



The requested amendment to the effluent limits within the WTA is based on the most comprehensive research completed to date on lagoon-wetland systems in Nunavut and considers the significant change to the hydrologic regime that will be influenced by the seasonal pump out of the future impermeable lagoon that will replace the passive exfiltration and dilution that occurs now. The treatment goals for the lagoon-wetland effluent criteria, at the end of the treatment process, were established as 100, 120, and 1.25 mg/L for carbonaceous biochemical oxygen demand, total suspended solids, and un-ionized ammonia as nitrogen, respectively, to protect the final receiving environment. These effluent criteria are based on Nunavut specific research that CGS completed in partnership with Dalhousie University from 2010-2016, along with the additional field study completed by Dalhousie of the Naujaat wetlands in 2017. These effluent quality limits are technology based, along with

confirming that effluent of this quality would not have a negative impact on the receiving environment.

Given an estimated population of 1,225 residents in 2021 by Statistics Canada, the design population to be serviced by the expanded lagoon was projected to be 2,175 people in 2043. This population will require an active storage volume 121,469 m³ for 12 months of storage.

The lagoon discharge point will be by controlled manual pump out into the secondary lagoon that will then exfiltrate into the WTA which will remain at the same location. The decant system will be designed with a flowrate below 2500 m³/day to ensure effluent has sufficient residency time in the WTA. An updated Operations and Maintenance Plan will be submitted to NWB once the new lagoon is commissioned.

This submission includes the following documents:

- The letter of authorization from the Hamlet of Naujaat
- The renewal application
- The application summary in Inuktitut and English
- The NPC Conformity Determination letter
- NIRB Screening Decision cover letter and report
- The 2022 compliance plan
- The updated Quality Assurance and Quality Control Plan, Environmental Emergency Spill Contingency Plan, Water Supply OM Plan, Sewage Disposal Facility OM Plan, and Solid Waste Facility OM Plan
- Consideration of Effluent Amendment Request
- Pre-Design Report

Regards,



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