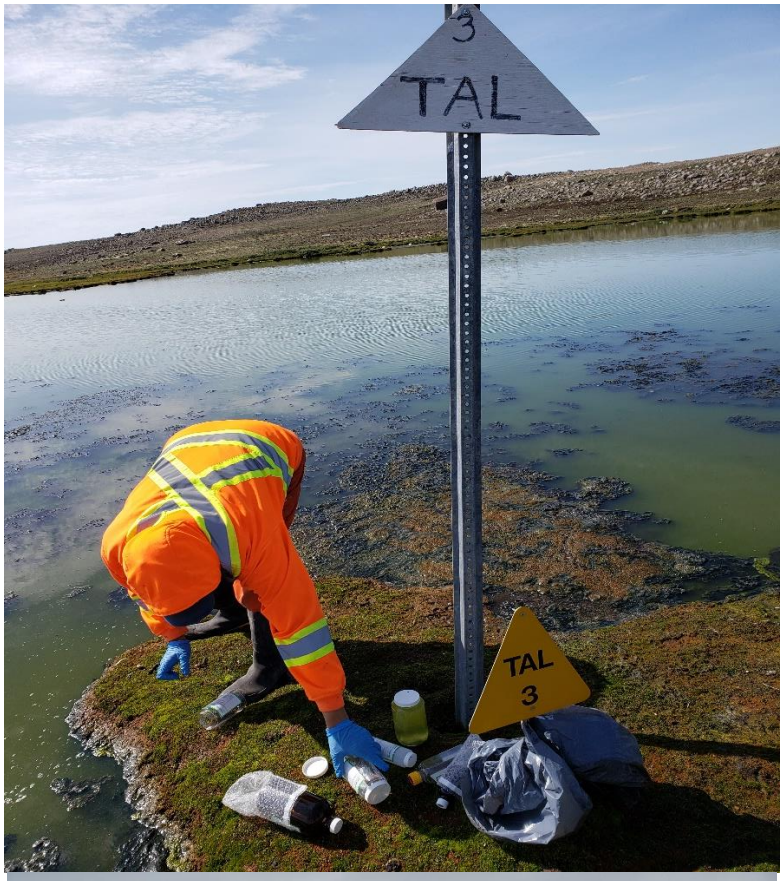
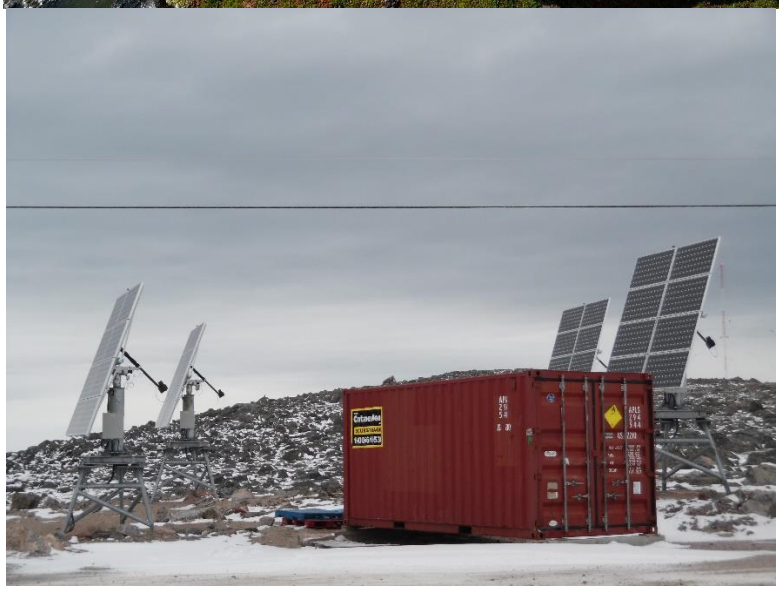
Annual Report-2019

Water Licence: 3BM-TAL 1926





Submitted: Aug 08, 2020

Taloyoak Water Licence: 3BM-TAL 1926 — Annual Report 2019

Aug 08, 2020

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1L0

Attention: Richard Dwyer, Manager of Licensing

RE: 3BM-TAL 1926 (Previous 3BM-TAL 1419)- Annual Report 2019, Hamlet of Taloyoak

Dear Richard,

The Hamlet of Taloyoak is pleased to submit the "**Annual Report 2019**" of water uses and sewage solid waste disposal as required and directed under the compliance of Water Licence 3BM-TAL-1926 (previous: 3BM- TAL 1419). Copies of required tests reports are included.

The Licensee has carried facilities operation, monitoring, management and sampling of water, sewage effluent, solid waste run-off as identified in the Licence, tested at Taiga Laboratory (the CALA accredited) in Yellowknife. Test results shown satisfactory remediation of contamination parameters that are within allowable limits specifically BOD, TSS, E-coli, toxicity and trace metals as determined in the compliance requirements prior to discharge to water body. We summarized those conditions and requirements outlined in Part B through part H.

We hope that Nunavut Water Board will find this report and enclosed test results valuable to Annual Report in operating the Water Licence for water, sewage and solid waste facilities.

CGS is submitting this report on behalf of the Hamlet of Taloyoak (the Licensee).

Best Regards,

Shah Alam, P. Eng. E.P.
Municipal Planning Engineer,
Government of Nunavut
Community and Government Services
Kitikmeot Region, Cambridge Bay, Nu
Phone: 867-983-4156, fax: 867-983-4124
salam@gov.nu.ca<mailto:salam@gov.nu.ca>

Cc: Baba Pedersen, Resource Management Officer, CIRNAC
SAO, Hamlet of Taloyoak, NU

EXECUTIVE SUMMARY:

The Annual Report 2019 has prepared by Hamlet of Taloyoak to submit to Nunavut Water Board meeting the requirements of the Municipal Water Licence 3BM-TAL 1926 (Previous 3BM-TAL 1419), Part B-H conditions to the monitoring program. This report covers the period from 01 January to 31 December 2019.

Water drawn from the Canso Lake through twin intake pumps to the treatment plant where it treated through a series of cartage filters of 20M – 1M followed by a chlorination. Treated water directly truck-fill from outside the building after a second chlorination, then supply to community tanks by hamlet operated water trucks. Quantity of water uses **46,503** m3, which is within allowable limit of **70,000** m3.

Raw sewage collects from household sewage tanks using vacuum trucks, hauled to sewage lagoon and discharge at the lagoon main cell through one of the two flutes. Raw sewage stays inside the lagoon during Oct -June for almost 9 months and receives primary treatment naturally. The lagoon cells are separated by a submerge berm which control raw sewage sediment inside the primary cell first before merging onto the secondary cell when thaws and finally effluent water starts merging onto wetland from secondary cell during July-Sep. Samples are collected from monitoring stations test at Taiga Laboratory in Yellowknife for micro-biological, bacterial, physical, major ions and trace metal contents in accordance to requirements of the Licence.

Waste batteries, waste oil, waste paint drums and toxic products are picked up and secure inside C-cans by Hamlet operators which are ready for shipping out. Non-hazardous waste disposed at the solid waste facility are pushed down with grader and packed and covered with sand-gravels. Control burn the loose wastes, papers, boxes, and light woods onsite and cleared ashes once the burning operation completed.

The study project for solid waste improvement along with another community by the GN hired consultant has prepared draft report and presented to the community council. The consultant has identified several options for the solid waste facility upgrade and the final report will identify the best location with cost effective operation. The licensee is waiting for GN Capital Projects for a new lagoon development or improvement and a solid waste facility improvement in next years. Both the sewage lagoon and solid waste facilities are their end of life and capacity constraints.

Hamlet is operating the water plant and sewage lagoon 7 days a week. The solid waste facility operation and maintenance carries mostly in summer -fall and minor in other times as needed.

Part B - D: conditions of water uses and waste disposal:

- The annual water supply and sewage waste disposal quantity were measured on daily basis.
- No modification or major works or maintenance to water intake, treatment plant solar system or wind turbine. No modification to sewage lagoon or solid waste facilities.
- No changes to O&M manuals for water supply, sewage and solid waste management, but an update version has been submitted to the Board with the request for Amendment License
- Monitoring program carried during summer and fall as reported in QA/QC plan
- The Canso Lake is the only source of intake and the annual quantity drawn 46,503 m3 which is within the allowable daily limit 248 m3 and annual 60,000 m3
  The amendment License has increased the annual quantity to 70,000m3 for next 10 years
- Maintained the erosion control measure on sides slope of water intake lines.
- Raw sewage water collects from household sewage tank by hamlet operated vacuum trucks and discharged at the designated drop off point using metal flutes into the main cell.
- No mechanical decanting system for the sewage system; effluent water merges from second cell onto the wetland naturally when started melted in spring and summer.
- Final discharge point remains unchanged designated as TAL-6.

Part E-G: Modification, construction, operation, abandonment and Restoration

- No new construction or modification done to water, sewage and solid waste facilities.
- A new lagoon cell construction is in plan and waiting for shortage fund allocation to confirm engaging a contractor and consultant for design and development.

Part H: Monitoring Program

Sewage & solid waste effluent monitoring stations TAL- 2, TAL-3, TAL-4 and TAL-6

Hazardous Waste Management

The community has stored waste batteries and waste oils inside of some metal C-cans placed on site and in town at designated places.

ANNUAL REPORT - 2019

YEAR BEING REPORTED: 2019

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence **3BM-TAL 1419** (new amendment Licence **3BM TAL 1926**) issued to the **Hamlet of Taloyoak**

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i) - iii) tabular summaries of all data generated under the "Monitoring Program"; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste based on quantities used.

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January	4,206,055.00	same
February	3,585,044.00	Same
March	3,962,656.00	Same
April	3,744,686.00	Same
May	3,811,480.00	Same
June	3,570,458.00	Same
July	3,909,567.00	Same
August	3,967,831.00	Same
September	3,894,742.00	Same
October	4,015,336.00	Same
November	3,893,637.00	Same
December	3,940,952.00	Same
ANNUAL TOTAL	46,502,454.00	Same

iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures & facilities;

Water intake and treatment System:

- No effective maintenance or modification needed for water intake or treatment
- Localized potholes at truckfill area repaired by hamlet maintenance team using localized gravels and sands.
- One of the twin intake pipes faced some ice clogs inside but was cleaned up through continuous use of active heat trace inside the intake pipe. The other intake line was active and there was no interruption of water intake.

