

**ANNUAL REPORT
FOR THE HAMLET OF SANIRAJAK (HALL BEACH), NUNAVUT, 2021**

YEAR BEING REPORTED: 2021

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water License # 3BM-HAL2025 issued to the Hamlet of Hall Beach, Nunavut.

- 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.

Month Reported	Quantity of Water Obtained from all sources (m³)	Quantity of Sewage Waste Discharged (Estimated)
January	2,914.44130	Same
February	2,823.44530	Same
March	2,989.90190	Same
April	2,822.56810	Same
May	2,849.73030	Same
June	2,977.40670	Same
July	3,298.22260	Same
August	3,417.56110	Same
September	3,504.07970	Same
October	3,661.45480	Same
November	3,442.96770	Same
December	3,185.15760	Same
Annual Total	37,886.93710	Same

Note: The average consumption volume is considered equal to the sewage discharge volume in each month because there is no meter at the end of the discharge pipe.

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- iv. 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;

Work is ongoing to repair the leaking sewage lagoon. The contractor and consultant were on site again during summer 2021 to determine the issue and data analysis ongoing. Summary of the 2022 field work will be submitted with the 2022 Annual Report.

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

Spill report 2021-289 was filed for the leaking sewage lagoon. This sewage spill drains directly into the sewage wetlands area, which is incorporated as part of the sewage treatment design. Sewage from both lagoon cells is treated throughout the wetland area prior to reaching the ocean about 3km away. Appendix A summarizes effluent quality limits, well below BOD/TSS maximum concentrations. No further remedial action is needed in the sewage wetlands area.

No other unauthorized discharges for the infrastructure under licence 3BM-HAL2025 occurred in 2021.

- 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 abandonment and restoration work were conducted during this reporting year.

- 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 initial planning study for a new solid waste site was completed in Fiscal Year 2020/21. The cost estimates have indicated that the current funding cannot support the construction of a new state-of-the-art 20-year landfill. The focus of the project will shift to making improvements to the current site. A second planning contract to assess and prioritize the improvements to the current site with the available is expected to begin in 2022.

An assessment of the road adjacent to the water source is currently being completed, including an analysis of the water quality of the separated water body. The report is anticipated to be finalized April 2022 and will be submitted with the 2022 Annual Report.

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

None

- ix. Updates or revisions to the approved Operation and Maintenance Plans.
-

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None

x. ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

CGS will work with the Municipality during summer 2022 to ensure all sampling requirements under the water licence are met.

xi. FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

The GPS coordinates of the ongoing sewage lagoon leak will be reported to CIRNAC during summer 2022.

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Appendix A: HAL-3 Effluent Quality Limits

**Appendix B: Certificate of Analysis July 23, 2021
Certificate of Analysis August 19, 2021
Certificate of Analysis August 27, 2021**

Appendix C: Sanirajak 2021 CIRNAC Inspection Report

Appendix D: Hazardous Materials Spill Database, Sanirajak 2021

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Appendix A

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**3BM-HAL2025 Sanirajak Monitoring Program Results 2021
HAL-3 Effluent Quality limits**

Parameter	Maximum Concentration of any Grab Sample	Sampling Results HAL-3 18-Aug-21
BOD ₅	120 mg/L	20 mg/L
Total Suspended Solids	180 mg/L	70 mg/L
Fecal Coliform	1x10 ⁶ CFU/100 mL	<2 CFU/100 mL
Oil and Grease	No visible sheen	1.9 mg/L
pH	Between 6 and 9	10.1

**ANNUAL REPORT
FOR THE HAMLET OF SANIRAJAK (HALL BEACH), NUNAVUT, 2021**

Appendix B

C.O.C.: G096005

REPORT No. B21-26491

Report To:

Hamlet of Sanirajak
P.O. Box 198,
Sanirajak NU K0A 0K0 Canada

Attention: Louis Primeau

Caduceon Environmental Laboratories

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

DATE RECEIVED: 19-Aug-21

JOB/PROJECT NO.:

DATE REPORTED: 25-Aug-21

P.O. NUMBER:

SAMPLE MATRIX: Waste Water

WATERWORKS NO.

