Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

Water Resources Division
Resource Management Directorate
Nunavut Regional Office
918 Nunavut Drive
Iqaluit, NU, X0A 3H0

Your file - Votre référence
3AM-IQA1626
Our file - Notre référence
GCDocs#148783026

July 22, 2026

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
E-mail: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada's review of the City of Iqaluit 2025 Annual Report for Type A Water Licence No. 3AM-IQA1626 in the Qikiqtani Region of Nunavut

Dear Mr. Dwyer,

Thank you for the April 15, 2026 invitation to review the City of Iqaluit 2025 Annual Report and corresponding Appendixes A through G, for Type A Water Licence No. 3AM-IQA1626.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) reviewed the aforementioned 2025 Annual Report pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. **CIRNAC has 2 unresolved recommendations from the 2022 Annual Report, 7 unresolved recommendations from the 2023 Annual Report, 13 unresolved recommendations from the 2024 Annual Report, and 11 recommendations for the 2025 Annual Report.** Please find CIRNAC's comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact Michelle Blade at michelle.blade@rcaanc-cirnac.gc.ca or Andrew Keim at andrew.keim@rcaanc-cirnac.gc.ca.

Sincerely,

Michelle Blade
Regulatory and Science Advisor

Crown-Indigenous Relations and Northern Affairs Canada | Relations Couronne-Autochtones et Affaires du Nord Canada

Technical Review Memorandum

Date: July 22, 2026

To: Richard Dwyer, Manager of Licensing, Nunavut Water Board

From: Michelle Blade, Regulatory and Science Advisor

Subject: Crown-Indigenous Relations and Northern Affairs Canada's review of the City of Iqaluit 2025 Annual Report for Type A Water Licence No. 3AM-IQA1626 in the Qikiqtani Region of Nunavut

Region: ☐ Kitikmeot ☐Kivalliq ☒Qikiqtani

A. BACKGROUND

The City was issued Water Licence No. 3AM-IQA1626 on June 17, 2016, for a 10-year period that expires June 16, 2026. On June 17, 2026, a Short-Term Renewal Licence was issued - extending the expiry date of Water Licence No. 3AM-IQA1626 to December 13, 2026.

Water Licence No. 3AM-IQA1626 authorizes the following activities, works, and undertakings by the City:

- Use, management, and protection of the Lake Geraldine drainage basin.
- Management and protection of Waters surrounding the West 40 Landfill site.
- Management, collection, and monitoring of leachate from the West 40 Landfill site and adjacent Sludge Management Facility.
- Management of improved drainage works at the West 40 Landfill site.
- Management, operation, and eventual closure and reclamation of the current West 40 Landfill site and associated solid waste disposal facilities.
- Upgrades, operation, maintenance, monitoring, and eventual closure and reclamation of a Wastewater Treatment Plant (WWTP).
- Operation, maintenance, monitoring, and eventual closure and reclamation of a Sludge Management Facility.
- Operation, maintenance, monitoring and eventual closure and reclamation of a Sewage Lagoon Facility.
- Implementation of contingency measures for the Wastewater and Landfill management facilities.
- Implementation of changes to the monitoring requirements including frequency, parameters, and stations being monitored.

Since the Licence was issued in 2016, the City has applied for and received a series of amendments to the Licence, the following which are relevant to the period covered by the City of Iqaluit's 2023 Annual Water Licence Report:

- Amendment No. 4
  - effective April 1, 2020
  - allows seasonal replenishment of Lake Geraldine Reservoir from the Niaqunguk River (Apex River)

- Amendment No. 5
  - effective March 15, 2021
  - allows for construction and operation of new solid waste management facilities and water use from Imiqtarviviniq Lake (Dead Dog Lake)

- Amendment No. 6
  - effective October 15, 2021
  - allows for construction, operation, and removal of temporary facilities to truck water from the Sylvia Grinnell River
  - expired upon resolution of the state of emergency

- Amendment No. 7
  - effective August 22, 2022
  - allows replenishment of the Lake Geraldine Reservoir through withdrawal of water from an unnamed lake to the Niaqunguk (Apex) River and an increase in withdrawal from the Apex River
  - expired upon completion of the temporary withdrawals required to replenish the Lake Geraldine Reservoir in 2022

In its 2022 Annual Report, the City of Iqaluit reports that Amendment No. 7 was not implemented.

Through the amendments, the quantity of water withdrawal permitted has increased from 1,100,000 m^3 extracted annually from the Lake Geraldine Reservoir, authorized under Water Licence No. 3AM-IQA1626 issued in 2016, to the current annual withdrawal limits:

- 2,000,000 m^3 from the Lake Geraldine Reservoir (Amendment 4, 2020)
- 500,000 m^3 from Niaqunguk River (Apex River) for transfer to Lake Geraldine Reservoir (Amendment 5, 2021)
- 2,500 m^3 from Imiqtarviviniq Lake (Dead Dog Lake) (Amendment 5, 2021)

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) reviewed the 2025 Annual Report pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. As directed by the Nunavut Water Board on December 3, 2024, the 2024 Annual Report was to also address intervener outstanding comments from the City of Iqaluit 2021, 2022, 2023, and 2024 Annual Reports. CIRNAC's comments on the City of Iqaluit 2021 Annual Report were resolved through the City's response provided October 3, 2025. **CIRNAC has 2 unresolved recommendations from the 2022 Annual Report, 7 unresolved recommendations from the 2023 Annual Report, 13 unresolved recommendations from the 2024 Annual Report, and 11 recommendations for the 2025 Annual Report.**

A summary of the subjects of CIRNAC's comments and recommendations regarding the renewal application can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments are in Section C (2022 Annual Report), Section D (2023 Annual Report), Section E (2024 Annual Report), and Section F (2025 Annual Report).

Table 1: Summary of CIRNAC Comments and Recommendations

Subject	Recommendation Number	Status
Wastewater discharge reporting	R-02 on 2024 Annual Report	2024 – Unresolved 2025 – Unresolved (R-01)
Dam Safety Inspections/Dam Safety Reviews	R-03 on 2024 Annual Report R-04 on 2024 Annual Report	2024 – Unresolved 2024 – Unresolved 2025 – Unresolved (R-02)
Monitoring Program reporting	R-03 on 2022 Annual Report R-02 on 2023 Annual Report R-11 on 2023 Annual Report R-06 on 2024 Annual Report R-16 on 2024 Annual Report	2022 – Resolved 2023 – Unresolved 2023 – Unresolved 2024 – Unresolved 2024 – Resolved 2025 – Unresolved (R-03, R-04, R-05)
Construction activity reporting	R-07 on 2024 Annual Report	2024 – Unresolved 2025 – Unresolved (R-06)
Water Treatment and Waste Treatment Facilities modification/maintenance reporting	R-12 on 2023 Annual Report	2023 – Unresolved
Reporting on studies requested by the board	R-06 on 2023 Annual Report R-15 on 2023 Annual Report R-13 on 2024 Annual Report	2023 – Unresolved 2023 – Resolved 2024 – Unresolved 2025 – Unresolved (R-07)
Revisions to Plans, Manuals and Reports approved under the Licence	R-05 on 2022 Annual Report R-09 on 2024 Annual Report	2022 – Unresolved 2024 – Unresolved 2025 – Unresolved (R-08)
Spill reporting and follow-up actions	R-06 on 2022 Annual Report R-07 on 2023 Annual Report R-10 on 2024 Annual Report	2022 – Resolved 2023 – Unresolved 2024 – Unresolved 2025 – Unresolved (R-09)

Reporting on closure and reclamation work	R-11 on 2024 Annual Report	2024 – Resolved
Reporting on actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports	R-18 on 2024 Annual Report	2024 – Resolved
Updates on implementation plan, including changes and status of the Upgraded Wastewater Treatment Plant	R-12 on 2024 Annual Report	2024 – Unresolved
Update on landfill capacity		2025 – Unresolved (R-10)
Review of procedures for packaging, storage, and shipment of harmful hazardous waste	R-14 on 2024 Annual Report	2024 – Unresolved 2025 – Unresolved (R-11)

B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) provides a list of the documents reviewed under the submission and referenced during the review.

Table 2: Documents Reviewed and Referenced

Document Title, Author, File No., Rev., Date
Iqaluit Sewage Lagoon, DSR Requirement Investigation, Concentric Associates International Incorporated. 2012. 12-4487, June 29, 2012
Nunavut Water Board Type “A” Water Licence No. 3AM-IQA1626 NWB; 160617 3AM-IQA1626 Water Licence ONME; June 17, 2016
Licence No. 3AM-IQA1626 – City of Iqaluit; Amendment No. 4 – Seasonal Replenishment of Lake Geraldine Reservoir from the Niaqunguk River (Apex River) NWB; 190904 3AM-IQA1626 Amendment No. 4-OCHE; September 4, 2019
Licence No: 3AM-IQA1626 – City of Iqaluit; Amendment No. 5 – New Solid Waste Management Facility and Additional Water Source NWB; 210315 3AM-IQA1626 Amendment 5-ODDE; March 15, 2021
Crown-Indigenous Relations and Northern Affairs Canada’s Review of City of Iqaluit’s 2021 Annual Report for Water Licence 3AM-IQA1626 CIRNAC; 221005 3AM-IQA1626 2021 Annual Report CIRNAC Comments-IMLE; October 5, 2022

