

Environmental Protection Operations Directorate
Prairie & Northern Region
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ECCC File: 6200 000 001/011
NWB File: 3AM-IQA1626



August 6, 2024

via email at: licensing@nwb-oen.ca

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Richard Dwyer:

RE: 3AM-IQA1626 – City of Iqaluit – 2023 Annual Water License Report

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) regarding the above-mentioned 2023 Annual Water License Report.

ECCC provides expert information and knowledge to project assessments on subjects within the department's mandate, including climate change, air quality, water quality, biodiversity, environmental preparedness and emergencies. This work includes reviewing proponent characterization of environmental effects and proposed mitigation measures. We provide advice to decision-makers regarding a proponent's characterization of environmental effects, the efficacy of their proposed mitigation activities, and may suggest additional mitigation measures. Any comments received from ECCC in this context does not relieve the proponent of its obligations to respect all applicable federal legislation.

The following comments are provided:

1. Wastewater treatment plant effluent quality

Reference(s):

1. Water Licence 3AM-IQA1626 2023 Annual Water License Report (City of Iqaluit; May 23, 2024)
 - Appendix B: Sampling Results
2. RE: 3AM-IQA1626 – City of Iqaluit – Municipal Type A Water Licence – Annual Water Licence Report Review (Environment and Climate Change Canada; August 22, 2023)



- Comment #2: Wastewater Treatment Plant (WWTP)

Comment:

The wastewater treatment plant effluent quality, reported for IQA-04, does not meet secondary treatment targets. ECCC's review of the 2022 Annual Report included a comment with the same observation. Monitoring results are variable but do not demonstrate any trend of improvement. The 2022 conclusion stated "Improvements in effluent quality should be pursued on a priority basis."

The recommendation made last year is still applicable since none of the information requested was found in this year's report.

ECCC Recommendation(s):

ECCC recommends the Proponent provide a summary of actions to be taken to achieve acceptable wastewater treatment plant effluent quality, including a timeline and commitment to implement.

2. Reporting on wastewater treatment plant upgrades

Reference(s):

1. Water Licence 3AM-IQA1626 2023 Annual Water License Report (City of Iqaluit; May 23, 2024)
 - Section N: A brief update on the implementation plan of all facilities within the scope of this License including projected implementation and status of the Upgraded Wastewater Treatment Plant.

Comment:

Annual reporting requirements include the status of the upgraded wastewater treatment plant (Section N). In 2023, it was reported as "N/A". Given the fact the plant is not meeting treatment targets, a status update is relevant.

Quarterly reports on the status of the wastewater treatment plant are to be provided to ECCC as per the issued Fisheries Act Direction. These reports provide the necessary information and could be appended to the annual report to fulfill the reporting requirement of Section N.

ECCC Recommendation(s):

ECCC recommends the Proponent include quarterly reports on the status of the wastewater treatment plant, or information contained therein, to future annual reports.

Furthermore, ECCC reminds the Proponent of their requirement to provide quarterly reports as per issued Fisheries Act direction, until the plant effluent has been demonstrated to be effectively treated and passes required effluent toxicity tests.

3. Sewage lagoon effluent quality

Reference(s):

1. Water Licence 3AM-IQA1626 2023 Annual Water License Report (City of Iqaluit; May 23, 2024)
 - Section B: The monthly and annual quantities in cubic meters of any discharges from the Wastewater Treatment Facilities (Monitoring Stations No. IQA-02, IQA-04, IQA-08).
 - Appendix B: Sampling Results

Comment:

The sewage lagoon effluent quality, reported for IQA-02, does not meet secondary treatment targets. ECCC notes the Fecal Coliform, BOD5, total suspended solids and ammonia concentrations are more elevated in the middle of the decant (June 12, 2023) than at the beginning (May 31, 2023) or at the end (June 16, 2023) of the decant. No explanation is provided for the variability in effluent quality nor is there a discussion of measures to improve the quality.

ECCC Recommendation(s):

ECCC recommends the Proponent:

- discuss possible causes for the variability of sewage lagoon effluent quality during decant in 2023; and
- provide a summary of actions to be taken to achieve acceptable sewage lagoon effluent quality, including a timeline and commitment to implement.

4. Presentation and discussion of water quality data

Reference(s):

1. Water Licence 3AM-IQA1626 2023 Annual Water License Report (City of Iqaluit; May 23, 2024)
 - Table 5: Summary of 2023 Sampling Conducted
 - Appendix B: Sampling Results
2. Environmental Monitoring Program and Quality Assurance/ Quality Control Plan Revision 3 (City of Iqaluit; April 2019)
 - Section 4.5: Quality Assurance and Quality Control Program

Comment:

Table 5 summarizes the 2023 sampling results by identifying the date, test, station ID, sample name and lab sample ID. It is not clear what the “test” column refers to as the letters A, D, E and F are used but there are no footnotes or key to explain what the letters refer to. The sample results themselves, specifically the parameter concentrations measured by laboratory analysis, are not summarized. This makes it difficult for both the Proponent and reviewers to identify elevated concentrations of parameters of concern, or to detect trends in water quality. These are objectives of the water monitoring program and will give context for discussion and interpretation of water quality results.

Additionally, ECCC notes that no quality assurance/quality control (QA/QC) sample results were included in the annual report. QA/QC is a part of the Environmental Monitoring Program and should be completed alongside annual water quality monitoring.

ECCC Recommendation(s):

ECCC recommends that in future annual reports the Proponent:

- summarize water quality sample results in tables presenting measured parameter concentrations for monitoring stations;
- note any elevated monitoring parameters, discuss the potential underlying cause(s), and describe any measures taken/planned to prevent elevated parameter concentrations; and
- implement QA/QC for water quality monitoring including QA/QC samples and a discussion of the results.

5. Landfill water sampling locations

Reference(s):

1. Water Licence 3AM-IQA1626 2023 Annual Water License Report (City of Iqaluit; May 23, 2024)
 - Table 5: Summary of 2023 Sampling Conducted
 - Appendix B: Sampling Results

Comment:

The sample locations at the landfill are not clear because the same sample ID (IQA-08) is used for three different sample names (Inside Landfill, Outside Landfill, and West 40 Landfill – Effluent discharge). It is necessary to understand where samples were collected to interpret sample results.

ECCC Recommendation(s):

ECCC recommends the Proponent clarify where the landfill samples were collected in 2023 and use location specific, clear sample names in future years.

If you need more information, please contact Jennifer Sabourin at Jennifer.Sabourin@ec.gc.ca.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Sabourin', written in a cursive style.

Jennifer Sabourin
Environmental Assessment Officer

cc: Eva Walker, Head, Environmental Assessment North (NT and NU)