					Client I.D.	Hal-3	Hal-4	Hal-5	
					Sample I.D.	B21-26491-1	B21-26491-2	B21-26491-3	
					Date Collected	18-Aug-21	18-Aug-21	18-Aug-21	
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed					
Hardness (as CaCO ₃)	mg/L	1	SM 3120	24-Aug-21/O	148	152	3530		
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	20-Aug-21/O	119	162	127		
pH @25°C	pH Units		SM 4500H	20-Aug-21/O	10.1	8.17	7.75		
Conductivity @25°C	µmho/cm	1	SM 2510B	20-Aug-21/O	502	629	27300		
Total Suspended Solids	mg/L	3	SM2540D	23-Aug-21/K	70	5	16		
Chloride	mg/L	0.5	SM4110C	23-Aug-21/O	71.8	87.1	9030		
Nitrite (N)	mg/L	0.1	SM4110C	23-Aug-21/O	< 0.1	< 0.1	< 5		
Nitrate (N)	mg/L	0.1	SM4110C	23-Aug-21/O	0.1	0.6	< 5		
Sulphate	mg/L	1	SM4110C	23-Aug-21/O	30	20	1260		
Aluminum	mg/L	0.01	SM 3120	24-Aug-21/O	0.03	0.04	0.10		
Arsenic	mg/L	0.0005	EPA 200.8	20-Aug-21/O	0.0024	0.0037	0.0014		
Cadmium	mg/L	0.005	SM 3120	24-Aug-21/O	< 0.005	< 0.005	< 0.005		
Calcium	mg/L	0.02	SM 3120	24-Aug-21/O	42.1	43.3	230		
Chromium	mg/L	0.002	SM 3120	24-Aug-21/O	< 0.002	< 0.002	< 0.002		
Cobalt	mg/L	0.005	SM 3120	24-Aug-21/O	< 0.005	< 0.005	< 0.005		
Copper	mg/L	0.002	SM 3120	24-Aug-21/O	0.003	< 0.002	< 0.002		
Iron	mg/L	0.005	SM 3120	24-Aug-21/O	0.165	0.349	0.051		
Lead	mg/L	0.02	SM 3120	24-Aug-21/O	< 0.02	< 0.02	< 0.02		
Magnesium	mg/L	0.02	SM 3120	24-Aug-21/O	10.5	10.7	719		
Manganese	mg/L	0.001	SM 3120	24-Aug-21/O	0.010	0.018	0.002		
Mercury	mg/L	0.00002	SM 3112 B	20-Aug-21/O	< 0.00002	< 0.00002	< 0.00002		
Nickel	mg/L	0.01	SM 3120	24-Aug-21/O	< 0.01	< 0.01	< 0.01		
Potassium	mg/L	0.1	SM 3120	24-Aug-21/O	8.4	9.5	219		
Sodium	mg/L	0.2	SM 3120	24-Aug-21/O	52.8	60.1	5850		
Zinc	mg/L	0.005	SM 3120	24-Aug-21/O	0.035	0.005	0.020		
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	25-Aug-21/K	0.15	3.59	0.05		
Phenolics	mg/L	0.002	MOEE 3179	24-Aug-21/K	< 0.002	< 0.002	< 0.002		

R.L. = Reporting Limit

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

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

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



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

C.O.C.: G096005

REPORT No. B21-26491

Report To:

Hamlet of Sanirajak
P.O. Box 198,
Sanirajak NU K0A 0K0 Canada

Attention: Louis Primeau

Caduceon Environmental Laboratories

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

DATE RECEIVED: 19-Aug-21

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SAMPLE MATRIX: Waste Water

JOB/PROJECT NO.:

P.O. NUMBER:

WATERWORKS NO.

