ANNUAL REPORT
FOR THE HAMLET OF NAUJAAT

YEAR BEING REPORTED: 2021

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence No. **3BM-NAU2126** issued to the **Hamlet of Naujaat**.

Below are tabular summaries of all data generated under the "Monitoring Program".

I. Monthly and annual quantities of freshwater obtained by daily logs for all freshwater sources and estimated sewage waste discharged.

Table 1: Summary of water obtained from three raw water cells combined and estimated sewage water discharge in m^3

Month Reported	Quantity of Water Obtained from all sources (m^3)	Quantity of Sewage Waste Discharged (m^3)
January	4,044.170	Same
February	3,635.230	Same
March	4,141.285	Same
April	3,809.895	Same
May	4,102.254	Same
June	3,588.765	Same
July	4,174.508	Same
August	4,589.906	Same
September	3,832.132	Same
October	2,948.552	Same
November	3,952.143	Same
December	3,868.552	Same
ANNUAL TOTAL	46,687.392	Same

Note: No meter exists to measure the sewage discharge volumes, therefore Sewage discharge volumes are considered equal to the water consumption volumes.

II. A summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities:
- None

III. A list of unauthorized discharges and summary of follow-up action taken:
- No unauthorized discharges for the infrastructure under licence 3BM-NAU2126 occurred in 2021.

IV. A summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year:
- None

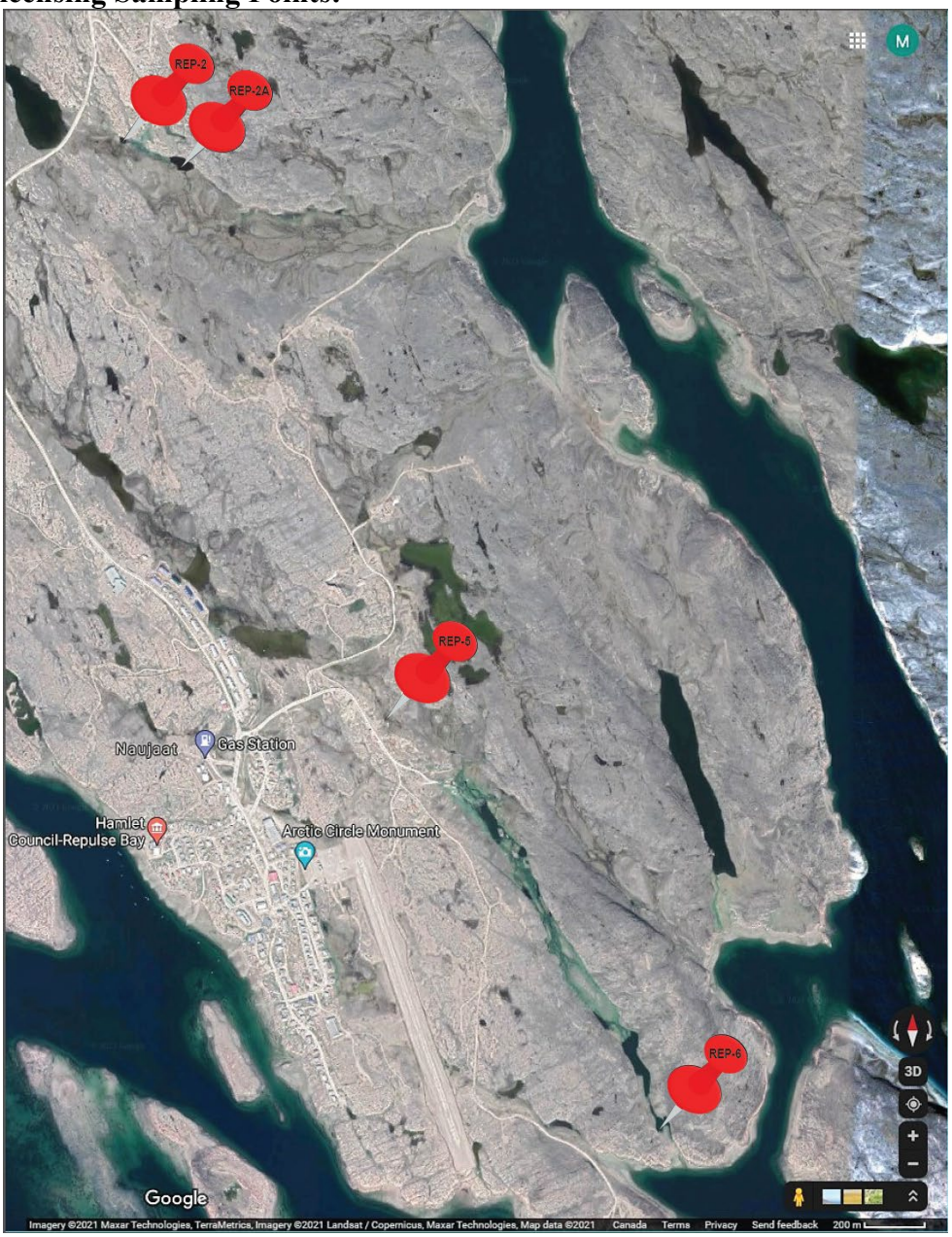
V. A summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned:
- The construction tender for the new sewage lagoon is expected to be completed by December 2022. The existing wetlands area will remain part of the wastewater treatment system. Tentative schedule will be for construction equipment and materials to arrive on sealift 2023, construction continuing through 2024, with completion by fall 2025.
- The Municipality is interested in relocating their solid waste site and may undertake a study to inform the planning of a new site.

VI. Any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and
- None

VII. updates or revisions to the approved Operation and Maintenance Plans:
- None

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:
- Licence 3BM-NAU2126 was issued on January 27, 2021 to replace previous licence 3BM-1520.

Water Licensing Sampling Points:



REP-2: Runoff from Solid Waste Disposal Facility culvert
REP-2a: Runoff from the Solid Waste Disposal Facility boulder seepage
REP-5: Effluent discharged from the Contaminated Solid Storage Facility
REP-6: Discharge from Vegetated Filter Strip Wetlands

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- CGS will gather more information about the breached berm at the solid waste site identified in the CIRNAC Inspection Report and the battery storage area during summer 2022, and will support the Municipality in any necessary repairs. A summary of the work will be submitted in the 2022 Annual Report, along with any updates on the Municipality led solid waste project.

Appendix A: REP-6 Effluent Quality Limits

Appendix B: Weekly Inspections at Monitoring Program Station

Appendix C: Certificate of Analysis August 19, 2021

Appendix D: Hazardous Materials Spill Database, Naujaat 2021

Appendix E: Naujaat 2021 Sampling Summary

Appendix F: Naujaat CIRNAC Inspection Report

Appendix A

3AM-ARV1016 Arviat Monitoring Program Results 2021
ARV-4 Effluent Quality limits

Parameter	Maximum Concentration of any grab sample	REP- 6
		19-Aug-21
BOD_5	80 mg/L	6.6
Total Suspended Solids	100 mg/L	5.7
Fecal Coliforms	1 x 10^4 CFU/100mL	90
Oil & Grease	no visible sheen	<5.0
pH	between 6 and 9	7.99

Appendix B

No Weekly Inspections at Monitoring Stations were received by CGS.