Document Title, Author, File No., Rev., Date
Crown-Indigenous Relations and Northern Affairs Canada's review of the City of Iqaluit 2022 Annual Report for Type A Water Licence No. 3AM-IQA1626 in the Qikiqtani Region of Nunavut CIRNAC; 230821 3AM-IQA1626 2022 Annual Report CIRNAC Comments-ILAE; August 22, 2023
Crown-Indigenous Relations and Northern Affairs Canada's review of the City of Iqaluit 2023 Annual Report for Type A Water Licence No. 3AM-IQA1626 in the Qikiqtani Region of Nunavut CIRNAC; 240806 3AM-IQA1626 2023 Annual Report CIRNAC comments-IMLE; August 6, 2024
City of Iqaluit Water Licence 3AM-IQA1626 2025 Annual Water License Report, 2022 – 2024 Annual Report Comments, Appendix G. 2025 Waste Generation and West 40 Landfill Airspace Projections. AECOM. 2025. March 24, 2025
Crown-Indigenous Relations and Northern Affairs Canada's review of the City of Iqaluit 2024 Annual Report for Type A Water Licence No. 3AM-IQA1626 in the Qikiqtani Region of Nunavut CIRNAC; 240806 3AM-IQA1626 2023 Annual Report CIRNAC comments-IMLE, July 28, 2025
City of Iqaluit, Sewer Upgrades, AV341-335 PROJECT No.FRN-23006637-AO, AUGUST 2025, Issued for Construction - August 15, 2025. Appendix B, EXP. 2025. PROJECT No.FRN-23006637-AO, August 15, 2025
City of Iqaluit, Water Licence 3AM-IQA1626, 2021-2024 Annual Report Review Response, October 3, 2025. City of Iqaluit, 251003 3AM-IQA1626 2021-2024 Annual report review response-IMLE, October 3, 2025
City of Iqaluit Water Licence 3AM-IQA1626 2025 Annual Water License Report, Appendix E. Lake Geraldine Water Balance Model Calibration Update – 2024 Refinement and Validation, WSP; November 12, 2025
NWB Technical Review of 2024 Annual Report for the City of Iqaluit; Water Licence No: 3AM-IQA1626. November 20, 2025
City of Iqaluit Water Licence 3AM-IQA1626 2025 Annual Water License Report, City of Iqaluit; 260331 3AM-1QA1626 2025 Annual report-IMLE; March 31, 2026
City of Iqaluit Water Licence 3AM-IQA1626 2025 Annual Water License Report, Appendix A Laboratory and Field Monitoring Results. City of Iqaluit; 260331 3AM-1QA1626 2025 Annual report-IMLE; March 31, 2026
City of Iqaluit Water Licence 3AM-IQA1626 2025 Annual Water License Report, Appendix C. Project Summary Report: Iqaluit 2025 Lake Geraldine Resupply (Apex River Supplementary Pumping Program): Report of Activities 3AM-IQA1626., Nunami Stantec Limited; Project Number: 144903621; March 31, 2026
City of Iqaluit Water Licence 3AM-IQA1626 2025 Annual Water License Report, Appendix D Spill Reports, City of Iqaluit; 260331 3AM-1QA1626 2025 Annual report-IMLE; March 31, 2026
City of Iqaluit Water Licence 3AM-IQA1626 2025 Annual Water License Report, 2022 – 2024 Annual Report Comments, Appendix F, City of Iqaluit; 260331 3AM-1QA1626 2025 Annual report-IMLE; March 31, 2026

C. LICENSEE RESPONSE TO CIRNAC UNRESOLVED RECOMMENDATIONS ON THE 2022 ANNUAL REPORT

3. Sampling for the monitoring and QA/QC program

CIRNAC Recommendation on 2022 Annual Report:

(R-03e) CIRNAC recommends the City of Iqaluit review and update operating procedures for pH control in the treated water entering the treated water reservoir to meet CDWQG.

CIRNAC Comment on the City of Iqaluit's Response:

(R-03e) In 2015 the Canadian Drinking Water Quality Guideline (CDWQG) for pH was updated to be 7-10.5 for treated water. Monthly third-party laboratory results included in the 2022 and 2023 Annual Reports along with the 2023 WTP log sheets included in appendix F of the 2023 Annual Report regularly have pH readings on finished water below the CDWQG guideline. Review of the WTP O&M manuals indicated that a caustic soda system is included at the WTP for treated water pH control, however an updated operating procedures for pH control in the treated water entering the treated water reservoir to meet CDWQG is not included.

City of Iqaluit Response to CIRNAC's Response:

(R-03e) We have provided the updated operating procedures for the Water Treatment Plant in appendix A. The City is consistently working to ensure that our water quality meets CDWQG.

CIRNAC Comment on the City of Iqaluit's Response:

(R-03e) The City of Iqaluit response indicates that operating procedures have been updated for the WTP. Review of 2024 WTP log sheets indicate that the pH recorded was regularly below the GCDWQ 7.0. CIRNAC recommends the City provide an update on steps taken to meet pH guideline.

City of Iqaluit Response to CIRNAC's Comment (2025):

The City is currently working with its Owner's Engineer to identify and evaluate options for improving pH levels to achieve compliance with the Canadian Drinking Water Quality Guidelines (CDWQG). This work includes a review of current operating procedures for pH control , as well as an assessment of whether any existing equipment requires modification, replacement, or further testing to support improved performance. Further updates on the outcome of this work and any planned operational or equipment changes will be provided in subsequent reporting periods.

CIRNAC Comment on the City of Iqaluit's Response (2025):

(R-03e) As part of the 2022-2024 Annual Report Comments (Appendix F), the City has acknowledged that it is working with it's Owner's Engineer to identify options for pH control. CIRNAC recommends that the City provide an update as part of the 2026 Annual Report (and subsequent reports if issue persists).

Status:

R-03e – Resolved.

5. Updated plans, manuals, and reports in 2022

CIRNAC Recommendation on 2022 Annual Report:

(R-05) CIRNAC recommends the City of Iqaluit update the 2022 Annual Report and corresponding documents to address Schedule B item j of the Water Licence. The plans, manuals, and reports to be addressed include, but are not limited to, the following:

- March, May, and June 2022 revisions to the General Site Information and Guide for the Iqaluit Water Treatment Plant,
- March 2022 Iqaluit Water Treatment Plant Operation and Maintenance Manual,
- City of Iqaluit Operations and Maintenance Manual Landfill and Waste Transfer Station (Aug 2022 Version 6.0),
- Updates to WWTP Operations and Maintenance Manual following substantial completion/commissioning, and
- Updates to the Iqaluit Water Treatment Plant Operation and Maintenance Manual to reflect the modifications of the filters to GAC media.

CIRNAC Comment on the City of Iqaluit's Response:

The updated 2022 Annual report, section J makes reference to updates that were completed to the respected O&M manuals. The text in the report does not include references to the wastewater treatment plant that had final completion in 2022 nor modifications to the process of the water treatment plant so it is unclear what was updated in these manuals.

The versions of the Iqaluit Water Treatment Plant Operation and Maintenance Manuals provided for review do not reflect the modifications of the filters to GAC media (it is listed as pending and has details on the old filter media throughout).

City of Iqaluit Response to CIRNAC's Response:

(R-05a) The May and June 2022 revisions to the General Site Information and Guide for the Iqaluit Water Treatment Plant are provided in the Appendix. However, there were no changes to the General Site Information and Guide in March. There were only updates to the Operation & Maintenance Manual in 2022.

(R-05b) The March 2022 Iqaluit Water Treatment Plant Process, Mechanical and Electrical Operation and Maintenance Manual are provided in the Appendix.
(R-05c) The Landfill and Waste Transfer Station are not yet commissioned. Once there are commissioned the City will provide the Operations and Maintenance Manuals for both facilities.
(R-05d) The City is awaiting a response from WSP and will provide this document once a response is received.
(R-05e) The latest version of the Operation and Maintenance Manual reflects the modifications to the GAC media at the time of the O&M publication. The January 2024 Operation and Maintenance Manual is provided the Appendix.

CIRNAC Comment on the City of Iqaluit's Response:
General Site information and Guide for the Iqaluit Water Treatment Plant was provided for review, along with the 2022 updated Iqaluit Water Treatment Plant Process, Mechanical and Electrical Operation and Maintenance Manual.

The updated WWTP Operations and Maintenance Manual following substantial completion was not provided (City is waiting on response from consultant WSP).

The latest version of the WTP O&M manual, updated in January 2024 was provided for review. Reference to the January 2024 update was not included in section J of the 2024 Annual Report (Any revisions required in the form of addenda, to Plans, Manuals and Reports approved under the Licence).

CIRNAC recommends that the remaining documents for the Landfill and Waste Transfer station, wastewater treatment plant and water treatment plant be submitted.

City of Iqaluit Response to CIRNAC's Comment (2025):
Updated O&M manuals will be provided as part of the City's response to the comments received on the renewal application.

CIRNAC Comment on the City of Iqaluit's Response (2025):
(R-05) As part of the 2022-2024 Annual Report Comments (Appendix F), the City has acknowledged that the remaining updated O&M manuals will be provided as the City's response to the comments received on the renewal application. On June 5, 2026, inspection of the City's Water Treatment Plant and Wastewater Treatment Plant are both utilizing O&M manuals dated April 2026. CIRNAC requests the April 2026 O&M manuals for the Water Treatment Plant and Wastewater Treatment Plant are submitted for inclusion and review during the Water Licence Renewal Application process.

Status:
R-05a – Resolved.
R-05b – Resolved.
R-05c – Unresolved.
R-05d – Unresolved
R-05e – Unresolved.

D. LICENSEE RESPONSE TO CIRNAC UNRESOLVED RECOMMENDATIONS ON THE 2023 ANNUAL REPORT

2. Sampling for the monitoring and QA/QC program

CIRNAC Recommendation on 2023 Annual Report:
(R-02a) CIRNAC recommends the City of Iqaluit update the 2023 Annual Report with the monitoring and sampling analytical results in accordance with Schedule I of the Water Licence.

CIRNAC Comment on the City of Iqaluit's Response:
The City of Iqaluit did not respond.

City of Iqaluit Response to CIRNAC's Response:
(R-02a) Unfortunately, due to the extensive data the city has collected on monitoring and sampling analytical results over the year, it is not possible to change the format to match Schedule I of the Water Licence. However, moving forward, the city will strive to provide the data in a table similar to Schedule I of the Water Licence, if feasible.

CIRNAC Comment on the City of Iqaluit's Response:
(R-02a) To clarify, CIRNAC does not expect the City to provide the data in a table similar to Schedule I of the Water Licence. CIRNAC recommends the City provide the sampling locations, sampling frequency, and analyses in compliance with Schedule I of Water Licence No. 3AM-IQA1626 in the 2024 Annual Report.

City of Iqaluit Response to CIRNAC's Response in the 2025 Annual Water Licence Report:
(R-02a) The City has procured the necessary equipment required to support sampling activities in April 2026.

CIRNAC Comment on the City of Iqaluit's Response in the 2025 Annual Water Licence Report:
(R-02a) The City's Response does not address CIRNAC's request.

Status:
R-02a – Unresolved.

6. Future Wastewater Treatment Plant studies planned

CIRNAC Recommendation on 2023 Annual Report:
(R-06) CIRNAC recommends the City of Iqaluit provide an update on future Wastewater Treatment Plant studies planned as per Schedule B item o.

CIRNAC Comment on the City of Iqaluit's Response:
The City of Iqaluit did not respond.

City of Iqaluit Response to CIRNAC's Response:
(R-06) The City of Iqaluit has no future Wastewater Treatment Plant studies planned.

