



Attention: Richard Dwyer, Manager of Licensing

RE: 3AM-ARV---- Municipality of Arviat – Renewal and Amendment Application

Dear Richard,


The Government of Nunavut Department of Community and Government Services (CGS) on behalf of the Municipality of Arviat has prepared a response to the comments submitted by Environment and Climate Change Canada (ECCC), Crown Indigenous Relations and Affairs Canada (CIRNAC), and Fisheries and Oceans Canada (DFO) on the water license renewal and amendment application.

Regards,



Elan Chalmers
Municipal Planning Officer
Government of Nunavut
Community and Government Services
Email: echalmers@gov.nu.ca

Agency	Comment	Recommendation	Licensee Response
ECCC	01	The Business Case for the new Arviat wastewater treatment discusses the location of water quality monitoring downstream of the lagoon within the wetland area (ARV-4, which is the point of discharge from the system) and recommends that the location of ARV-4 be relocated to the end of the wetland, as wastewater treatment occurs within the wetland. It is unclear whether GN-CGS is accepting this recommendation and proposing this change in the Water Licence Application.	CGS accepts this recommendation and is petitioning that ARV-4 be established at the recommended location downstream in the wetland in an area accessible by municipal staff.
ECCC	02	ECCC recommends GN-CGS provide updated timelines and a work plan for studies and work related to the construction of the new wastewater facility and expansion of the solid waste facility.	CGS will provide an updated timeline for the wastewater and solid waste projects. CGS expects to have confirmation of funding for both projects by April 2022, which will allow a more definite schedule to be prepared and submitted to NWB for distribution. Until then, anticipated schedules can be provided.
ECCC	03	<p>ECCC recommends that GN-CGS:</p> <ul style="list-style-type: none"> ☐ Provide an updated Interim Closure and Reclamation Plan for the Solid Waste Disposal Facility, Bulky Metals Area, and Hazardous Waste Storage Area and the Final Closure and Reclamation Plan for the two abandoned sewage lagoons. ☐ Describe the current state of abandonment and restoration activities completed on the unused sewage lagoon cells, and any planned future work. ☐ If additional work needs to be completed in order to provide updated plans, these water licence conditions should be updated and retained in the licence to ensure that information related to abandonment and restoration is provided. 	There is no plan to close the solid waste disposal area or the bulky metals area. The business case recommended that both areas remain in use indefinitely, and expansion take place. An investigation of the abandoned lagoon cells to assess their potential to be remediated and re-used to expand the current solid waste will be included in the next phase of the solid waste project, pending the funding approval by the federal government. Plans for the recommended remediation and re-use of the sewage lagoons will be provided once these studies are complete, pending funding approval.

ECCC	04	<p>ECCC recommends GN-CGS:</p> <ul style="list-style-type: none"> ☐ Provide an update on whether desludging occurred in 2021 and if not, when desludging is planned for. ☐ Provide information on sludge management, assessment, and disposal techniques and location. 	<p>After discussing the planned desludging in 2021 with the CIRNAC inspector, it was determined that since the lagoon cell is expected to be decommissioned, desludged, remediated, and upgraded in 2024, desludging in 2021 would provide minimal benefit (ie. Potentially 1-2 years of benefit prior to construction of new site) compared to the labor required for the undertaking.</p> <p>A new OM plan will be prepared by the design consultant and contractor for the new 2-cell lagoon. The plan will contain a sludge management plan that includes assessment and disposal techniques, as well as a disposal location.</p>
ECCC	05	ECCC recommends that consideration be given to include an additional monitoring station at the point of discharge from the lagoon into the wetland to evaluate sewage effluent quality prior to effluent entering the wetland.	The licensee agrees that a monitoring station at the point of discharge from the lagoon should be included in the new license to aid in evaluation and understanding of the facilities treatment capacity. However, this station should not be considered a compliance point and no effluent limits should be imposed at this point since it represents only partially treated effluent.
ECCC	06	ECCC recommends that GN-CGS provide information of the frequency of replicate/duplicate samples within the sampling program.	The QA/QC Plan will be updated to include information on the frequency of replicate/duplicate samples in the sampling program.
CIRNAC	R-01	(R-01) CIRNAC recommends that the Licensee provide the detailed steps that it plans to take to address the overcapacity issue at the solid waste management facility (SWMF) until such time as a new facility can be constructed.	<p>Beginning in 2018, the Municipality purchased equipment and began shredding depolluted metal waste to increase capacity at the site. The metal was then used as cover material for the landfill which resulted in compaction that drastically increased the capacity as seen in the photo below:</p> 

