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City of Iqaluit  
Box 460  
Iqaluit, Nunavut  
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Ville d'Iqaluit  
C.P. 460  
Iqaluit, Nunavut  
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admin@city.iqaluit.nu.ca  
www.iqaluit.nu.ca

September 24, 2019

File: 3AM-IQA1626

Attention: Richard Dwyer  
Manager of Licensing  
Nunavut Water Board  
[via email: richard.dwyer@nwb-oen.ca]

**Reference: Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) / NWB  
Technical Review Comments on City of Iqaluit 2018 Annual Report for Water License No.  
3AM-IQA1626.**

Dear Mr. Dwyer,

Please accept the City of Iqaluit's response to CIRNAC and the NWB Review Comments on the 2018 Annual Report for Water License No. 3AM-IQA162 and the

- 1. Monitoring Requirements / Missing Monitoring Data and Improvement of Data Presentation**
  - **Missing lab analysis sheets:** The missing lab analysis sheets B18-07383-1 and B18-11789-1 for sample station IQA-06 are attached.
  - **Testing Frequencies:** The City acknowledges that the required testing frequencies for sample stations IQA-01, IQA-02, IQA-04, IQA-05, IQA-06 and IQA-08. There was a significant change in important staff during this period. Additionally, there was on-going construction work at the Wastewater Treatment plant from July 2018.
  - **Conversion Charts for Lab Test Groups:** The conversion charts for the Lab Test groups is attached.
- 2. Spill Report Not Submitted:** The missing spill report for February 15, 2018 does not exist in the Government of Nunavut's Spill Database. This spill might have been incorrectly listed.
- 3. Instrumentation at IQA-01:** The City of Iqaluit is continuously measuring the quality of water from Lake Geraldine and will provide proper maintenance to the instrumentation present at Station IQA-01.
- 4. Surface Water Management Plan:** The surface water management plan is not required as part of the City's Water License.
- 5. Actions Taken to Address Concerns Raised in Inspection Reports**
  - a. **Discrepancies in water usage calculations:** The discrepancies in the water usage to waste water disposal calculations comes from the multiple leaks in the water distribution system. The city is currently upgrading the equipment at the Wastewater treatment plant and have implemented Supervisory Control and Data Acquisition

(SCADA) software and hardware that will capture the current amount of waste entering the Wastewater treatment Plant.

- b. **Approval for removal of the containment ponds/waste management structures at the West 40 Landfill:** The city has not removed any containment ponds or waste management structures or containment ponds at the West 40 Landfill. The City is operating the containment and water management of the pond as per the approved water Licence and Landfill O&M Plan.
  - c. **Board Approval for Modifications at the West 40 Landfill:** The City added the fire water treatment pond into the landfill stormwater management system. The City advised Nunavut Water Board that the pond had been added to the landfill stormwater management system and was included in the operations plan. The operations plan was approved by the Nunavut Water Board.
  - d. **Amendment of Current Water License to include waste deposit at Federal Road:** The deposit of waste at the end of Federal Road is not the City's responsibility
6. **Sylvia Grinnell River Report – Options Evaluation:** The Options Evaluation/Concept Design Report can be retrieved from this link -  
<https://colliers.sendthisfile.com/MjTg8gMPncTF36ObnJNfJWqA>
7. **Timeline of Commissioning of new Waste Water Treatment Plant:** The schedule of the Waste Water Treatment Plant is attached. Commissioning is scheduled to begin on Monday 13 January 2020 and end on Wednesday, 22 January 2019.
8. **Outstanding Submissions for NWB Licence 3AM-IQA1626:**
- a. **OM Manual Water Treatment Facility:** Currently in development, will be completed in October 2019.
  - b. **OM Manual Sewage Treatment Facility:** Currently in development, will be completed in January 2020.

Thank you for your understanding of the situation and ongoing assistance.

Sincerely,

**Matthew Hamp**

*Director of Public Works and Engineering, City of Iqaluit*

CC: Derek Donald – Technical Advisor, Nunavut Water Board

Matthew Hamp – Director of Public Works & Engineering, City of Iqaluit

Josip Deronja – Acting Manager of Engineering, City of Iqaluit (Colliers Project Leaders)

Attachments: Test Results B18-07383-1

Test Results B18-07383-1

Conversion chart for Lab Test Groups

Schedule of Construction at the Wastewater Treatment Plant

Sylvia Grinnell River Report – Options Evaluation

190619 3AM-IQA1626\_CIRNAC\_COMMENTS\_2018\_ANNUAL\_REPORT

190717 3AM-IQA1626 NWB Technical Comments 2018 Annual Report - ODDE

**C.O.C.: G63690**

**REPORT No. B18-07383**

**Report To:**

**City of Iqaluit**

PO Box 460,  
Iqaluit NU X0A 0H0

**Attention:** Maria Karveli

**Caduceon Environmental Laboratories**

2378 Holly Lane  
Ottawa Ontario K1V 7P1  
Tel: 613-526-0123  
Fax: 613-526-1244

DATE RECEIVED: 23-Mar-18

JOB/PROJECT NO.: Test D (Solid Sludge)

DATE REPORTED: 03-Apr-18

P.O. NUMBER:

SAMPLE MATRIX: Solid Sludge

WATERWORKS NO.