CIRNAC Comment on the City of Iqaluit's Response:
(R-06) The City of Iqaluit response to CIRNAC Comments/Recommendations for the 2022 Annual report (Recommendation R-04), indicated that *"The City continues to address the operational challenges at the Wastewater Treatment Plant and implement remedial actions to ensure that the full treatment process is operational. The City has dedicated funds in 2024 to perform an holistic review of the plant and initiate updates and upgrades to parts of the system that are not operating as designed."* The City has not indicated that this review has been completed in 2024. CIRNAC recommends the City provide a status update on the 2024 holistic review.

City of Iqaluit Response to CIRNAC's Response (2025):
(R-06) Please refer to Section O of the 2025 Annual Report for City ongoing efforts.

CIRNAC Comment on the City of Iqaluit's Response:
(R-06) Section O of the 2025 Annual Report provides a summary of the current work to study the HVAC system at the WWTP, with a technical report expected to be provided in 2026 and to be included as part of the 2026 Annual Report. It also states that the City is working with the Owner's Engineer to review and optimize operations at the WWTP, along with developing an operational plan to improve effluent quality at the sewage lagoon. CIRNAC requests that the City provide an update on both the HVAC and process optimization work, along with any resulting updates to the WWTP O&M plans as part of the 2026 Annual Report.

Status:
R-06 – Resolved.

7. Un-authorized discharges and spills

CIRNAC Recommendation on 2023 Annual Report:
(R-07a) CIRNAC recommends the City of Iqaluit provide the estimates or ranges for spill volumes when precise measurements are not available. If estimating is not possible, explain why.

CIRNAC Comment on the City of Iqaluit's Response:
It is recommended that the City of Iqaluit develop a clear spill reporting process to capture (estimate) volumes and a reporting mechanism.

City of Iqaluit Response to CIRNAC's Response:
The comment has been acknowledged. Moving forward, the City will quantify the volume of spills based on the available information.

CIRNAC Comment on the City of Iqaluit's Response:
A total of only four spills were reported in the 2024 Annual Report, and three of the four spill reports did not include a volume of spill following CIRNAC's 2023 Annual Report recommendations. The City continues to omit the provision of information on the volume of spills. The City acknowledged that spill reports submitted as part of the 2024 Annual Report included entries where the discharge volume was not recorded and that they would appreciate CIRNAC's support by providing a sample reporting template or guidance document. CIRNAC requests confirmation that the City is recording volume of spills in 2025 and will be reporting them in the 2025 Annual Report.

City of Iqaluit Response to CIRNAC's Response in the 2025 Annual Water Licence Report:
(R-07a) The City will provide estimates or ranges for spill volumes going forward. If estimates are not provided an explanation of why this information is not included will be provided. Please refer to Section K of the 2025 Annual Report.

CIRNAC Comment on the City of Iqaluit's Response in the 2025 Annual Water Licence Report:
(R-07a) CIRNAC continues to request confirmation from the City that it is recording spill volumes in 2026 for inclusion in the 2026 Annual Report.

Status:
R-07a - Unresolved.

11. 2023 Sample Results

CIRNAC Recommendation on 2023 Annual Report:
(R-11a) CIRNAC recommends the City of Iqaluit advise if consideration has been given for exhaustion of GAC media and its ability to continue to remove hydrocarbons.

(R-11b) CIRNAC recommends the City of Iqaluit compile the lab results in an Appendix table with comparison to the applicable guidelines.

CIRNAC Comment on the City of Iqaluit's Response:
The City of Iqaluit provided a response addressing R- 11a. The comment indicates that GAC media has been functioning as expected. However, third-party analytical results from the 2023 Annual Report show that the GAC media is not providing TOC reduction, which would be expected for GAC media of this age. This could indicate that the media is becoming exhausted for the adsorption of organics in the water. This could impact the capacity for hydrocarbon removal if hydrocarbons were detected in the raw water. The City of Iqaluit did not respond to R-11b.

City of Iqaluit Response to CIRNAC's Response:
The City is awaiting a response from WSP and will address the comment once a response is received.

CIRNAC Comment on the City of Iqaluit's Response:
(R-11a) – The City of Iqaluit responded that comment will be provided once response is provided from consultant WSP. CIRNAC continues to request that the City include the response with their 2024 Annual Report response.

(R-11b) The City of Iqaluit did not respond and recommendation was not included in 2024 Annual report. CIRNAC reiterates R-11b that the City of Iqaluit compile the lab results in an Appendix table with comparison to the applicable guidelines.

City of Iqaluit Response to CIRNAC's Response:
(R-11a) The City contacted WSP for a response and WSP provided the following response – GAC capacity is tracked using turbidity post filter. There are setpoints for turbidity that will initiate a backwash once exceeded. If the turbidity is not exceeded after a period of time, the filter will initiate a backwash anyways based on time. This ensures the media stays fresh. If the media were exhausted, the turbidity would not be reduced post filter after a backwash

or the frequency of backwashing would start to increase showing the media wasn't being cleaned. We do not expect media replacement to occur very often.

City of Iqaluit Response to CIRNAC's Response (2025)

(R-11a) As part of the City's ongoing efforts, the City is currently working with its Owner's Engineer to review the performance of the Granular Activated Carbon (GAC) system, including consideration of media exhaustion and its continued ability to remove hydrocarbons effectively. If possible, the City would appreciate further clarification from CIRNAC regarding the specific information being requested under this item, so that a more targeted and complete response can be provided.

(R-11b) City would provide this table moving forward. Please refer to Section F of the 2025 Annual Report.

CIRNAC Comment on the City of Iqaluit's Response (2025)

(R-11a) As previously described in CIRNAC's response to R-11a and R-12, GAC media removes contaminants through both filtration and adsorption. While post-filter turbidity is an appropriate indicator of filtration (particulate removal) performance, it does not provide information on adsorption capacity, which is the primary mechanism for removing petroleum hydrocarbons (PHCs) and other organic compounds. As such, reliance on turbidity alone does not indicate the available GAC capacity to remove hydrocarbons in the event they are present in the raw water.

Because hydrocarbons are not typically present in the source water, direct monitoring of target contaminant breakthrough of the GAC media is not feasible under normal conditions. However, natural organic matter (NOM) present in the source water will continuously compete for and occupy adsorption sites within the GAC media, contributing to a gradual reduction in available adsorption capacity over time. Based on the water quality data provided in past annual reports, there does not appear to be a measurable reduction in organic parameters across the filters, which suggests that some adsorption capacity has been consumed and may impact performance to remove hydrocarbons.

Often GAC performance is assessed using a combination of surrogate water quality parameters (e.g., UV254 and/or TOC, with turbidity) and operational indicators such as bed volumes treated, which reflect cumulative loading on the media. This combined approach provides a more appropriate basis for evaluating remaining adsorption capacity and ensuring the GAC system remains effective for hydrocarbon removal when required.

CIRNAC requests that the City provide an update on the current review of the GAC system and consideration of media exhaustion.

(R-11b) As part of the 2022-2024 Report Comments (Appendix F of 2025 Annual Report), the City comments that they will provide this table moving forward and to refer to Section F of the 2025 Annual Report. Section F of the 2025 Annual Report then refers to the laboratory and field monitoring results available in Appendix A.

CIRNAC acknowledges that the sampling results have been provided in an appendix table. It appears that the sample results are compared to the analytical reporting limit (RL) for the specific analysis rather than the applicable regulatory or monitoring guidelines. CIRNAC requests that the City clarify if the reporting limit is for the analysis or to specify which monitoring or regulatory guidelines are being referenced.

Status:
R-11a – Unresolved.
R-11b – Unresolved.

12. Water Treatment Plant Report

CIRNAC Recommendation on 2023 Annual Report:
(R-12) CIRNAC recommends the City of Iqaluit provide information on how GAC capacity is being tracked and steps that are in place in the event that the GAC media has reached capacity and requires replacement.

CIRNAC Comment on the City of Iqaluit's Response:
The GAC filter media can remove contaminants through two different mechanisms: filtration and adsorption. The response describes the process of monitoring filter performance for particle removal based on filtered water turbidity. This applies to both the current GAC media and the previously used anthracite media. While necessary for filter performance and particle removal, monitoring turbidity does not monitor the GAC media adsorption capacity, which is the mechanism that would be used for removing hydrocarbons.

The GAC media has a porous structure, allowing target contaminants to be adsorbed onto the media. The adsorbed contaminants are not removed from the media through backwashing, resulting in a finite number of adsorption sites. Over time, these sites will become exhausted, and the media will no longer be able to remove containments through adsorption (and will rely on filtration only). Other adsorbable contaminants in the water can further reduce the GAC capacity to remove a target contaminant. This results in the media having a site-specific expected useful life and timeline for replacement. Monitoring for additional parameters beyond turbidity should be considered for evaluating the GAC

adsorption capacity over time (UV254 could be used as a surrogate parameter for organics, for example).

City of Iqaluit Response to CIRNAC's Response:

The City is awaiting a response from WSP and will address the comment once a response is received.

CIRNAC Comment on the City of Iqaluit's Response:

The City of Iqaluit responded that comment will be provided once response is provided from consultant WSP. CIRNAC recommends the response be included with the 2024 Annual report.

City of Iqaluit Response to CIRNAC's Response (2025):

(R-12) The City tracks GAC performance primarily through post-filter turbidity monitoring. Operational setpoints have been established such that if turbidity exceeds the defined threshold, a backwash cycle is automatically initiated. In addition, if the turbidity threshold is not reached within a specified period, the filter will still initiate a backwash based on time to ensure the media remains properly conditioned and effective. The City assesses potential GAC media exhaustion by monitoring overall filter performance trends. Indicators that the media may be approaching the end of its effective service life would include reduced post-filter turbidity removal following backwashing or an increase in the frequency of required backwash cycles, suggesting that the media is no longer being effectively cleaned or is losing treatment capacity.

CIRNAC Comment on the City of Iqaluit's Response:

(R-12) As previously commented and with comments provided for (R-11a), turbidity alone is not sufficient for monitoring GAC performance for hydrocarbon removal. CIRNAC is requesting that the City provide information on how the GAC capacity is being tracked, which could be via surrogate parameters such as TOC or UVT/UV254, or the volume of water filtered (also referred to as bed volume).