			Client I.D.	Hal-3	Hal-4	Hal-5	
			Sample I.D.	B21-26491-1	B21-26491-2	B21-26491-3	
			Date Collected	18-Aug-21	18-Aug-21	18-Aug-21	
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
BOD(5 day)	mg/L	3	SM 5210B	20-Aug-21/K	20	8	< 3
Total Organic Carbon	mg/L	0.2	EPA 415.2	23-Aug-21/O	9.7	8.3	0.7
Oil & Grease-Total	mg/L	1.0	SM 5520	24-Aug-21/K	1.9	< 1.0	< 1.0
Fecal Coliform	cfu/100mL	1	MOE E3371	19-Aug-21/O	< 2	0	0

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

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GENERAL SAMPLE SUBMISSION FORM

C A D U C E
ENVIRONMENTAL LABORATORIES
Client committed. Quality assured. Proudly Canadian.

SAMPLES SUBMITTED TO:

Kingston
Ottawa
Richmond Hill
Barrie
London
Windsor

TESTING REQUIREMENTS

O'Reg 153/04
O'Reg 406/19
RPI
Coarse
MISA
Other:Table (1 - 9)
Table (1 - 9.1)
ICC
Medium/Fine
PWC0Record of Site
SPLP Table (1 - 9.1)
Agricultural
O'Reg 553 TCLP
Landfill Monitoring

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations?

Yes ☐ No ☐

(If yes, submit all Drinking Water Samples on a Drinking Water Chain of Custody)

Organization: Hamlet of SanirayakContact: SAOTel: 867-928-8829Fax: XDA-OKDEmail: cao@sanirayak.caAdditional Info (email, cell, etc): P21-NunavutAddress: P.O. Box 198Sanirayak NUXDA-OKD

Project Name#:

P.O. #:

Additional Info:

As per
Quote

Suspected Highly Contaminated

TURNAROUND SERVICE
REQUESTED (see back page)
Platinum* 200% Surcharge
Gold* 100% Surcharge
Silver 50% Surcharge
Bronze 25% Surcharge
Standard 5-7 days
Specific Date:

* Sample Matrix Legend: WW=Waste Water, SW=Surface Water, GW=Groundwater, LS=Liquid Sludge, SS=Solid Sludge, S=Soil, Sed=Sediment, PC=Paint Chips, F=Filter, Oil=Oil

No. Sample Source and/or Sample Identification

S.P.L.

Sample Matrix *

Date Collected (yy-mm-dd)

Time Collected

By Using A Check Mark in The Box Provided

X

pH

Temp.

Bottles/ Sample

Field Filled Y/N

HAI-3

WW

21-08-18

9:15AM

✓

8

HAI-4

21-08-18

9:23AM

✓

8

HAI-5

21-08-18

8:58AM

✓

8

SAMPLE SUBMISSION INFORMATION

Print: Daniel Samuk-JohnSign: AselaDate (yy-mm-dd) time: 21-08-18 9:15Date (yy-mm-dd) time: 21-08-18 9:15

Courier (Client account)

Courier (Caduceon account)

Drop Off

of Pieces

Invoice by Email

Invoice by Mail

Report by Fax

Report by Email

Sample Temperature °C: 9/4

Labeled by:

Received by (print): solSignature: solDate Received (yy-mm-dd): 18/08/21Time Received: 14:05Laboratory Prepared Bottles: ☐ Yes ☐ NoComments: 1 Oct + 1 R + 1 Oct + 2 NP + 1 M + 1448 + 1600 + 1 PPage 096005 of 05

QUOTATION FOR ANALYTICAL SERVICES

Quote # :	P21_Nunavut
Organization:	Government of Nunavut, Baffin Region
Contact:	Bhabesh Roy
Telephone:	867 899 7314
Facsimile:	867 899 7328
Email:	broy@gov.nu.ca
Project #:	
Address:	P.O.Box 379, Pond Inlet, X0A 0S0
Additional Info:	QUOTE # ('S) MUST BE ON C OF C TO APPLY If not listed, General pricing will be applied.
Additional Info:	11 communities in the Baffin region
Date:	January 1, 2021