			Client I.D.	Test D			
			Sample I.D.	B18-07383-1			
			Date Collected	22-Mar-18			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
BOD(5 day)	µg/g	5	SM 5210B	29-Mar-18/O	49300		
Total Solids	% by wt	0.1	SM 2540	27-Mar-18/O	18.0		
Conductivity @25°C	µmho/cm	1	SM 2510B	27-Mar-18/O	338	1	
pH @25°C	pH Units		SM 4500H	28-Mar-18/O	5.24		
Nitrite (N)	µg/g	1	SM4110C	27-Mar-18/O	< 1		
Nitrate (N)	µg/g	1	SM4110C	27-Mar-18/O	4		
Ammonia (N)-Total	µg/g	0.01	MOEE 3364	27-Mar-18/O	501		
o-Phosphate (P)	µg/g	0.01	MOEE 3366	27-Mar-18/O	185		
Phosphorus-Total	µg/g	0.01	E3199A.1	27-Mar-18/K	2750		
Aluminum	µg/g	10	EPA 6010	27-Mar-18/O	2490		
Antimony	µg/g	2	EPA 6020	28-Mar-18/O	< 2		
Arsenic	µg/g	2	EPA 6020	28-Mar-18/O	< 2		
Barium	µg/g	1	EPA 6010	27-Mar-18/O	24		
Beryllium	µg/g	0.2	EPA 6010	27-Mar-18/O	< 0.2		
Cadmium	µg/g	0.5	EPA 6010	27-Mar-18/O	< 0.5		
Chromium	µg/g	1	EPA 6010	27-Mar-18/O	317		
Cobalt	µg/g	1	EPA 6010	27-Mar-18/O	7		
Copper	µg/g	1	EPA 6010	27-Mar-18/O	297		
Iron	µg/g	10	EPA 6010	27-Mar-18/O	24200		
Lead	µg/g	5	EPA 6010	27-Mar-18/O	22		
Lithium	µg/g	0.1	EPA 6010	27-Mar-18/O	1.1		
Manganese	µg/g	1	EPA 6010	27-Mar-18/O	237		
Mercury	µg/g	0.01	EPA 7471A	28-Mar-18/O	0.23		
Molybdenum	µg/g	1	EPA 6010	27-Mar-18/O	7		
Nickel	µg/g	1	EPA 6010	27-Mar-18/O	190		
Selenium	µg/g	2	EPA 6020	28-Mar-18/O	< 2		
Silver	µg/g	0.2	EPA 6010	27-Mar-18/O	6.8		



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Greg Clarkin , BSc., C. Chem  
Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

**C.O.C.: G63690**

**REPORT No. B18-07383**

**Report To:**

**City of Iqaluit**

PO Box 460,  
Iqaluit NU X0A 0H0

**Attention:** Maria Karveli

**Caduceon Environmental Laboratories**

2378 Holly Lane  
Ottawa Ontario K1V 7P1  
Tel: 613-526-0123  
Fax: 613-526-1244

DATE RECEIVED: 23-Mar-18

JOB/PROJECT NO.: Test D (Solid Sludge)

DATE REPORTED: 03-Apr-18

P.O. NUMBER:

SAMPLE MATRIX: Solid Sludge

WATERWORKS NO.

			Client I.D.	Test D			
			Sample I.D.	B18-07383-1			
			Date Collected	22-Mar-18			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Strontium	µg/g	1	EPA 6010	27-Mar-18/O	24		
Thallium	µg/g	0.4	EPA 6020	28-Mar-18/O	< 0.4		
Tin	µg/g	5	EPA 6010	27-Mar-18/O	24		
Titanium	µg/g	1	EPA 6010	27-Mar-18/O	101		
Uranium	µg/g	0.4	EPA 6020	28-Mar-18/O	< 0.4		
Vanadium	µg/g	1	EPA 6010	27-Mar-18/O	13		
Zinc	µg/g	3	EPA 6010	27-Mar-18/O	295		
Total Coliform	cfu/g	1	MOE E3371	23-Mar-18/O	11200000		
Fecal Coliform	cfu/g	1	SM9222D	23-Mar-18/K	168000		

1. not enough sample for repeat 1:15 Ratio with DI Water

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie



Greg Clarkin, BSc., C. Chem  
Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

**C.O.C.:** ---

**REPORT No. B18-11879**

**Report To:**

**City of Iqaluit**

PO Box 460,  
Iqaluit NU X0A 0H0

**Attention:** Maria Karveli

**Caduceon Environmental Laboratories**

2378 Holly Lane  
Ottawa Ontario K1V 7P1  
Tel: 613-526-0123  
Fax: 613-526-1244

DATE RECEIVED: 04-May-18

JOB/PROJECT NO.: Test D (Solid Sludge)

DATE REPORTED: 16-May-18

P.O. NUMBER: 460

SAMPLE MATRIX: Solid Sludge

WATERWORKS NO.