Status:

R-12 – Unresolved

E. LICENSEE RESPONSE TO CIRNAC UNRESOLVED RECOMMENDATIONS ON THE 2024 ANNUAL REPORT

2. Wastewater Discharge Reporting

CIRNAC Recommendation on the 2024 Annual Report:
(R-02) CIRNAC requests that the City record and report the annual treated sewage volumes discharged from the Sewage Lagoon (IQA-02) between July 30, 2024, and August 9, 2024, in the 2024 Annual Report.

City of Iqaluit Response (October 2025)
(R-02) City staff identified a factory defect with the installed flow meter. The unit has since been returned to the supplier, and the replacement flow meter is scheduled to be installed in preparation for 2026.

CIRNAC Comment on the City of Iqaluit's Response (October 2025)
(R-02) The City of Iqaluit's response indicated that there was a factory defect with the installed flow meter and that flow data was not collected during 2024. A replacement flow meter is scheduled to be installed in 2026.
It is recommended that the City provide an estimate of volumes discharged from the Lagoon in lieu of measured volumes.

City of Iqaluit Response (2025 Annual Report)
(R-02) The City experienced issues with the flow meter during this discharge event, and a replacement unit has since been procured.

CIRNAC Comment on the City's of Iqaluit's Response (2025 Annual Report)
(R-02) It is understood that the replacement flow meter would be installed in 2026. However, it is unclear if the City attempted to estimate the volume discharged from the sewage lagoon in 2024 in lieu of measured volumes.

CIRNAC requests that the City clarify if the City attempted estimating the volume of effluent discharged in 2024.

Status:
R-02 – Unresolved

3. Dam Safety Inspections / Dam Safety Review

CIRNAC Recommendation on 2024 Annual Report:
(R-03) CIRNAC recommends the following:

a) The City of Iqaluit complete the four “very high priority” deficiencies (two newly identified, and two previously identified) within the year:
    - Data collection from installed instrumentation (piezometers, thermistors)
    - Repair and cut all protrusions remaining from the grout injection repairs
    - Repair or relocation of the intake valve
    - Installation of CCTV instrumentation at the spillway
b) The City of Iqaluit provide a detailed plan that describes how the identified deficiencies will be addressed within the timelines provided in the DSR and DSI.
c) The City of Iqaluit detail all proposed and ongoing actions to address the deficiencies in future reports.

City of Iqaluit Response (2025 Annual Report)

(R-03a) Please refer to 2025 Annual Report Appendix > F-2022-2024 Annual Report Comments > Appendix Comments > A-DAM Deficiency List.

(R-03b) Please refer to 2025 Annual Report Appendix > F-2022-2024 Annual Report Comments > Appendix Comments > A-DAM Deficiency List.

(R-03c) Please refer to Section C of the 2025 Annual Report.

CIRNAC Comment on the City of Iqaluit’s Response:

(R03-a) CIRNAC acknowledges that the City is monitoring thermistors and recognizes that temperature trends are important for permafrost/embankment thermal regime and seasonal stability considerations. However, the recommendation explicitly included piezometers as well. Monitoring only thermistors does not satisfy the full intent of data collection from installed instrumentation. From a dam safety perspective, pore pressure data that can be collected using a piezometer is typically the most direct early indicator of internal erosion potential, changing seepage gradients, and hydraulic response during reservoir level changes and freeze thaw cycles. For future site activities and reporting, introduce and document piezometer data and provide a summary of data collected by both piezometers and thermistors in future Annual Report submissions.

CIRNAC acknowledges the City’s response that cutting/repairing protrusions from grout injection repairs is ongoing and is expected to be completed by end of 2026. As the recommendation identifies this item as a high priority and called for completion within the year, CIRNAC requests that the City report the progress and completion tracking by location in future Annual Report submissions.

CIRNAC acknowledges the City’s response that a third party has been retained to repair or relocate the Lake Geraldine intake valve, and that the design in progress will be

implemented in 2026. CIRNAC requests that the City report the design progress and anticipated implementation of the Lake Geraldine intake valve in the future Annual Report submissions.

CIRNAC acknowledges that the City is “looking into” installing monitoring instrumentation at the spillway in 2026. CIRNAC requests that the City provides a schedule for CCTV implementation at site.

(R03-b) CIRNAC acknowledges that the City is still working on the DSR and DSI plans to address previously identified deficiencies. CIRNAC requests that the City of Iqaluit provide a detailed plan that describes how the identified deficiencies will be addressed within the timelines provided in the DSR and DSI.

(R03-c) CIRNAC acknowledges that the City is still working on the DSR and DSI plans to address previously identified deficiencies. CIRNAC requests City of Iqaluit detail all proposed and ongoing actions to address the deficiencies in future reports.

Status:
R-03a – Unresolved
R-03b – Unresolved
R-03c – Unresolved

4. Dam Safety Inspections / Dam Safety Review for Wastewater Treatment Facilities
Comment:
Dam Safety Inspections (DSIs), and/or Dam Safety Reviews (DSRs) are required to be completed each year for the Wastewater Treatment Facilities. These reports are to be provided with the annual report. DSIs and DSRs do not appear to have been provided for the Wastewater Treatment Facilities. It is noted that the sewage lagoon contains two containment berms (east and west), which impound approximately 56,000 m^3 of material. The east berm is approx. 3.8 metres in height, and the west is up to 3.3 metres in height.
As per the Canadian Dam Association, a dam is any structure that is at least 2.5 metres high, and impounds at least 30,000 m^3 of material, or fewer if containing contaminated substances or poses a risk to the public. Additionally, the Sewage Lagoon Operation and Maintenance Manual details several tasks that should be completed as part of regular operations.

Several breaches have been reported in the past, including in 1981, 1991 and 1997. Regular inspection and maintenance of the berms is important to ensure the proper functioning of the treatment facility as well as the health and safety of citizens of Iqaluit. Following the

Canadian Dam Association Guidelines, a low-risk dam structure must undergo a DSR every 10-years. The last DSR appears to have been completed in 2012.

Recommendation:

(R-04) CIRNAC recommends that the City of Iqaluit:

a) Conduct a DSR and/or DSI for the Wastewater Treatment Facilities and provide the results in future annual reports.
a) CIRNAC notes that if a DSR has not been completed within the last 10-years, CIRNAC recommends that one be completed in 2025.
b) CIRNAC recommends a DSI be completed annually and submitted with future Annual Reports.

City of Iqaluit Response in the 2025 Annual Water Licence Report:

(R04-a) DSI would be conducted in 2026.
(R04-b) Please refer to 2025 Annual Report Appendix > F-2022-2024 Annual Report Comments > Appendix Comments > B-Sewage Lagoon Dam Safety Requirement
(R04-c) DSI would be conducted annually starting 2026.

CIRNAC Comment to the City of Iqaluit Response in the 2025 Annual Water Licence Report:

(R04-a) The City has not completed the required DSRs and DSIs within the 2025 Annual Report, but commits to completing a DSI in 2026.
(R04-b) The DSR provided by the City is dated 2012. The DSR is more than 10 years old; therefore, CIRNAC recommends the City commits to completing a DSR in 2026.
(R04-c) The City has committed to completing DSIs annually to be submitted with future Annual Reports.

Status:

R-04a – Unresolved
R-04b – Resolved
R-04c – Resolved

6. Monitoring Program Reporting

Comment:

Schedule I of Water licence 3AM-IQA1626 outlines the water quality monitoring criteria and water quality parameters for the facilities to meet. The following sample results or specific parameters are missing from the sampling that was reported for the Water Treatment Plant and Wastewater Treatment Plant:

a) IQA-01 Lake Geraldine Reservoir – Raw and Potable Water

- Annual report noted that samples were not collected for January and February 2024.
- Field ORP and conductivity were not provided for the monthly samples in 2024.
- December 2024 monthly bacteria sample was noted past hold time by third party lab.
- It is not explicitly stated in the lab reports that the water samples were submitted for “dissolved” metals; however separate samples were collected for Total Metals from the raw WTP and treated WTP which insinuates that the metals from the originally collected samples are dissolved metals as requested in the Water Licence.

b) IQA-02 Sewage Lagoon – Effluent Discharge Point
- Temperature, pH, ORP and conductivity field sample results were not provided.
- Flow measurements during decant were not provided.
- Bacteria samples for both the August 4th (i.e., during discharge) and August 9th (i.e., prior to completion of discharge) sample events were noted past hold time by third party lab.

c) IQA-04 Wastewater Treatment Plant - Effluent
- Annual report noted that samples were not collected for the months of March and September 2024. Sample results were reported as collected but were not provided in Appendix B for January and February 2024.
- Field ORP and conductivity were not provided for the monthly samples in 2024. Field pH and temperature were provided for several months but was inconsistent.
- Bacteria samples for August, November and December 2024 were noted past hold time by third party lab.
- Acute toxicity test results for IQA-04 were not provided for 2024.

d) IQA-05 Wastewater Treatment Plant - Influent
- Annual report noted that samples were not collected for the months of March and September 2024. Sample results were reported as collected but were not provided in Appendix B for January and February 2024.
- Field ORP and conductivity were not provided for the monthly samples in 2024. Field pH and temperature were provided for several months, but were inconsistent.
- Bacteria samples for August, November and December 2024 were noted past hold time by third party lab.
- The frequency of sampling required for IQA-05 is listed as *“no testing requirements following commissioning of the WWTP*”. However, it is acknowledged that the City continues to sample and report influent results as best practice.

e) IQA-06 Sludge – From WWTP

- Annual report indicated that quarterly sampling was conducted in accordance with Schedule I of the Water licence but sampling results for one sampling event (i.e., 2024-01-08) were not provided in Appendix B.
- Samples taken in May 2024, August 2024, and November 2024 were not analyzed for Biochemical Oxygen Demand (BOD), conductivity, pH, Nitrite-N and Nitrate-N. In addition, field readings of temperature, conductivity and pH were not reported on.
- Bacteria sample for November 2024 was noted past hold time by third party lab.

With respect to the laboratory certificates provided in Appendix B of the 2024 Annual Report, the client ID did not match the Station ID in the Water Licence.