The water intake system is 200 mm HDPE line inside 300 mm insulated HDPE casing, two 20HP intake pumps runs by 3p power line with automatic transfer. The filtration consists of 75M screener before the cartridge filtration 20M -1M, Chlorination using 0.5hp pumps before filtration and before truckfill,

3p power line from main grid, but also two alternate energy generating:

- Wind turbine (whisper 500 battery charging system)
- Solar cell energy generating

Sewage treatment system:

The sewage lagoon comprised of two natural lakes with a submerged berm in between made up the primary cell and a secondary cell, is connected to a wetland through a raised berm. Raw sewage hauled from household sewage tanks using vacuum truck and deposits into the primary cell through fixed metal chutes, where raw sewage mostly stays frozen from late Oct – late June. The sewage lagoon is about 3.2 km from the community and has capacity about 35,000 m3. The wetland about 900m long enriched with seasonal vegetation, connected to lagoon secondary cell in one end and ending with Stanner Harbour (final discharge point).

Solid waste and metal dump:

- Not any reportable modification or maintenance for the solid waste/metal dump

The solid waste facility is on a slopping land made up of MSW (for municipal waste at lower gradient) and a metal dump facility (for bulky meal and hazardous material) at the higher gradient gravel-sand topography.

v. a list of unauthorized discharges and summary of follow-up action taken;

- No reported unauthorized discharge of sewage or solid waste or fuel spills.

vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;

No abandoned or restoration work done for water or sewage lagoon facilities.

vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;

The solid waste and metal dump facilities have been in use for long time. Because of its capacity concerns, a study has been initiated for the improvement of these facilities under a CGS Capital project. The CIRNAC inspector has addressed this issue over the years. CGS has hired a consultant for the feasibility study together with another community Gjoa Haven under one contract. The study report is under GN discussion and approval for the improvement of the existing facility or a new one considering the most cost-effective operation and efficiency.

The Sewage Lagoon Study project has completed with a report of a new lagoon cell with the extension of existing lagoon as summer cell.

viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and

No specific request or details about water intake, water supply, sewage or waste disposal. The inspector has requested to keep records water supply to all purposes including any wastage and sewage waste disposal quantity (normally rough order estimate by counting truck loads).

ix. updates or revisions to the approved Operation and Maintenance Plans.

Not any major changes but an update version of the approved O&M manuals for sewage lagoon, solid waste or water treatment system.

X ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

An amendment water Licence 3BM TAL 1926 has been issued by the Nunavut Water Board for another 10 years of operation with Annual Water quantity 70, 000 m3.

Project for solid waste facility improvement by CGS Capital Plan in design process. GN CGS has allocated an amount for the Sewage lagoon improvement project, but still more funds required to move for development works; CGS is working on funding arrangement.

Xi FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

Community: Taloyoak 2019

Parameters				June 3rd, 2019		
	Units	**MAC**	**AO**	**Raw (TAL 1)**	**WTP**	**Truckfill**
Colour	TCU		≤ 15	< 5	< 5	< 5
pH		7.0 - 10.5		7.78	7.86	7.86
Turbidity	NTU	≤ 3		0.33	0.28	0.2
TDS			≤ 500	182	176	190
TSS				4	< 3	6
Alkalinity				131	131	131
Conductivity				350	356	357
Ammonia as N				< 0.005	< 0.005	< 0.005
Dissolve C	mg/L	45		4.6	4.3	4.5
Total C	mg/L			4.3	4.5	4.3
P, Total	mg/L					
Cyanide	mg/L	0.2		< 0.0010	< 0.0010	< 0.0010
THMs	mg/L	0.1			0.011	
Phenol, Tot				< 0.0010	< 0.0010	< 0.0010
Bromo-CH4						
Nitrate as N	mg/L	10		0.56	0.54	0.55
Hardness	mg/L			134	137	138
Chloride	mg/L		<=250	31.1	31.9	32
Fluoride	mg/L	1.5		< 0.1	0.1	0.1
Sodium	mg/L		<=200	19.6	19.8	19.8
Sulphate	mg/L		<=500	14	14	14
Magnesium	mg/L			13.9	13.1	14.1
Potassium	mg/L			1.6	1.6	1.6
Calcium	mg/L			30.6	31.8	31.9
Total Coli	CFU	none		< 1.0	< 1.0	< 1.0
E. Coli	CFU	none		< 1.0	< 1.0	< 1.0
Aluminium	mg/L		≤ 0.1	0.0029	0.0033	0.0025
Antimony	mg/L	0.006		< 0.1	< 0.1	< 0.0001
Arsenic	mg/L	0.01		0.0003	0.0004	0.0004
Barium	mg/L	1		0.005	0.005	0.005
Boron	mg/L	5		0.0195	0.0192	0.0199
Beryllium	mg/L					
Cadmium	mg/L	0.005		< 0.00004	< 0.00004	< 0.00004
Cobalt	mg/L					
Chromium	mg/L	0.05		< 0.0001	< 0.0001	0.0001
Copper	mg/L		≤ 1.0	0.0011	0.0005	0.0032
Iron	mg/L		≤ 0.3	< 0.005	< 0.005	0.011
Lead	mg/L	0.01		0.0001	< 0.0001	0.0002
Manganese	mg/L	0.12	0.02	0.0025	0.0019	0.00017
Mercury	mg/L	0.001		< 0.00001	< 0.00001	< 0.00001
Nickel	mg/L					
Selenium	mg/L	0.05		0.0005	0.0004	0.0004
Silver	mg/L			< 0.0001	< 0.0001	< 0.0001
Uranium	mg/L	0.02		0.0005	0.0005	0.0005
Vanadium	mg/L			0.0001	0.0002	0.0002
Zinc	mg/L		≤ 5.0	0.0061	0.0013	0.0031

WATER LICENCE INSPECTION FORM

☒ **Original**
☐ **Follow-Up Report**

Licensee	**Licensee Representative**
Hamlet of Taloyoak	Janice Anderson
Licence No. / Expiry	**Representative's Title**
3BM-TAL1419	Senior Administrative Officer
Land / Other Authorizations	**Land / Other Authorizations**
Date of Inspection	**Inspector**
2019 July 4	Baba Pedersen

Activities Inspected

☐ Camp ☐ Drilling ☐ Mining ☐ Construction ☐ Reclamation ☐ Fuel Storage
☐ Roads/Hauling ☐ Other: ☒ Other: Municipal

Conditions: **A - Acceptable** **C - Concern** **U - Unacceptable** **NA – Not Applicable** **NI – Not Inspected**

Water Use	Condition	Comment	**Site Conditions**	Condition	Comment	**Haz/Mat Management**	Condition	Comment
Intake/Screen			Water Management Structures	A		Storage	A U	7 8
Flow Measure. Device	A C	3 9	Culverts / Bridges	A		Spills		
Source:			Drainage	A		Spill Plan		
Water Use:	A		Erosion / Sediment					
Recirculation (y /n)			Mitigation Measures			**Administrative**		
			Reclamation Activities	C	10	Records	A	
			Materials Storage	A		Reports	A	
Waste Disposal			Signage	A	2 & 4	Plans		
Waste Water	NA	5				Notifications		
Solid Waste	A	6	**Monitoring**			**Other**		
Hazardous Waste			Sample Collection / Analysis	A		License Renewal	C	1

**The number in the comments field will correspond with specific comments provided below.*

Samples taken by Inspector:	Location(s): Hamlet and GN-CGS Staff took Samples at Sample Stations TAL-1, TAL-4 and TAL-6
☐ Yes ☒ No	

SECTION 1 ☒ **Comments** (s.__) ☐ **Non-Compliance with Act or Licence** (s.__) ☐ **Action Required** (s.__)

On July 4, 2019 I Inspected the Hamlet of Taloyoak's Water License 3BM-TAL1419. I was accompanied by Shah Alam from the GN-CGS as well as James Ashevak and Ashoona Irquit from the Hamlet of Taloyoak.

SECTION 2 ☒ **Comments** ☐ **Non-Compliance with Act or Licence** ☐ **Action Required**

We discussed 1. The Water License is due to expire this year. At the Raw Water Intake Pump House we saw, 2. The TAL-1 Raw Water Sample Station Signage (photo 1) and, 3. The Flow Meter which records all Consumption (photo 2). We also saw 4. The TAL-6 Final Discharge Sample Station (photo 3), 5. The area across and adjacent to the Sewage Lagoon where the Hamlet and the GN are planning to build a new Lined Cell (photo 4), 6. The Garbage Dump (photo 5), 7. The Waste Oil Storage (photo 6), 8. The Used Battery Storage (photo 7), 9. The Salt Water pump for use as Dust Suppressant on Municipal Roads (photo 8), and 10. The old abandoned Raw Water Pump House and above ground Water Line (photos 9 & 10).

SECTION 3 ☐ **Comments** ☐ **Non-Compliance with Act or Licence** ☒ **Action Required**

1. That Hamlet must ensure to submit a Renewal Request to the Nunavut Water Board prior to the current License Expiring. 2. Thank you for installing appropriate Signage as requested last year. 3. All Water Consumption used for any and all types of usage must be accounted for. 4. Thank you for installing appropriate Signage as requested last year. 5. This is an information item only at this time. 6. The Dump was fairly well organized and in an acceptable state. 7. Thank you for this secure storage of Used Oils, please continue this practice going forward. 8. The current state of Used Battery storage is unacceptable. All Used Batteries must be stored in Wooden Crates lined with Plastic Poly. This must be taken care of by next year's Inspection. 9. All Raw Water Usage MUST be accounted for in Total Consumption Records. These Load Counts must be included in Total Consumption Records. 10. The old Raw Water Pump House and above ground Water Line were stopped being used in 2011, they need to be Decommissioned and Removed in the summer of 2020.