Appendix C

Hamlet of Naujaat (Repulse Bay)
ATTN: KEVIN TEGUMIAR
PO Box 10
Naujaat NU X0C 0H0

Date Received: 20-AUG-21
Report Date: 03-SEP-21 16:42 (MT)
Version: FINAL

Client Phone: 867-462-9952

Certificate of Analysis

Lab Work Order #: L2629717

Project P.O. #: NOT SUBMITTED
Job Reference: HAMLET OF NAUJAAT - WASTE WATER
C of C Numbers:
Legal Site Desc:

Craig Riddell, B.Sc.Ag
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2629717-1 REP-2							
Sampled By: MH on 19-AUG-21 @ 10:30							
Matrix: EFFLUENT							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		26-AUG-21	R5573018
Toluene	<0.0010		0.0010	mg/L		26-AUG-21	R5573018
Ethyl benzene	<0.00050		0.00050	mg/L		26-AUG-21	R5573018
o-Xylene	<0.00050		0.00050	mg/L		26-AUG-21	R5573018
m+p-Xylenes	<0.00040		0.00040	mg/L		26-AUG-21	R5573018
F1 (C6-C10)	<0.10		0.10	mg/L		26-AUG-21	R5573018
Surrogate: 4-Bromofluorobenzene (SS)	72.8		70-130	%		26-AUG-21	R5573018
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	01-SEP-21	03-SEP-21	R5575976
F3 (C16-C34)	<0.25		0.25	mg/L	01-SEP-21	03-SEP-21	R5575976
F4 (C34-C50)	<0.25		0.25	mg/L	01-SEP-21	03-SEP-21	R5575976
Surrogate: 2-Bromobenzotrifluoride	100.5		60-140	%	01-SEP-21	03-SEP-21	R5575976
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		03-SEP-21	
F2-Naphth	<0.10		0.10	mg/L		03-SEP-21	
F3-PAH	<0.25		0.25	mg/L		03-SEP-21	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		03-SEP-21	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		31-AUG-21	
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	960	MBHT	10	MPN/100mL		20-AUG-21	R5564810
Escherichia Coli	<10	MBHT	10	MPN/100mL		20-AUG-21	R5564810
CCME PAHs in mg/L							
1-Methylnaphthalene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
2-Methylnaphthalene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Acenaphthene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Acenaphthylene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Anthracene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Acridine	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(a)anthracene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Chrysene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Dibenz(a,h)anthracene	<0.0000050		0.0000050	mg/L	24-AUG-21	25-AUG-21	R5569706
Fluoranthene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Fluorene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Naphthalene	<0.000050		0.000050	mg/L	24-AUG-21	25-AUG-21	R5569706
Phenanthrene	<0.000050		0.000050	mg/L	24-AUG-21	25-AUG-21	R5569706
Pyrene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Quinoline	0.000021		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	24-AUG-21	25-AUG-21	R5569706
Surrogate: Naphthalene d8	99.6		50-130	%	24-AUG-21	25-AUG-21	R5569706
Surrogate: Phenanthrene d10	99.3		60-130	%	24-AUG-21	25-AUG-21	R5569706
Surrogate: Chrysene d12	97.8		60-130	%	24-AUG-21	25-AUG-21	R5569706
Surrogate: Acridine d9	92.4		60-130	%	24-AUG-21	25-AUG-21	R5569706
Nunavut WW Group 1							
Alkalinity, Bicarbonate							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2629717-1 REP-2							
Sampled By: MH on 19-AUG-21 @ 10:30							
Matrix: EFFLUENT							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	164		1.2	mg/L		24-AUG-21	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		24-AUG-21	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		24-AUG-21	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	134		1.0	mg/L		23-AUG-21	R5566047
Ammonia by colour							
Ammonia, Total (as N)	0.233		0.010	mg/L		25-AUG-21	R5570186
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		21-AUG-21	R5570844
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		21-AUG-21	R5570844
Chloride in Water by IC							
Chloride (Cl)	4.29		0.50	mg/L		20-AUG-21	R5563476
Conductivity							
Conductivity	268		1.0	umhos/cm		23-AUG-21	R5566047
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	10	MBHT	10	MPN/100mL		20-AUG-21	R5564996
Hardness Calculated							
Hardness (as CaCO3)	123	HTC	0.20	mg/L		24-AUG-21	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	30-AUG-21	30-AUG-21	R5572875
Nitrate in Water by IC							
Nitrate (as N)	0.072		0.020	mg/L		20-AUG-21	R5563476
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.072		0.070	mg/L		24-AUG-21	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		20-AUG-21	R5563476
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		24-AUG-21	R5571200
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		26-AUG-21	R5571213
Phosphorus, Total							
Phosphorus (P)-Total	0.0262		0.0030	mg/L		27-AUG-21	R5571258
Sulfate in Water by IC							
Sulfate (SO4)	5.52		0.30	mg/L		20-AUG-21	R5563476
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0175		0.0030	mg/L	23-AUG-21	23-AUG-21	R5567249
Arsenic (As)-Total	0.00028		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	23-AUG-21	23-AUG-21	R5567249
Calcium (Ca)-Total	38.1		0.050	mg/L	23-AUG-21	23-AUG-21	R5567249
Chromium (Cr)-Total	0.00020		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Cobalt (Co)-Total	0.00013		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Copper (Cu)-Total	0.00198		0.00050	mg/L	23-AUG-21	23-AUG-21	R5567249
Iron (Fe)-Total	0.158		0.010	mg/L	23-AUG-21	23-AUG-21	R5567249
Lead (Pb)-Total	0.000119		0.000050	mg/L	23-AUG-21	23-AUG-21	R5567249
Magnesium (Mg)-Total	6.71		0.0050	mg/L	23-AUG-21	23-AUG-21	R5567249
Manganese (Mn)-Total	0.0554		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Nickel (Ni)-Total	0.00108		0.00050	mg/L	23-AUG-21	23-AUG-21	R5567249
Potassium (K)-Total	2.94		0.050	mg/L	23-AUG-21	23-AUG-21	R5567249
Sodium (Na)-Total	7.62		0.050	mg/L	23-AUG-21	23-AUG-21	R5567249