Schedule I outlines requirements for stations relating to the West 40 Landfill effluent; however, the City indicated that *"there are no monitoring results for IQA-08 because the West 40 Landfill was not discharged in 2024."* Meanwhile samples IQA-08A and IQA-08B were collected from up-gradient and down-gradient of the West 40 Landfill, respectively, in June 2024. Schedule I specifies to sample these two stations annually, therefore the City is compliant with the Water Licence for these two stations. However, it was noted that the following parameters were not reported for these two locations:

f) Effluent analysis—temperature (field), pH (field), conductivity (field and lab)
g) Nutrient analysis—orthophosphate, nitrite, and nitrate
h) Flow—volume (m^3)

Schedule I also outlines requirements for stations relating to the Waste Transfer Station and North 40 landfill. These include the following monitoring stations:

i) IQA-15
j) IQA-16
k) SW-1 to SW-3
l) WS-100, WS-101, WS-102
m) 19MW-01 to 19MW-05
n) W-107 to W-111

The City has stated that these sites have not yet been commissioned, and as such, samples have not been collected. Monitoring of the leachate discharge will commence when the facilities are in use for municipal waste collection. The following statement was made in the 2024 Annual Report: "*The City is acknowledging that the monitoring results are missing for the following station IDs, relating to the Waste Transfer Station and North 40 Landfill.*" This statement is followed by Table 7, containing a summary of the 2024 sampling conducted. A summary of the station IDs where no sampling was conducted was not confirmed.

Amendment 5 added Item 1:I to the Water Licence, which is for the "*Construction and operation of the new solid waste management facilities, including the Waste Transfer Station, the New North Landfill, and associated infrastructure."* Monitoring requirements for

the stations relating to the Waste Transfer Station and the North 40 landfill during both construction and operation of these sites are outlined in Schedule I.

Part E, Item 4 of the Water Licence states: "*The Licensee shall ensure that Surface Drainage or surface Water runoff associated with site activities or generated during the construction of any facility designed to withhold, divert, or retain Water or Waste, does not exceed the following Effluent criteria: TSS Maximum Average Concentration: 50 mg/L; TSS Maximum Concentration of Any Grab Sample: 100 mg/L; pH between 6 and 9.*" This water quality criteria would apply to sample stations IAQ-02 (sewage lagoon), IAQ-08A (up-gradient of West 40 Landfill) and IAQ-08B (down-gradient of West 40 Landfill), however, there was no comparison or discussion of whether the analytical results met the compliance criteria.

There was also no mention of sampling methodology or if any field duplicates were collected and analyzed during the sampling events. The Water Licence did not mention QA/QC samples however the industry standard is that one field blank be collected per cooler and 10% blind duplicates be collected per sampling event, and if the total number of samples collected is less than five, include at a minimum, one blind duplicate.

Recommendation:

(R-06) CIRNAC requests that the City:

a) Conduct monitoring and sampling in accordance with Schedule I of the Water Licence. In particular, it is requested that the City follows the monitoring and sampling requirements for the following monitoring stations that had missing samples in 2024:

- IQA-01
- IQA-02
- IQA-04
- IAQ-05
- IAQ-06

b) Follows the monitoring and sampling requirements for the following monitoring stations that had missing sample parameters/analytes in 2024:

- IQA-01
- IQA-02
- IQA-04
- IAQ-05
- IAQ-06
- IAQ-08A
- IAQ-08B

e) CIRNAC requests that the City confirm the station IDs pertaining to the Waste Transfer Station and North 40 Landfill where no sampling was conducted and provide

an update as to when sampling of these monitoring stations will be conducted in the 2024 Annual Report.

f) Provide a summary report of data and information generated under the Monitoring Program in 2024 including: tabulated analytical results and comparison to applicable criteria; utilization of the station IDs in Water Licence 3AM-IQA1626 when submitting samples to the laboratory for analysis; if samples were not collected meeting the frequency requirement, provide an explanation as to why it was not done (e.g., weather); and, provide QA/QC data or provide an explanation as to why it was not done.

City of Iqaluit Response in the 2025 Annual Water Licence Report:

(R-06a) Please refer to Section F of the 2025 Annual Report for City ongoing efforts.
(R-06b) Please refer to Section F of the 2025 Annual Report for City ongoing efforts.
(R-06e) Monitoring of the Waste Transfer Station (WTS) and North 40 Landfill will begin 1 year before operation starts.
(R-06f) Please refer to Section F of the 2025 Annual Report for City ongoing efforts.

CIRNAC Comment on the City of Iqaluit's Response in the 2025 Annual Water Licence Report:

(R-06a) CIRNAC acknowledges the efforts made in the 2025 Annual Water Licence Report to meet the monitoring requirements of the Water Licence.
(R-06b) CIRNAC acknowledges the efforts made in the 2025 Annual Water Licence Report to meet the monitoring requirements of the Water Licence.
(R-06e) CIRNAC acknowledges that sampling and monitoring of WTS and North 40 Landfill will begin 1 year before operation starts.
(R-06f) CIRNAC acknowledges the efforts made in the 2025 Annual Water Licence Report to meet the monitoring requirements of the Water Licence, however, the response does not provide the tabulated 2024 analytical results with comparison to applicable criteria.

Status:

R-06a – Resolved
R-06b – Resolved
R-06e – Resolved
R-06f – Unresolved

7. Construction Activity Reporting

Comment:

The 2024 Annual Report provides a summary of construction activities carried out for the following facilities:

- North 40 Landfill

- Waste Transfer Facility
- LTWP – Supply and Storage
- Water Treatment Plant

Part F, Item 6 of the Water Licence states that *"the Licensee shall, submit to the Board for review, within ninety (90) days of completion of any structure authorized under this licence, to contain, withhold, divert or retain Water or Wastes; a construction summary report prepared by an Engineer that includes, among other relevant information, as-built drawings, documentation of field decisions that deviated from original plans, and any data used to support these decisions."* A construction summary report for each of these facilities was not included in the 2024 Annual Report.

CIRNAC comments on the 2023 Annual Report requested clarification on whether construction activities on the ATCO Loop sanitary sewer and watermain decommissioning and Federal Road Utilidor/ Watermain Extension were undertaken under Water Licence 3AM-IQA1626 and, if not, whether approval from the Nunavut Water Board has been obtained for these construction activities. The City has clarified that the construction works were carried out under Water Licence 3AM-IQA1626.

The City has not clarified whether the required notification was carried out prior to the construction. Part G, item 1 of the Water Licence 3AM-IQA1626 conditions requires the Licensee to notify the Board at least 60 days prior to commencing modifications of facilities authorized under this Licence. Further, Part G, item 3 of the Water Licence 3AM-IQA1626 conditions requires the Licensee to submit to the Board for review, within 90 days of completion of the modification, as-built plans and drawings stamped by an Engineer.

Recommendation:

(R-07) CIRNAC requests that the City provide the following:

a) A construction summary report for each of the North 40 landfill and waste transfer facility in the 2024 Annual Report or 2025 Annual Report, depending on the exact date that the facilities were complete.
b) Clarification as to whether the City notified the board in advance of construction activities carried out in 2023 and whether as-built plans and drawings stamped by an Engineer were provided to the board within 90 days of completion of those activities.

City of Iqaluit Response in the 2025 Annual Water Licence Report:

(R-07a) Please refer to 2025 Annual Report Appendix > F-2022-2024 Annual Report Comments > Appendix Comments > C-Construction Summary Report.

(R-07b) Please refer to Appendix > G-2022-2024 Annual Report Comments > Appendix Comments > C-Construction Summary Report. The City acknowledges that current City staff and the City's project management firm were not fully familiar with the notification requirements at the time. To address this, City staff have now been made fully aware of these requirements, and the City's project management firms will also be formally advised

to prevent this issue from recurring. IFC and as-built drawings will be provided moving forward.

CIRNAC Comment on the City of Iqaluit's Response in the 2025 Annual Water Licence Report:

(R-07a) CIRNAC acknowledges receipt of the construction summary report for each of the North 40 landfill and waste transfer facility in the 2025 Annual Water Licence Report.
(R-07b) CIRNAC acknowledges that current City staff and the City's project management firm were not fully familiar with the notification requirements at the time, and this will be addressed moving forward. CIRNAC also acknowledges receipt of the construction summary report for the ATCO Loop in the 2025 Annual Water Licence Report, and that IFC and as-built drawings will be provided moving forward. The construction summary report for the Federal Road Utilidor/ Watermain Extension is also in the 2025 Annual Water Licence Report but does not include drawings. CIRNAC requests confirmation that as-built plans and drawings stamped by an Engineer were provided to the board within 90 days of completion of those activities.

Status:

R-07a - Resolved.
R-07b - Unresolved.

9. Revisions to Plans, Manuals and Reports approved under the Licence

Comment:

In response to the 2022 Annual Report comments in regard to the WWTP O&M manual, the City responded that they are waiting on the consultant to provide response and the final O&M manual. The O&M manual was not provided as part of the 2024 Annual Report.
Section G and H of the 2024 Annual Report describes upgrades to the WTP and WWTP which included significant replacement or addition of equipment (such as new day tank system, replacement of UV units and raw water recirculation pump, new raw water sump pump, etc.) however, it stated that no revisions were made to the existing O&M manuals.

Recommendation:

(R-09b) CIRNAC requests that the City confirm that upgrades completed at the WTP and WWTP were direct replacements (no change in make/model) that would not result in modifications required for the O&M manuals to reflect upgrades.

City of Iqaluit Response (October 2025)

(R-09b) The City is actively addressing this matter and will confirm whether the replacements were direct. If the replacements are determined to be direct, no updates to the Operations and Maintenance (O&M) Manual will be required, as recommended.

CIRNAC Comment on the City of Iqaluit's Response (October 2025)

(R-09b) The City's response indicated that the O&M manuals are being reviewed.

City of Iqaluit Response (2025 Annual Report)

(R-09b) Updated O&M manuals will be provided as part of the City's response to the comments received on the renewal application.

Status:

R-09b - Unresolved.

10. Spill Reporting and Follow-Up Actions

Comment:

Schedule B item k of Water Licence No. 3AM-IQA1626 requires that the annual report provide "*a list and description, including volumes and Spill Report Line Identification Numbers, of all un-authorized discharges, spills and summaries of follow-up action taken*."

Four spills were reported in the 2024 Annual Report, of which three out of the four entries reported the spill volume as "Unknown," making it difficult to assess the impact of spills and adequacy of follow-up actions. The follow-up actions are repetitive and lack specificity.

Only wastewater spills were reported in Table 8 of the 2024 Annual Report; however, it is understood by CIRNAC that other spills have occurred, but are not being reported. All spills must be reported.

The 2024 Annual Report states: "*The City acknowledges that spill reports submitted included entries where the discharge volume was not recorded. We would appreciate the Board's support in this effort—if a sample reporting template or guidance document is available, it would be beneficial to inform our approach on recording discharge volume*." The 2024 Annual Report included a General Spill Response Plan which divides spills into small (<10 :), medium (10-100 L) and large (>100 L) spill categories and outline how the spill response measures vary for each type of spill. Additionally, the General Spill Response Plan includes a NWT/NU Spill Report Form to record spill information and there is a field for quantity of product spilled.