			Client I.D.	Test D			
			Sample I.D.	B18-11879-1			
			Date Collected	04-May-18			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
BOD(5 day)	µg/g	5	SM 5210B	10-May-18/O	104000		
Total Solids	% by wt	0.1	SM 2540	08-May-18/O	26.8		
Conductivity @25°C	µmho/cm	1	SM 2510B	14-May-18/O	584		
pH @25°C	pH Units		SM 4500H	14-May-18/O	6.13		
Nitrite (N)	µg/g	1	SM4110C	11-May-18/O	105		
Nitrate (N)	µg/g	1	SM4110C	11-May-18/O	26		
Ammonia (N)-Total	µg/g	0.01	MOEE 3364	09-May-18/O	863		
o-Phosphate (P)	µg/g	0.01	MOEE 3366	09-May-18/O	535		
Phosphorus-Total	µg/g	10	E3199A.1	09-May-18/K	1650		
Aluminum	µg/g	10	EPA 6010	15-May-18/O	2110		
Antimony	µg/g	2	EPA 6020	15-May-18/O	< 2		
Arsenic	µg/g	2	EPA 6020	15-May-18/O	< 2		
Barium	µg/g	1	EPA 6010	15-May-18/O	37		
Beryllium	µg/g	0.2	EPA 6010	15-May-18/O	< 0.2		
Cadmium	µg/g	0.5	EPA 6010	15-May-18/O	0.8		
Chromium	µg/g	1	EPA 6010	15-May-18/O	28		
Cobalt	µg/g	1	EPA 6010	15-May-18/O	2		
Copper	µg/g	1	EPA 6010	15-May-18/O	334		
Iron	µg/g	10	EPA 6010	15-May-18/O	9870		
Lead	µg/g	5	EPA 6010	15-May-18/O	8		
Lithium	µg/g	0.1	EPA 6010	15-May-18/O	1.0		
Manganese	µg/g	1	EPA 6010	15-May-18/O	74		
Mercury	µg/g	0.01	EPA 7471A	15-May-18/O	0.11		
Molybdenum	µg/g	1	EPA 6010	15-May-18/O	2		
Nickel	µg/g	1	EPA 6010	15-May-18/O	19		
Selenium	µg/g	2	EPA 6020	15-May-18/O	< 2		
Silver	µg/g	0.2	EPA 6010	15-May-18/O	6.0		



R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Greg Clarkin , BSc., C. Chem  
Lab Manager - Ottawa District

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C.O.C.: ---

**REPORT No. B18-11879**

**Report To:**

**City of Iqaluit**

PO Box 460,  
Iqaluit NU X0A 0H0

**Attention:** Maria Karveli

**Caduceon Environmental Laboratories**

2378 Holly Lane  
Ottawa Ontario K1V 7P1  
Tel: 613-526-0123  
Fax: 613-526-1244

DATE RECEIVED: 04-May-18

JOB/PROJECT NO.: Test D (Solid Sludge)

DATE REPORTED: 16-May-18

P.O. NUMBER: 460

SAMPLE MATRIX: Solid Sludge

WATERWORKS NO.

			Client I.D.	Test D			
			Sample I.D.	B18-11879-1			
			Date Collected	04-May-18			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Strontium	µg/g	1	EPA 6010	15-May-18/O	28		
Thallium	µg/g	0.4	EPA 6020	15-May-18/O	< 0.4		
Tin	µg/g	5	EPA 6010	15-May-18/O	10		
Titanium	µg/g	1	EPA 6010	15-May-18/O	53		
Uranium	µg/g	0.4	EPA 6020	15-May-18/O	< 0.4		
Vanadium	µg/g	1	EPA 6010	15-May-18/O	6		
Zinc	µg/g	3	EPA 6010	15-May-18/O	319		
Total Coliform	cfu/g	1	MOE E3371	04-May-18/O	22600000		
Fecal Coliform	cfu/g	1	MOE E3371	04-May-18/O	1070000		