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2629717-1 REP-2							
Sampled By: MH on 19-AUG-21 @ 10:30							
Matrix: EFFLUENT							
Total Metals in Water by CRC ICPMS							
Zinc (Zn)-Total	0.0032		0.0030	mg/L	23-AUG-21	23-AUG-21	R5567249
Total Organic Carbon by Combustion							
Total Organic Carbon	5.98		0.50	mg/L		23-AUG-21	R5569730
Total Suspended Solids							
Total Suspended Solids	<3.0		3.0	mg/L		23-AUG-21	R5566942
pH							
pH	8.26		0.10	pH units		23-AUG-21	R5566047
L2629717-2 REP-2A							
Sampled By: MH on 19-AUG-21 @ 10:45							
Matrix: EFFLUENT							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		26-AUG-21	R5573018
Toluene	<0.0010		0.0010	mg/L		26-AUG-21	R5573018
Ethyl benzene	<0.00050		0.00050	mg/L		26-AUG-21	R5573018
o-Xylene	<0.00050		0.00050	mg/L		26-AUG-21	R5573018
m+p-Xylenes	<0.00040		0.00040	mg/L		26-AUG-21	R5573018
F1 (C6-C10)	<0.10		0.10	mg/L		26-AUG-21	R5573018
Surrogate: 4-Bromofluorobenzene (SS)	70.5		70-130	%		26-AUG-21	R5573018
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	01-SEP-21	03-SEP-21	R5575976
F3 (C16-C34)	<0.25		0.25	mg/L	01-SEP-21	03-SEP-21	R5575976
F4 (C34-C50)	<0.25		0.25	mg/L	01-SEP-21	03-SEP-21	R5575976
Surrogate: 2-Bromobenzotrifluoride	94.4		60-140	%	01-SEP-21	03-SEP-21	R5575976
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		03-SEP-21	
F2-Naphth	<0.10		0.10	mg/L		03-SEP-21	
F3-PAH	<0.25		0.25	mg/L		03-SEP-21	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		03-SEP-21	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		31-AUG-21	
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	1140	MBHT	10	MPN/100mL		20-AUG-21	R5564810
Escherichia Coli	30	MBHT	10	MPN/100mL		20-AUG-21	R5564810
Note: microbiological test result for E.coli > Fecal coliform due to sample heterogeneity.Both test results are within normal variability for MPN tests.							
CCME PAHs in mg/L							
1-Methylnaphthalene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
2-Methylnaphthalene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Acenaphthene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Acenaphthylene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Anthracene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Acridine	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(a)anthracene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Chrysene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2629717-2 REP-2A							
Sampled By: MH on 19-AUG-21 @ 10:45							
Matrix: EFFLUENT							
CCME PAHs in mg/L							
Dibenz(a,h)anthracene	<0.0000050		0.0000050	mg/L	24-AUG-21	25-AUG-21	R5569706
Fluoranthene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Fluorene	<0.000020		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Naphthalene	<0.000050		0.000050	mg/L	24-AUG-21	25-AUG-21	R5569706
Phenanthrene	<0.000050		0.000050	mg/L	24-AUG-21	25-AUG-21	R5569706
Pyrene	<0.000010		0.000010	mg/L	24-AUG-21	25-AUG-21	R5569706
Quinoline	0.000033		0.000020	mg/L	24-AUG-21	25-AUG-21	R5569706
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	24-AUG-21	25-AUG-21	R5569706
Surrogate: Naphthalene d8	105.5		50-130	%	24-AUG-21	25-AUG-21	R5569706
Surrogate: Phenanthrene d10	100.7		60-130	%	24-AUG-21	25-AUG-21	R5569706
Surrogate: Chrysene d12	97.7		60-130	%	24-AUG-21	25-AUG-21	R5569706
Surrogate: Acridine d9	94.2		60-130	%	24-AUG-21	25-AUG-21	R5569706
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	194		1.2	mg/L		24-AUG-21	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		24-AUG-21	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		24-AUG-21	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	159		1.0	mg/L		23-AUG-21	R5566047
Ammonia by colour							
Ammonia, Total (as N)	0.453		0.010	mg/L		25-AUG-21	R5570186
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		21-AUG-21	R5570844
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		21-AUG-21	R5570844
Chloride in Water by IC							
Chloride (Cl)	9.10		0.50	mg/L		20-AUG-21	R5563476
Conductivity							
Conductivity	339		1.0	umhos/cm		23-AUG-21	R5566047
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	10	MBHT	10	MPN/100mL		20-AUG-21	R5564996
Hardness Calculated							
Hardness (as CaCO3)	146	HTC	0.20	mg/L		24-AUG-21	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	30-AUG-21	30-AUG-21	R5572875
Nitrate in Water by IC							
Nitrate (as N)	0.417		0.020	mg/L		20-AUG-21	R5563476
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.431		0.070	mg/L		24-AUG-21	
Nitrite in Water by IC							
Nitrite (as N)	0.013		0.010	mg/L		20-AUG-21	R5563476
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		24-AUG-21	R5571200
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		26-AUG-21	R5571213
Phosphorus, Total							
Phosphorus (P)-Total	0.0375		0.0030	mg/L		27-AUG-21	R5571258
Sulfate in Water by IC							
Sulfate (SO4)	8.30		0.30	mg/L		20-AUG-21	R5563476