Recommendation:

(R-10) CIRNAC requests that the City provide the following:

b) Clarification as to whether it was considered a small (<10 L), medium (10-100 L) or large spill (>100 L) based on the spill types in the General Spill Response Plan. CIRNAC recommends adding this information to the NWT/NU Spill Report Form to aid personnel to quantify spills when completing a spill report by estimating the size of the spill (i.e., small, medium or large) at a minimum.

c) More details on the follow-up actions, especially if they differ between incidents. Provide details on how spills were collected and disposed of and specify if additional monitoring or corrective actions were taken.
d) Information on spills in addition to the reported wastewater spills.

City of Iqaluit Response in the 2025 Annual Water Licence Report:

(R-10b) An update Spill Contingency Plan will be provided as part of the City's response to the comments received on the renewal application.
(R-10c) Please refer to Section K of the 2025 Annual Report for City ongoing efforts.
(R-10d) Please refer to 2025 Annual Report Appendix > F-2022-2024 Annual Report Comments > Appendix Comments > D-Spill Report.

CIRNAC Comment on the City of Iqaluit's Response in the 2025 Annual Water Licence Report:

(R-10b) The City's response does not address the request.
(R-10c) CIRNAC acknowledges the efforts made in the 2025 Annual Report to meet the spill reporting requirements of the Water Licence, however, the response does not address the requested information on the 2024 spills.
(R-10d) CIRNAC acknowledges receipt of an additional spill report for the 2024 reporting period. The summary of the spill incident and efforts indicates that water samples were taken and a full internal report is underway and will be completed within 48 hours. CIRNAC requests that the City provide this internal report for review as part of its response to the 2025 Annual Report comments.

Status:

R-10b - Unresolved.
R-10c - Unresolved.
R-10d - Unresolved.

11. Reporting on Closure and Reclamation Work

Comment:

The 2024 Annual Report states that no closure and reclamation work were undertaken in 2024. With respect to the West 40 landfill, the 2024 Annual Report states that "*the landfill's remaining effective waste disposal capacity within Area A has been estimated at 60, 264 cubic meters, as of August 2024,*" and *"Area B offers 29,786 more cubic meters of potential capacity, bringing the total available landfill airspace to approximately 90,050 cubic meters."* There is no comment in the 2024 Annual Report on any closure and reclamation work planned for 2025 even though the North 40 Landfill and the Waste Transfer Station were substantially completed in 2024. It is noted that "*the City continues to accept and manage*

waste at the West 40 Landfill, these operations will continue until the City's decommissioning plan is submitted and then accepted by the Board one year to the planned closure."

Recommendation:

(R-11) CIRNAC requests the City provide an update as to when the Closure and Reclamation Plan for the for the West 40 Landfill will be submitted to the Nunavut Water Board.

City of Iqaluit Response in the 2025 Annual Water Licence Report:

(R-11) Closure and reclamation plan would be provided 1 year prior to commencing the decommissioning of the West 40 Landfill.

CIRNAC Comment on the City of Iqaluit's Response in the 2025 Annual Water Licence Report:

(R-11) CIRNAC acknowledges that the closure and reclamation plan would be provided 1 year prior to commencing the decommissioning of the West 40 Landfill.

Status:

R-11 - Resolved.

12. Updates on Implementation Plan, including changes and status of the Upgraded Wastewater Treatment Plant

Comment:

In response to the 2022 Annual Report comments in regard to the WWTP, the City responded "*The City continues to address the operational challenges at the Wastewater Treatment Plant and implement remedial actions to ensure that the full treatment process is operational. The City has dedicated funds in 2024 to perform a holistic review of the plant and initiate updates and upgrades to parts of the system that are not operating as designed."* The City did not provide an update on the holistic review described to be completed in 2024. Comments in the 2024 Annual Report and effluent results provided indicate that the WWTP is still dealing with operational deficiencies and providing limited treatment.

Recommendation:

(R-12) CIRNAC requests the City submit the holistic review report with the 2024 Annual Report, along with a plan and timeline to address the remedial actions identified in the report.

City of Iqaluit Response (October 2025)

(R-12) The 2024 holistic review was not completed due to staff turnover and differing approaches taken to address any issues at the Wastewater Treatment Plant (WWTP). At present, the City is in the process of planning necessary HVAC upgrades for the WWTP,

with detailed design scheduled to proceed in 2026. Appropriate notice will be provided as this project advances.

CIRNAC Comment on the City of Iqaluit's Response (October 2025)

(R-12) The City of Iqaluit response indicated that due to staff turnover and differing approaches to addressing the challenges at the WWTP, the holistic review was not completed. The City has indicated that upgrades to the WWTP HVAC system are in the planning stage with detailed design in 2026.

While it is noted that the HVAC upgrades are required for the WWTP, the HVAC design does not replace an overall study of operational challenges or deficiencies for systems not operating as intended.

City of Iqaluit Response (2025 Annual Report)

(R-12) A holistic review was not completed. At present, City staff are focusing on areas to improve the wastewater treatment plant (WWTP). Please refer to Section O of the 2025 Annual Report for City ongoing efforts.

CIRNAC Comment on the City of Iqaluit's Response (October 2025)

(R-12) CIRNAC acknowledges that the holistic review was not completed in 2024 and that the City is currently working with its Owner's Engineer to review and optimize operations. The response included in the 2025 Annual Report does not provide a timeline for addressing the issues at the WWTP (including the HVAC upgrades). CIRNAC requests a timeline for addressing the issues at the WWTP (including the HVAC upgrades) in the City's response to the 2025 comments.

Status:

R-12 - Unresolved

13. Reporting on Studies Requested by the Nunavut Water Board

Comment:

In 2023, CIRNAC requested an updated bathymetric survey, development of a new stage storage curve, and an updated Lake Geraldine Water Balance Model. In 2024, the Nunavut Water Board also recommended calibration of the Water Balance Model to account for the rapidly changing climate in the Arctic by using the most recent meteorological data available, compared to the previously used 2008 to 2017 meteorological information. A detailed bathymetric survey was completed in fall 2024 to supplement the Lake Geraldine Water Balance Model update. In the 2024 Annual Water Licence Report, the City indicated the bathymetric data has been sent to their engineering consultant to update the water balance model. See also CIRNAC comment R-09b on the 2021-2023 Annual Report Review Responses and the City's response "*The City of Iqaluit contracted GeoVerra to complete a*

bathymetric Survey in 2024. The results have been sent to our engineering consultant WSP to update the water balance model". An updated Water Balance Model report has not been submitted to the Nunavut Water Board.

In 2023, CIRNAC recommended the City of Iqaluit submit an updated Spill Contingency Plan that addresses the most common causes of spills and unauthorized discharges. In their 2024 Annual Water Licence Report response, the City indicated it has recently drafted a spill response plan that will be updated as required. An updated Spill Contingency Plan that specifies the most common causes of spills and unauthorized discharges and incorporates these causes into the Plan is still outstanding. See also CIRNAC comment R-06b on the 2022 Annual report and the City's responses in the 2024 Annual Report.

CIRNAC Recommendation on 2024 Annual Report:

(R-13) CIRNAC recommends the City of Iqaluit submit to the Nunavut Water Board:

a) An updated and recalibrated Lake Geraldine Water Balance Model to address the new bathymetric survey data collected in 2024 and the updated metrological information

City of Iqaluit Response (2025 Annual Report):

(R-13a) Please refer to 2025 Annual Report Appendix >F - Water Balance Model.

CIRNAC Comment on the City of Iqaluit's Response:

(R-13a) CIRNAC understands that the Lake Geraldine Water Balance Model has been recalibrated and validated using new information, including new bathymetric survey data collected in 2024 and recent meteorological information, as outlined in the Lake Geraldine Water Balance Model Calibration Update technical memorandum. An updated Water Balance Model report has not been submitted to the Nunavut Water Board. The Lake Geraldine Water Balance Model Calibration Update technical memorandum that was included with the 2025 Annual Report submission documents the recalibration and validation of the Lake Geraldine Reservoir Water Balance Model, incorporating the 2024 bathymetry. The technical memorandum does not include forecasting or reporting year analysis to predict 2025 reservoir conditions or forecast risk for the 2026 winter period, which was included in previous Annual Report submissions. CIRNAC requests that the City of Iqaluit provide an updated completion schedule for the Water Balance modelling and submit the updated Water Balance Model report as part of the Water Licence renewal process.

Status:

R-13a – Unresolved

14. Review of Procedures for Packaging, Storage, and Shipment of Hazardous Waste

Comment:

The 2024 Annual Report tabulates hazardous wastes and associated quantities in Table 9. The description column in Table 9 indicates "*removal, sealift, and final disposal*" for various hazardous wastes. For others, the description just includes the name of the hazardous waste (i.e., biomedical waste, contaminated soil, etc.) or a material used to manage hazardous wastes (i.e., supply and delivery of 20' seas containers, absorbent/rags/filters/totes, etc.). It is unclear whether these other materials are shipped for final disposal or remain on-site. It is also unclear whether the materials used to manage hazardous wastes (i.e., absorbent/rags/filters/totes, etc.) have been used and are now contaminated.

In addition, Part E, Item 19 of the Water Licence states that "*the Licensee shall maintain records of all Waste removed from site and records of confirmation of proper disposal of removed Waste.*" Records of confirmation of proper disposal of hazardous wastes shipped for final disposal were not included.

Recommendation:

(R-14) CIRNAC requests that the City:

a) Confirm which hazardous wastes have not been shipped for final disposal and how they will continue to be managed on-site.
c) Append records of confirmation of proper disposal of hazardous wastes shipped for final disposal to the 2024 Annual Report.

City of Iqaluit Response in the 2025 Annual Water Licence Report:

(R-14a) City confirms all hazardous wastes have been shipped for final disposal. Please refer to Section T -Table 6 of the 2025 Annual Report.

(R-14c) The City is currently awaiting documentation from the contractor confirming the proper disposal of waste removed from the site. This documentation will be provided once it becomes available. The City will also ensure that this information is incorporated into future annual reports.

CIRNAC Comment on the City of Iqaluit's Response in the 2025 Annual Water Licence Report:

(R-14a) CIRNAC acknowledges that all hazardous wastes have been shipped for final disposal.

(R-14c) CIRNAC acknowledges that documentation from the contractor confirming the proper disposal of waste removed from the site is pending. CIRNAC recommends this documentation is provided with the City's response to the 2025 Annual Report comments.

