



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
MARQUETTE DISTRICT OFFICE



LIESL EICHLER CLARK
DIRECTOR

October 23, 2019

Mr. David Anderson
Director, Environment and Regulatory Affairs
Aquila Resources Incorporated
E807 Gerue Street
Stephenson, Michigan 49887

Dear Mr. Anderson:

SUBJECT: Back Forty Project - Mining Permit Amendment Application – Request for Additional Information and Clarification – Tailings Management Facility MP 01 2016

The Oil, Gas, and Minerals Division (OGMD) of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) has reviewed Aquila Resources' (Aquila) response to a letter requesting additional information sent on August 9, 2019. Following up with the meeting held on October 16, 2019, at which Aquila presented the Tailings Management Facility (TMF) conceptual design to Water Resource Division (WRD), Materials Management Division (MMD), and OGMD staff, and in consultation with WRD and MMD engineers, it was agreed that additional details and explanation regarding the design, construction, and monitoring of the Tailings Management Facility (TMF) are necessary to demonstrate that methods, materials, and techniques proposed to be utilized are capable of accomplishing their stated objectives in protecting the environment and public health, specifically from a safety and stability standpoint. As such, the review period shall continue to be tolled to allow time for a response.

As communicated in the October 16, 2019, meeting, the Mining Review Team evaluating the TMF design requests that the presentation shown at that meeting be submitted as part of your response. Please also provide a response to the following items:

1. A conceptual level geotechnical exploration/monitoring plan outlining the following:
 - a. Frequency and depth of soil borings and other exploration to be completed before construction of each berm lift.
 - b. Spacing and locations of monitoring devices (including piezometers, inclinometers, settlement plates, etc.) that would be used to track conditions of foundation materials and berm lifts.
 - c. Provisions for periodic monitoring/construction progress reports to be submitted to EGLE for review throughout the construction process.

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2. Additional conceptual detail/explanation of the feasibility/appropriateness of a granular filter to be constructed between the tailings and waste rock interfaces including the following:
 - a. Potential migration of fine-grained tailings materials into the waste rock penetrating layers, crushed rock transition layers, overburden soil filtration layers, and/or non-woven geotextile layers.
 - b. Potential for fouling of the non-woven geotextiles.
 - c. Potential impacts on berm/foundation stability if filters and separation layers do not perform as designed.
3. Conceptual level construction specifications and Construction Quality Assurance (CQA) plans outlining the following:
 - a. Level of onsite CQA that would be provided during subgrade preparation and liner installation.
 - b. Construction sequence and processes for the drainage/buffer layers, initial berm construction and grading, and subsequent berm lift construction and grading. Please include berm lift thicknesses, and any CQA and monitoring that will take place during construction.
4. The application materials and subsequent responses provide very little detail of how leachate will be collected and transported from the liner catchment to treatment facilities. Provide further explanation of conceptual level plans of leachate collection and transportation in order to ensure that phreatic surface within the basin does not impact stability of the tailings or rock berms and so that escapement does not occur.
5. Summarize analysis completed to date for conceptual/feasibility design phase of the TMF and describe analysis and plans to be completed as part of the final design phase.

Thank you for your attention in this regard. If you have any questions, please feel free to contact me at the telephone number listed below or by e-mail at Humphreym@michigan.gov.

Sincerely,



Melanie Humphrey, Geologist
Marquette District Office
Oil, Gas, and Minerals Division
906-250-7564

mh:tc

cc: Mr. Adam Wygant, EGLE
Mr. Rick Henderson, EGLE
Mr. Mark Snow, EGLE
Mr. Jerrod Sanders, EGLE
Mr. Luke Trumble, EGLE
Ms. Margie Ring, EGLE
File: Back Forty Project, CM9