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2629717-2 REP-2A							
Sampled By: MH on 19-AUG-21 @ 10:45							
Matrix: EFFLUENT							
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0138		0.0030	mg/L	23-AUG-21	23-AUG-21	R5567249
Arsenic (As)-Total	0.00034		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Cadmium (Cd)-Total	0.0000052		0.0000050	mg/L	23-AUG-21	23-AUG-21	R5567249
Calcium (Ca)-Total	46.4		0.050	mg/L	23-AUG-21	23-AUG-21	R5567249
Chromium (Cr)-Total	0.00047		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Cobalt (Co)-Total	0.00017		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Copper (Cu)-Total	0.00155		0.00050	mg/L	23-AUG-21	23-AUG-21	R5567249
Iron (Fe)-Total	0.380		0.010	mg/L	23-AUG-21	23-AUG-21	R5567249
Lead (Pb)-Total	0.000124		0.000050	mg/L	23-AUG-21	23-AUG-21	R5567249
Magnesium (Mg)-Total	7.40		0.0050	mg/L	23-AUG-21	23-AUG-21	R5567249
Manganese (Mn)-Total	0.0944		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Nickel (Ni)-Total	0.00126		0.00050	mg/L	23-AUG-21	23-AUG-21	R5567249
Potassium (K)-Total	4.48		0.050	mg/L	23-AUG-21	23-AUG-21	R5567249
Sodium (Na)-Total	15.0		0.050	mg/L	23-AUG-21	23-AUG-21	R5567249
Zinc (Zn)-Total	0.0049		0.0030	mg/L	23-AUG-21	23-AUG-21	R5567249
Total Organic Carbon by Combustion							
Total Organic Carbon	9.25		0.50	mg/L		23-AUG-21	R5569730
Total Suspended Solids							
Total Suspended Solids	<3.0		3.0	mg/L		23-AUG-21	R5566942
pH							
pH	8.19		0.10	pH units		23-AUG-21	R5566047
L2629717-3 REP-6							
Sampled By: MH on 19-AUG-21 @ 11:30							
Matrix: EFFLUENT							
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		20-AUG-21	R5564810
Escherichia Coli	<10		10	MPN/100mL		20-AUG-21	R5564810
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	153		1.2	mg/L		24-AUG-21	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		24-AUG-21	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		24-AUG-21	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	125		1.0	mg/L		23-AUG-21	R5566047
Ammonia by colour							
Ammonia, Total (as N)	2.10		0.10	mg/L		25-AUG-21	R5570186
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	6.6		2.0	mg/L		21-AUG-21	R5570844
Carbonaceous BOD							
BOD Carbonaceous	4.4		2.0	mg/L		21-AUG-21	R5570844
Chloride in Water by IC							
Chloride (Cl)	10.9		0.50	mg/L		20-AUG-21	R5563476
Conductivity							
Conductivity	299		1.0	umhos/cm		23-AUG-21	R5566047
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	90		10	MPN/100mL		20-AUG-21	R5564996
Hardness Calculated							
Hardness (as CaCO3)	123	HTC	0.20	mg/L		24-AUG-21	
Mercury Total							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2629717-3 REP-6							
Sampled By: MH on 19-AUG-21 @ 11:30							
Matrix: EFFLUENT							
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	30-AUG-21	30-AUG-21	R5572875
Nitrate in Water by IC							
Nitrate (as N)	0.302		0.020	mg/L		20-AUG-21	R5563476
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.336		0.070	mg/L		24-AUG-21	
Nitrite in Water by IC							
Nitrite (as N)	0.035		0.010	mg/L		20-AUG-21	R5563476
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		24-AUG-21	R5571200
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		26-AUG-21	R5571213
Phosphorus, Total							
Phosphorus (P)-Total	0.691		0.0030	mg/L		27-AUG-21	R5571258
Sulfate in Water by IC							
Sulfate (SO4)	12.7		0.30	mg/L		20-AUG-21	R5563476
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0187		0.0030	mg/L	23-AUG-21	23-AUG-21	R5567249
Arsenic (As)-Total	0.00026		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Cadmium (Cd)-Total	0.0000062		0.0000050	mg/L	23-AUG-21	23-AUG-21	R5567249
Calcium (Ca)-Total	37.2		0.050	mg/L	23-AUG-21	23-AUG-21	R5567249
Chromium (Cr)-Total	0.00014		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Cobalt (Co)-Total	0.00012		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Copper (Cu)-Total	0.00334		0.00050	mg/L	23-AUG-21	23-AUG-21	R5567249
Iron (Fe)-Total	0.473		0.010	mg/L	23-AUG-21	23-AUG-21	R5567249
Lead (Pb)-Total	0.000105		0.000050	mg/L	23-AUG-21	23-AUG-21	R5567249
Magnesium (Mg)-Total	7.40		0.0050	mg/L	23-AUG-21	23-AUG-21	R5567249
Manganese (Mn)-Total	0.0374		0.00010	mg/L	23-AUG-21	23-AUG-21	R5567249
Nickel (Ni)-Total	0.00082		0.00050	mg/L	23-AUG-21	23-AUG-21	R5567249
Potassium (K)-Total	3.38		0.050	mg/L	23-AUG-21	23-AUG-21	R5567249
Sodium (Na)-Total	12.7		0.050	mg/L	23-AUG-21	23-AUG-21	R5567249
Zinc (Zn)-Total	0.0084		0.0030	mg/L	23-AUG-21	23-AUG-21	R5567249
Total Organic Carbon by Combustion							
Total Organic Carbon	11.8		0.50	mg/L		23-AUG-21	R5569730
Total Suspended Solids							
Total Suspended Solids	5.7		3.0	mg/L		23-AUG-21	R5566942
pH							
pH	7.99		0.10	pH units		23-AUG-21	R5566047

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MBHT	The APHA 30 hour hold time was exceeded for microbiological testing. Samples processed within 48 hours from time of sampling may be valid in some cases (refer to Health Canada guidance).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-CO3CO3-CALC-WP	Water	Alkalinity, Carbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.

ALK-HCO3HCO3-CALC-WP	Water	Alkalinity, Bicarbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L

ALK-OHOH-CALC-WP	Water	Alkalinity, Hydroxide	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.

ALK-TITR-WP	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BOD-CBOD-WP	Water	Carbonaceous BOD	APHA 5210 B

Samples are diluted and seeded, have TCMP added to inhibit nitrogenous demands, and then are incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.

BOD-WP	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B

Samples are diluted and seeded and then incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.

BTEXS+F1-HSMS-WP	Water	BTX plus F1 by GCMS	EPA 8260C / EPA 5021A

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transfered into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

C-TOC-HTC-WP	Water	Total Organic Carbon by Combustion	APHA 5310 B-WP

Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

EC-WP	Water	Conductivity	APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511

Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.

FC10-QT97-WP	Water	Fecal coliforms, 1:10 dilution by QT97	APHA 9223B QT97

Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 +/- 0.2 degrees C for 18 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.

HARDNESS-CALC-WP	Water	Hardness Calculated	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-WP	Water	Nitrite in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-IC-N-WP	Water	Nitrate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

OG-GRAV-WP	Water	Oil & Grease - Gravimetric	EPA 1664 (modified)

Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil & Grease is determined from the weight of the residue in the vial.

P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.

PAH-CCME-PPM-WT	Water	CCME PAHs in mg/L	EPA 3511/8270D (mod)

PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.

PH-WP	Water	pH	APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.

SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)
Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.			
TC,EC10-QT97-WP	Water	Total and E. coli, 1:10 dilution by QT97	APHA 9223B QT97
Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Susbtrate Coliform Test". Total coliforms and Eschericia coli bacteria are simultaneously determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 35.0 +/- 0.5 degrees C for 18 or 24 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2629717-COFC

COC Number: 15 -

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	
Company:	Hamlet of Naujaat	Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Contact:	Kevin Tegumiar	Quality Control (QC) Report with Report	☐ YES ☐ NO
Phone:	867-462-9952	☐ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Street:	PO Box 10	Email 1 or Fax	saonaujaat@qiniq.com
City/Province:	Naujaat, NU	Email 2	mhewey@gov.nu.ca
Postal Code:	X0C 0H0	Email 3	scollins@gov.nu.ca
Invoice To	Same as Report To ☑ YES ☐ NO	**Invoice Distribution**	
	Copy of Invoice with Report ☑ YES ☐ NO	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	W10624	AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler: MH

