INTRODUCTION

The Waste and Hazardous Materials Division (WHMD), Michigan Department of Natural Resources and Environment (DNRE), formerly the Michigan Department of Environmental Quality (MDEQ), received an Application for Permit to Construct a Solid Waste Disposal Area (Application) from Wolverine Power Supply Cooperative, Inc. (Wolverine), on October 22, 2009, for a proposed Type III industrial waste landfill (Proposed Landfill) for combustion by-products. The Application was determined to be administratively complete by the WHMD on November 16, 2009. Amendments to the Application dated February 4, 2010, February 16, 2010, and February 18, 2010, were also received from Wolverine by the WHMD. The Proposed Landfill would be constructed at 1035 Calcite Road, Rogers City, Michigan, within the boundaries of the O-N Minerals Calcite Quarry (Quarry) located in Sections 25 and 36 of Rogers Township and Section 30 of Pulawski Township, Presque Isle County.

On November 9, 2009, the WHMD received a written request from Wolverine for a public hearing on the Application, pursuant to Section 11510(2) of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). In response to this request, the WHMD scheduled a public hearing for January 27, 2010. A public notice of the meeting was published in the Presque Isle County Advance newspaper on January 14, 2010.

The public hearing was held at 6:30 p.m., January 27, 2010, at the Rogers City High School gymnasium in Rogers City, Michigan. The WHMD made the Application available for review before the public hearing and an informal question and answer period was held from 4:30 p.m., to 6:00 p.m., preceding the hearing. Mr. Lonnie Lee, Chief, Field Operations Section, WHMD moderated the hearing. Mr. Philip Roycroft, Cadillac District Supervisor, WHMD; Mr. John Ozoga, Cadillac District Geologist and Project Manager, WHMD; Mr. Scott Conradson, District Engineer, WHMD; and Mr. Tyrone Black, Cadillac District Geologist, DNRE, Office of Geologic Survey, also attended the hearing. Mr. Black has expertise regarding the geology of Presque Isle County.

This summary contains the WHMD’s response to comments received during the public hearing and public comment period.

COMMENTS OPPOSED TO THE PROPOSED LANDFILL AND THE WHMD’S RESPONSE:

1. The Proposed Landfill is too close to Lake Huron, and should be at least a mile further from Lake Huron.

   The closest distance the proposed active fill area of the Proposed Landfill is located to Lake Huron is 3,200 feet. This exceeds the minimum isolation distance of 500 feet from lakes, as established in the Presque Isle County Solid Waste Management Plan (County Plan). In addition, this location would exceed the most restrictive offset of 2,000 feet from a Great Lake for a Type II (general refuse) landfill, as required under Part 115.
2. The area has vulnerable karst geology and, therefore, should not be used for the Proposed Landfill. One commenter cited a 1983 report from the Michigan Department of Natural Resources (MDNR), predecessor to the DNRE, which reported karst features in the Quarry.

   The cited 1983 report is a field trip guidebook of the Michigan Basin Geological Society written by Mr. Black. It refers to paleokarst, which are the plugged, collapsed, and inactive remnants of karst from geologic activity that occurred over 100,000 years ago. Hydrogeological studies conducted at the Proposed Landfill utilizing a number of advanced techniques did not identify any active karst features either at, or below, the ground surface. The results of these studies are summarized in the Hydrogeological Report in Volume 2 of the Application.

3. Dissolved carbon dioxide and sulfur dioxide in leachate from the Proposed Landfill may dissolve underlying karst formations.

   The double-composite liner design for the Proposed Landfill would contain leachate, precluding it from interacting with the bedrock formation. However, if a release were to occur, the elevated pH of the leachate would cause the reverse reaction. Calcium carbonate and gypsum would precipitate in the presence of carbon dioxide and sulfur dioxide, thus filling and solidifying the formation further.

4. The Quarry is a bad location for the Proposed Landfill because groundwater below the Quarry is in an unprotected aquifer.

   The location of the Proposed Landfill meets or exceeds the location criteria in the County Plan and under Part 115, as does the proposed liner design. Because of the Proposed Landfill’s isolation inside the Quarry, groundwater below the site would not be hydraulically connected to area drinking water supplies.

5. The Proposed Landfill location in the Quarry is not consistent with the County Plan because the zoning designation for the Quarry area of “extractive industrial” is not in the County Plan.

