



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
P.O. Box 100
Iqaluit, NU, X0A 0H0

Your file - Votre référence
3AM-IQA1626
Our file - Notre référence
GCDocs# 99318825

December 6, 2021

Richard Dwyer
Manager of Licencing
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 City of Iqaluit's Water Treatment Plant Operation and Maintenance Manual for water licence 3AM-IQA1626

Dear Mr. Dwyer,

Thank you for your November 5, 2021 invitation to review the above-referenced manual.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the water treatment plant operation and maintenance manual 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*. Please find CIRNAC comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at david.zhong@rcaanc-cirnac.gc.ca or Andrew Keim at andrew.keim@rcaanc-cirnac.gc.ca.

Sincerely,

David Zhong,
Regulatory & Science Advisor



Technical Review Memorandum

Date: December 6, 2021

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

From: David Zhong, Regulatory & Science Advisor, CIRNAC

Subject: Crown-Indigenous Relations and Northern Affairs Canada's Review of City of Iqaluit's Water Treatment Plant Operation and Maintenance Manual for water licence 3AM-IQA1626

Region: Qikiqtani

A. BACKGROUND

On November 5, 2021, the Nunavut Water Board (NWB) invited interested parties to submit comments on a Water Treatment Plant Operation and Maintenance (WTP O&M) Manual submitted by the City of Iqaluit (the licensee). Comments are due December 6, 2021.

Part D, Item 2 of water licence 3AM-IQA1626 reads:

"The Licensee shall submit to the Board for approval, within sixty (60) days of the Effective Date of the Licence, an updated manual for the potable Water Treatment Facility. The Manual shall be prepared in accordance with relevant aspects of the format outlined in the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories (GNWT, 1996)*. The manual shall, address among other items, the following:

- a. Purpose of facility;
- b. Site setting;
- c. Operational procedures for storage, treatment and distribution of potable Water; Waste generated and hazardous substances associated with the facility; site inspections; and personnel training;
- d. Maintenance procedures including equipment servicing;
- e. Sampling and monitoring requirements; and
- f. Emergency response measures."



Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) reviewed the WTP O&M manual 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*. 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.

Table 1: Summary of Comments and Recommendations

Recommendation Number	Subject
R-01	Timely submission of WTP O&M manual
R-02	Emergency response for fire events
R-03	Description of operational and maintenance procedures
R-04	Standard operating procedures for daily inspection and reporting
R-05	Standard operating procedures for sampling and monitoring
R-06	As-built drawings
R-07	As-built drawings for foundations and supporting structures of WTP

B. DOCUMENTS REVIEWED AND REFERENCED

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

Table 2: Documents Reviewed and Referenced

Document Title	Author, File No., Rev., Date
3AM-IQA1626 WTP O&M Manual Cover Letter	Amy Elgersma, Chief Administrative Officer, City of Iqaluit, November 5, 2021
Iqaluit Water Treatment Plant Operation & Maintenance Manual	City of Iqaluit, December 2018
Water Licence 3AM-IQA1626	Nunavut Water Board June 17, 2016
Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories	Diep Duong and Ron Kent, Northwest Territories Municipal and Community Affairs, October 1996



C. RESULTS OF REVIEW

1. Timely Submission of the WTP O&M Manual

Comment:

CIRNAC notes that Water Licence 3AM-IQA1626 was issued on June 17, 2016 and Part D, Item 2 of the licence stipulates that “(T)he Licensee shall submit to the Board for approval, within sixty (60) days of the Effective Date of the Licence, an updated manual for the potable Water Treatment Facility.” The WTP O&M Manual, which was updated in December 2018, was submitted to the NWB on October 26, 2021.

Recommendation:

(R-01) CIRNAC recommends that the licensee comply with the terms and conditions of its water licence in the future.

2. Emergency Response for Fire Events

Comment:

Section 6.2 of Chapter 6 on emergency response states:

“For this section, details will be added at a later time to address the following information:

- *The designated muster points in the event of a fire.*
- *The primary responder during a fire event (e.g., apart from the local City fire department, operators may also be trained to address fires on site).*
- *Locations of all the manual fire alarm pull stations in the WTP.”*

Recommendation:

(R-02) CIRNAC recommends that the details of emergency response for fire events be added to the WTP O&M Manual as soon as possible.

3. Description of operational and maintenance procedures

Comment:

Part D, Item 2 of Water Licence 3AM-IQA1626 stipulates that “(T)he Manual shall be prepared in accordance with relevant aspects of the format outlined in the **Guidelines for**



the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories, 1996.” The guidelines require that “*the O&M manual must include a description of how facilities are operated and maintained, how often these tasks are performed and who is responsible for their completion.*”

CIRNAC notes that on page eight (8) of the WTP O&M Manual, it is stated that “*(T)he intent of this Operations and Maintenance (O&M) manual is to provide the operations and maintenance personnel with a clear and concise understanding of how the City of Iqaluit Water Treatment Plant (WTP) operates, and the steps that must be followed to ensure that the facility is running safely and efficiently.*”

CIRNAC finds, however, that the WTP O&M manual provided only a summary of the operational and maintenance procedures but not an adequate description of how the facilities are operated and maintained for the operator to follow.

Recommendation:

(R-03) CIRNAC recommends that the WTP O&M manual be updated to include a step-by-step description of the operational and maintenance procedures for the operator to follow.

4. Standard operating procedures for daily inspection and reporting

Comment:

Chapter 4 of Section 1 of the WTP O&M Manual provides a brief description of the requirements of daily inspection and reporting of the WTP. No standard operating procedures for such tasks are included in the manual.

Recommendation:

(R-04) CIRNAC recommends that the licensee revise the WTP O&M Manual to include detailed standard operating procedures for the daily inspection and reporting.

5. Standard operating procedures for sampling and monitoring

Comment:

Sub-section 6.8 of Chapter 6 of Section 4 of the WTP O&M Manual provides a brief description of the requirements of daily sampling and monitoring of both the raw water and the treated water. No standard operating procedures for the daily sampling and monitoring (or in-situ measurements) of the raw water and the treated water are presented in the manual.



Recommendation:

(R-05) CIRNAC recommends that the licensee revise the WTP O&M Manual to include detailed standard operating procedures for the daily sampling and monitoring (or in-situ measurements) of the raw water and the treated water.

6. As-built drawings

Comment:

Three as-built drawings are included in the WTP O&M Manual (i.e., pages 2,694-2,696). CIRNAC notes that these as-built drawings are not signed and stamped by a qualified engineer.

Recommendation:

(R-06) CIRNAC recommends that all as-built drawings in the WTP O&M Manual be signed and stamped by the qualified engineers.

7. As-built drawings for the foundations and supporting structures of the WTP

Comment:

While CIRNAC was able to locate the manufacturer's instructions regarding installation, operation and maintenance for the fan unit (i.e., page 1,373), CIRNAC could not locate the as-built drawings for the foundations and supporting structures of the WTP in the manual. Part D, Item 2 of Water Licence 3AM-IQA1626 requires that "site setting" of the WTP be "addressed" in the manual. Such information can be important for facilitating the inspection of the WTP to ensure the structural integrity of the facility.

Recommendation:

(R-06) CIRNAC recommends that as-built drawings for the foundations and supporting structures be included in the WTP O&M Manual.