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an \*

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

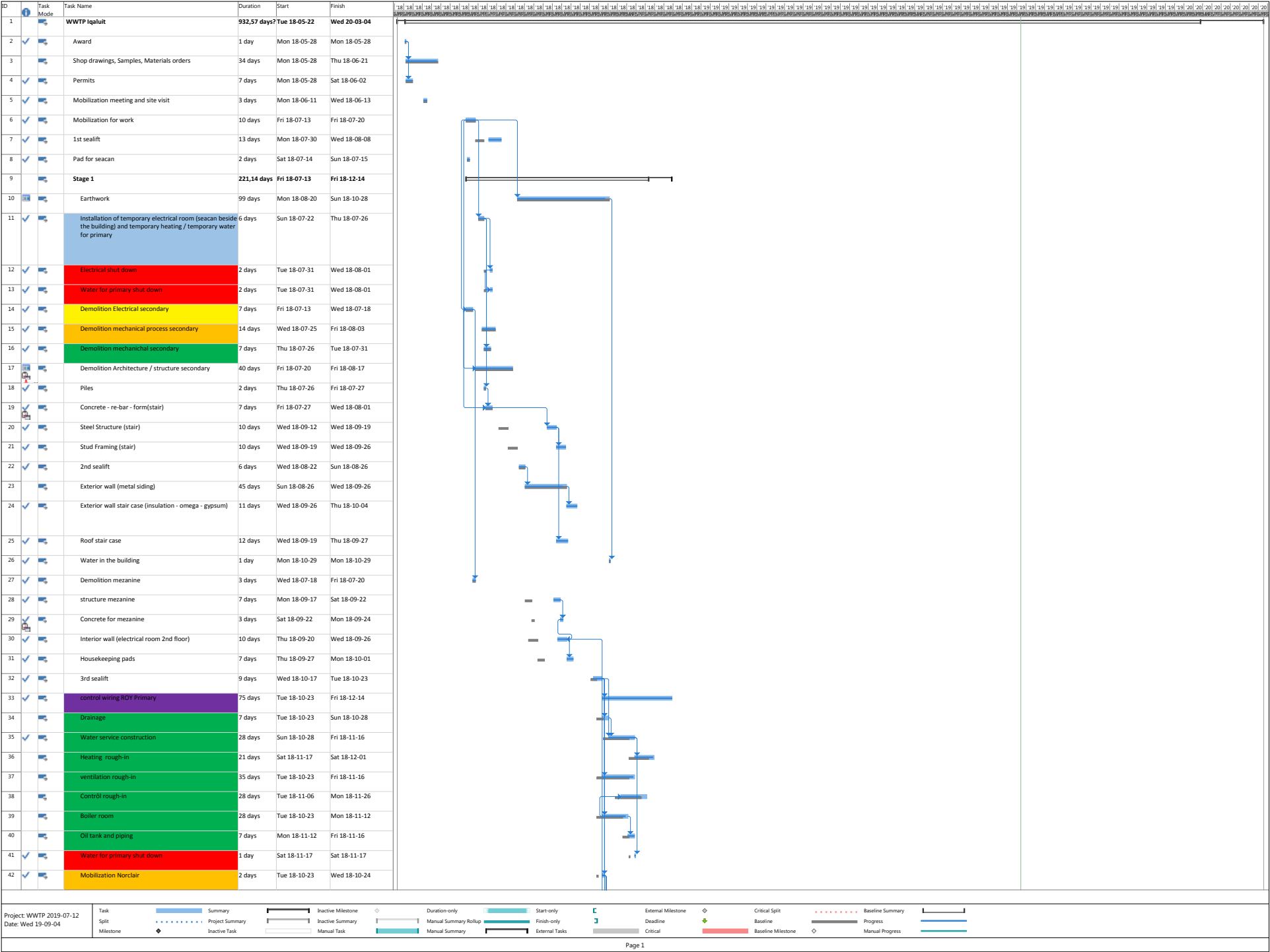


Greg Clarkin, BSc., C. Chem  
Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

**Conversion Chart for Lab test groups:**

Test A	Test B (Influent)	Test C (Effluent)	Test D (Sludge)	Test F (Sewage Lagoon)	Test E (Landfill Runoff)
IQA-01	IQA-03	IQA-04	IQA-06	IQA-02	IQA-08
Monthly	Bi-Annually - January, July	Quarterly - (January, April, July, October)	Quarterly - (January, April, July, October)	Before, During and Prior to Completion of Discharge Events	Not reviewed as a part of this analysis.
Acidity	BOD	BOD	BOD	BOD	
Alkalinity	Total Coliforms	Total Coliforms	Total Coliforms	Total Coliforms	
Bicarbonate	Fecal Coliforms	Fecal Coliforms	Fecal Coliforms	Fecal Coliforms	
Carbonate	Ammonia Nitrogen	Ammonia Nitrogen	Ammonia Nitrogen	Ammonia Nitrogen	
Chloride	Nitrate Nitrogen	Nitrate Nitrogen	Nitrate Nitrogen	Nitrate Nitrogen	
Conductivity	Nitrite Nitrogen	Nitrite Nitrogen	Nitrite Nitrogen	Nitrite Nitrogen	
Total Hardness	Total Phosphorus	Total Phosphorus	Total Phosphorus	Total Phosphorus	
Hydroxide	Orthophosphate	Orthophosphate	Orthophosphate	Orthophosphate	
ORP	Conductivity	Conductivity	Conductivity	Conductivity	
Sulphate	TSS	TSS	TSS	TSS	
TDS	pH	pH	pH	pH	
TSS	ICP Metals - Total	ICP Metals - Total	ICP Metals - Total	ICP Metals - Total	
TOC					
TIC					
ICP Metals - Total					
ICP Metals - Dissolved					
Fecal Coliform					
pH					
Turbidity					





Task Mode	Task Name	Duration	Start	Finish
✓	Reception of material	4 days	Wed 18-10-24	Sat 18-10-27
✓	Preparation of material, equipment and tools	34 days	Wed 18-10-24	Sat 18-11-17
✓	Prefabrication of piping and equipment	34 days	Wed 18-10-24	Sat 18-11-17
✓	Preliminary work in headworks area	5 days	Wed 18-10-24	Sun 18-10-28
✓	Installation of new bridge crane	4 days	Sun 18-10-28	Wed 18-10-31
✓	Electrical room	40 days	Tue 18-10-23	Tue 18-11-20
✓	Lighting rough-in	45 days	Tue 18-10-23	Fri 18-11-23
✓	Electrical distribution	55 days	Tue 18-10-23	Fri 18-11-30
✓	<b>Stage 2</b>	<b>216,14 days</b>	<b>Tue 18-10-23</b>	<b>Sat 19-03-23</b>
✓	Removal and disposal of existing headworks lift station pumps, screens, primary filter and associated equipment	12 days	Wed 18-10-31	Thu 18-11-08
✓	Installation of new lift pump station	10 days	Thu 18-11-08	Thu 18-11-15
✓	Installation of new fine screens	3 days	Thu 18-11-15	Sat 18-11-17
✓	Installation of primary filters	10 days	Sat 18-11-17	Sat 18-11-24
✓	Installation of all headworks piping and appurtenance	14 days	Sat 18-11-24	Tue 18-12-04
✓	Commissioning of headworks equipment	28 days	Mon 19-01-07	Sat 19-01-26
✓	Removal and disposal of unused equisting equipment, including MAGS waste treatment unit	12 days	Tue 18-12-04	Wed 18-12-12
✓	Installation of equipment and piping to delivered in summe 2018 (TBC)	21 days	Tue 18-12-04	Wed 18-12-19
✓	Demolition electrical primary	4 days	Tue 18-10-23	Fri 18-10-26
✓	Ventilation primary	20 days	Thu 18-11-08	Thu 18-11-22
✓	New electrical work primary	50 days	Fri 18-10-26	Fri 18-11-30
✓	Exterior Demolition / doors and windows	8 days	Tue 18-10-23	Mon 18-10-29
✓	Rough Carpentry	10 days	Mon 18-10-29	Mon 18-11-05
✓	Structure Primary	2 days	Thu 18-11-08	Fri 18-11-09
✓	Comissioning Deficiencies for primary / running	28 days	Mon 19-03-04	Sat 19-03-23
✓	partial substancial	7 days	Sat 19-03-09	Wed 19-03-13
✓	<b>waiting</b>	<b>207,5 days</b>	<b>Thu 19-01-31</b>	<b>Tue 19-06-25</b>
✓	Finish order and shop drawings	80 days	Thu 19-01-31	Tue 19-04-30
✓	waiting for mobilisation	80 days	Tue 19-04-30	Tue 19-06-25
✓	<b>Stage 3</b>	<b>932,57 days?</b>	<b>Tue 18-05-22</b>	<b>Wed 20-03-04</b>
✓	Mobilisation Kudlik	3 days	Mon 19-06-03	Wed 19-06-05
✓	Mobilization 2019 (sub-contractor)	5 days	Sun 19-07-14	Wed 19-07-17
✓	MBBR wall pour wall 1 and 2	2 days	Tue 18-05-22	Wed 18-05-23
✓	MBBR wall wall 3 and 4 (re-bar form)	8 days	Wed 18-05-23	Tue 18-05-29
✓	MBBR wall pour wall 3	4 days	Tue 18-05-29	Thu 18-05-31
✓	1st sealift 2019	10 days	Fri 19-08-02	Fri 19-08-09
✓	2nd sealift 2019	6 days	Wed 19-09-04	Sun 19-09-08
✓	Lagoon civil	20 days	Thu 19-08-29	Thu 19-09-12
✓	Lagoon Desludging	45 days	Mon 19-09-16	Thu 19-10-17
✓	Paint and plastering (stair + primary)	16 days	Wed 18-11-28	Sun 18-12-09
✓	Toilet accessories	2 days	Sun 19-10-06	Mon 19-10-07
✓	floor	7 days	Tue 19-10-01	Sun 19-10-06