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

EMERGENCY: 1 Business day [E1] ☐ | Same Day, Weekend or Statutory holiday [E0] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD	Routine	CBOD	Total Metals	Total Mercury	Nutrients/Phenols (x2)	Bacteria	Oil & Grease (x2)	BTEX-F1 (x3)	F2-F4 (x2)	PAH (x2)			Number of Containers
	REP-2	19-08-21	10:30	Effluent	R	R	R	R	R	R	R	R	R	R	R			17
	REP-2a	19-08-21	10:45	Effluent	R	R	R	R	R	R	R	R	R	R	R			17
	~~REP-5~~ No Water			~~Effluent~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~			~~17~~
	REP-6	19-08-21	11:30	Effluent	R	R	R	R	R	R	R	R						10

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human drinking water use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

NUNAVUT-WW-GRP1-WP, BTEX, F1-F4, PAH

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: MH	Date: Aug 19/21	Time: 17:00	Received by: O.A	Date: 20/8/21	Time: 2:05pm	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form.**

Temp: 7.3°C

Appendix D

List of spills reported to the NT-NU Spill Report Line and are listed on the Hazardous Materials Spills Database of Arviat in 2021

Spill	Occurrence Date	Location Description	Product Spilled	Quantity
2021415	25-Sep-21	lot 245 Naujaat NU (Coordinates 66.5454965905497, -85.96442650279523 in the Geolocation search bar are estimates produced by ECCC NEEC LTa)	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	600.00 Litres
2021153	04-May-21	Unit 139-143 5 Plex	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	46.00 Litres
2021005	06-Jan-21	Near Co-Op Warehouse / Naujaat, NU / Repulse Bay	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	20.00 Litres

Appendix E

Naujaat
REP-2

			2017		2018	2019	2020	2021	Statistics		
Parameter	**Unit**	**DL**	**29-Jun-17**	**19-Jul-17**	**02-Aug-18**	**01-Aug-19**	**09-Jul-20**	**19-Aug-21**	**Min**	**Max**	**Average**
Alkalinity											
Bicarbonate (HCO3)	mg/L	1.2	455	205	234	994	86.4	164	86.4	994	356.40
Carbonate (CO3)	mg/L	0.60	0.60	0.60	0.60	0.60	0.60	<0.60	0.6	0.6	0.60
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34	0.34	0.34	<0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	373	168	191	815	70.8	134	70.8	815	291.97
Ammonia by Colour											
Total (as N)	mg/L	0.20	18.3	0.302	0.72	57.1	0.470	0.233	0.233	57.1	12.85
Biochemical Oxygen Demand (BOD)											
Biochemical Oxygen Demand	mg/L	6.0	450	5.3	6.1	750	2.0	<2.0	2	750	242.68
Carbonaceous BOD											
BOD Carbonaceous	mg/L	6.0	330	3.2	3.5	700	2	<2.0	2	700	207.74
Chloride in Water by IC											
Chloride (Cl)	mg/L	10	32.1	12.2	15.1	69.1	3.68	4.29	3.68	69.1	22.75
Conductivity											
Conductivity	umhos/cm	1.0	1120	324	395	1870	144	268	144	1870	686.83
Fecal Coliforms											
Fecal Coliforms	MPN/100mL	3	/	10	10		10	10	10	10	10.00
Hardness Calculated											
Hardness (as CaCO3)	mg/L	0.30	487	164	169	561	60.4	123	60.4	561	260.73
Mercury Total											
Mercury (Hg)	mg/L	0.00020	0.0000470	0.0000067	0.0000050	0.0000050	0.0000050	<0.000050	0.000005	0.000047	0.00
Nitrate in Water by IC											
Nitrate (as N)	mg/L	0.40	0.040	0.069	0.076	0.2	0.032	0.072	0.032	0.2	0.08
Nitrate + Nitrite											
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.070	0.076	0.22	0.070	0.072	0.07	0.22	0.10
Nitrite in Water by IC											
Nitrite (as N)	mg/L	0.20	0.020	0.010	0.010	0.10	0.010	<0.010	0.01	0.1	0.03
Oil & Grease - Gravimetric											
Oil and Grease	mg/L	5.0	8.0	5.0	5.0	6.8	5.0	<5.0	5	8	5.96
Phenol											
Phenols	mg/L	0.0010	0.0598	0.0010	0.026	0.236	0.0012	<0.0010	0.001	0.236	0.06
Phosphorus, Total											
Phosphorus (P)	mg/L	0.010	3.50	0.086	0.0702	3.59	0.0408	0.0262	0.0262	3.59	1.22
Sulfate in Water by IC											
Sulfate (SO4)	mg/L	6.0	194	11	4.86	19.2	1.6	5.5	1.59	194	39.35
Total Metals by ICP-MS											
Aluminium (Al)	mg/L	0.0050	0.773	0.0270	0.0301	0.183	0.0316	0.0175	0.0175	0.773	0.18
Arsenic (As)	mg/L	0.00020	0.00287	0.00054	0.00068	0.00367	0.00041	0.00028	0.00028	0.00367	0.00
Cadmium (Cd)	mg/L	0.000010	0.000349	0.0000199	0.0000097	0.000307	0.0000050	<0.0000050	0.000005	0.000349	0.00
Calcium (Ca)	mg/L	0.10	175	52.1	54.7	191	19.8	38.1	19.8	191	88.45
Chromium (Cr)	mg/L	0.0010	0.0068	0.00046	0.00085	0.0109	0.00033	0.0002	0.0002	0.0109	0.00
Cobalt (Co)	mg/L	0.00020	0.00415	0.00039	0.00029	0.00149	0.00014	0.00013	0.00013	0.00415	0.00
Copper (Cu)	mg/L	0.00020	0.0256	0.00352	0.00184	0.0230	0.000107	0.001980	0.000107	0.0256	0.01
Iron (Fe)	mg/L	0.010	3.93	0.334	0.525	3.93	0.532	0.158	0.158	3.93	1.57
Lead (Pb)	mg/L	0.000090	0.00857	0.000633	0.000252	0.00877	0.000182	0.000119	0.000119	0.00877	0.00
Magnesium (Mg)	mg/L	0.010	12.3	8.33	7.81	20.7	2.67	6.71	2.67	20.7	9.75
Manganese (Mn)	mg/L	0.00030	0.529	0.155	0.200	0.793	0.204	0.0554	0.0554	0.793	0.32
Nickel (Ni)	mg/L	0.0020	0.0108	0.00200	0.00250	0.00990	0.00082	0.00108	0.00082	0.0108	0.00
Potassium (K)	mg/L	0.020	25.1	4.51	4.53	39.8	1.84	2.94	1.84	39.8	13.12
Sodium (Na)	mg/L	0.030	68.5	19.6	27.8	129	5.52	7.62	5.52	129	43.01
Zinc (Zn)	mg/L	0.0020	0.276	0.0072	0.0145	0.288	0.0035	0.0032	0.0032	0.288	0.10
Total Organic Carbon by Combustion											
Total Organic Carbon	mg/L	0.50	253	3.57	15.6	490	4.51	5.98	3.57	490	128.78
Total Suspended Solids											
Total Suspended Solids	mg/L	13	54	10	58.1	96.8	3	<3.0	3	96.8	44.38
pH											
pH	pH Units	0.10	6.92	7.81	7.95	7.64	7.8	8.26	6.92	8.26	7.73
Benzene	mg/L	0.00050	0.00050	0.00050	/	0.00050	0.00050	<0.00050	0.0005	0.0005	0.00
Toluene	mg/L	0.0010	0.0101	0.0010	/	0.0043	0.0010	<0.0010	0.001	0.0101	0.00
Ethyl Benzene	mg/L	0.00050	0.00212	0.00050	/	0.00081	0.00050	<0.00050	0.0005	0.00212	0.00
o-Xylene	mg/L	0.00050	0.00339	0.00050	/	0.00080	0.00050	<0.00050	0.0005	0.00339	0.00
F1 (C6-C10)	mg/L	0.10	0.27	0.10	/	0.36	0.10	<0.10	0.1	0.36	0.21
F2 (C10-C16)	mg/L	0.25	0.88	0.10	/	1.17	0.10	<0.10	0.1	1.17	0.56
F3 (C16-C34)	mg/L	0.25	2.99	0.25	/	1.49	0.25	<0.25	0.25	2.99	1.25
F4 (C34-C50)	mg/L	0.25	0.50	0.25	/	0.25	0.25	<0.25	0.25	0.5	0.31
Total Hydrocarbons (C6-C50)	mg/L	0.44	4.14	0.38	/	3.02	0.38	<0.38	0.38	4.14	1.98