   On October 13, 2009, the Presque Isle County Board of Commissioners (Board of Commissioners) determined that Wolverine’s proposal met the criteria of the County Plan. The WHMD has reviewed this determination and it agrees with the Board of Commissioners. It should be noted that the state prepared the County Plan and in doing so, only specified general zoning designations, such as “industrial and not specific categories, such as “extractive industrial.” Therefore, the extractive industrial zoning category is consistent with the County Plan.

6. The Rogers City area is not a good location for the Proposed Landfill because cancer rates in the area are already too high and the Proposed Landfill would add more toxic constituents to the area.

   Part 115 requires that solid waste disposed in a landfill be contained and managed in an environmentally safe manner. The WHMD is not aware of any studies on cancer rates in the Rogers City area.
7. The MDNR, predecessor to the DNRE, was opposed to this location for a landfill in the 1980s.

On March 14, 1988, the MDNR, predecessor to the DNRE, issued an Advisory Analysis (Analysis) for a possible landfill within the Quarry. The Analysis indicated that the site could be developed as a landfill if the state rules for liner requirements were met.

8. The waste going to the Proposed Landfill will be hazardous, and should be regulated accordingly.

Combustion by-products are classified as “industrial waste” under Part 115 and must comply with the requirements for a Type III landfill. State and federal laws specifically exempt fly ash waste, bottom ash waste, slag waste, and flue gas emission waste, which are generated primarily from the combustion of coal or other fossil fuels, from regulation as hazardous waste. The DNRE is not aware of any data that shows such waste would meet the toxicity criteria for hazardous waste, if it were not for this exemption.

9. Fluidized bed technology may produce hydrogen bromide in the ash and degrade the liner of the Proposed Landfill.

High-density polyethylene is a chemically inert liner material and is widely used nationwide. DNRE staff does not anticipate concentrated bromine concentrations in the ash or leachate; however, any bromine that may be released would be neutralized by the large amounts of unreacted lime in the combustion by-products.

10. The ash in the Proposed Landfill will contain mercury, arsenic, and other toxics; and will place area residents, including children, at risk.

Typical combustion by-products contain a variety of metals at low concentrations. The Application proposes containment of the waste with a double-composite liner system to prevent contaminant releases to the water, ground, or air. This system meets or exceeds the containment requirements for Type III landfills under Part 115.

11. State rules are inadequate to regulate coal ash. The state should defer any decision on the Proposed Landfill until new federal rules on coal ash are finalized.

The DNRE cannot defer a decision on the Application. Under state law, the DNRE has 120 days to make a final decision on an administratively complete application. For this Application, the 120-day deadline is March 15, 2010.

12. The operational plan for the Proposed Landfill is not adequate because the Proposed Landfill’s projected life is not as long as the projected life of the power plant. If Wolverine is relying upon reuse of the ash, they should be required to demonstrate they have a market for it.

Part 115 does not require a new waste source, such as a power plant, to demonstrate disposal capacity or reuse markets for the waste produced. If the Proposed Landfill reaches capacity, and reuse options for combustion by-products do not exist, the waste could then be legally transported to other licensed landfills in the region recognized by the County Plan.
13. The Public Service Commission (PSC) has determined that the proposed Wolverine Power Plant, and therefore, the Proposed Landfill, are not needed. The PSC’s determination and the Michigan Environmental Protection Act need to be considered.

Part 115 does not require that an applicant demonstrate a need for a proposed disposal facility, as long as it is consistent with the solid waste plan for the county. While reuse of combustion by-products is desirable, most reuse options would need to be approved by the DNRE based on analytical data generated from the waste.

14. If the Proposed Landfill leaks, no one will know, and no one will be available after closure to clean it up.

The site of the Proposed Landfill is monitored by a series of monitor wells (MWs) surrounding the site. Should a construction permit be issued, these MWs would be required to be sampled quarterly and the resulting data be transmitted to the DNRE. A qualified DNRE geologist would then review the data to determine if the Proposed Landfill is functioning properly. At times, the DNRE may also collect samples at the Proposed Landfill to verify that no release has occurred.

15. Wolverine should not be allowed to use leachate from the Proposed Landfill for dust suppression.

Under Part 115, leachate is allowed to be recirculated within the boundaries of a lined landfill. Leachate is not allowed to be discharged to roads or other areas outside of a lined landfill. Utilizing the leachate to wet the combustion by-product waste may be beneficial for dust control and compaction.