			<p>The Municipality also partnered with the local mine to have hazardous waste backhauled. Pending federal funding approval, CGS will undertake a study in 2022/23 to determine how to further improve capacity of the current solid waste site and evaluate the feasibility of expanding into the abandoned lagoon cells after proper remediation. The results will be submitted to NWB for distribution along with any subsequent designs and planned modifications.</p>
CIRNAC	R-02	<p>R-02) CIRNAC recommends that Licensee clarify:</p> <ul style="list-style-type: none"> ☐ The retention time of the effluent in the lagoon to achieve treatment goals before manual discharge by pumping. ☐ The pumping rate from the lagoon discharge point to the wetland treatment area. 	<p>Lagoon-wetland systems do not function to achieve treatment goals prior to discharging into the wetland. The lagoon only represents first phase of the treatment process. The wetland treatment area is a significant component of the treatment facility. The 2-cell lagoon system will be sized to retain wastewater for 12 months for a 20-year design life following CSA W203:19 <i>Planning, design, operation, and maintenance of wastewater treatment in northern communities using lagoon and wetland systems</i>. Effluent will be decanted into the wetland treatment area in late summer once the wetland has had the opportunity to develop and runoff has passed through. Currently the effluent is benefiting from dilution rather than treatment, potentially resulting in lower effluent concentrations, but in reality, not better-quality effluent.</p> <p>The pumping rate will be determined during design to optimize both drawn down time and effectiveness off the wetland treatment but it will be below the recommended maximum of 2500 m³/day to preserve the health of the marine receiving environment.</p>
CIRNAC	R-03	CIRNAC recommends that the licensee clarify the change in parameters being requested in the two documents and update the documents accordingly.	The licensee is requesting that the effluent parameter limits at the end of the wastewater treatment facility be changed to cBOD/TSS of 100/120 mg/L. This error in the OM Plan will be fixed in the newer version.
CIRNAC	R-04	CIRNAC recommends that Licensee provide a detailed plan on how it intends to prevent seepage of the effluent into ground water in the event that localized thawing of the permafrost damages the impermeable liner.	In the event that the liner is damaged resulting in a leak, the effluent will passively exfiltrate into the wetland treatment area, which is downgrade from the lagoon, in the same way that it does with the current permeable lagoon. The new lagoon will use the same wetland as the current lagoon therefore no additional land will be contaminated. In addition, the effluent samples taken, and lagoon water levels will be monitored in order to detect evidence of a leak. Repairs to the liner will be completed if there is a leak.
CIRNAC	R-05	<p>(R-05) CIRNAC recommends that the licensee provide rationales as to why:</p> <ul style="list-style-type: none"> ☐ the stations are being listed as “inactive”, and; ☐ the Licensee is requesting that ARV-10 and ARV-11 monitoring stations be deleted from the licence. 	<p>A “hydrocarbon impacted storage facility” was never constructed and does not exist therefore ARV-10 and ARV-11 do not exist. Having inactive compliance points listed in the monitoring station program table is unnecessarily cumbersome for operational staff and provide no benefit. Historical information on previous compliance points is stored on the Nunavut Water Board FTP site and therefore should not be included in active licenses. The licensee agrees with removing these stations from the licence.</p>

CIRNAC	R-06	(R-06) CIRNAC recommends that the Licensee update section 6 of its sewage treatment facility operation and maintenance plan to include acceptable methods of sludge disposal as required by the water licence.	A new OM plan will be prepared by the design consultant and contractor for the new 2-cell lagoon. The plan will contain a sludge management plan that includes assessment and disposal techniques, as well as a disposal location. The upgraded lagoon will be sized to accommodate 20 years of sludge accumulation. However, effluent samples as well as visual inspection will indicate if sludge accumulates more than anticipated, and appropriate methods to remove and dispose of the sludge will be included in the new, upgraded lagoon Operation and Maintenance plan.
DFO	01	We recommend the proponent review the Interim Code of Practice for End-of-pipe fish screens (https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html) and the Measures to Protect Fish and Fish Habitat (http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html). If the project is able to comply with the conditions and measures set out in the Interim Code of Practice, a project review by Fisheries and Oceans Canada is not required; however, we recommend that a Notification Form be submitted. If the project is unable to comply with the Interim Codes of Practice or the Measures to Protect Fish and Fish Habitat, we recommend that the proponent submit a Request for Review (http://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/forms-formes/request-demand-eng.pdf) of the project.	Information on the fish screen has been requested from the staff involved with the resupply. If the fish screen does not meet DFO requirements actions will be initiated to replace it.