Valid Until: December 31, 2021

Item #	Quantity	Analysis Request	Matrix	Unit Cost, \$	Amount, \$
1	1	LEACHATE ANALYSIS: TPH/BTEX, PAH's, BOD, pH, TSS, N02/N03, Phenols (4AAP), Fecal Coliforms; Conductivity, Oil & Grease - Total, Ammonia Nitrogen, Alkalinity, Sulphate, Chloride, TOC; Total Phosphorus & Metals - As, Cu, Fe, Hg, Ca, K, Cd, Cr, Pb, Ni, Co, Al, Zn, Mn & Hardness	Leachate	540.00	\$540.00
2	1	RAW WATER - Surfactants, TDS, Chloride, Fluoride, Nitrate, Sulphate, DOC, Cyanide (Total), Phenolics (4AAP) & E.Coli, Alkalinity, Ammonia, Colour, Conductivity, pH, TOC, Turbidity, Metals - Al, Sb, As, B, Ba, Ca, Cd, Cr, CrVI, Cu, Fe, Pb, Mg, Mn, K, Se, Ag, Na, U, Zn & Hardness	Raw Water	344.00	\$344.00
3	1	WASTE WATER - BOD, TSS, Conductivity, Alkalinity, Oil and Grease (Total), Chloride, Ammonia Nitrogen, Fecal Coliforms, pH, N02/N03, Phenols (4AAP), Sulphate, TOC & Metals - Mg, Na, Cd, Co, Cr, Cu, Al, Hg, Ca, K, Zn, Fe, Mn, Ni, Pb, As & Hardness	Waste Water	292.50	\$292.50
Subtotal					1,176.50
HST					152.95
Total Cost					\$1,329.45

Prices do not include shipping unless otherwise stated.

****NOTE**** The Ottawa laboratory will keep track of the samples bottle sets sent to the communities. Nearing the end of the year Caduceon staff will compare what has been sent in supplies versus what has been submitted. Missing/unreturned supplies will be charged at the same rate as listed above. Far too many cooler sets/supplies have not been sent back leading Caduceon to implement this measure. Additionally, past reports can be retrieved from Caduceon's CadConnect Web Portal. Should clients require Caduceon to retrieve them an administration charge may be applicable up to \$100 for retrieval of historical reports. Should you require a CadConnect account, please contact it@caduceonlabs and Caduceon can provide you with an account setup.



Damien Gilbert
Business Development
Caduceon Environmental Laboratories
dgilbert@caduceonlabs.com
Cell: 613-331-1743

Laboratory Locations

Kingston - 285 Dalton Ave, Kingston, ON K7K 6Z1 Tel: (613) 544-2001 Fax: (613) 544-2770
Ottawa - 2378 Holly Lane Ottawa, ON K1V 7P1 Tel: (613) 526-0123 Fax: (613) 526-1244
Richmond Hill - 110 West Beaver Creek Road (Unit 14), Richmond Hill, ON L4B 1J9 Tel: (888) 475-5442 Fax: (888) 562-1963
Windsor - #5-3201 Marentelle Ave. Windsor, ON N8X 4G3 Tel: (519) 966-9541 Fax: (519) 966-9567

C.O.C.: G095973

REPORT No. B21-27420

Report To:

Hamlet of Sanirajak
 P.O. Box 198,
 Sanirajak NU K0A 0K0 Canada

Attention: SAO -

Caduceon Environmental Laboratories

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

DATE RECEIVED: 27-Aug-21

JOB/PROJECT NO.:

DATE REPORTED: 08-Sep-21

P.O. NUMBER:

SAMPLE MATRIX: Leachate

WATERWORKS NO.