Status:
R-14a - Resolved
R-14c - Unresolved

16. 2024 Sample Results
Comment:
2024 Potable Water Treatment Plant pH results (monthly laboratory samples) and Weekly WTP Log pH results consistently did not meet the Canadian Drinking Water Quality Guidelines of 7 to 10.5 for sample results provided at IQA-01 in 2024. It should be noted that there were no sample results provided for the months of January and February 2024. It is unclear if the WTP is using the caustic soda system for pH adjustment.

Through the weekly Water Treatment Plant Logs, the WTP operators record the UV dose applied (MJ/cm²). In the 2023 log sheets submitted in response to the 2022 Annual report comments, the UV dose was consistently above 45 MJ/cm². From the 2024 log sheets, it appears that there was an adjustment to the UV power set point in late February/March, and following the adjustment, the UV dose was consistently reported as 25-30 MJ/cm². Generally, a minimum UV dose of 40 MJ/cm² is targeted for primary disinfection, unless approval by a regulator is provided for alternative UV dosages. From the available documentation, it is unclear if the WTP is required to supply a minimum dose of 40 MJ/cm² for primary disinfection, or if it approved for an alternative dose as part of the UV upgrades. Several sets of monthly potable water results for total organic carbon (TOC) show that treated water concentrations were equal to or greater than concentrations measured in the raw water, indicating that the GAC media may not be removing TOC. This could be an indication that the GAC media is becoming exhausted for TOC removal.

It is noted that S::CAN data for the WTP intake and treated water between the WTP and reservoir was not provided as part of the 2024 Annual Report, which was recommended to be included as part of the 2023 Annual report comments.

Under the current Water Licence, the WWTP does not have effluent discharge limits assigned to assess the facility's performance. Through review available of design criteria for the WWTP (3AM-IQA-1626 Process-Mechanical O&M, 2020), a reference was found that the WWTP upgrades were designed to meet effluent concentrations of less than or equal to 20 mg/L carboneous biological oxygen demand (cBOD) and total suspended solids (TSS) (to match the federal Wastewater System Effluent Regulations-WSER). This would align with the effluent quality generally expected from the primary and secondary treatment processes included in the WWTP upgrades. Monthly sample results provided in the 2024 Annual Report Appendix B for IQA-04 (Wastewater Treatment Plant Effluent) did not meet the effluent limits of 20 mg/L or less for cBOD and TSS during 2024. From the available

effluent data and commentary provided in previous Annual reports, it appears the WWTP is still faced with operational challenges and deficiencies even with the improvements or modifications that have been completed by the City following substantial completion in 2022. Analytical results in Appendix B were compared by CIRNAC against the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Aquatic Life, Marine, where available. The following findings were made:

- IQA-01: Lake Geraldine Reservoir – Raw Water, therefore sample results were not compared to CCME WQGs.
- IQA-02 (Sewage Lagoon – Effluent Discharge Point): The cadmium concentration for IQA-02 sampled on July 30, August 4 and August 9, 2024, were, 2024 were reported to be non-detect, however the detection limit was above the guideline (i.e., RDL was 5 mg/L and CCME WQG is 1.2 mg/L). Similarly, the mercury concentrations for IQA-02 sampled on July 30, August 4 and August 9, 2024, were reported to be non-detect, however the detection limit was above the guideline (i.e., RDL was 0.02 mg/L and CCME WQG is 0.016 mg/L).
- IQA-04 (Wastewater Treatment Plant – Effluent): The cadmium concentration for IQA-04 sampled on April 15, May 1, June 3, July 15, August 6, October 22, November 25 and December 3, 2024, was reported to be non-detect, however the detection limit was above the guideline (i.e., RDL was 5 mg/L and CCME WQG is 1.2 mg/L). Similarly, the mercury concentration for IQA-04 sampled on April 15, May 1, June 3, July 15, August 6, October 22, November 25 and December 3, 2024, was reported to be non-detect, however the detection limit was above the guideline (i.e., RDL was 0.02 mg/L and CCME WQG is 0.016 mg/L).
- IQA-05: Wastewater Treatment Plant – Influent sample, therefore sample results were not compared to CCME WQGs.
- IQA-08a and IQA-08b (Station situated up– and down-gradient of West 40 Landfill): The cadmium concentration for IQA-08 sampled on June 3, 2024, was reported to be non-detect, however the detection limit was above the guideline (i.e., RDL was 5 mg/L and CCME WQG is 1.2 mg/L). Similarly, the mercury concentration for IQA-08 sampled on June 3, 2024, was reported to be non-detect, however the detection limit was above the guideline (i.e., RDL was 0.02 mg/L and CCME WQG is 0.016 mg/L).

Recommendation:

(R-16) CIRNAC requests that the City provide the following:

a) A compilation of the lab results in an Appendix table with comparison to the applicable guidelines or instruct the lab to include the guidelines in the lab report for easy reference and comparison.

d) S::CAN data results (either tabular or as a screenshot graph) for review.

City of Iqaluit Response to CIRNAC's Response (October 2025):

(R-16a) Outstanding – City is working on it.

(R-16d) S::CAN data was not available for 2024 however the City can now access S::CAN data through a web-based portal so download and data storage procedures are not required. S::CAN data should be accessible through the web-based portal beginning with the 2025 annual report.

CIRNAC Comment on the City of Iqaluit's Response (October 2025):

(R-16a) The City's response indicated that this is in progress but was not included.

(R-16d) – The City confirmed that S::CAN data is not available for 2024 for review. It was noted that the data is now accessible via a web portal, and will be available to be included in the 2025 Annual Report.

City of Iqaluit Response to CIRNAC's Response (2025 Annual Report):

(R-16a) Please refer to Section F of the 2025 Annual Report for City ongoing efforts

(R-16-d) Please refer to 2025 Annual Report Appendix > F-2022-2024 Annual Report Comments > Appendix Comments > E-S-CAN Data

CIRNAC Comment on the City of Iqaluit's Response (2025 Annual Report):

(R-16a) CIRNAC acknowledges that efforts were made to compile the laboratory results in the summary table for 2025.

Status:

R-16a - Resolved.

R-16d - Resolved.

18. General Spill Response Plan

Comment:

The 2024 Annual Report summarizes actions that will be taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector. Specifically, on-site training for staff with respect to hazardous waste handling practices will be conducted in June 2025; two 20-foot dangerous good containers equipped with integrated secondary containment systems are scheduled to arrive at the West 40 Landfill during the 2025 sealift season; and fencing will be installed along the eastern boundary of the West 40 landfill by August 2025. There is no comment on what mitigative actions have been taken until training is conducted, materials are received, and fencing is implemented.

Recommendation:

(R-18) CIRNAC requests that the City:

a) provide a summary of actions taken in the short-term to address the concerns raised in the 2024 inspection reports.

City of Iqaluit Response in the 2025 Annual Water Licence Report:
(R-18a) The City acknowledges that the outstanding item remaining is the installation of a large section of fencing surrounding the landfill. As part of the City's ongoing corrective efforts, the procurement process has been reinitiated to ensure that the required fence extension is installed in 2026. In the interim, miscellaneous materials like sea cans are being used to provide temporary fencing and to help secure the area until the permanent fence is constructed.

CIRNAC Comment on the City of Iqaluit's Response in the 2025 Annual Water Licence Report:
(R-18a) CIRNAC acknowledges that miscellaneous materials like sea cans are being used to provide temporary fencing and to help secure the area until the permanent fence is constructed.

Status:
R-18a - Resolved.

F. CIRNAC RECOMMENDATIONS ON THE 2025 ANNUAL REPORT

1. Effluent volume discharged from Sewage Lagoon

Comment:
Item B of the 2025 Annual report states that a total volume of 8,208 m³ of effluent was discharged from the Sewage Lagoon to Frobisher Bay (IQA-02) in August 2025. From previous City responses on the 2024 Annual Report comments (R-02), City staff had identified a factory defect with the installed flowmeter and that a replacement flow meter is scheduled to be installed in 2026. It is unclear if the flow reported in the 2025 Annual Report is an estimated value or if measured via flow meter.

Recommendation:
(R-01) CIRNAC requests that the City clarify if the effluent volume reported for the Sewage Lagoon was estimated or if the flow meter was installed prior to the discharge period.

2. Dam Safety Inspections/Dam Safety Reviews

Comment:

The City acknowledges that no Dam Safety Inspections (DSIs) were completed in 2025 for either the Lake Geraldine Dam or the Wastewater treatment facilities.

Unresolved comments from the 2024 Annual Report Review recommended that if a Dam Safety Review (DSR) has not been completed in the last ten years, that one be completed in 2025. The response to this unresolved comment from the 2024 Annual Report Review referenced Appendix B - Sewage Lagoon Dam Safety Requirement, which contains an outdated report titled, Iqaluit Sewage Lagoon DSR Requirement Investigation (dated June 29, 2012). In addition, there is no other mention of Dam Safety Reviews in the 2025 Annual Report other than the City initiated procurement processes to retain a qualified consultant to provide these services and the consultant will also be required to provide training to current City operational staff to improve internal understanding of DSI and DSR requirements and to support the City to assist in inspections. The City also states this work is intended to inform current operational staff of identified deficiencies and better equip them to develop plans to address them in subsequent years.

Although a DSI was not completed in 2025, the plan to address dam deficiencies was provided in Appendix A - DAM Deficiency List, in response to the unresolved comments from the 2024 Annual Report Review showing a list of deficiencies along with proposed remedial actions and timelines for completion. Select items in the deficiency list have been determined by the City not to require any additional actions.

Recommendation:

(R-02) CIRNAC recommends that the City provide the following:

a) A DSR completed in 2026 for Wastewater treatment facilities with the 2026 Annual Report.
b) Detailed explanation as to why deficiencies that were previously identified in the DSI's and/or DSR's do not require remedial actions in response to the 2025 Annual Report comments.

3. Monitoring Program Reporting – Schedule to Support Sampling Activities

Comment:

Schedule I of Water Licence No. 3AM-IQA1626 outlines the water quality monitoring criteria and water quality parameters for the facilities to meet. In Section F of the 2025 Annual Water Licence Report, the City acknowledged that certain required parameters were not analyzed during the reporting period and provided a schedule to address these deficiencies and to

achieve compliance with the Monitoring Program going forward. Specifically, it is noted that the *"City has procured the necessary laboratory equipment required to support testing of the parameters associated with the monitoring stations, and this testing will be undertaken in 2026. In addition, the City's third-party laboratory has been advised of the parameters that were previously omitted from testing, and these will be included in the monitoring program moving forward. The missing field parameters were primarily the result of current City staff not being fully aware of all required testing parameters at the time of sampling. To address this, ongoing efforts have been undertaken to familiarize operational staff with the applicable monitoring requirements and sampling procedure (including QA/QC)."* However, details regarding the specific equipment procured and the nature of the training or measures being implemented to support staff remain unclear.