Project: WWTP 2019-07-12

Date: Wed 19-09-04

Task

Split

Milestone

Summary

Project Summary

Inactive Task

Inactive Milestone

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Inactive Summary

Manual Summary

Finish-only

Inactive Task

External Task

External Milestone

Deadline

Critical

Critical Split

Baseline

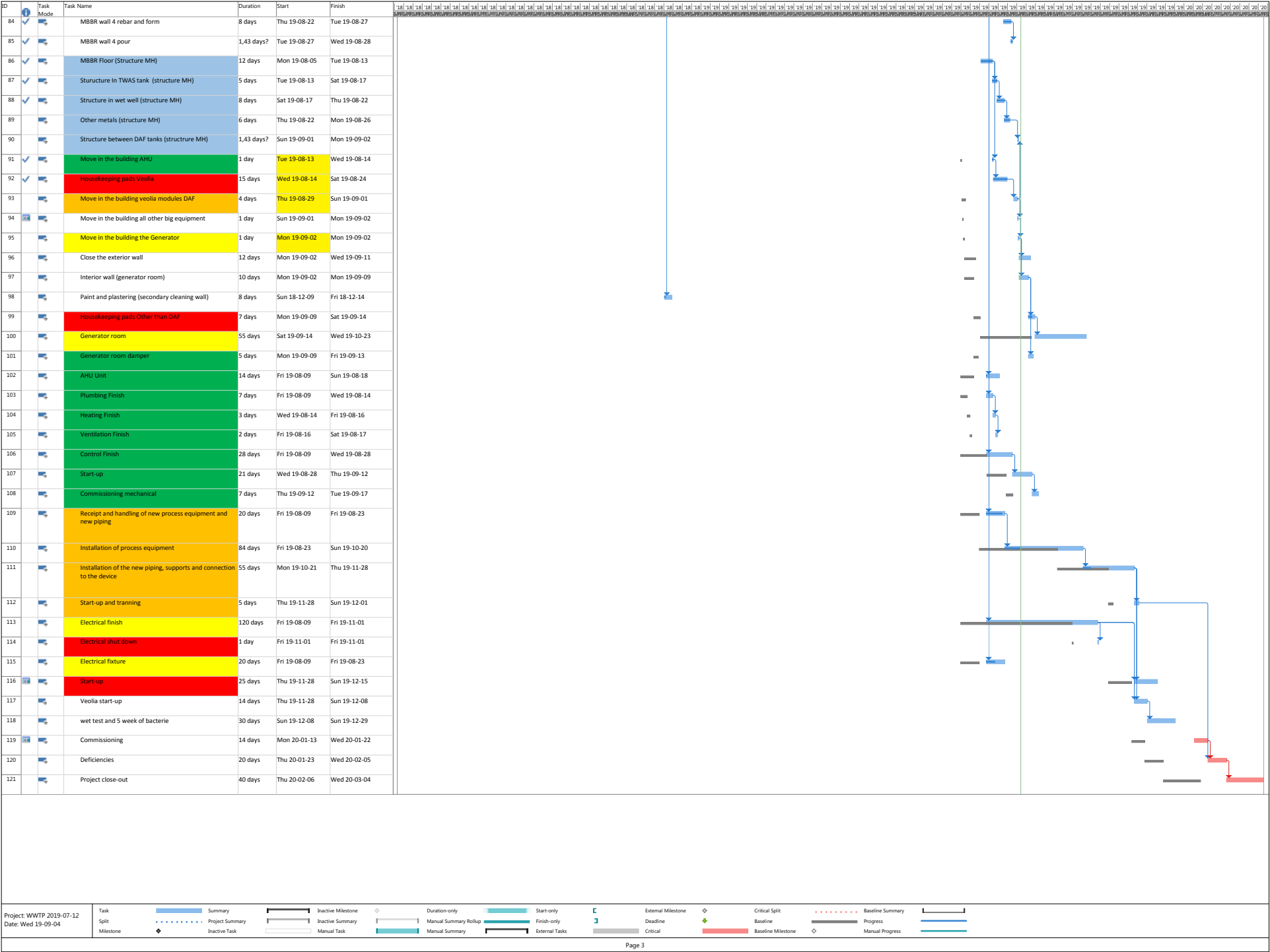
Baseline Milestone

Baseline Summary

Progress

Manual Progress

Page 2





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  
CIDM#1249641

June 19, 2019

Manager of Licensing  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU, X0B 1J0  
E-mail: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown-Indigenous Relations and Northern Affairs Canada Review Comments  
on City of Iqaluit 2018 Annual Report for Water Licence No. 3AM-IQA1626**