Licensee or Representative	**Inspector's Name**
	Baba Pedersen
Signature	**Signature**
	Signed Original on File
Date	**Date**
	2019 Nov 27

Office Use Only:	Follow-up report to be issued by Inspector	☐ Yes ☒ No

cc. CIRNAC, Manager Field Operations, Iqaluit, justin.hack@canada.ca

Nunavut Water Board, Manager of Licensing, Gjoa Haven, licensing@nwb-oen.ca

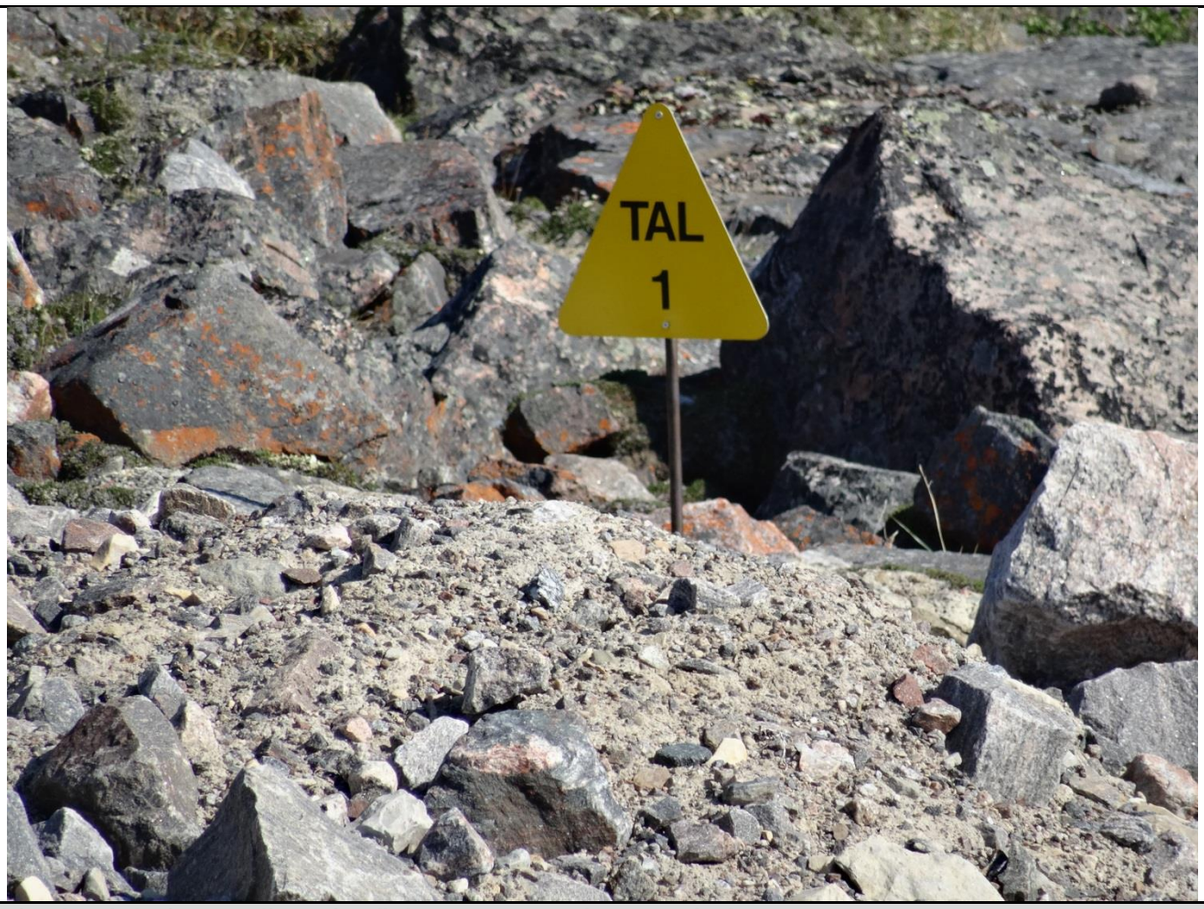
Gov't of Nunavut, Municipal Engineer, Cambridge Bay, salam@gov.nu.ca

PHOTO LOG

Date	Camera	Inspector	Authorization
2019 July 4	Sony DSC-HX50V	Baba Pedersen	3BM-TAL1419

Photo Log # DSC04951

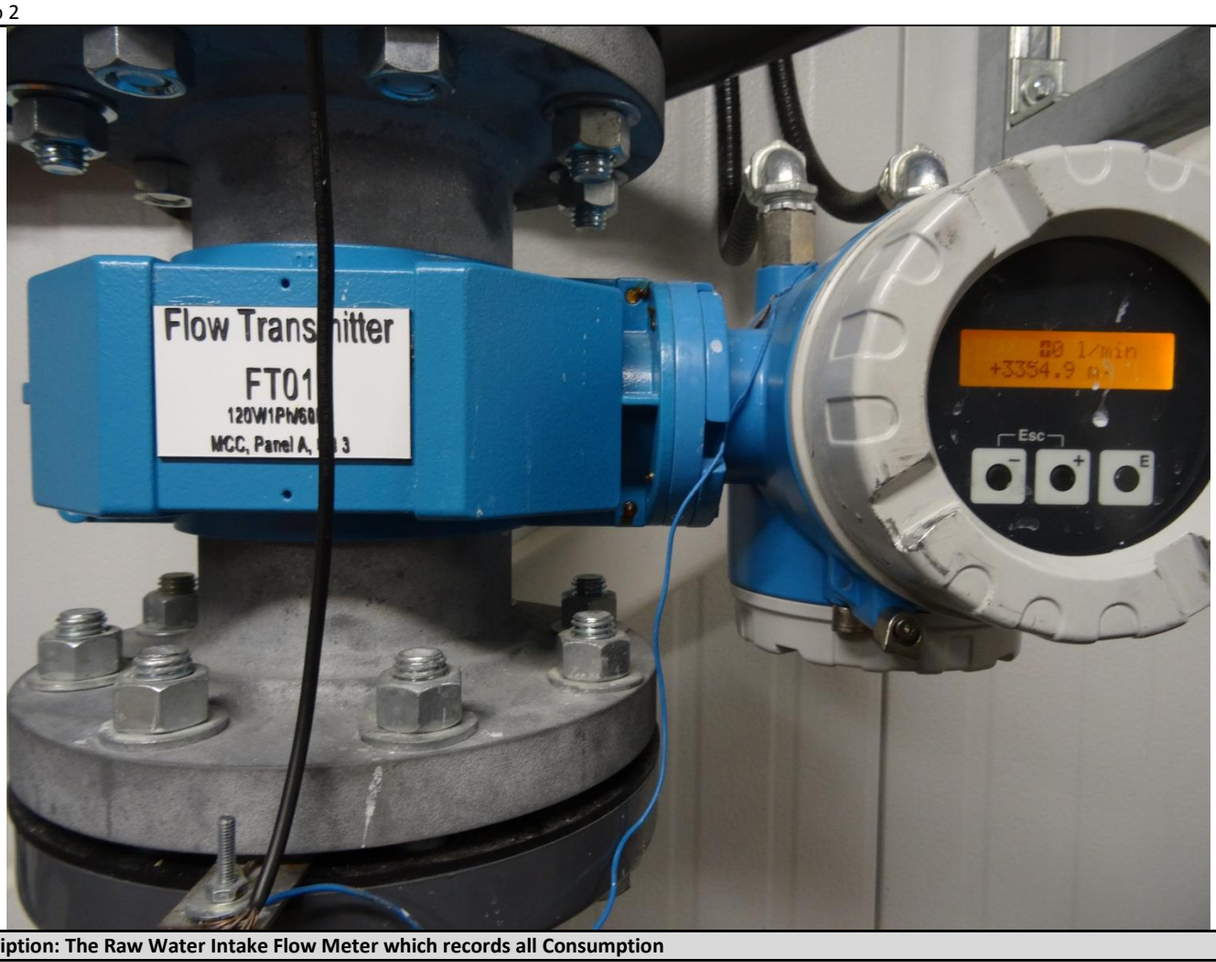
Photo 1



Description: Sample Station TAL-1 Signage installed as per my request last year – Thank you