Naujaat
REP-2A

			2017		2018	2019	2020		2021	Statistics		
Parameter	**Unit**	**DL**	**29-Jun-17**	**19-Jul-17**	**02-Aug-18**	**01-Aug-19**	**09-Jul-20**	**20-Aug-20**	**19-Aug-21**	**Min**	**Max**	**Average**
Alkalinity												
Bicarbonate (HCO3)	mg/L	1.2	42.5	186	254	271	154	269	194	42.5	271	195.785714
Carbonate (CO3)	mg/L	0.60	0.60	0.60	0.60	0.60	0.60	6.84	<0.60	0.6	6.84	1.640000
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34	0.34	0.34	0.34	<0.34	0.34	0.34	0.340000
Total (as CaCO3)	mg/L	1.0	34.8	153	209	222	127	232	159	34.8	232	162.400000
Ammonia by Colour												
Total (as N)	mg/L	0.20	0.046	0.040	1.08	0.69	0.180	1.70	0.453	0.04	1.7	0.598429
Biochemical Oxygen Demand (BOD)												
Biochemical Oxygen Demand	mg/L	6.0	2.0	2.0	7.6	3.6	2	2	<2.0	2	7.6	3.200000
Carbonaceous BOD												
BOD Carbonaceous	mg/L	6.0	2.0	2.0	5.0	2	2	2	<2.0	2	5	2.500000
Chloride in Water by IC												
Chloride (Cl)	mg/L	10	1.21	12.9	12.7	23.1	7.05	17	9.1	1.21	23.1	11.865714
Conductivity												
Conductivity	umhos/cm	1.0	64.1	302	411	479	257	457	339	64.1	479	329.871429
Fecal Coliforms												
Fecal Coliforms	MPN/100mL	3	/	10	<10		20	10	10	10	20	12.500000
Hardness Calculated												
Hardness (as CaCO3)	mg/L	0.30	31.2	145	178	174	106	184	146	31.2	184	137.742857
Mercury Total												
Mercury (Hg)	mg/L	0.00020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	<0.0000050	0.000005	0.000005	0.000005
Nitrate in Water by IC												
Nitrate (as N)	mg/L	0.40	0.020	0.107	0.108	0.047	0.082	0.044	0.417	0.02	0.417	0.117857
Nitrate + Nitrite												
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.107	0.108	0.070	0.082	0.070	0.431	0.07	0.431	0.134000
Nitrite in Water by IC												
Nitrite (as N)	mg/L	0.20	0.010	0.010	0.001	0.010	0.010	0.010	0.013	0.001	0.013	0.009143
Oil & Grease - Gravimetric												
Oil and Grease	mg/L	5.0	5.0	5.0	5.000	5.0	5.0	22.3	<5.0	5	22.3	7.883333
Phenol												
Phenols	mg/L	0.0010	0.0010	0.0010	0.00	0.0010	0.0010	0.0012	<0.0010	0.001	0.0012	0.001033
Phosphorus, Total												
Phosphorus (P)	mg/L	0.010	0.041	0.032	0.111	0.113	0.0324	0.0336	0.0375	0.032	0.113	0.057214
Sulfate in Water by IC												
Sulfate (SO4)	mg/L	6.0	1.29	10.7	3.69	5.04	8.05	7.55	8.30	1.29	10.7	6.374286
Total Metals by ICP-MS												
Aluminium (Al)	mg/L	0.0050	0.0794	0.0662	0.0279	0.0216	0.0083	0.0173	0.0138	0.0083	0.0794	0.033500
Arsenic (As)	mg/L	0.00020	0.00020	0.00043	0.00080	0.00098	0.00038	0.00054	0.00034	0.0002	0.00098	0.000524
Cadmium (Cd)	mg/L	0.000010	0.000010	0.0000070	0.0000098	0.0000093	0.0000050	0.0000050	0.0000052	0.000005	0.00001	0.000007
Calcium (Ca)	mg/L	0.10	9.87	45.7	54.9	49.7	35.5	55.6	46.4	9.87	55.6	42.524286
Chromium (Cr)	mg/L	0.0010	0.0010	0.00040	0.00080	0.00081	0.00033	0.00037	0.00047	0.00033	0.001	0.000597
Cobalt (Co)	mg/L	0.00020	0.00020	0.00025	0.00035	0.00031	0.00014	0.00022	0.00017	0.00014	0.00035	0.000234
Copper (Cu)	mg/L	0.00020	0.00057	0.00169	0.00220	0.00239	0.00167	0.00162	0.00155	0.00057	0.00239	0.001670
Iron (Fe)	mg/L	0.010	0.154	0.220	0.630	0.757	0.176	0.370	0.38	0.154	0.757	0.383857
Lead (Pb)	mg/L	0.000090	0.000116	0.000168	0.000431	0.000874	0.000133	0.000345	0.000124	0.000116	0.000874	0.000313
Magnesium (Mg)	mg/L	0.010	1.60	7.44	9.88	12.1	4.23	10.9	7.4	1.6	12.1	7.650000
Manganese (Mn)	mg/L	0.00030	0.0406	0.0539	0.217	0.246	0.0440	0.104	0.0944	0.0406	0.246	0.114271
Nickel (Ni)	mg/L	0.0020	0.0020	0.00182	0.00262	0.00237	0.00106	0.00174	0.00126	0.00106	0.00262	0.001839
Potassium (K)	mg/L	0.020	0.652	3.24	5.14	6.39	2.63	5.45	4.48	0.652	6.39	3.997429
Sodium (Na)	mg/L	0.030	1.21	22.2	21.3	33.6	11.2	22	15	1.21	33.6	18.072857
Zinc (Zn)	mg/L	0.0020	0.0024	0.0030	0.0036	0.0053	0.0055	0.0032	0.0049	0.0024	0.0055	0.003986
Total Organic Carbon by Combustion												
Total Organic Carbon	mg/L	0.50	1.83	9.05	14.9	20.5	6.99	10.2	9.25	1.83	20.5	10.388571
Total Suspended Solids												
Total Suspended Solids	mg/L	13	5.0	20.0	8.1	7.1	3	3	<3.0	3	20	7.700000
pH												
pH	pH Units	0.10	7.28	7.99	8.00	8.06	8.10	8.42	8.19	7.28	8.42	8.005714
Benzene	mg/L	0.00050	0.00050	0.00050	/	0.00050	0.00050	0.00050	<0.00050	0.0005	0.0005	0.000500
Toluene	mg/L	0.0010	0.0010	0.0010	/	0.0010	0.0010	0.0013	<0.0010	0.001	0.0013	0.001060
Ethyl Benzene	mg/L	0.00050	0.00050	0.00050	/	0.00050	0.00050	0.00050	<0.00050	0.0005	0.0005	0.000500
o-Xylene	mg/L	0.00050	0.00050	0.00050	/	0.00050	0.00050	0.00050	<0.00050	0.0005	0.0005	0.000500
F1 (C6-C10)	mg/L	0.10	0.10	0.10	/	0.10	0.10	0.10	<0.10	0.1	0.1	0.100000
F2 (C10-C16)	mg/L	0.25	0.10	0.10	/	0.10	0.10	0.10	<0.10	0.1	0.1	0.100000
F3 (C16-C34)	mg/L	0.25	0.25	0.25	/	0.25	0.25	0.25	<0.25	0.25	0.25	0.250000
F4 (C34-C50)	mg/L	0.25	0.25	0.25	/	0.25	0.25	0.25	<0.25	0.25	0.25	0.250000
Total Hydrocarbons (C6-C50)	mg/L	0.44	0.38	0.38	/	0.38	0.38	0.38	<0.38	0.38	0.38	0.380000