Dear Mr. Dwyer,

Thank you for your March 29, 2019 invitation for Crown Indigenous Relations and Northern Affairs Canada (CIRNAC) to comment on the City of Iqaluit (City) 2018 Annual report for Water Licence No. 3AM-IQA1626. CIRNAC examined the submission. Comments provided in Attachment A are pursuant to CIRNAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

If there are any questions or concerns, please contact me at (867) 975-4282 or [bridget.campbell@canada.ca](mailto:bridget.campbell@canada.ca) or Godwin Okonkwo at (867) 975-4550 or [godwin.okonkwo@canada.ca](mailto:godwin.okonkwo@canada.ca).

Sincerely,

Bridget Campbell,  
Water Resource Coordinator

CC: Matthew Hamp, City of Iqaluit  
Derek Donald, Nunavut Water Board



## **Attachment A: Review Comments**

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

From: Bridget Campbell, Water Resource Coordinator, Water Resources Division,  
CIRNAC

Date: June 19, 2019

**Re: Crown-Indigenous Relations and Northern Affairs Canada Review  
Comments on City of Iqaluit 2018 Annual Report for Water Licence No.  
3AM-IQA1626**

Applicant: City of Iqaluit

Project: Municipality

Region: Qikiqtani

---

### **A. REVIEW COMMENTS**

#### **1. Monitoring Requirements**

##### Reference:

- City of Iqaluit, 2018 Annual Report for Nunavut Water Board Water Licence No. 3AM-IQA1626, March 29, 2019.
- Nunavut Water Board, Water Licence No. 3AM-IQA1626, June 17, 2016.

##### Comment:

CIRNAC notes that Lab analysis sheets B18-07383-1 and B18-11879-1 were not provided for sample station IQA-06, so this requirement cannot be confirmed by reviewers. Also, no landfill specific (LS) tests or discharges were reported; if no discharges occurred, it would be appropriate to note that 0 cubic metres of water were discharged. Further, the testing frequency outlined in *Schedule I: Conditions Applying to Monitoring* of Water Licence No. 3AM-IQA1626 was not met for all sample stations in the monitoring summary of the 2018 Annual Report. The required frequency and the frequency provided are outlined in Table 1.

The names and letter codes of the required test groups outlined in Water Licence No. 3AM-IQA1626 differ from the names and letter codes of the test groups reported in *Table 5: Summary of 2018 Sampling Conducted* in the Annual Report (page 10). This makes it difficult for a reviewer to determine if the testing or measurement parameters required in the licence have been fulfilled. A conversion chart stating which licence test groups are covered under corresponding lab test group would be helpful for conducting proper reviews.

**Table 1: Sample Frequency Requirements and Sample Frequency Reported**

Sample Station	Test Group	Required Frequency per year	Reported Frequency per year	Meets Requirement
IQA-01	R, PW	12	8	No
	F	12	12	Yes
IQA-02	B, N, E, ICP	3 / Discharge or Decant Event	3 / Event	Yes
	F	During Decant Event	0	No
IQA-03	N/A			
IQA-04	B, N, E, ICP	4	2	No
	F	During Discharge Event	6	Yes
IQA-05	B, N, E, ICP	2	1	No
IQA-06	B, N, E, ICP	4	2	No
IQA-07	N/A			
IQA-08	B, N, E, ICP	3 / Discharge Event	0	No
	LS	3 / Discharge Event	0	No
	F	During Discharge Event	0	No
IQA-08A	N/A			
IQA-08B	N/A			
IQA-09	N/A			

**Recommendation:**

CIRNAC encourages the City to fulfill all monitoring required in the licence, including all required parameters at the required frequency, and to add the missing Lab analysis sheets B18-07383-1 and B18-11879-1. CIRNAC also recommends that the City report these finding by using the names and letter codes of the required test groups outlined in the licence, or by providing reviewers with a conversion chart stating which licence test groups are covered under each corresponding lab test group.

**2. Spill Report Not Submitted****Reference:**

- City of Iqaluit, 2018 Annual Report for Nunavut Water Board Water Licence No. 3AM-IQA1626, March 29, 2019.



Comment:

Fifteen of the sixteen Spills Reports corresponding to Table 6: 2018 Spill Reports were submitted in Appendix B of the 2018 Annual Report. The Spill Report corresponding to February 12, 2018 at the Discharge Station (Spill I.D. No. N/A), however, was not submitted with the 2018 Annual Report.

Recommendation:

CIRNAC recommends that the City of Iqaluit submit the outstanding Spill Report for February 12, 2018 as part of the 2018 Annual Report Package.

### **3. Instrumentation at Station No. IQA-01**

Reference:

- City of Iqaluit, 2018 Annual Report for Nunavut Water Board Water Licence No. 3AM-IQA1626, March 29, 2019.
- Nunavut Water Board, Water Licence No. 3AM-IQA1626, June 17, 2016.