Photo Log # DSC04953

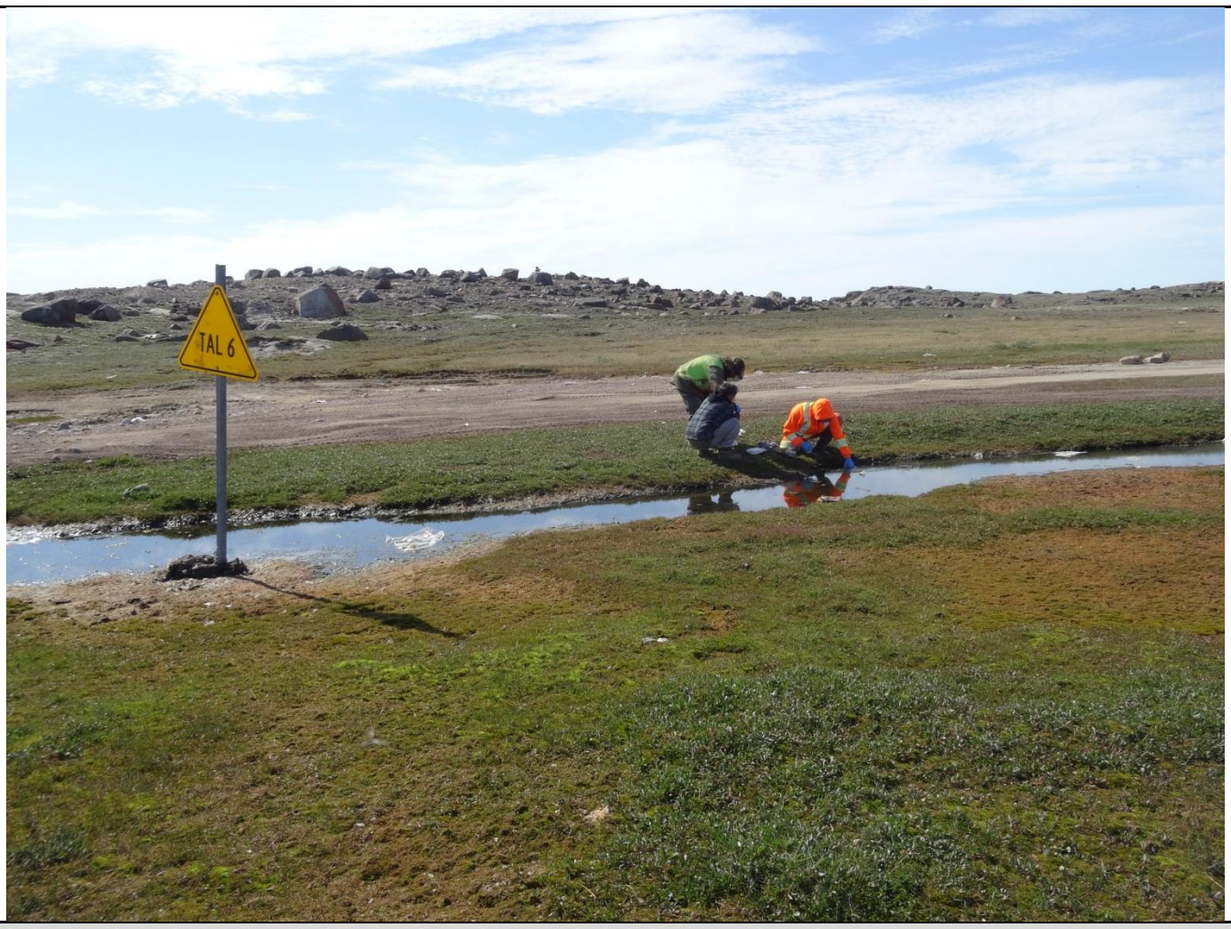
Photo 2



Description: The Raw Water Intake Flow Meter which records all Consumption

Photo Log # DSC04965

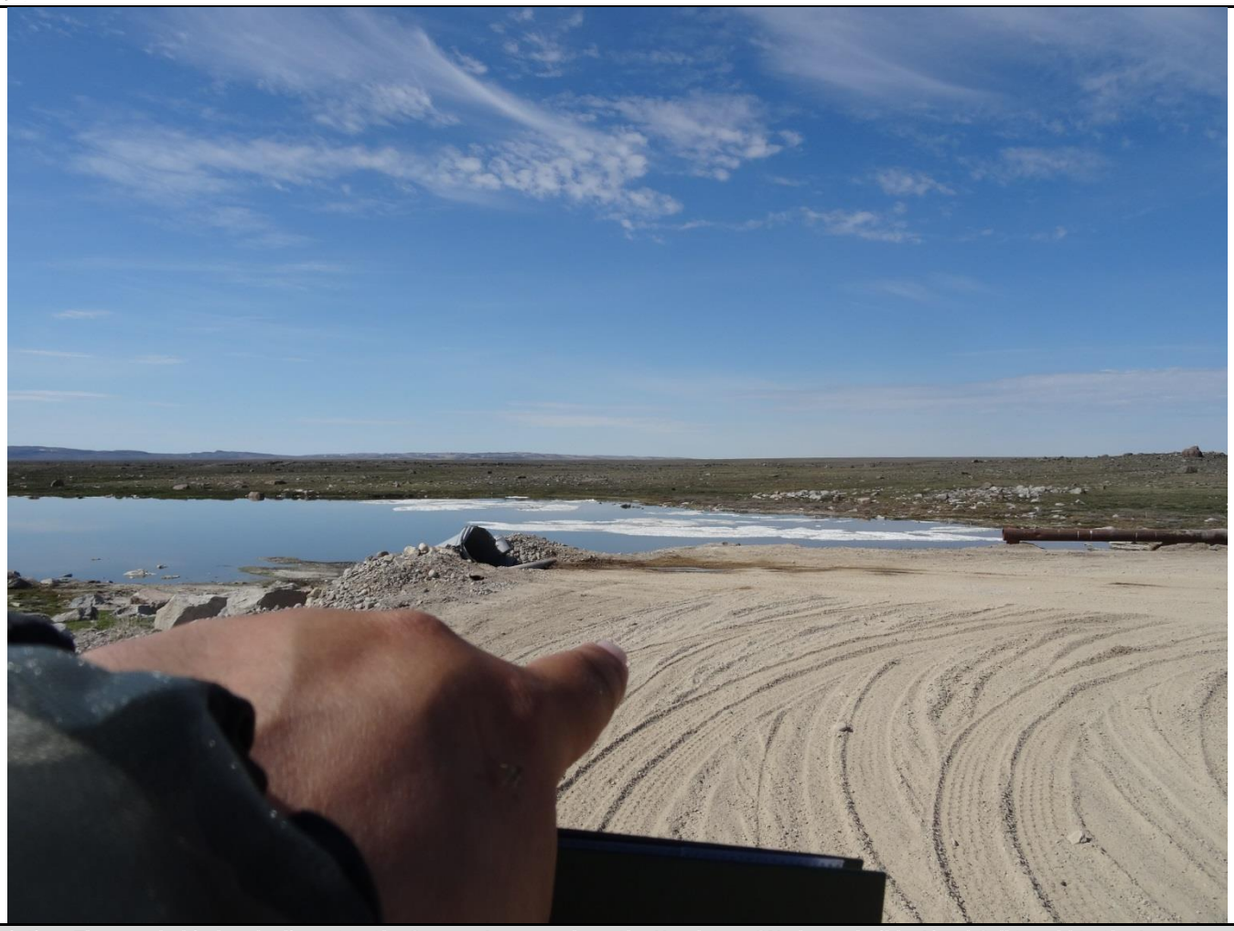
Photo 3



Description: Hamlet and GN-CGS Staff taking Samples at the TAL-6 Final Discharge Sample Station

Photo Log # DSC05051

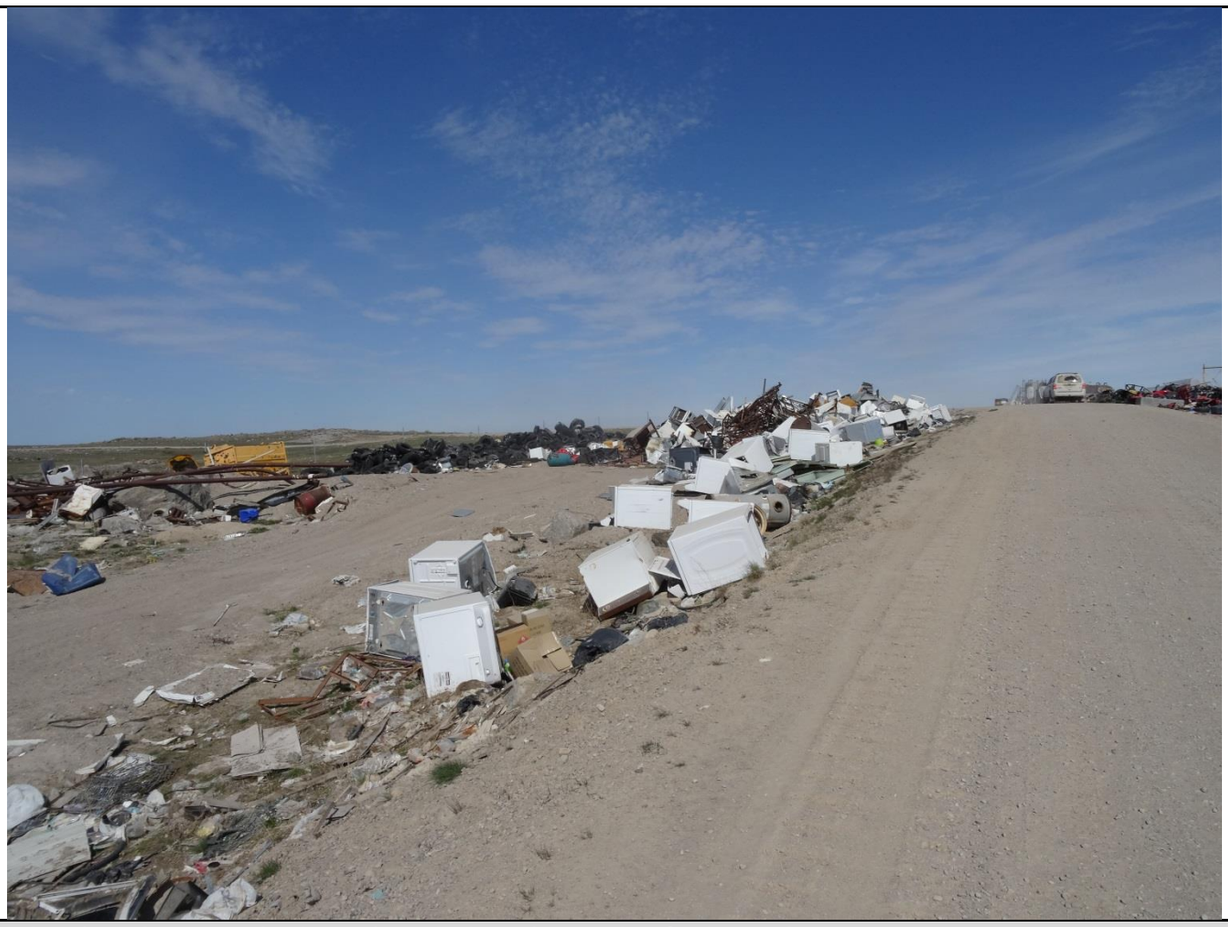
Photo 4



Description: The area behind and adjacent to the Sewage Lagoon where the Hamlet an GN plan to build a Lined Cell to add to the Lagoon

Photo Log # DSC05064

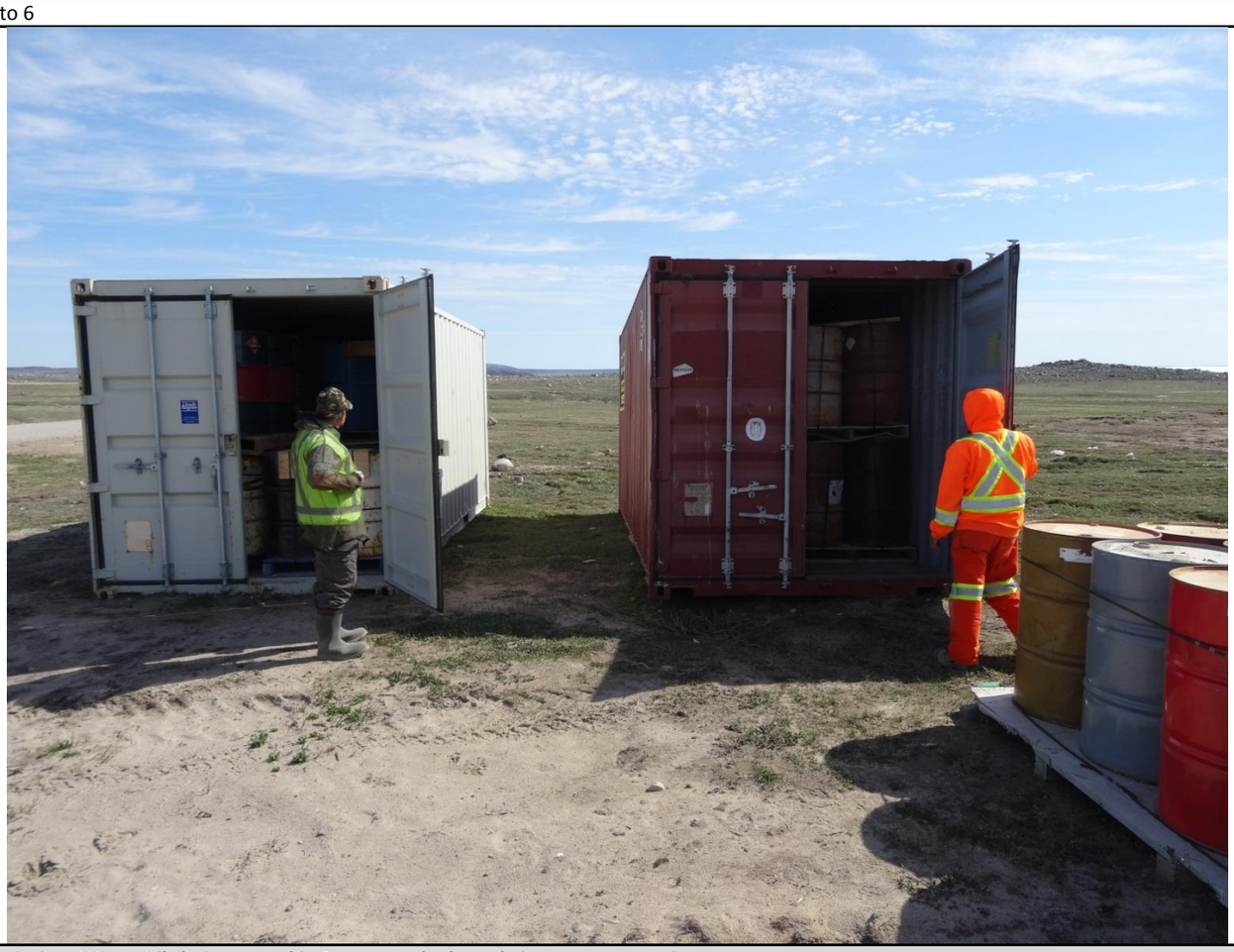
Photo 5



Description: The Garbage Dump showing good organization and segregation of various products