			Client I.D.	Leachate HAL-2			
			Sample I.D.	B21-27420-1			
			Date Collected	25-Aug-21			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Hardness (as CaCO ₃)	mg/L	1	SM 3120	31-Aug-21/O	212		
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	27-Aug-21/O	147		
pH @25°C	pH Units		SM 4500H	27-Aug-21/O	8.20		
Conductivity @25°C	µmho/cm	1	SM 2510B	27-Aug-21/O	515		
Total Suspended Solids	mg/L	3	SM2540D	30-Aug-21/K	16		
Chloride	mg/L	0.5	SM4110C	01-Sep-21/O	26.7		
Nitrite (N)	mg/L	0.1	SM4110C	01-Sep-21/O	< 0.1		
Nitrate (N)	mg/L	0.1	SM4110C	01-Sep-21/O	0.2		
Sulphate	mg/L	1	SM4110C	01-Sep-21/O	81		
Calcium	mg/L	0.02	SM 3120	31-Aug-21/O	66.0		
Potassium	mg/L	0.1	SM 3120	31-Aug-21/O	4.9		
Aluminum	mg/L	0.01	SM 3120	31-Aug-21/O	0.07		
Arsenic	mg/L	0.0005	EPA 200.8	30-Aug-21/O	< 0.0005		
Cadmium	mg/L	0.000070	EPA 200.8	30-Aug-21/O	< 0.000070		
Chromium	mg/L	0.002	SM 3120	31-Aug-21/O	< 0.002		
Cobalt	mg/L	0.005	SM 3120	31-Aug-21/O	< 0.005		
Copper	mg/L	0.002	SM 3120	31-Aug-21/O	< 0.002		
Iron	mg/L	0.005	SM 3120	31-Aug-21/O	0.251		
Lead	mg/L	0.0001	EPA 200.8	30-Aug-21/O	0.0003		
Manganese	mg/L	0.001	SM 3120	31-Aug-21/O	0.025		
Mercury	mg/L	0.00002	SM 3112 B	01-Sep-21/O	< 0.00002		
Nickel	mg/L	0.01	SM 3120	31-Aug-21/O	< 0.01		
Zinc	mg/L	0.005	SM 3120	31-Aug-21/O	0.007		
Ammonia (N)-Total	mg/L	0.01	SM4500-NH ₃ -H	03-Sep-21/K	0.38		
Phosphorus-Total	mg/L	0.01	E3199A.1	01-Sep-21/K	0.02		
Phenolics	mg/L	0.002	MOEE 3179	01-Sep-21/K	< 0.002		



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

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			Client I.D.	Leachate HAL-2			
			Sample I.D.	B21-27420-1			
			Date Collected	25-Aug-21			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
BOD(5 day)	mg/L	3	SM 5210B	27-Aug-21/K	< 3		
Total Organic Carbon	mg/L	0.2	EPA 415.2	27-Aug-21/O	5.7		
Fecal Coliform	cfu/100mL	1	MOE E3371	27-Aug-21/O	25		
Benzene	µg/L	0.5	EPA 8260	01-Sep-21/R	< 0.5		
Toluene	µg/L	0.5	EPA 8260	01-Sep-21/R	< 0.5		
Ethylbenzene	µg/L	0.5	EPA 8260	01-Sep-21/R	< 0.5		
Xylene, m,p-	µg/L	1.0	EPA 8260	01-Sep-21/R	< 1.0		
Xylene, o-	µg/L	0.5	EPA 8260	01-Sep-21/R	< 0.5		
Xylene, m,p,o-	µg/L	1.1	EPA 8260	01-Sep-21/R	< 1.1		
Toluene-d8 (SS)	% rec.		EPA 8260	01-Sep-21/R	99.0		
PHC F1 (C6-C10)	µg/L	25	MOE E3421	01-Sep-21/R	< 25		
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	30-Aug-21/K	< 50		
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	30-Aug-21/K	< 400		
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	30-Aug-21/K	< 400		
Oil & Grease-Total	mg/L	1.0	SM 5520	31-Aug-21/K	1.8		
Acenaphthene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05		
Acenaphthylene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05		
Anthracene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05		
Benzo(a)anthracene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.06		
Benzo(a)pyrene	µg/L	0.01	EPA 8270	31-Aug-21/K	< 0.01		
Benzo(b)fluoranthene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05		
Benzo(b+k)fluoranthene	µg/L	0.1	EPA 8270	31-Aug-21/K	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05		
Benzo(k)fluoranthene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05		
Chrysene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05		
Dibenzo(a,h)anthracene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05		
Fluoranthene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05		



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

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REPORT No. B21-27420

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P.O. Box 198,
Sanirajak NU K0A 0K0 Canada
Attention: SAO -

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SAMPLE MATRIX: Leachate

WATERWORKS NO.