Recommendation:

(R-03) CIRNAC requests that the City provide the following in response to the 2025 Annual Report comments:

a) Clarify what equipment was procured to support testing.
b) Clarify efforts taken to familiarize operational staff with the applicable monitoring requirements and sampling procedure in 2025 and annually moving forward.

4. Monitoring Program Reporting - 2025 Sampling Results (Appendix A)

Comment:

Under Part I, Item 10 and Schedule B, Item f, of the Water Licence, the City is required to provide a summary report that includes all data and information generated under the Monitoring Program as requested by an Inspector and/or the Board.

CIRNAC notes that 2025 potable water treatment plant pH results (monthly laboratory samples) consistently did not meet the Canadian Drinking Water Quality Guidelines (GCDWQ) of 7 to 10.5 for sample results provided at IQA-01 in 2025.

Several sets of monthly potable water results for total organic carbon (TOC) show that treated water concentrations were equal or greater than concentrations measured in the raw water, indicating that the GAC may not be removing TOC. This could be an indication that the GAC media is becoming exhausted for TOC removal and may impact media performance to remove hydrocarbons in the event of detections. This aligns with comments provided for previous annual reports regarding monitoring GAC media exhaustion.

CIRNAC acknowledges that efforts have been made to collect S::CAN data for the WTP intake and treated water and that the data was provided in response to the 2024 Annual Report.

CIRNAC acknowledges that the City has undertaken efforts to provide the sample results in a summary report format based on previous feedback. Previous feedback provided included reference to including applicable guidelines for comparison purposes, which was not included in the 2025 summary table.

Under the current Water Licence, the WWTP does not have effluent discharge limits assigned to assess the facility's performance. Previous documentation for the facility indicated that the upgrades were designed to meet effluent concentrations of less than or equal to 20 mg/L CBOD and TSS, which would align with effluent quality generally expected from the treatment processes at the WWTP. Monthly sample results provided in the 2025 Annual Report Appendix A for IQA-04 (Wastewater Treatment Plant Effluent) exceeded the limits described and were higher than what would be expected by membrane treatment. This aligns with comments provided for the 2024 Annual report and indicates that the WWTP is still faced with operational challenges.

Recommendation:

(R-04) CIRNAC requests that the City provide the following in response to the 2025 Annual Report comments:

a) S::CAN data for the WTP intake and treated water as part of the summary report in the Annual Reporting.
b) Applicable guidelines in the monitoring report for ease of reference and comparison
c) A status update of steps completed to date on troubleshooting/investigating operational challenges at the WWTP along with implementation plan
d) Status update on the pH adjustment at the WTP to meet GCDWQ limits
e) Update on method and/or parameters the City is using to monitor GAC exhaustion along side turbidity measurements

5. Monitoring Program Reporting - West 40 Landfill Effluent Discharge Point (IQA-08)

Comment:

Schedule I of Water Licence No. 3AM-IQA1626 requires monitoring at IQA-08 (West 40 Landfill – Effluent Discharge Point) once prior to discharge, once during discharge, and once prior to the completion of discharge for biological parameters, effluent parameters, nutrients, ICP – metals scan (total), flow and landfill specific parameters.

An inconsistency was identified in the 2025 Annual Water Licence Report with respect to monitoring at Station IQA-08. Section B of the 2025 Annual Water Licence Report states that *"the West 40 landfill (Station ID IQA-08) did not discharge any effluent in 2025,"* however, one (1) sample was taken at IQA-08 and analyzed.

Recommendation:
(R-05) CIRNAC requests that the City confirm whether any effluent discharge occurred from the West 40 Landfill (Station IQA-08) during the 2025 reporting period. If no discharge occurred, clarify the purpose and conditions under which the sample at IQA-08 was collected and analyzed (e.g., pre-discharge, standing water, or other rationale).

6. Construction Activity Reporting

Comment:
Schedule B, item g, of Water Licence No. 3AM-IQA1626 requires that the City provide a summary of all construction activities carried out for facilities under the Licence. The 2025 Annual Report references the design and construction of a permanent lined fuel containment berm. However, this incident was not included in Section G of the report.

Recommendation:
(R-06) CIRNAC requests that the City provide details on the design and construction of the permanent fuel containment berm constructed in 2025.

7. Lake Geraldine Water Balance Model Calibration Update Report Data

Comment:
The Lake Geraldine Water Balance Model Calibration Update report provided in the 2025 Annual Report submission identifies gaps in available data and notes the potential influence of ice pressure, which was not considered in the calibration and validation process. The report notes: *"It is recommended to complete the identified data gaps, including daily water consumption and emergency pumping volumes from 2018 and 2019, to allow for an extended calibration period. Also, it is recommended to verify the potential impact of ice pressure on water level measurements during the lake's ice-covered period."*

Recommendation:
(R-07) CIRNAC recommends the City of Iqaluit provide the following:

a) An updated and recalibrated Lake Geraldine Water Balance Model to include water consumption data and emergency pumping volumes for 2018 and 2019.
b) An updated and recalibrated Lake Geraldine Water Balance Model with verification of the potential impact of ice pressure on water level measurements during the lake's ice-covered period.

8. Revisions to Plans, Manuals and Reports approved under the Licence

Comment:

No updated Plans and Manuals, or associated addenda with revisions required, were provided with the 2025 Annual Report. It is noted in the 2025 Annual Report that updated O&M manuals will be provided as part of the City's response to the comments received on the renewal application.

The response to the unresolved comments from the 2024 Annual Report Review also states that updated O&M manuals, as well as an updated Spill Contingency Plan, will be provided as part of the City's response to the comments received on the renewal application.

CIRNAC understands that various Plans and Manuals are outstanding, including but not limited to the Monitoring Plan and Quality Assurance/Quality Control Plan, Inspection Plan, Explosives Management Plan and Refueling Plan, as well as O&M Manuals for the Landfill and Waste Transfer Station, Wastewater Treatment Plant and Water Treatment Plant.

Recommendation:

(R-08) CIRNAC recommends the City of Iqaluit provide any updated plans with future Water Licence Renewal Applications for review and approval.

9. Spills and Follow-up Actions

Comment:

Schedule B, item k, of Water Licence No. 3AM-IQA1626 requires the City to provide a list and description, including volumes and Spill Report Line Identification Number, of all un-authorized discharges, spills and summaries of follow-up action taken. Section K of the 2025 Annual Water Licence Report describes three (3) sewage spills.

With respect to follow-up actions, the general approach described involved the use of a vacuum truck to recover spilled sewage to the extent practicable, with the recovered material transported to the Wastewater Treatment Plant for appropriate disposal. In two of the three cases, this was followed by scraping and cleaning of the affected area by City road crews to remove residual waste and debris, and a subsequent inspection to confirm that cleanup had been completed. However, based on the information provided, it is unclear whether any

impacted soil was excavated and removed as part of the response. As such, there is potential for residual impacts, including infiltration of pathogens, nutrients (e.g., nitrogen and phosphorus), and organic matter into underlying soils or migration via surface runoff to nearby watercourses.

The 2025 Annual Report also references a suspected fuel spill at a pumping site, which reportedly prompted a soil investigation, implementation of mitigation measures, and the design and construction of a permanent lined fuel containment berm. However, this incident was not included in Section K of the report, nor was a spill report provided, as required under the Water Licence. The Apex River Supplemental Pumping Report further notes that a fuel spill was identified during setup by the contractor, with subsequent remediation involving test pit excavation and soil sampling to assess potential contamination at the pumping site. No additional details regarding the extent of the spill, analytical results, or the effectiveness of remediation measures were provided.

It is also noted that Nunami Stantec were not present on-site during or following construction of the fuel containment berm, and confirmation of its installation and adequacy was completed solely by the City of Iqaluit.

Recommendation:

(R-09) CIRNAC requests that the City provide the following in response to the 2025 Annual Report comments:

a) Confirmation as to whether impacted soil was excavated and removed as part of the response actions for the three (3) reported sewage spills. If soil was not removed, justify the selected cleanup approach and assess the potential for residual impacts to soil and nearby watercourses.
b) All available documentation related to the suspected fuel spill, including spill reports, field investigation results (e.g., test pit logs and soil analytical data), and confirmation of remediation outcomes.
c) Confirmation of how the adequacy of the fuel containment berm was verified, including any inspection records, quality assurance/quality control (QA/QC) documentation, or third-party review, given that Nunami Stantec was not present during or after construction.

10. West 40 Landfill Capacity

Comment:

Schedule B, item u, of Water Licence No. 3AM-IQA1626 (Amendment 5) requires the City to provide an update on the capacity of the landfill cell currently in use, including the

installation timing calculation (inputs and results), including discussion on the required actions/schedule for the design and installation of the next lined disposal area in the sequence. Section U of the 2025 Annual Water Licence Report provides an adequate response and refers to Appendix G (2025 Waste Generation and West 40 Landfill Airspace Projections Letter Report) for more information. In the Landfill Airspace section of the Report, it is noted that *"the City has recently obtained an RB6000 metal crusher that can be employed to bale a large portion of the stored scrap metal. Baling the metal for off-site transfer can potentially add more airspace to the Landfill which could be used as an emergency disposal area in the event of a disposal constraint at the new balefill facility. The New Bailer is not yet in operating condition to remove metal, approx. 2000 m^3 bailer needs to be removed by this November."*

Recommendation:
(R-10) CIRNAC requests that the City provide an update as to when the new bailer will be in operation.

11. Review of Procedures for Packaging, Storage, and Shipment of Hazardous Waste

Comment:
Part E, Item 19 of the Water Licence states that "*the Licensee shall maintain records of all Waste removed from site and records of confirmation of proper disposal of removed Waste.*" Although hazardous wastes shipped for final disposal in 2025 are tabulated in the 2025 Annual Report, records of confirmation of proper disposal of hazardous wastes have not been attached.

Recommendation:
(R-11) CIRNAC requests that the City obtain records confirming the proper disposal of hazardous wastes shipped for final disposal each year and append those records to the Annual Report moving forward.