16. The Environmental Assessment in the Application is inadequate. Specifically, R299.4903(e)(ii) requires “Quantitative and qualitative descriptions of each alternative in terms of both positive and negative economic and environmental impacts.”

The DNRE review of the Environmental Assessment indicates that alternative actions for waste disposal, including onsite landfill, offsite existing landfill, beneficial re-use, and offsite new landfill, were all evaluated in detail. Based on both quantitative and qualitative scoring, the option chosen was the onsite landfill. The beneficial re-use option had the best score for impacts; however, due to regulatory and market limitations that option cannot be implemented at this time.

17. Native American gravesites may be impacted by the Proposed Landfill. This should be evaluated.

No historical settlements were identified in the Environmental Assessment. The area has never been mined like the rest of the Quarry, and during the 1930s, unused rock from the Quarry was deposited there raising elevations above natural grade. Therefore, the base grades of the Proposed Landfill will be approximately 10 to 20 feet above the original ground surface.
18. **What is the difference between this proposal and the Bay Harbor contamination site?**

The Bay Harbor contamination site resulted from cement kiln dust being dumped along the shore of Lake Michigan with no containment prior to regulation under Part 115. The containment and leachate controls at the Proposed Landfill would prevent the type of release that occurred at the Bay Harbor contamination site.

19. **The Proposed Landfill would be near international waters and could become a target of terrorist attack.**

The DNRE is not qualified to determine the probability of a terrorist attack at the Proposed Landfill. Should any such event occur the appropriate agencies would be notified immediately.

20. **An extreme natural event, such as an earthquake or a 100-year storm, could affect the Proposed Landfill in a catastrophic way.**

The Proposed Landfill is not within a seismic impact zone (as defined by federal landfill rules) and Part 115 requires the design to contain up to a 25-year storm event. Few manmade structures, such as bridges and skyscrapers, are designed for unforeseen catastrophic events.

21. **The base of the Proposed Landfill will violate the groundwater level clearance requirement.**

The Engineering Plans in the Application document that the base of the Proposed Landfill is closest to the groundwater at the Cell 4 Sump. This Sump has a base elevation of 630 feet, and the groundwater elevation at this location is approximately 620 feet, resulting in 10-foot isolation. Part 115 requires that a minimum of 4-foot isolation be maintained from the base of the waste to the groundwater. Therefore, the Proposed Landfill design complies with the groundwater clearance requirement.

22. **The volume of waste referenced in the Application conflicts with that listed in the power plant application.**

Part 115 requires that an application include “the anticipated volume of waste to be received” and “the anticipated useful life of the facility.” The Environmental Assessment states that the waste generation rate would be 1,315 cubic yards per day, and assuming no beneficial re-use (worst-case scenario) of waste, that the life expectancy of the Proposed Landfill would be approximately 19 years. WHMD staff understands that the air permit application calculations for waste generation were based on a 1,200 megawatt base load power plant, whereas the current proposed plant is for a 600-megawatt base load plant. Therefore, the Application for the Proposed Landfill is accurate with respect to the anticipated volume of waste to be received.
23. The Application fails to provide the composition of the waste residuals to be disposed of, which is critical to assessing compliance with the water performance standards, anticipated environmental impacts, and unavoidable adverse impacts.

The chemical composition of waste residuals is not required as part of the Application. Part 115 establishes standards for non-hazardous industrial waste landfills as a class, by defining industrial waste as “solid waste which is generated by manufacturing or industrial processes from an industrial site and which is not a hazardous waste…”

24. The Application fails to describe unavoidable adverse impacts to water.

Under Part 115, design and operational standards for industrial waste landfills prohibit adverse impacts to water. Part 115 also requires quarterly monitoring of groundwater and storm-water runoff to assure that no adverse impact occurs.

25. The Application fails to consider changes in lake level and associated groundwater flow over time.

The Hydrogeological Investigation Report in the Application evaluates the worst-case scenario of flooding of the Quarry should dewatering of the Quarry cease. The projected flooded Quarry water levels result in a 27-foot isolation distance from the flooded Quarry. Part 115 requires that a minimum clearance of four feet from the waste to the groundwater be maintained at the Proposed Landfill.

