



Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

Your file - Votre référence
2AM-WTP1826

December 14, 2018

Our file - Notre référence
CIDM# 1235768

Richard Dwyer
Manager of Licensing
Nunavut Water Board
Gjoa Haven, NU X0B 1J0

Sent via email: licensing@nwb-oen.ca

Re: 2AM-WTP1826 Design Report Arsenic Water Treatment Plant

Dear Mr. Dwyer,

Thank you for the email notice, received on November 29, 2018, regarding the above-noted design report.

CIRNAC reviewed the design report pursuant to its mandated responsibilities from the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act* and would like to provide the following comments and recommendations.

General:

1. It is stated, on page two (2) of the report, that *"the design report was written according to Water License 2AM-WTP1826 Part I Item 1 and 2"*. CIRNAC's understanding is that the design report is required under Part D Item 1(b) and 2 of Water Licence No: 2AM-WTP1826;
2. It is stated, on page seven (7) of the report, that *"the AsWTP overflow is designed to meet the Type A Licence final effluent discharge criteria for TSS concentrations and As. The final effluent will be monitored for pH and turbidity, which will be monitored continuously. Flow rate will be measured continuously."* Given that the effluent from the Whale Tail Attenuation Pond must meet the water quality limits set by Part F Item 4 of Water Licence No: 2AM-WTP1826 when discharged to the receiving environment, CIRNAC recommends that all the water quality parameters specified in Part F Item 4 of Water Licence No: 2AM-WTP1826 be monitored and verified prior to discharge to ensure they meet the discharge criteria;
3. It is stated, on page eighteen (18) of the report, that *"the AsWTP construction will start November 5th 2018 and commissioning is planned for the end of February 2019."* CIRNAC notes that the report was submitted to the NWB on November the 22nd, 2018 and Part D Item 1 of Water Licence No: 2AM-WTP1826 requires



that “*the Licensee shall submit to the Board for review, at least sixty (60) days prior to Construction*” CIRNAC recommends that the licensee comply with the water licence and not start any construction activities until activity is deemed approved;

Design:

4. It is stated, on page three (3) of the report, that “*the sludge generated by the AsWTP will be dewatered with centrifuges and stored into the waste rock storage facility*”. Part D Item 2(b) of Water Licence No. 2AM-WTP1826 requires the report to include “*site specific data and analysis to support the design and management decisions*”. CIRNAC notes that the report does not contain any geochemical testing data or analysis on the dewatered sludge to justify or support the decision of co-storing the sludge with waste rocks in the waste rock storage facility. CIRNAC recommends that the licensee justify this important decision with sufficient data and analysis;
5. It is stated, on page four (4) of the report, that “*the AsWTP will treat TSS and As which will ensure compliance for those elements as well as iron (Fe) and pH. Other constituents are not expected to require treatment during the treatment period.*” Section 2.2 of the report provided a brief summary of methodology of the water treatment (i.e., Arsenic is removed from the effluent by oxidation from As (III) to As (V) and followed by coprecipitation with ferric hydroxide). Part D Item 2(a) of Water Licence No: 2AM-WTP1826 requires that the report include “*design rational, requirements, criteria, parameters, standards analysis, methods, assumptions and limitations;*” and Part F Item 4 of Water Licence No: 2AM-WTP1826 sets water quality limits for effluent from the Whale Tail Attenuation Pond. CIRNAC notes that the report does not contain any data, analysis or information to demonstrate if and how the proposed water treatment design will be able to meet the effluent quality criteria specified in Part F Item 4 of Water Licence No: 2AM-WTP1826. CIRNAC recommends that the licensee provide such data, analysis or information as per license requirements.

If you have any questions or require any further information with respect to this matter, please contact me at (867) 975-4555 or email david.zhong@canada.ca, or Ian Parsons at (867) 222-9278 or email ian.parsons@canada.ca.

Regards,

David Zhong
Regulatory & Science Advisor, Water Resource Division