October 4, 2021

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1L0

Attention: Richard Dwyer, Manager of Licensing

RE: 3AM-GRA1624 –Government of Nunavut Community and Government Services – Municipality of Rankin Inlet – Annual Water Licence Report

Dear Richard,

The Government of Nunavut Department of Community and Government Services (CGS) has prepared a response to the comments submitted by Environment and Climate Change Canada (ECCC) and Crown Indigenous Relations and Affairs Canada (CIRNAC) on the 2020 3AM-GRA1624 Annual Report, updated Environmental Emergency Contingency Plan, and updated Quality Assurance/Quality Control Plan.

Agency	Comment	Recommendation	CGS Response
ECCC	Appendix A : Rankin Inlet 2020 Sampling Summary GRA-3. Station GRA-3 monitors effluent quality for a wide range of parameters. The September 2, 2020 samples had elevated Oil and Grease levels of 2170 mg/L; this is considerably higher than other monthly sample results (median 24.1). Comparisons to total hydrocarbon concentrations indicate that the source is likely biological lipids. It is unclear whether community education has been done to prevent kitchen grease and oils from entering the wastewater treatment system.	ECCC recommends that community education be done regarding disposal of kitchen grease and oils. Commercial kitchens should have grease traps or other capture practices, and alternative disposal methods for these substances.	Noted. CGS will pass this recommendation on to the Municipality.
ECCC	Appendix A : Rankin Inlet 2020 Sampling Summary GRA-6 and GRA-7. Data for several of the parameters shown for the June 25, 2020 sample from GRA-6 are below the Detection Limits (DL) shown, including total ammonia, Biological Oxygen	ECCC recommends the proponent clarify the data and confirm results for the parameters which have numerical results reported while being below listed	This was a data input error; the table will be updated, and the revised annual report will be submitted to NWB. The correct values are in the laboratory results that

	Demand (BOD), Carbonaceous Biological Oxygen Demand (cBOD), chloride, mercury, nitrate, nitrite, phosphorus, sulphate, arsenic, cadmium, chromium, cobalt, lead, Total Suspended Solids (TSS), and F2 (C10-C16) hydrocarbons. Similarly, for GRA-7, data that are below the DL include total ammonia, BOD and cBOD, chloride, mercury, nitrate, nitrite, sulphate, cadmium, chromium, cobalt, lead, nickel, TSS, and F2 (C10-C16) hydrocarbons. Some of the metals appear to be reported as half the detection limit, and there are similar data replicated for both stations GRA-6 and 7.	detection limits.	were submitted in Appendix B of the original report.
ECCC	Environmental Monitoring Program and Quality Assurance/Quality Control Plan Section 3.0 Sampling Procedures and Protocols. In Section 3.0, overarching procedures are described, then the subsections provide direction on specific protocols, with specific details on surface water sampling procedures in subsection 3.5 (applicable to GRA-1 and GRA-6) and flow monitoring procedures in subsection 3.9 (for GRA-5). Similar information on procedures has not been provided for GRA-3 (effluent discharge from the Sewage Treatment Facility) nor for GRA-4 (volume of sludge removed).	ECCC recommends that the Quality Assurance/Quality Control (QA/QC) manual include all active sampling locations.	The QA/QC Plan will be updated with a description of sampling at GRA-3 and GRA-4.
ECCC	Environmental Monitoring Program and Quality Assurance/Quality Control Plan Section 4.2 Quality Control. This section outlines the type of QA/QC samples collected; these include field blanks and replicate or duplicate samples.	As travel blanks are also typically used as part of a QA/QC program, ECCC recommends that travel blanks be used with the municipal sampling protocols.	The accredited lab ALS uses distilled water as a blank during the analysis procedure.
CIRNAC	Table 1, Page 1, of the 2020 Annual report provides information on the monthly quantities of freshwater obtained from all sources while acknowledging that “broken flow meters and missed readings have caused monthly totals to become incomplete and inaccurate”. Therefore, “the annual total was provided by tracking totals on the flow meters in use”. CIRNAC observes that the quantities of water withdrawn in the months of April and May, was not reported in Table 1, Page 1, of the 2020 Annual Report. CIRNAC seeks clarification from the licensee if the omission of water quantity for the months of April and May in the Annual Report, was as a result of the broken flow meters and missed readings as acknowledged, or it meant that no amount of water was	(R-01) CIRNAC requests that the licensee: a. Clarify if any amount / volume of water was withdrawn from any fresh water source in Rankin Inlet in the months of April and May, 2020. b. If yes, what is the estimated amount of water withdrawn in April and May, 2020 respectively? c. Provide information on the current state of the flow meters	a) Water was withdrawn from Nipissar Lake in April and May. b) The estimated amount in each month was 50,945 m^3. c) All flowmeters are currently operational.