Photo Log # DSC05070

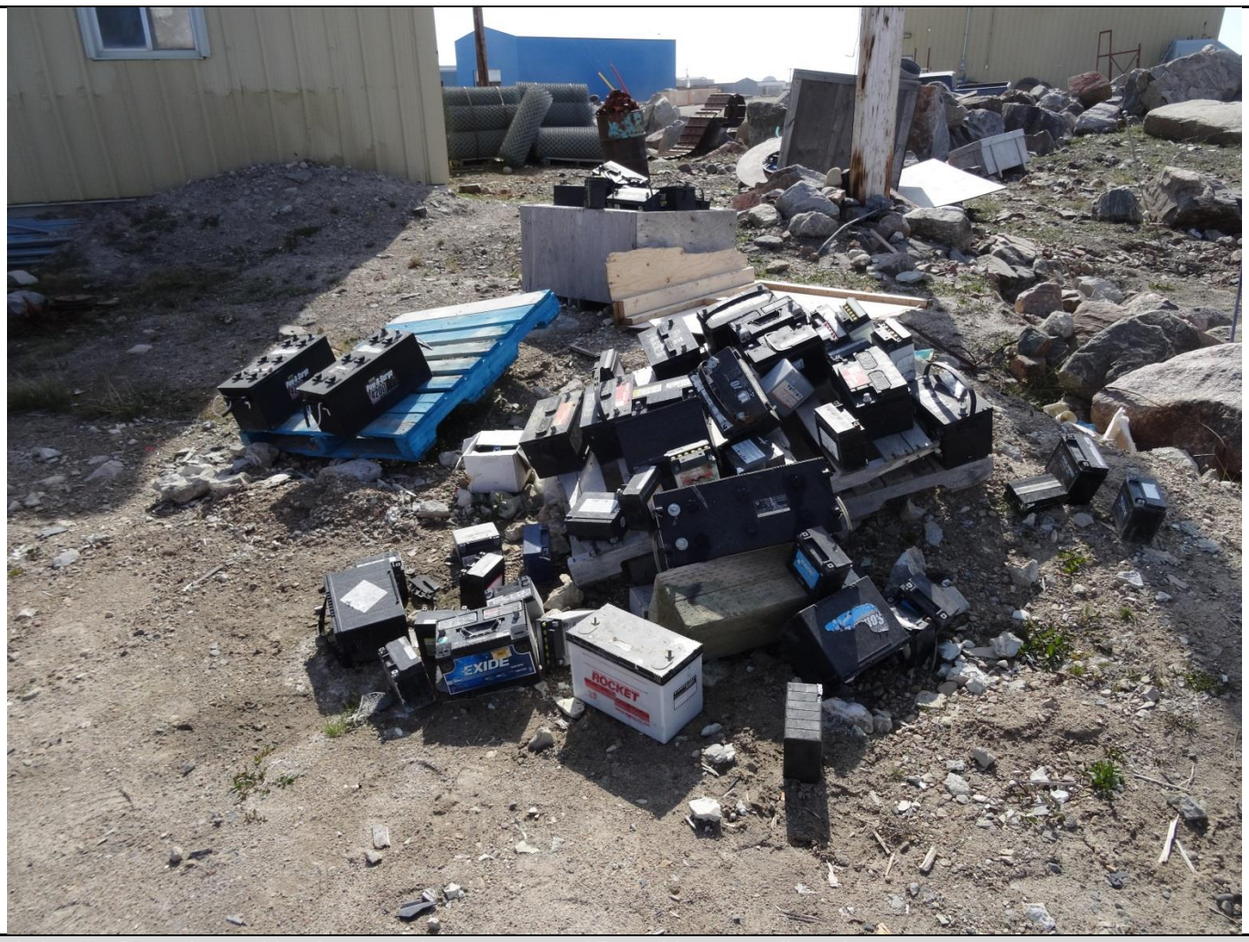
Photo 6



Description: Waste Oils being stored in Drums stacked neatly in Sea Can Containers

Photo Log # DSC05073

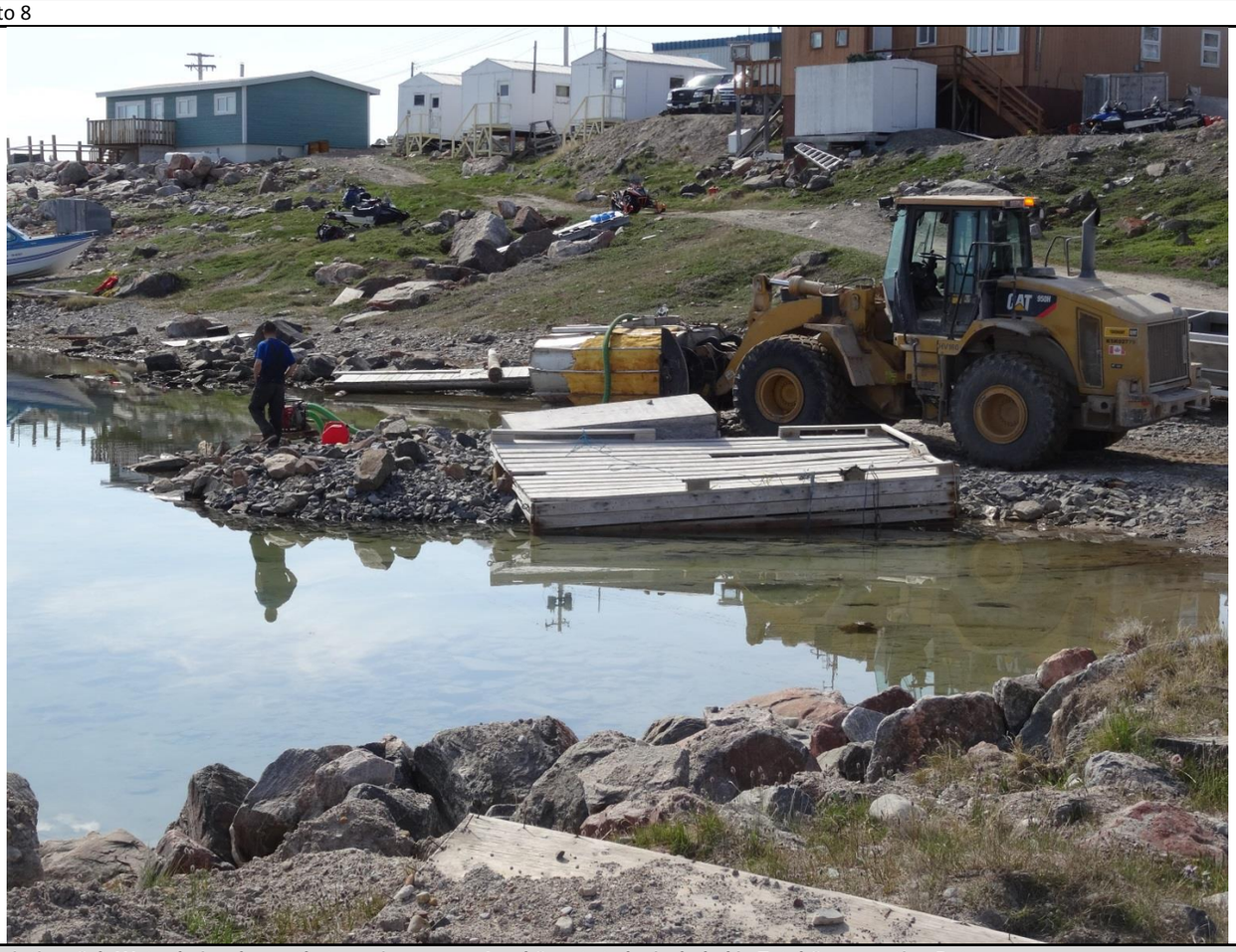
Photo 7



Description: Used Batteries requiring clean-up and secure storage while awaiting proper disposal

