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The NWB strongly recommends that the Licensee consult the comments received from interested persons on issues identified. This information is attached for your consideration³.

Sincerely,

Lootie Toomasie
Nunavut Water Board
Chair

LT/sk/rqd

Enclosure: **Licence No: 3BM-TAL1926 – Amendment No. 1**

Comments – CIRNA, ECCC

Cc: Distribution – Kitikmeot

³ L. Bachellier (CIRNA) to R. Dwyer (NWB), Re: Crown-Indigenous Relations and Northern Affairs Canada Review of amendment application for water licence 3BM-TAL1926 Hamlet of Taloyoak, dated July 23, 2021.

LICENCE AMENDMENT No. 1

Licensee:	Hamlet of Taloyoak
Licence No:	3BM-TAL1926 Type “B”
Licence Issued:	December 06, 2019
Amendment No. 1 Effective Date	September 15, 2021
Licence Expiry:	December 07, 2026

Pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA)*, with respect to an application for amendment, dated June 17, 2021, made by the Government of Nunavut, Community and Government Services (GN-CGS) on behalf of Hamlet of Taloyoak (the Hamlet or Licensee), the Board hereby grants the following Licence amendment.

The Licence issued December 06, 2019, with an expiry date of December 07, 2026, shall be amended to include the following terms and conditions, with respect to the use of Water and the deposit of Waste during Municipal undertaking.

Procedural History

On June 17, 2021, the GN-CGS submitted to the Board an amendment (No. 1) application to modify the effluent parameters of the existing Water Licence No: 3BM-TAL1926. The rationale for these modifications was the logistical challenges associated with acute toxicity testing and inability to achieve the required Carbonaceous Biological Oxygen Demand (CBOD) and Total Suspended Solids (TSS) limits in Nunavut using the lagoon/wetland treatment system.

The Amendment No. 1 application (Application) included the following documents as supplementary information:

- Water Licence Amendment Application, dated June 17, 2021;
- NPC Letter of Conformity, dated May 29, 2021;
- Executive Summaries in English and Inuktitut;
- Memo for Taloyoak Water License Amendment prepared by Exp., dated April 12, 2021;
- Recommendations for the Development of Nunavut Municipal Wastewater Management Standards, prepared by Exp., revised November 2018;
- Draft Water License Framework, dated June 17, 2021;
- ECCC Comments on the 2014 Water Licence Application; and
- CGS Response to the ECCC Comments on the 2014 Water Licence Application.

Upon receipt, the NWB conducted a preliminary internal technical review of the Application and distributed it for a thirty (30) day comment period with the deadline of July 19, 2021. On or before the deadline for comments, the Board received submissions from Crown-Indigenous Relations and Northern Affairs (CIRNA) and Environment and Climate Change Canada (ECCC).

Complete details on the interveners' submissions received are available from the NWB File Transfer Protocol (FTP) site using the following link:

<ftp://ftp.nwb-oen.ca/registry/3%20MUNICIPAL/3B/3BM%20-%20Municipality/3BM-TAL1926/2%20ADMIN/3%20SUBMISSIONS/>

In its technical review comments⁴, CIRNA recommended to update the Monitoring Program Stations in all Management Plans to align those with Part I of the Water Licence. In response to this recommendation⁵, the GN-CGS committed to update the Monitoring Program Stations in all applicable plans and to submit the updated documents to the Board with the 2021 Annual Report.

Additionally, CIRNA emphasized the Inspector's concerns with respect to reclamation of the old Water Intake Pump House and Utilidor System raised during the August 13, 2020 Water Licence Inspection and recommended to prepare the Abandonment and Restoration (A&R) Plan for this facility. In response⁵ to this comment, the GN-CGS committed to obtain funding and prepare the outstanding plan prior to any decommissioning action. The NWB notes that the provision to submit the A&R Plan for the old Water Treatment Facility was previously included under Part H, Item 4 of the current Water Licence.

CIRNA also expressed their concerns with respect to the updates to the Effluent discharge requirements, for which the GN-CGS clarified that some Effluent requirements (i.e. CBOD, TSS) “cannot be reliably achieved in Nunavut using a lagoon/wetland treatment system, particularly when removing the reliance on dilution,”⁶ and that “this proposal was consistent with outputs of research conducted by Dalhousie University, as summarized in the attached EXP document, [and] also consistent with the position of the GN in ongoing discussions between the GN and federal counterparts related to an equivalent WSERs standard for Nunavut.”⁷ With respect to CIRNA's enquiry regarding the need for such modifications considering that all previous samples (except one) have met the TAL-3 effluent quality limits under the existing conditions, the GN-CGS provided the following clarification:

*Presently, the natural lagoon is undersized. This means that wastewater deposited during the winter months becomes frozen on the lagoon or partway down the frozen wetland. During the spring freshet, much of this wastewater ice-block partially thaws and slides onto the frozen marine water body prior to any sampling. As such, the summer sampling regime does not represent a portion of the annual deposition of wastewater.*⁵

In its technical review comments⁸, ECCC did not object to the proposed removal of the acute toxicity testing requirement and the Effluent discharge criteria for TAL-3, as well as to the

⁴ L. Bachellier (CIRNA) to R. Dwyer (NWB), Re: Crown-Indigenous Relations and Northern Affairs Canada Review of amendment application for water licence 3BM-TAL1926 Hamlet of Taloyoak, dated July 23, 2021.