	withdrawn in the months of April and May, 2020.	(whether they are repaired or replaced).	
CIRNAC	The licensee acknowledged in Page 3, Table 3 of the 2020 Annual Report that "A total of 355,444 m^3 was pumped to Nipissar Lake in 2020. A flowmeter was installed on July 22nd and lost power on September 18th that measured 245,444 m^3. Approximately 110,000 m^3 was not registered through the meter from July 6th-21st and September 18th-21st. Pumping was for a total of 78 days". The monthly totals are estimates calculated from the total value". The licensee did not state whether this amount of water pumped from Lower Landing Lake into Nipissar lake was authorized under the renewed licence or the existing licence as of 2020 before the amendments took effect (on July 8, 2021) …	(R-02) CIRNAC requests that the licensee clarify pumping of 355,444 m^3 of water from Landing Lake into Nipissar Lake in 2020 when it was not permissible under water licence 3AM-GRA1624 terms and conditions.	That is correct. Ensuring adequate water supply for the Municipality Rankin Inlet is essential to protect human life. The Chief Medical Health Officer signed a letter indicating that the water must be withdrawn because adhering to the previous license would have caused a public health emergency. It was demonstrated in the license amendment process that Lower Landing Lake can support the annual withdrawal rate. CGS can meet the municipal water needs and remain in compliance under the terms of the new license.
CIRNAC	Schedule B, Item c; of water licence 3AM-GRA1624 requires the licensee to report "The monthly and annual quantities of wastes removed for disposal from licenced facilities". A comparative review of Annual Reports submitted by the licensee from 2016 to 2020 (i.e. five consecutive years) shows that the Monthly quantities of solid waste/sludge reportedly removed from the sewage treatment facility have remained constant at 4 m^3. Similarly, the review shows that the information reported in Table 2, Page 2, of the 2020 Annual Report was the same table/information reported in the 2019 and 2017 Annual Reports respectively. …	(R-03) CIRNAC recommends that the licensee update the "2020 Environmental Monitoring Program and Quality Assurance / Quality Control Plan" to include information on solid waste / sludge data collection procedures at the sewage treatment facility.	There is no sludge generated at the sewage treatment facility only solids collected by augers in garbage bags and transported to the solid waste site. The licensee will update the QA/QC Plan with this information.
CIRNAC	On Page 5 of the 2020 Annual Report, under the heading, "Additional information that the licensee deems useful", the licensee acknowledged submitting an amendment application package to the NWB on September 16, 2020 for water licence 3AM-GRA1624. CIRNAC observes that the licensee did not wait for the NWB's approval (as acknowledged in the Compliance Plan, Parts E1-E3); before moving ahead to undertake a major/significant	(R-04) CIRNAC recommends that the licensee provide the following information to the NWB: a. Provide within 30 days "as built" installation/construction drawing signed and stamped by an Engineer	a) All of the applicable information was provided by CGS during the amendment application process. The regulators, including CIRNAC participated in the technical review process prior to issuing the new license.