Photo Log # DSC05076

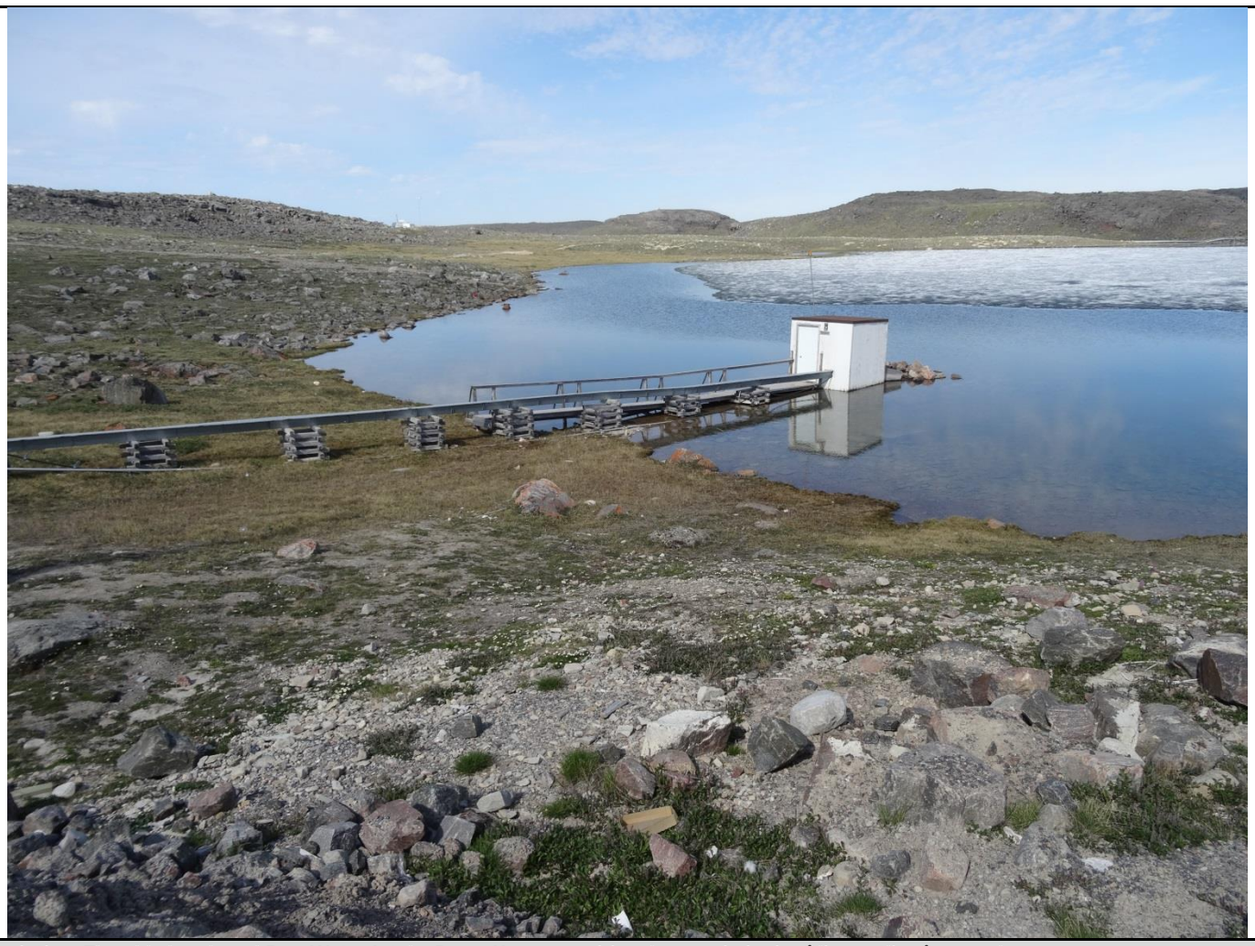
Photo 8



Description: Salt Water being drawn that requires proper Load Counts to be included in Total Consumption Data

Photo Log # DSC05087

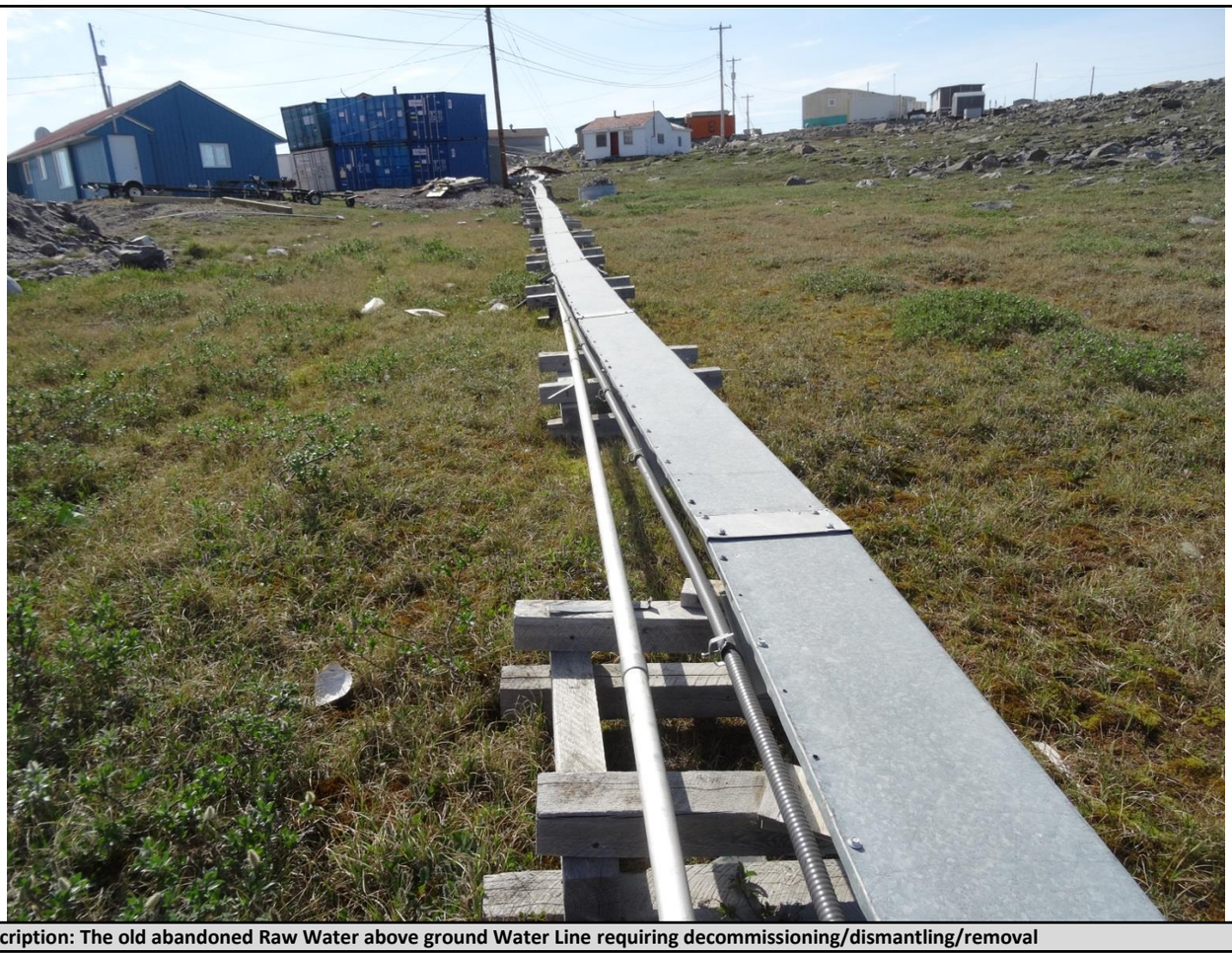
Photo 9



Description: The old abandoned Raw Water Intake Pump House requiring decommissioning/dismantling/removal

Photo Log # DSC05093

Photo 10



Description: The old abandoned Raw Water above ground Water Line requiring decommissioning/dismantling/removal

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 190306

- FINAL REPORT -

Prepared For: Hamlet of Taloyoak

Address: P.O. Box 8
Taloyoak, NU,X0E 1B0

Attn: **Larry Banks** **Facsimile: 867-561-5057**

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Monday, June 24, 2019
Print Date: ***Monday, June 24, 2019***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-1 **Taiga Sample ID:** 001

Client Project:
Sample Type: Raw Water
Received Date: 04-Jun-19
Sampling Date: 03-Jun-19
Sampling Time:
Location: Source Water and Treated Water
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	< 0.005	0.005	mg/L	13-Jun-19	SM4500-NH3:G	
Organic Carbon, Dissolved	4.6	0.5	mg/L	05-Jun-19	SM5310:B	
Organic Carbon, Total	4.3	0.5	mg/L	06-Jun-19	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	131	0.4	mg/L		SM2320:B	
Colour, True	< 5	5	TCU	12-Jun-19	SM2120:B	
Conductivity, Specific (@25C)	350	0.4	µS/cm		SM2510:B	
pH	7.78		pH units		SM4500-H:B	
Solids, Total Dissolved	182	10	mg/L	07-Jun-19	SM2540:C	
Solids, Total Suspended	4	3	mg/L	07-Jun-19	SM2540:D	
Turbidity	0.33	0.05	NTU	05-Jun-19	SM2130:B	
Major Ions						
Calcium	30.6	0.1	mg/L	04-Jun-19	SM4110:B	
Chloride	31.1	0.7	mg/L	04-Jun-19	SM4110:B	

ReportDate: Monday, June 24, 2019
Print Date: ***Monday, June 24, 2019***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-1 **Taiga Sample ID:** 001

Fluoride	< 0.1	0.1	mg/L	04-Jun-19	SM4110:B
Hardness	134	0.7	mg/L	04-Jun-19	SM4110:B
Magnesium	13.9	0.1	mg/L	04-Jun-19	SM4110:B
Nitrate as Nitrogen	0.56	0.01	mg/L	04-Jun-19	SM4110:B
Nitrate+Nitrite as Nitrogen	0.56	0.01	mg/L	04-Jun-19	SM4110:B
Potassium	1.6	0.1	mg/L	04-Jun-19	SM4110:B
Sodium	19.6	0.1	mg/L	04-Jun-19	SM4110:B
Sulphate	14	1	mg/L	04-Jun-19	SM4110:B
Microbiology					
Coliforms, Total	< 1.0	1.0	MPN/100ml	05-Jun-19	SM9223:B
Escherichia coli	< 1.0	1.0	MPN/100ml	05-Jun-19	SM9223:B
Subcontracted Inorganics					
Sulphide	< 0.0015	0.0015	mg/L	10-Jun-19	APHA4500-S2
Subcontracted Organics					
Cyanide, Total	< 0.0010	0.001	mg/L	10-Jun-19	APHA4500-CN
Phenols, Total	< 0.0010	0.001	mg/L	19-Jun-19	AB ENV.06537
Trace Metals, Total					
Aluminum	2.9	0.6	µg/L	10-Jun-19	EPA200.8
Antimony	< 0.1	0.1	µg/L	10-Jun-19	EPA200.8
Arsenic	0.3	0.2	µg/L	10-Jun-19	EPA200.8
Barium	5.0	0.1	µg/L	10-Jun-19	EPA200.8
Boron	19.5	0.9	µg/L	10-Jun-19	EPA200.8
Cadmium	< 0.04	0.04	µg/L	10-Jun-19	EPA200.8
Chromium	< 0.1	0.1	µg/L	10-Jun-19	EPA200.8
Copper	1.1	0.2	µg/L	10-Jun-19	EPA200.8

ReportDate: Monday, June 24, 2019
Print Date: *Monday, June 24, 2019*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-1 **Taiga Sample ID:** 001