Naujaat
REP-6

			2017		2018	2019	2020		2021	Statistics		
Parameter	**Unit**	**DL**	**29-Jun-17**	**19-Jul-17**	**02-Aug-18**	**01-Aug-19**	**09-Jul-20**	**20-Aug-20**	**19-Aug-21**	**Min**	**Max**	**Average**
Alkalinity												
Bicarbonate (HCO3)	mg/L	1.2	171	38.9	52.8	169	148	134	153	38.9	171	123.81
Carbonate (CO3)	mg/L	0.60	0.60	51.5	44.5	11.60	17.4	30.0	<0.60	0.6	51.5	25.93
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34	0.34	0.34	0.34	<0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	141	118	118	158	151	160	125	118	160	138.71
Ammonia by Colour												
Total (as N)	mg/L	0.20	15.9	1.25	0.69	2.89	13.5	2.23	2.1	0.69	15.9	5.51
Biochemical Oxygen Demand (BOD)												
Biochemical Oxygen Demand	mg/L	6.0	17.3	44	36.5	37	30.4	16.2	6.6	6.6	44	26.86
Carbonaceous BOD												
BOD Carbonaceous	mg/L	6.0	19.1	25.6	13.3	15.2	15.1	12.2	4.4	4.4	25.6	14.99
Chloride in Water by IC												
Chloride (Cl)	mg/L	10	18.9	26.2	17.9	37.2	23.8	29.1	10.9	10.9	37.2	23.43
Conductivity												
Conductivity	umhos/cm	1.0	342	274	264	437	346	365	299	264	437	332.43
Fecal Coliforms												
Fecal Coliforms	MPN/100mL	3	411	10	10	121	20	10	90	10	411	96.00
Hardness Calculated												
Hardness (as CaCO3)	mg/L	0.30	72.8	115	116		88.5	133	123	72.8	133	108.05
Mercury Total												
Mercury (Hg)	mg/L	0.00020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	<0.0000050	0.000005	0.000005	0.00
Nitrate in Water by IC												
Nitrate (as N)	mg/L	0.40	0.155	0.434	0.435	0.020	0.371	0.328	0.302	0.02	0.435	0.29
Nitrate + Nitrite												
Nitrate and Nitrite as N	mg/L	0.45	0.155	0.603	0.648	0.070	0.419	0.463	0.336	0.07	0.648	0.38
Nitrite in Water by IC												
Nitrite (as N)	mg/L	0.20	<0.040	0.168	0.213	0.010	0.048	0.135	0.035	0.01	0.213	0.10
Oil & Grease - Gravimetric												
Oil and Grease	mg/L	5.0	5.0	11.2	5.0	5.0	5.0	31.9	<5.0	5	31.9	10.52
Phenol												
Phenols	mg/L	0.0010	0.0013	0.0013	0.001	0.0010	0.0013	0.0010	<0.001	0.001	0.0013	0.00
Phosphorus, Total												
Phosphorus (P)	mg/L	0.010	1.98	2.82	2.03	3.04	2.98	2.03	0.69	0.691	3.04	2.22
Sulfate in Water by IC												
Sulfate (SO4)	mg/L	6.0	5.27	9.76	8.64	13.8	4.6	11.2	12.7	4.62	13.8	9.43
Total Metals by ICP-MS												
Aluminium (Al)	mg/L	0.0050	0.0240	0.0783	0.0432	0.0357	0.0300	0.0483	0.0187	0.0187	0.0783	0.04
Arsenic (As)	mg/L	0.00020	0.00028	0.00049	0.00037	0.00065	0.00044	0.00050	0.00026	0.00026	0.00065	0.00
Cadmium (Cd)	mg/L	0.000010	0.000010	0.0000130	0.0000070	0.0000110	0.0000159	0.0000067	0.0000062	0.0000062	0.0000159	0.00
Calcium (Ca)	mg/L	0.10	21.7	33.5	35.2	34	26	39.4	37.2	21.7	39.4	32.43
Chromium (Cr)	mg/L	0.0010	0.0010	0.00023	0.00040	0.00020	0.00051	0.00024	0.00014	0.00014	0.001	0.00
Cobalt (Co)	mg/L	0.00020	0.00020	0.00024	0.00017	0.00027	0.00024	0.00025	0.00012	0.00012	0.00027	0.00
Copper (Cu)	mg/L	0.00020	0.0107	0.00842	0.00424	0.00650	0.0106	0.00478	0.0033	0.00334	0.0107	0.01
Iron (Fe)	mg/L	0.010	0.443	0.474	0.336	0.184	0.865	0.257	0.473	0.184	0.865	0.43
Lead (Pb)	mg/L	0.000090	0.000178	0.000228	0.000114	0.000137	0.000281	0.000098	0.000105	0.000098	0.000281	0.00
Magnesium (Mg)	mg/L	0.010	4.52	7.69	6.83	8.65	5.76	8.51	7.4	4.52	8.65	7.05
Manganese (Mn)	mg/L	0.00030	0.0299	0.0334	0.0294	0.0243	0.0436	0.0282	0.0374	0.0243	0.0436	0.03
Nickel (Ni)	mg/L	0.0020	0.0020	0.00139	0.00164	0.00164	0.00170	0.00130	0.00082	0.00082	0.002	0.00
Potassium (K)	mg/L	0.020	7.75	10.3	5.60	13.5	8.21	7.63	3.38	3.38	13.5	8.05
Sodium (Na)	mg/L	0.030	17.3	24.1	18.6	34.7	20.5	25.8	12.7	12.7	34.7	21.96
Zinc (Zn)	mg/L	0.0020	0.0086	0.0098	0.0060	0.0124	0.0128	0.0063	0.0084	0.006	0.0128	0.01
Total Organic Carbon by Combustion												
Total Organic Carbon	mg/L	0.50	14.5	3.61	38.8	72.4	23.6	36.8	11.8	3.61	72.4	28.79
Total Suspended Solids												
Total Suspended Solids	mg/L	13	16	280	62.5	104	45.6	65.3	5.7	5.7	280	82.73
pH												
pH	pH Units	0.10	7.75	10.12	9.88	8.74	8.83	9.25	7.99	7.75	10.12	8.94
Benzene	mg/L	0.00050	/	/	/		0.00050	N/A	N/A	0.0005	0.0005	0.00
Toluene	mg/L	0.0010	/	/	/		0.0010	N/A	N/A	0.001	0.001	0.00
Ethyl Benzene	mg/L	0.00050	/	/	/		0.00050	N/A	N/A	0.0005	0.0005	0.00
o-Xylene	mg/L	0.00050	/	/	/		0.00050	N/A	N/A	0.0005	0.0005	0.00
F1 (C6-C10)	mg/L	0.10	/	/	/		0.10	N/A	N/A	0.1	0.1	0.10
F2 (C10-C16)	mg/L	0.25	/	/	/		0.10	N/A	N/A	0.1	0.1	0.10
F3 (C16-C34)	mg/L	0.25	/	/	/		0.63	N/A	N/A	0.63	0.63	0.63
F4 (C34-C50)	mg/L	0.25	/	/	/		0.25	N/A	N/A	0.25	0.25	0.25
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	/	/		0.63	N/A	N/A	0.63	0.63	0.63