	modification activity that is capable of altering the Lower Landing Lake's hydro-morphological structure (i.e. water flow) and Geo-morphological structure (i.e. River/Lake attributes). The licensee reported in its 2020 Compliance Plan that, "The pump now sits in the Lower Landing Lake (GRA-7) body of water which is upstream of Char River. This allows more water to be pumped over a longer period of time due to water levels being consistent as provided in the water balance study completed on Nipissar Lake and Lower Landing Lake in 2016. An access road was also installed from the main road to pad where the sea can containing the pump sits, and a pipeline over the vicinity of Char River to allow the utilidor pipe to bypass this river above the high water mark – no change to flow occurred to date". CIRNAC is concerned that the construction or installation of a new access road (without prior authorization from the NWB) within the vicinity of the Lower Landing Lake may cause sediment build-up around the lake and also could lead to erosion of the river banks. CIRNAC would assume that this activity would not pose greater impacts on the flow rate of the Lower Landing Lake. CIRNAC seeks clarification from the licensee if the referenced water balance study of 2016 in the Compliance Plan, also covered the potential impacts that the newly installed/constructed access road could have on the flow patterns as well as the processes and attributes of the Lower Landing Lake, Nipissar Lake and the Char River respectively. As noted in the NWB's completeness check letter dated December 16, 2020 for water licence 3AM-GRA1624, the licensee's response to recommendation #4, item 4.2 was, "As there are no construction activities planned to take place near Char River (steel carrier pipe is in place and not being moved), is sampling for this type of activity still recommended?". …	registered in Nunavut, for the newly installed/constructed access road as well as for the newly installed pipeline. b. Provide detailed information on the potential impacts of the newly installed/constructed access road; and the newly installed pipeline on both the flow pattern and attributes (surface features) of the Char River and Lower Landing Lake in the next Annual Report c. Provide a mitigation plan for any identified impacts; particularly mitigation against potential erosion and sediment build-up on the river/lake banks of Lower Landing Lake and Char River. d. Update the environmental monitoring program and quality assurance / quality control plan to include information on flow monitoring and data collection procedures at river/lake banks of Lower Landing Lake and Char River and provide that information. e. Provide, within 30 days the data/results used to support the conclusion that, "no change to flow occurred to date" after the new access road was installed/constructed; also after moving of the pump from the Char River to Lower Landing Lake was undertaken.	b) All of the applicable information was provided by CGS during the amendment application process. The regulators, including CIRNAC participated in the technical review process prior to issuing the new license. c) All of the applicable information was provided by CGS during the amendment application process. The regulators, including CIRNAC participated in the technical review process prior to issuing the new license. d) The QA/QC Plan will be updated. e) The new pipeline bypasses Char River completely and therefore its presence does not impact the flow. Water level monitoring of Lower Landing Lake was requested by CIRNAC as part of the new water licence to provide that monitoring portion of the impact to lower landing lake based on the water taking. These will now be included in the annual reports.

CIRNAC	Part H, Item 5, of the water licence 3AM-GRA1624 states that, "The Licensee shall sample annually during spring freshet, at Monitoring Program Stations GRA-1, GRA-6 and GRA-7 and analyze for the following parameters in accordance with the Canadian Council of Ministers of the Environment (CCME, 2013) Water Quality Guidelines for the Protection of Freshwater Aquatic Life: …	(R-05) CIRNAC recommends that the Licensee and the Government of Nunavut adopt the provided example / template to be used to compare data sets collected annually during Freshet from the listed sampling points. Data collected over time (annually) may then be compared and evaluated to determine compliance with CCME water quality guidelines for the protection of freshwater aquatic life. This table may also be used at other sites in Nunavut and in future Annual Reports.	The licensee will follow the format provided by CIRNAC on the 2021 Annual Report.

Please do not hesitate to contact me with any questions or concerns.

Regards,

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