Iron	< 5	5	ug/L	10-Jun-19	EPA200.8
Lead	0.1	0.1	µg/L	10-Jun-19	EPA200.8
Manganese	2.5	0.1	µg/L	10-Jun-19	EPA200.8
Mercury	< 0.01	0.01	µg/L	10-Jun-19	EPA200.8
Selenium	0.5	0.3	µg/L	10-Jun-19	EPA200.8
Silver	< 0.1	0.1	µg/L	10-Jun-19	EPA200.8
Uranium	0.5	0.1	µg/L	10-Jun-19	EPA200.8
Vanadium	0.1	0.1	µg/L	10-Jun-19	EPA200.8
Zinc	6.1	0.4	µg/L	10-Jun-19	EPA200.8

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Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP **Taiga Sample ID:** 002

Client Project:
Sample Type: Treated Water
Received Date: 04-Jun-19
Sampling Date: 03-Jun-19
Sampling Time:
Location: Source Water and Treated Water
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	< 0.005	0.005	mg/L	13-Jun-19	SM4500-NH3:G	
Organic Carbon, Dissolved	4.3	0.5	mg/L	05-Jun-19	SM5310:B	
Organic Carbon, Total	4.5	0.5	mg/L	06-Jun-19	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	131	0.4	mg/L		SM2320:B	
Colour, True	< 5	5	TCU	12-Jun-19	SM2120:B	
Conductivity, Specific (@25C)	356	0.4	µS/cm		SM2510:B	
pH	7.86		pH units		SM4500-H:B	
Solids, Total Dissolved	176	10	mg/L	07-Jun-19	SM2540:C	
Solids, Total Suspended	< 3	3	mg/L	07-Jun-19	SM2540:D	
Turbidity	0.28	0.05	NTU	05-Jun-19	SM2130:B	
Major Ions						
Calcium	31.8	0.1	mg/L	04-Jun-19	SM4110:B	
Chloride	31.9	0.7	mg/L	04-Jun-19	SM4110:B	
Fluoride	0.1	0.1	mg/L	04-Jun-19	SM4110:B	
Hardness	137	0.7	mg/L	04-Jun-19	SM4110:B	

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Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP **Taiga Sample ID:** 002

Magnesium	14.1	0.1	mg/L	04-Jun-19	SM4110:B
Nitrate as Nitrogen	0.54	0.01	mg/L	04-Jun-19	SM4110:B
Nitrate+Nitrite as Nitrogen	0.54	0.01	mg/L	04-Jun-19	SM4110:B
Potassium	1.6	0.1	mg/L	04-Jun-19	SM4110:B
Sodium	19.8	0.1	mg/L	04-Jun-19	SM4110:B
Sulphate	14	1	mg/L	04-Jun-19	SM4110:B
Microbiology					
Coliforms, Total	< 1.0	1.0	MPN/100ml	05-Jun-19	SM9223:B
Escherichia coli	< 1.0	1.0	MPN/100ml	05-Jun-19	SM9223:B
Organics					
Bromodichloromethane	< 0.005	0.005	mg/L	07-Jun-19	EPA8260B
Bromoform	< 0.005	0.005	mg/L	07-Jun-19	EPA8260B
Chloroform	0.007	0.005	mg/L	07-Jun-19	EPA8260B
Dibromochloromethane	< 0.005	0.005	mg/L	07-Jun-19	EPA8260B
Trihalomethanes, Total	0.011	0.005	mg/L	07-Jun-19	EPA8260B
Subcontracted Inorganics					
Sulphide	< 0.0015	0.0015	mg/L	10-Jun-19	APHA4500-S2
Subcontracted Organics					
Cyanide, Total	< 0.0010	0.001	mg/L	10-Jun-19	APHA4500-CN
Phenols, Total	< 0.0010	0.001	mg/L	19-Jun-19	AB ENV.06537
Trace Metals, Total					
Aluminum	3.3	0.6	µg/L	10-Jun-19	EPA200.8
Antimony	< 0.1	0.1	µg/L	10-Jun-19	EPA200.8
Arsenic	0.4	0.2	µg/L	10-Jun-19	EPA200.8
Barium	5.0	0.1	µg/L	10-Jun-19	EPA200.8

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Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP **Taiga Sample ID:** 002

Boron	19.2	0.9	µg/L	10-Jun-19	EPA200.8
Cadmium	< 0.04	0.04	µg/L	10-Jun-19	EPA200.8
Chromium	< 0.1	0.1	µg/L	10-Jun-19	EPA200.8
Copper	0.5	0.2	µg/L	10-Jun-19	EPA200.8
Iron	< 5	5	ug/L	10-Jun-19	EPA200.8
Lead	< 0.1	0.1	µg/L	10-Jun-19	EPA200.8
Manganese	1.9	0.1	µg/L	10-Jun-19	EPA200.8
Mercury	< 0.01	0.01	µg/L	10-Jun-19	EPA200.8
Selenium	0.4	0.3	µg/L	10-Jun-19	EPA200.8
Silver	< 0.1	0.1	µg/L	10-Jun-19	EPA200.8
Uranium	0.5	0.1	µg/L	10-Jun-19	EPA200.8
Vanadium	0.2	0.1	µg/L	10-Jun-19	EPA200.8
Zinc	1.3	0.4	µg/L	10-Jun-19	EPA200.8

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Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Truckfill **Taiga Sample ID:** 003

Client Project:
Sample Type: Treated Water
Received Date: 04-Jun-19
Sampling Date: 03-Jun-19
Sampling Time:
Location: Source Water and Treated Water
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	< 0.005	0.005	mg/L	13-Jun-19	SM4500-NH3:G	
Organic Carbon, Dissolved	4.5	0.5	mg/L	05-Jun-19	SM5310:B	
Organic Carbon, Total	4.3	0.5	mg/L	06-Jun-19	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	131	0.4	mg/L		SM2320:B	
Colour, True	< 5	5	TCU	12-Jun-19	SM2120:B	
Conductivity, Specific (@25C)	357	0.4	µS/cm		SM2510:B	
pH	7.86		pH units		SM4500-H:B	
Solids, Total Dissolved	190	10	mg/L	07-Jun-19	SM2540:C	
Solids, Total Suspended	6	3	mg/L	07-Jun-19	SM2540:D	
Turbidity	0.20	0.05	NTU	05-Jun-19	SM2130:B	
Major Ions						
Calcium	31.9	0.1	mg/L	04-Jun-19	SM4110:B	
Chloride	32.0	0.7	mg/L	04-Jun-19	SM4110:B	
Fluoride	0.1	0.1	mg/L	04-Jun-19	SM4110:B	
Hardness	138	0.7	mg/L	04-Jun-19	SM4110:B	

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Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Truckfill **Taiga Sample ID:** 003

Magnesium	14.1	0.1	mg/L	04-Jun-19	SM4110:B	
Nitrate as Nitrogen	0.55	0.01	mg/L	04-Jun-19	SM4110:B	
Nitrate+Nitrite as Nitrogen	0.55	0.01	mg/L	04-Jun-19	SM4110:B	
Potassium	1.6	0.1	mg/L	04-Jun-19	SM4110:B	
Sodium	19.8	0.1	mg/L	04-Jun-19	SM4110:B	
Sulphate	14	1	mg/L	04-Jun-19	SM4110:B	
Microbiology						
Coliforms, Total	< 1.0	1.0	MPN/100ml	05-Jun-19	SM9223:B	
Escherichia coli	< 1.0	1.0	MPN/100ml	05-Jun-19	SM9223:B	
Organics						
Bromodichloromethane		0.005	mg/L		EPA8260B	111
Bromoform		0.005	mg/L		EPA8260B	111
Chloroform		0.005	mg/L		EPA8260B	111
Dibromochloromethane		0.005	mg/L		EPA8260B	111
Trihalomethanes, Total		0.005	mg/L		EPA8260B	111
Subcontracted Inorganics						
Sulphide	< 0.0015	0.0015	mg/L	10-Jun-19	APHA4500-S2	
Subcontracted Organics						
Cyanide, Total	< 0.0010	0.001	mg/L	10-Jun-19	APHA4500-CN	
Phenols, Total	< 0.0010	0.001	mg/L	19-Jun-19	AB ENV.06537	
Trace Metals, Total						
Aluminum	2.5	0.6	µg/L	10-Jun-19	EPA200.8	
Antimony	< 0.1	0.1	µg/L	10-Jun-19	EPA200.8	
Arsenic	0.4	0.2	µg/L	10-Jun-19	EPA200.8	
Barium	5.0	0.1	µg/L	10-Jun-19	EPA200.8	

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Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Truckfill **Taiga Sample ID:** 003

Boron	19.9	0.9	µg/L	10-Jun-19	EPA200.8
Cadmium	< 0.04	0.04	µg/L	10-Jun-19	EPA200.8
Chromium	0.1	0.1	µg/L	10-Jun-19	EPA200.8
Copper	3.2	0.2	µg/L	10-Jun-19	EPA200.8
Iron	11	5	ug/L	10-Jun-19	EPA200.8
Lead	0.2	0.1	µg/L	10-Jun-19	EPA200.8
Manganese	1.7	0.1	µg/L	10-Jun-19	EPA200.8
Mercury	< 0.01	0.01	µg/L	10-Jun-19	EPA200.8
Selenium	0.4	0.3	µg/L	10-Jun-19	EPA200.8
Silver	< 0.1	0.1	µg/L	10-Jun-19	EPA200.8
Uranium	0.5	0.1	µg/L	10-Jun-19	EPA200.8
Vanadium	0.2	0.1	µg/L	10-Jun-19	EPA200.8
Zinc	3.1	0.4	µg/L	10-Jun-19	EPA200.8

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Taiga Batch No.: 190306

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Truckfill **Taiga Sample ID:** 003

- DATA QUALIFERS -

Data Qualifier Descriptions:

111 *Vial contained air bubble, analysis not possible*

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 190462

- FINAL REPORT -

Prepared For: Hamlet of Taloyoak

Address: P.O. Box 8
Taloyoak, NU,X0E 1B0

Attn: **Ted Laszczak** **Facsimile: 867-561-5057**

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Monday, July 29, 2019
Print Date: ***Monday, July 29, 2019***

Taiga Environmental Laboratory
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Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 190462