Appendix F

WATER LICENCE INSPECTION FORM

☒ **Original**
☐ **Follow-Up Report**

Licensee	**Licensee Representative**
Hamlet of Naujaat	Kevin Tegumiar
Licence No. / Expiry	**Representative's Title**
3BM-NAU2126/January 26th, 2026	Senior Administrative Officer
Land / Other Authorizations	**Land / Other Authorizations**
--	--
Date of Inspection	**Inspector**
August 18th 2021	Atuat Shouldice

Activities Inspected

☐ Camp ☐ Drilling ☐ Mining ☐ Construction ☐ Reclamation ☐ Fuel Storage
☐ Roads/Hauling ☒ Other: Waste Disposal Facility ☒ Other: Water Treatment Facility

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SECTION 1 ☒ **Comments** (s._1_) ☐ **Non-Compliance with Act or Licence** (s.__) ☐ **Action Required** (s.__)

Background

On August 18th 2021, an inspection was conducted of water licence no. 3BM-NAU2126 (formally water licence no. 3BM-REP1520) issued to the Hamlet of Naujaat for the use of water and deposit of waste as it relates to municipal undertakings. The inspection was conducted to ensure compliance with applicable terms and conditions of the licence. Community and Government services representative Matthew Hewey accompanied the Inspector on the inspection.

Observation

1. Fresh water is obtained from Nuviq Luktujuq Lake, as approved by PART C item 1.
2. All sewage is directed to the Sewage Disposal Facility which utilizes wetland treatment.
3. Total water used in 2020 was 44,396 m^3 which is below the 60,000 m^3 annual allotment.
4. The 2020 Annual Report was available for review on the Nunavut Water Boards, FTP website.
5. The 2020 Annual Report noted that the Land fill has reached capacity. The Inspector observed limited available space for organization within the landfill foot.
6. Segregation and appropriate storage for hazardous waste has been an issue with the limited space inside the Landfill.
7. The Landfill is not gated. Often community members remove discarded batteries from the secondary containment areas looking for batteries to re-use.
8. The Hamlet is currently looking for a location for a new Landfill.
9. Mega bags of contaminated soil are located near the Waste Oil Storage Area. These bags had been observed during previous inspection in 2020. The number of bags have increased since last year. A number of organizations have committed to shipping these bags out in 2022.

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

Concerns related to Water Licence no. 3BM-NAU2126;

PART D Item 6: Failure to maintain the Landfill to the satisfaction of the Inspector.

PART D Item 10: Failure to maintain hazardous waste storage to the satisfaction of the Inspector.

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

- The Hamlet shall submit a plan to the Inspector by December 15th 2021, as to how they will repair the breached south berm at the Landfill and maintain the battery storage area. This plan shall include a brief summary of work and completion date.
- With the large amount of contaminated soil stored in the community the Inspector recommends that the Hamlet and local organization explore options for soil remediation options within the community.
- The Hamlet is recommended to work with the Government of Nunavut, Department of Environment, Environmental Protection Officers to ensure contaminated soil is disposed of appropriately moving forward.

Licensee or Representative	**Inspector's Name**
Kevin Tegumiar	Atuat Shouldice
Signature	**Signature**
	Sent Electronically
Date	**Date**
	October 29th, 2021

CC: Licensing Department, NWB
Manager of Field Operations, CIRNAC
Sarah Collins, Municipal Works, CGS

Date:	Authorization Number:	Camera/Model:	Inspector
August 18th, 2021	3BM-NAU2126	Samsung S9	RMO Shouldice

Photo #	Location:
1	Waste Oil Storage Area

Description
Contaminated soil being stored by various companies at Waste Oil Storage Area

Photo #	Location:
2	Landfill

Description
Collection of batteries at Bulky Metal Area of the Landfill.

Photo #	Location
3	Landfill

Description
View of landfill at capacity.