26. The Application fails to provide supporting information for its conclusions regarding floodplain levels.

The Environmental Assessment indicates that the Proposed Landfill would not be within a 100-year floodplain. This projection is based on a U.S. Army Corps of Engineers’ 1988 report entitled “Open Coast Flood Levels,” which is for six different reaches of Lake Huron.

27. The Application does not include detail on leachate handling and any air or water pollution that will result from such handling.

The Engineering Plans in the Application specify that leachate will be pumped from the Proposed Landfill into a perimeter force main. This force main will discharge to the leachate-holding pond where leachate will be stored prior to use for either dust control within the Proposed Landfill, or for use as process water for the power plant. Part 115 requires that all landfill operations comply with applicable air, groundwater, and surface-water protection requirements.

28. The Proposed Landfill will not meet requirements for closure and post-closure care.

The Closure and Post Closure Plans for the Proposed Landfill are outlined in Section F of the Application. Review of these Plans by WHMD staff determined that they are in compliance with Part 115 and that they adequately address the closure and continued post-closure requirements at the Proposed Landfill.
29. The Application fails to sufficiently address how it will abate adverse impacts.

Part 115 does not require that a Response Action Plan (RAP) be developed unless a release resulting in an environmental impact that exceeds the standards set forth in Part 201, Environmental Remediation, of the NREPA, actually occurs. Should a release occur, Part 115, Rule R299.4319, addresses the actions that an owner and operator of a landfill must take to prepare a RAP, and to comply with Part 201.

30. The Application fails to include sufficient recordkeeping and reporting requirements.

The Operations Plan is detailed in Section G of the Application, and describes the recordkeeping and reporting requirements under Part 115 applicable to industrial waste landfills. Review of these provisions by the WHMD has determined that adequate detail has been provided.

COMMENTS IN SUPPORT OF THE PROPOSED LANDFILL AND THE WHMD’S RESPONSE:

1. A number of people, including Congressman Bart Stupak, Representative Andy Neumann, the Chairman of the Presque Isle County Board of Commissioners, and the Mayor of Rogers City, have expressed support for the Application and cited economic growth and the need for jobs in the area as factors to consider.

   Jobs and economic growth are not factors that may be used directly in the WHMD’s decision on the Application. However, statements of local officials support Presque Isle County’s previous determination that the Application is consistent with the County Plan.

2. One person submitted a petition in support of the Proposed Landfill with over a thousand signatures.

   WHMD staff acknowledges this support, but cannot base a decision on it.

3. Wolverine has proven itself to be a responsible company and has proposed the best available technology for the Proposed Landfill.

   WHMD staff agrees that Wolverine has proposed a liner system consistent with the best landfill designs in the nation for non-hazardous waste. The WHMD believes that such a liner design goes far to minimize risk and mitigate potential impacts of the Proposed Landfill.

4. Burning petcoke as a fuel produces less ash than coal and any contaminants are in a fused state; therefore, the ash that would be disposed of in the Proposed Landfill is not toxic, as alleged by opponents.

   WHMD staff has not reviewed specific chemical characteristics of the waste. Based on previous data obtained from coal ash at other facilities, Part 115 considers coal ash to be a “low-hazard” industrial waste when managed properly.
5. Wolverine has voluntarily exceeded the regulations for the Proposed Landfill.  

   WHMD staff agrees that Wolverine has proposed a liner system that exceeds the requirements of Part 115.

6. The Proposed Landfill meets or exceeds all isolation distances in the state’s solid waste law.  

   WHMD staff agrees that the Proposed Landfill meets, or exceeds, required isolation distances under Part 115 and in the County Plan.

7. Wolverine did extensive borings around the Quarry and found no evidence of active karst formations.  

   An independent review of the data by Mr. Black found that there is no evidence of active karst features at the site that could impact the stability of the Proposed Landfill.

8. The fluidized bed process produces dry residuals. Therefore, issues related to slurry landfills would not be present at the Proposed Landfill.  

   The WHMD staff agrees that dike stability is not a concern at the Proposed Landfill as it is at slurry landfills, such as the Tennessee Valley Authority site.

9. Groundwater below the Proposed Landfill becomes channelized and is easy to monitor. This groundwater is isolated from any drinking water source.  

   WHMD staff acknowledges the channelized condition of the groundwater at the Proposed Landfill and believes that the monitoring program is sufficient to detect a significant release from the Proposed Landfill, should it occur.