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-6 **Taiga Sample ID:** 001

Client Project: Taloyoak Sewage and Solid Waste
Sample Type: Water
Received Date: 05-Jul-19
Sampling Date: 04-Jul-19
Sampling Time: 11:00
Location: Sewage and Solid Waste
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	8	2	mg/L	05-Jul-19	SM5210:B	
CBOD	8	2	mg/L	05-Jul-19	SM5210:B	
Organic Carbon, Dissolved	29.7	0.5	mg/L	08-Jul-19	SM5310:B	
Organic Carbon, Total	35.6	0.5	mg/L	09-Jul-19	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	193	0.4	mg/L	05-Jul-19	SM2320:B	
Conductivity, Specific (@25C)	733	0.4	µS/cm	05-Jul-19	SM2510:B	
pH	8.10		pH units	05-Jul-19	SM4500-H:B	
Solids, Total Dissolved	443	10	mg/L	11-Jul-19	SM2540:C	
Solids, Total Suspended	10	3	mg/L	11-Jul-19	SM2540:D	
Major Ions						
Calcium	46.2	0.1	mg/L	05-Jul-19	SM4110:B	
Chloride	92.0	0.7	mg/L	05-Jul-19	SM4110:B	
Hardness	199	0.7	mg/L	05-Jul-19	SM4110:B	

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Taiga Batch No.: 190462

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-6 **Taiga Sample ID:** 001

Magnesium	20.4	0.1	mg/L	05-Jul-19	SM4110:B
Nitrate+Nitrite as Nitrogen	0.43	0.01	mg/L	05-Jul-19	SM4110:B
Potassium	13.2	0.1	mg/L	05-Jul-19	SM4110:B
Sodium	62.8	0.1	mg/L	05-Jul-19	SM4110:B
Sulphate	36	1	mg/L	05-Jul-19	SM4110:B
Microbiology					
Coliforms, Fecal	32	1	CFU/100mL	05-Jul-19	SM9222:D
Organics					
Benzene	< 0.002	0.002	mg/L	16-Jul-19	EPA8260B
Ethylbenzene	< 0.002	0.002	mg/L	16-Jul-19	EPA8260B
F2: C10-C16	< 0.2	0.2	mg/L	12-Jul-19	EPA8015B
F3: C16-C34	< 0.2	0.2	mg/L	12-Jul-19	EPA8015B
F4: C34-C50	< 0.2	0.2	mg/L	12-Jul-19	EPA8015B
Hydrocarbons, Total Extractable	< 0.2	0.2	mg/L	12-Jul-19	EPA8015B
Toluene	< 0.002	0.002	mg/L	16-Jul-19	EPA8260B
Xylenes	< 0.002	0.002	mg/L	16-Jul-19	EPA8260B
Subcontracted Organics					
Phenols, Total	0.0031	0.001	mg/L	15-Jul-19	AB ENV.06537
Trace Metals, Total					
Aluminum	17.9	5	µg/L	10-Jul-19	EPA200.8
Arsenic	1.1	0.2	µg/L	10-Jul-19	EPA200.8
Beryllium	< 0.1	0.1	µg/L	10-Jul-19	EPA200.8
Chromium	0.3	0.1	µg/L	10-Jul-19	EPA200.8
Iron	222	5	µg/L	10-Jul-19	EPA200.8
Lead	< 0.1	0.1	µg/L	10-Jul-19	EPA200.8

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Taiga Batch No.: 190462

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-6 **Taiga Sample ID:** 001

Mercury	0.01	0.01	µg/L	10-Jul-19	EPA200.8
Nickel	1.4	0.1	µg/L	10-Jul-19	EPA200.8
Silver	< 0.1	0.1	µg/L	10-Jul-19	EPA200.8
Zinc	< 5.0	5	µg/L	10-Jul-19	EPA200.8

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Taiga Batch No.: 190462

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-4 **Taiga Sample ID:** 002

Client Project: Taloyoak Sewage and Solid Waste
Sample Type: Water
Received Date: 05-Jul-19
Sampling Date: 04-Jul-19
Sampling Time: 11:30
Location: Sewage and Solid Waste
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	114	2	mg/L	05-Jul-19	SM5210:B	
CBOD	120	2	mg/L	05-Jul-19	SM5210:B	
Organic Carbon, Dissolved	184	0.5	mg/L	08-Jul-19	SM5310:B	
Organic Carbon, Total	196	0.5	mg/L	09-Jul-19	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	779	0.4	mg/L	05-Jul-19	SM2320:B	
Conductivity, Specific (@25C)	4630	0.4	µS/cm	05-Jul-19	SM2510:B	
pH	7.53		pH units	05-Jul-19	SM4500-H:B	
Solids, Total Dissolved	3260	10	mg/L	11-Jul-19	SM2540:C	
Solids, Total Suspended	29	3	mg/L	11-Jul-19	SM2540:D	
Major Ions						
Calcium	343	0.1	mg/L	05-Jul-19	SM4110:B	
Chloride	477	0.7	mg/L	05-Jul-19	SM4110:B	
Hardness	1430	0.7	mg/L	05-Jul-19	SM4110:B	
Magnesium	139	0.1	mg/L	05-Jul-19	SM4110:B	
Nitrate+Nitrite as Nitrogen	1.33	0.01	mg/L	05-Jul-19	SM4110:B	

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Taiga Batch No.: 190462

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-4 **Taiga Sample ID:** 002

Potassium	140	0.1	mg/L	05-Jul-19	SM4110:B	
Sodium	407	0.1	mg/L	05-Jul-19	SM4110:B	
Sulphate	1140	1	mg/L	05-Jul-19	SM4110:B	
Microbiology						
Coliforms, Fecal	100	10	CFU/100mL	05-Jul-19	SM9222:D	
Organics						
Benzene	< 0.002	0.002	mg/L	16-Jul-19	EPA8260B	110
Ethylbenzene	< 0.002	0.002	mg/L	16-Jul-19	EPA8260B	110
F2: C10-C16	< 0.2	0.2	mg/L	18-Jul-19	EPA8015B	
F3: C16-C34	< 0.2	0.2	mg/L	18-Jul-19	EPA8015B	
F4: C34-C50	< 0.2	0.2	mg/L	18-Jul-19	EPA8015B	
Hydrocarbons, Total Extractable	< 0.2	0.2	mg/L	18-Jul-19	EPA8015B	
Toluene	< 0.002	0.002	mg/L	16-Jul-19	EPA8260B	110
Xylenes	< 0.002	0.002	mg/L	16-Jul-19	EPA8260B	110
Subcontracted Organics						
Phenols, Total	0.0429	0.001	mg/L	15-Jul-19	AB ENV.06537	
Trace Metals, Total						
Aluminum	129	5	µg/L	10-Jul-19	EPA200.8	
Arsenic	8.7	0.2	µg/L	10-Jul-19	EPA200.8	
Beryllium	< 0.1	0.1	µg/L	10-Jul-19	EPA200.8	
Chromium	7.5	0.1	µg/L	10-Jul-19	EPA200.8	
Iron	2470	5	µg/L	10-Jul-19	EPA200.8	
Lead	2.3	0.1	µg/L	10-Jul-19	EPA200.8	
Mercury	0.05	0.01	µg/L	10-Jul-19	EPA200.8	
Nickel	21.6	0.1	µg/L	10-Jul-19	EPA200.8	

ReportDate: Monday, July 29, 2019
Print Date: *Monday, July 29, 2019*

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Taiga Batch No.: 190462

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-4 **Taiga Sample ID:** 002

Silver	0.2	0.1	µg/L	10-Jul-19	EPA200.8
Zinc	149	5	µg/L	10-Jul-19	EPA200.8

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Taiga Batch No.: 190462

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-3 **Taiga Sample ID:** 003

Client Project: Taloyoak Sewage and Solid Waste
Sample Type: Water
Received Date: 05-Jul-19
Sampling Date: 04-Jul-19
Sampling Time: 11:15
Location: Sewage and Solid Waste
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	66	2	mg/L	05-Jul-19	SM5210:B	
CBOD	72	2	mg/L	05-Jul-19	SM5210:B	
Organic Carbon, Dissolved	35.2	0.5	mg/L	08-Jul-19	SM5310:B	
Organic Carbon, Total	74.1	0.5	mg/L	09-Jul-19	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	164	0.4	mg/L	05-Jul-19	SM2320:B	
Conductivity, Specific (@25C)	625	0.4	µS/cm	05-Jul-19	SM2510:B	
pH	9.38		pH units	05-Jul-19	SM4500-H:B	
Solids, Total Dissolved	446	10	mg/L	11-Jul-19	SM2540:C	
Solids, Total Suspended	44	3	mg/L	11-Jul-19	SM2540:D	
Major Ions						
Calcium	35.2	0.1	mg/L	05-Jul-19	SM4110:B	
Chloride	87.8	0.7	mg/L	05-Jul-19	SM4110:B	
Hardness	152	0.7	mg/L	05-Jul-19	SM4110:B	
Magnesium	15.6	0.1	mg/L	05-Jul-19	SM4110:B	
Nitrate+Nitrite as Nitrogen	0.53	0.01	mg/L	05-Jul-19	SM4110:B	

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- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-3 **Taiga Sample ID:** 003

Potassium	14.9	0.1	mg/L	05-Jul-19	SM4110:B
Sodium	60.3	0.1	mg/L	05-Jul-19	SM4110:B
Sulphate	35	1	mg/L	05-Jul-19	SM4110:B
Microbiology					
Coliforms, Fecal	< 10	10	CFU/100mL	05-Jul-19	SM9222:D
Organics					
F2: C10-C16	< 0.2	0.2	mg/L	18-Jul-19	EPA8015B
F3: C16-C34	< 0.2	0.2	mg/L	18-Jul-19	EPA8015B
F4: C34-C50	< 0.2	0.2	mg/L	18-Jul-19	EPA8015B
Hydrocarbons, Total Extractable	< 0.2	0.2	mg/L	18-Jul-19	EPA8015B
Subcontracted Organics					
Phenols, Total	0.0030	0.001	mg/L	15-Jul-19	AB ENV.06537
Trace Metals, Total					
Aluminum	106	5	µg/L	10-Jul-19	EPA200.8
Arsenic	1.1	0.2	µg/L	10-Jul-19	EPA200.8
Beryllium	< 0.1	0.1	µg/L	10-Jul-19	EPA200.8
Chromium	0.2	0.1	µg/L	10-Jul-19	EPA200.8
Iron	208	5	µg/L	10-Jul-19	EPA200.8
Lead	0.2	0.1	µg/L	10-Jul-19	EPA200.8
Mercury	< 0.01	0.01	µg/L	10-Jul-19	EPA200.8
Nickel	1.6	0.1	µg/L	10-Jul-19	EPA200.8
Silver	< 0.1	0.1	µg/L	10-Jul-19	EPA200.8
Zinc	8.2	5	µg/L	10-Jul-19	EPA200.8

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- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-3 **Taiga Sample ID:** 003

- DATA QUALIFERS -

Data Qualifier Descriptions:

110 *Reported result uncertain, due to air in vial.*

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

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