⁵ E. Chalmers (GN-CGS) to R. Dwyer (NWB), Re: CGS Response to Comments Received on Amendment Application for Water Licence 3BM-TAL1926 Hamlet of Taloyoak, dated August 11, 2021.

⁶ GN-CGS, Executive Summary for Water Licence Amendment for 3BM-TAL1926.

⁷ Draft Water Licence Framework, dated June 17, 2021.

⁸ M. Pinto (ECCC) to R. Dwyer (NWB), Re: 3BM-TAL1926 – Community and Government Services, Government of Nunavut – Hamlet of Taloyoak – Water Licence Amendment, dated July 23, 2021.

proposed modifications to the Effluent discharge criteria at TAL-6. Additionally, ECCC supported the proposal of the GN-CGS to continue monitoring of Effluent at the TAL-3 sampling location to identify the treatment capacity of the lagoon and optimize future management.

The NWB notes that although the 5-day Biochemical Oxygen Demand (BOD₅) is generally used for municipal lagoon treatment systems in the Northwest Territories and Nunavut as per the *Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories (1992)*, the CBOD criteria was included under Part D, Item 8 to account for the Nunavut specific study provided as part of the Application and to be in line with the *Wastewater Systems Effluent Regulations (SOR/2012-139)*.

In the Application, the GN-CGS has indicated that a new lined cell is planned to be added to the existing Sewage Lagoon in July/August 2022 – October 2024 to enhance overall Wastewater treatment capability. The NWB would like to remind the Licensee that Part E, Item 1 of the current Water Licence requires them to submit for-construction design drawings stamped by a qualified Engineer at least sixty (60) days prior to construction, and that the Construction Summary Report along with as-built plans and drawings should be submitted to the Board within ninety (90) days after construction, as per Part E, Item 4.

The NWB has also taken this opportunity to review the 2020 Annual Report submitted on February 10, 2021. The Board notes that this submission included the following updated documents:

- *Operation and Maintenance Manual, Volume 1, for the Water Treatment Plant at Taloyoak, Nunavut*, revised December 10, 2020;
- *Hamlet of Taloyoak, Nunavut, Sewage Treatment Facility Operation and Maintenance (O&M) Plan*, dated December 15, 2020;
- *Hamlet of Taloyoak, Nunavut, Solid Waste Facility Operation and Maintenance (O&M) Plan*, dated December 15, 2020; and
- *Spill Contingency Plan, Taloyoak Facilities, Hamlet of Taloyoak*, dated December 15, 2020.

The technical review of the 2020 Annual Report determined that the information provided generally addresses the requirements of the current Water Licence. The Operations and Maintenance Manuals and Plans listed above are found complete and addressing all necessary requirements of Part F, Items 1, 2, and 3 of the current Water Licence and, therefore, are accepted by the Board with the issuance of Amendment No. 1.

With respect to the *Spill Contingency Plan* mentioned above, the Board acknowledges that this submission fulfills the requirement of Part G, Item 1 of the current Water Licence and has approved this plan with the issuance of Amendment No. 1.

The Board appreciates inclusion of the follow-up actions to address the recommendations provided by CIRNA Inspector during the August 13, 2020 Water Licence Inspection.

LICENCE AMENDMENT No. 1

The Licence shall be amended to indicate the following:

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

Remove Item 3

Amend Item 7 to read:

The Licensee shall provide to the Board for approval, prior to the commissioning of the Enhanced Wetland Treatment Area as an integral component of the sewage treatment or within ninety (90) days of completion, whichever occurs first, a Wetland Treatment Area assessment that includes, but is not limited to:

- i. Location of the Final Discharge Point required to complete monitoring requirements under Part D, Item 8;
- ii. Ecological/vegetative assessment of the area to be used, including a prediction of the time required to achieve the effluent quality as described in the Application for Water Licence renewal;
- iii. Description of the gradient, holding capacity, and verification of the total area utilized, which has been predicted as required to attain the proposed effluent quality, describing any discrepancies and the affects it will have on the predictive model outcome along with contingencies.

Amend Item 8 to read:

All effluent discharged from the Wetland Treatment Area Final Discharge Point, at Monitoring Program Station TAL-6 shall meet the following Effluent quality standards:

Parameter	Units	Maximum Concentration of any Grab Sample
pH	–	6 – 9
Fecal Coliform	CFU/100mL	1×10^4
CBOD	mg/L	100
Total Suspended Solid	mg/L	120
Un-ionized Ammonia (NH ₃)	mg/L	1.25, as nitrogen (N) at 15°C ± 1°C
Oil and Grease	mg/L	No visible sheen

Remove Item 9

PART I: CONDITIONS APPLYING TO THE MONITORING PROGRAM

Remove Item 7

All remaining terms and conditions of the Licence 3BM-TAL1926 Type ‘B’, dated December 06, 2019, still apply.

This Licence Amendment No. 1 is issued and recorded at Gjoa Haven, NU on September 15, 2021.

Approved by,

Lootie Toomasie
Nunavut Water Board
Chair