit Backfill - the title of the section leads one to believe that the wall is strictly for p rotection of the Menominee River, which is definitely not accurate. The reality is that the wall will function primarily for the protection of the pit itself and to assure that mining activities are able to be carried out without excessive inflow of water from the Menominee River influence due to the pits close proximity to the river. Post-closure outflow will be dependent on long term monitoring and will be critical in protection of wetlands that are adjacent to the Menominee River. There is no mention of how the post closure pit outflow will be monitored to prevent impact of wetlands.

c. Section 5.3 Acquisition of Additional Land for Mine Waste Storage – There has been additional land purchased to accommodate expansion of tailings and waste rock storage, which is a substantial change to the overall project scope. This change should result in reopening of the mining permit that was previously issued by the Department of Environmental Quality. At a minimum the permit should be amended and put back out for public comment.

d. Section 5.5 Co-Disposal Tailings and Waste Rock Storage Facility – As is the case with previous sections (see 5.3 above), this section is describing a change to the project that has not been previously introduced within any of the issued permits (mining, Air or NPDES). This change should result in reopening of the mining permit that was previously issued by the Department of Environmental Quality. At a minimum the permit should be amended and put back out for public comment.

e. Section 5.6 Contact Water Contamination to Protect Water Quality – This section outlines the operation of how contact water will be handled if the CWB storage volumes are exceeded. The section reports that excess water will be treated and discharged to the Menominee River, but there is no analysis of what those water volumes are expected to be, what times of year this will occur and what are the potential impacts to

aquatic resources. Large volumes of water discharged during fish spawning activities could be detrimental to species like lake sturgeon.

f. Section 5.7 Erosion and Sediment Control Measures to Protect Water Quality– throughout this section there are numerous references to "control measures" and structures. This type of details should be identified in a Stormwater Pollution Prevention Plan (SWPPP), yet there is no reference to a SWPPP or any stormwater permits previously issued. The second paragraph of the section goes into the Invasive Species Management Plan (ISMP), which seems oddly out of place in a section that is intended to assess Erosion impacts and protection of water quality. There are a number of errors in the ISMP description starting with the statement in the first sentence, "The ISMP defines monitoring practices for all of theidentified invasive species". In examination of the ISMP there is only statements that the plans "will be" or "shall be" developed. Secondly, there is no plan that is in either this section or within the ISMP that describes how post closure monitoring wil l be completed for all invasive species. Lastly, there is contradictory language on page 2 of 7 that indicates there are not high-risk species onsite, yet the next page 3 of 7 provides a list of high-risk species that are in fact "onsite".

C. Section 6. Compensatory Mitigation

Although a more throughout discussion of the chosen option in regards to compensatory mitigation can be found within the "Proposed Wetland and Stream Mitigation Plan", this section summarizes the chosen mitigation, which we feel is t he least preferred mitigation. This option is troubling due to its lack of a good analysis, that would determine, through comparisons with other options, the actual values and significance of the preservation site wetlands. An analysis is also needed to determine what quality of wetlands are being selected on the chosen property.

PUBLIC HEARING ON BACK FORTY MINE WETLAND PERMIT APPLICATION
JANUARY 23, 2018

TRIBAL ELECTED GOVERNMENTAL OFFICIAL
STOCKBRIDGE-MUNSEE COMMUNITY

We believe that under the federal Clean Water Act, the State of MI cannot assume Clean Water Act permitting authority for the Menominee River and its wetlands. The way in which the DEQ is proceeding with this permit application is contrary to the public's interest and this process should be placed on hold pending the outcome of the federal litigation filed by the Menominee Indian Tribe of Wisconsin. Therefore, I make my comment under protest.

INTERFERENCE OF MI STATE LEGISLATURE

- We have concerns with the independence of DEQ and the ability of DEQ to objectively consider the wetland application before you.

- In mid-September 2017 the MI State Senate passed Senate Resolution-0085 at the urging of State Senator Tom Casperson. That resolution was titled "A resolution to encourage support for Aquila Resources' Back Forty Proposed Mine and express confidence that the proposed mine meets federal and state requirements to protect the environment, natural resources and public health".

- The premise of senate resolution 0085 is absurd and should cause concerns about the motivations behind this resolution. The resolution which expressed confidence that the proposed mine meets federal and state requirements was approved close to three months before this application was even found complete. How could the State Senate possible know what would be in the final application to feel comfortable enough to express their confidence that it would meet applicable standard?

- This shows that regardless of what was to be submitted to the DEQ, the DEQ was expected to rubber stamp it because the State Senate believes an application they never seen nonetheless met all requirements.

- No one outside of the DEQ knows at this point what impact this had and has on DEQ decision making. What those of us outside do know is that the DEQ changed positions on several requirements for the wetland application and there is cause for concern that the DEQ's mind was made up for you by improper legislative interference.

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- This action raises serious concern of separation of powers under Article 3 Section 2 of the Constitution of the State of Michigan – which prohibits one branch of government from exercising powers properly belonging to another branch. Senate Resolution 0085 was an attempt by the legislative body to dictate the application of the law, to a specific applicant – which is a power properly belonging to the executive branch / DEQ.

- Senate Resolution 0085 infringes on the DEQ's ability to implement applicable laws and has tainted the DEQ's decision making authority. Perhaps Senator Tom Casperson is here tonight and we may get to hear what his instructions are to DEQ through his testimony. Or maybe he will enlighten us on how an application he never seen can gain his confidence.

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