Comment:

Under Part I Condition number 6, the licence states that all quantities of water withdrawn from Lake Geraldine must be measured by instrument at Station No. IQA-01. In the 2018 Annual Report, the City states that measurements for the quantity withdrawn were not available during some days of the year, and the values are instead estimates based on averages from the previous days' records. CIRNAC is unclear of the reason for unavailable records during these days and encourages the City to find the cause and then remedy the issue.

Recommendation:

CIRNAC recommends that the City continue to monitor the quantity of water extracted from Lake Geraldine by instrument, and maintain the instrument at Station No. IQA-01 in working condition.

### **4. Surface Water Management Plan**

Reference:

- City of Iqaluit, 2018 Annual Report for Nunavut Water Board Water Licence No. 3AM-IQA1626, March 29, 2019.
- Crown-Indigenous Relations and Northern Affairs Canada Water Resource Officer Jonathan Mesher, Inspection Report, June 4, 2018.

Comment:

The June 2018 Inspection report by CIRNAC Water Resource Officer indicates that the Inspector recommended the City submit the Surface Water Management Plan, which was in development, to the Nunavut Water Board for review. No management plan were submitted by the City as part of the 2018 Annual Report, and the City states under Section M in the 2018 Annual Report (page 13) that "No actions were taken to address



the concerns and deficiencies listed in the previous inspection reports.” Further, Sections I, J, and O did not make reference to a Surface Water Management Plan.

Recommendation:

CIRNAC encourages the City to submit the Surface Water Management Plan to the Nunavut Water Board for review.

## **5. Actions Taken to Address Concerns Raised in Inspection Reports**

Reference:

- City of Iqaluit, 2018 Annual Report for Nunavut Water Board Water Licence No. 3AM-IQA1626, March 29, 2019.
- Crown-Indigenous Relations and Northern Affairs Canada Water Resource Officer Jonathan Mesher, Inspection Report, June 4, 2018.

Comment:

The City of Iqaluit states on page 13 of the 2018 Annual Report, “No actions were taken to address the concerns and deficiencies listed in the previous inspection reports.” Concerns were listed in the June 4, 2018 Inspection Report (page 5) as follows:

- a) The inspector is requesting that the City of Iqaluit amend their current water licence to appropriately capture the City of Iqaluit’s current water demand, this will help prevent the ongoing failure to comply with the agreed upon water usage limit.
- b) The inspector is requesting that the licensee amend their current water to capture all usages of water as described in the Nunavut Waters and Nunavut Surface Rights Tribunal Act and the corresponding regulations that are managed and used by the licensee.
- c) The inspector is requesting that the Licensee provide a report outlining what work recommended in the 2015 DSI has been completed.
- d) The inspector is requesting that the licensee provide reasoning for this discrepancy in the water usage to waste disposal calculation and reevaluate the way the licensee records the deposit of waste water to better reflect the actual amount of waste entering the WWTP.
- e) Please provide the approval that was given for the removal of the containment ponds/waste management structures at the west 40 Landfill.
- f) The licensee is to submit the required documents as described in Part G, Item 1 of the licence 3AM-IQA1626 for the modifications of the west 40 landfill and complete the required work to ensure that all leachate and waste is contained in the landfill as required in Part E, Item 13.



- g) The licensee is to amend the current water licence to include the deposit of waste at the end of federal road and implement the appropriate measures to ensure that this waste does not affect the surrounding water ways, or provide evidence that this waste is not the licensee's responsibility.

CIRNAC is aware that the City is currently undergoing a licence amendment process which addresses item a), and that due to the urgency of this requirement, it is not practical to address the other suggestions for amendments under b) and c) at this time. The other concerns remain outstanding.

Recommendation:

CIRNAC encourages the City to follow up on CIRNAC Water Resource Officer's concerns listed in the June 4, 2018 Inspection Report.





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**NWB File No: 3AM-IQA1626**

July 17, 2019

Matthew Hamp  
Director of Public Works and Engineering  
City of Iqaluit  
P.O. Box 460  
Iqaluit, NU, X0A 0H0

E-mail: [M.Hamp@city.iqaluit.nu.ca](mailto:M.Hamp@city.iqaluit.nu.ca)

**Subject: NWB Technical Review Comments on the City of Iqaluit's 2018 Annual Report for Water Licence No. 3AM-IQA1626**

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Dear Mr. Hamp,

Thank you for the 2018 Annual Report submitted to the Nunavut Water Board's (NWB or Board) on March 29, 2019, by the City of Iqaluit (the City or Applicant) for their Type "A" municipal Water Licence 3AM-IQA1626 (Licence). Following receipt of the 2018 Annual Report, the Board distributed it for external review and received comments from Crown-Indigenous Relations and Northern Affairs (CIRNA) on June 19, 2019. Copies of these comments are attached to this email, have been placed in the Board's Public Registry, and are made available through the NWB's FTP site using the following link:

[ftp://ftp.nwb-oen.ca/registry/3%20MUNICIPAL/3A/3AM%20-%20Municipality/3AM-IQA1626/3%20TECH/1%20GENERAL%20\(B\)/2%20ANNUAL%20RPT/2018/](ftp://ftp.nwb-oen.ca/registry/3%20MUNICIPAL/3A/3AM%20-%20Municipality/3AM-IQA1626/3%20TECH/1%20GENERAL%20(B)/2%20ANNUAL%20RPT/2018/)

In addition, the Board has reviewed the 2018 Annual report and is providing the following technical comments:

**1. Missing Monitoring Data and Improvement of Data Presentation**

Comment: The 2018 annual report is missing data for a number of monitoring requirements as outlined in Schedule I of the Licence, including:

- Volume decanted from the sewage lagoon at IQA-02;
- Quarterly water quality measurements of Wastewater Treatment Plant Effluent at IQA-04;
- Biannual water quality of the Waste Water Treatment Plant Influent at IQA-05;



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- Quarterly measurements of sludge quality/chemistry from the waste water treatment facility at IQA-06; and
- Water quality and quantity effluent discharged from the West 40 Landfill at IQA-08.

In Addition, the data is provided only in the form of original lab reports with no indication that it has been reviewed and evaluated by the Licensee.

Recommendation: Provide the missing data if it is available, or alternatively provide a brief explanation as to why the samples were not collected and what steps will be taken to ensure that this data is collected for 2019.

Recommendation: Provide a clearer presentation of collected data for all subsequent Annual Reports, including Microsoft Excel summary tables and charts.

## **2. Sylvia Grinnell River Report – Options Evaluation**

Comment: The 2018 Annual Report mentions that a Options Evaluation / Concept Design for Raw Water Supplementation – Sylvia Grinnell River was conducted in 2018/2019 and that “*Completion of the concept design report is expected in Q1-2019.*”

Recommendation: Provide the NWB with a brief summary and/or copy of this Options Evaluation Report and its findings.

## **3. Timeline for commissioning of new Waste Water Treatment Plant (WWTP)**

Comment: The 2018 Annual Report states that the Commissioning of the new WWTP will occur in March 2019, prior to its construction in 2020, which is erroneous.

Recommendation: Provide the NWB with the expected timeline of final commission for the new WWTP.

## **4. List of Outstanding Submissions**

Comment: The Board Notes Table 1 (below) provides a list of submissions, both outstanding and previously submitted, as required by the Licence:

Recommendation: Provide a brief timeline for the completion and submission of outstanding documents.

## **5. Actions Taken to Address Concerns Raised in Inspection Reports**



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Comment: A number of issues were raised in the CIRNAC Inspection Report dated June 4, 2018, requiring action by the Licensee. However, the 2018 Annual Report states that “*No actions were taken to address the concerns and deficiencies listed in the previous inspection reports.*”

Recommendation: Provide a follow up summary, responding to the June 4, 2018 Inspection Report.

Note that the Board appreciates the City’s current water supply situation, the Licence amendments currently underway, and all efforts the City is making to help facilitate a smooth and robust Licensing process. As such, the Board request that the City provide a response to comments by **September 4, 2019**.

If you have any technical questions or require clarification on the above, please contact Derek Donald, Technical Advisor, at (867) 360-6338 (Ext. 32) or by email at [derek.donald@nwb-oen.ca](mailto:derek.donald@nwb-oen.ca), or for any procedural or administrative inquiries, Richard Dwyer, Licensing Manager at (867) 360-6338 (Ext 27), or by email at [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca).

Sincerely,

Derek Donald  
Technical Advisor  
Nunavut Water Board

cc. Distribution List – Qikiqtani



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Table 1: List of Outstanding Submissions for NWB Licence 3AM-IQA1626.

Licence Condition / Inspection Report	Report Title	Timeline for Submission	Submitted or Not
<b>D2</b>	OM Manual Water Treatment Facility	August 17, 2016 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...	<b>Not submitted</b>  On Jan 4, 2019, email from <i>Mohammed.Fawzi@colliersprojectleaders.com</i> to <i>derek.donald@nwb-en.ca</i> , indicating that it is "To be submitted by March 2019."
<b>E6</b>	OM Manual Sewage Treatment Facility	October 17, 2016 The Licensee shall submit to the Board for approval in writing, within four (4) months of the Effective Date of the Licence, an Operation and Maintenance Manual for the Sewage Lagoon Facility...	<b>Not submitted</b>  On Jan 4, 2019, email from <i>Mohammed.Fawzi@colliersprojectleaders.com</i> to <i>derek.donald@nwb-en.ca</i> , indicating that it is "To be completed by Oct. 2019."
<b>E12</b>	OM Manual Landfill	August 17, 2016 The Licensee shall submit to the Board for approval, within sixty (60) days of the Effective Date of the Licence, an updated Landfill Operation and Maintenance Manual...	Submitted.  Approved by NWB on March 21, 2019.
<b>H1</b>	Updated Spill Contingency Plan	July 17, 2016 The Licensee shall, submit to the Board for approval in writing, within thirty (30) days of the Effective Date of this Licence, an	Submitted.  Received on March 5, 2019, a Spill Plan dated May 2016, only a few weeks before the



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		amalgamated and updated Spill Contingency Plan...	Licence was issued and likely to fulfill this Licence requirement. Satisfactory Plan but never approved by NWB.
<b>I2</b>	Updated Monitoring Program	The Licensee shall, submit Board for approval in writing, within sixty (60) days of the Effective Date of this Licence, an updated Monitoring Program	Submitted. Approved by NWB on May 6, 2019.
<b>I5</b>	QA/QC Plan	August 17, 2016 The Licensee shall, submit to the Board for review, within sixty (60) days of the Effective Date of the Licence, an updated Quality Assurance/Quality Control (QA/QC) Plan	Submitted Approved by NWB on May 6, 2019.
<b>CIRNAC Water Licence Inspection Form dated June 4, 2018</b>	Surface Water Management Plan	A Plan that captures all usages of water as described in the Nunavut Waters and Nunavut Surface Rights Tribunal Act and the corresponding regulations that are managed and used by the licensee, and that address concerns raised by the Inspector. To be submitted to the Inspector and NWB once complete.	<b>Not submitted</b>