			Client I.D.	Leachate HAL-2				
			Sample I.D.	B21-27420-1				
			Date Collected	25-Aug-21				
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Fluorene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05			
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05			
Methylnaphthalene, 1-	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05			
Methylnaphthalene, 2-	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05			
Naphthalene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.06			
Phenanthrene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05			
Pyrene	µg/L	0.05	EPA 8270	31-Aug-21/K	< 0.05			
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	31-Aug-21/K	88.0			

1. NOTE: Elevated RLs due to sample matrix interferences.



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

R.L. = Reporting Limit

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

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

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

TESTING REQUIREMENTS

REFUGEE NUMBER (1 to 10)

	Table (1 - 9)	Record of Site
	Table (1 - 9.1)	SPLP Table (1 - 9.1)
	ICC	Agricultural
	Medium/Fine	O'Reg 558 TCLP
	PWQO	Landfill Monitoring

TO:	
<input checked="" type="checkbox"/>	O'Reg 15304
<input type="checkbox"/>	O'Reg 40619
<input type="checkbox"/>	RPI
<input type="checkbox"/>	Coarse
<input type="checkbox"/>	MISA
<input type="checkbox"/>	Other:

SAMPLES SUBMITTED

Kingston
Ottawa
Richmond Hill
Barrie
London
Windsor

GENERAL SAMPLE SUBMISSION FORM

CADUCEUSTM
ENVIRONMENTAL LABORATORIES
Cert. Accredited Quality Assured, Peoria, Canada

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations?

(If yes, submit all Drinking Water Samples on a Drinking Water Chain of Custody)

Organization: Hamlet of Sanirajak	Address: P.O. Box 198 Sanirajak Nt. XOA-OKO	Invoicing Address (if different):
Contact: SAD	Quote #:	Project Name#:
Tel: 867-978-8829	P.O. #:	Additional Info:
Fax:		
Email: SAD-hbhamlet@g.iniq.com		
Additional Info (email, cell, etc):		

ANALYSES REQUESTED	<div style="display: flex; justify-content: space-between;"> <div> <p>Platinum*</p> <p>Gold*</p> <p>Silver</p> <p>Bronze</p> <p>Standard</p> </div> <div> <p>200% Surcharge</p> <p>100% Surcharge</p> <p>50% Surcharge</p> <p>25% Surcharge</p> <p>5-7 days</p> </div> </div>					TURNAROUND SERVICE REQUESTED (see back page) *Must be arranged in advance
	<div style="display: flex; justify-content: space-between;"> <div> <p>Platinum*</p> <p>Gold*</p> <p>Silver</p> <p>Bronze</p> <p>Standard</p> </div> <div> <p>200% Surcharge</p> <p>100% Surcharge</p> <p>50% Surcharge</p> <p>25% Surcharge</p> <p>5-7 days</p> </div> </div>					

Leach		
-------	--	--

* Sample Matrix Legend: VW=Vaste Water, SW=Surface Water, GV=Groundwater, LS=Liquid Sludge, SS=Solid Sludge, S=Soil, Sed=Sediment, PC=Paint Chips, F=Filter, Oil = Oil

[illegible]

SAMPLE RECEIVING INFORMATION (LABORATORY USE ONLY)

REPORTING / INVOICING

SHIPPING INFORMATION

SAMPLE SUBMISSION INFORMATION

Print:	Sampled by:	Submitted by:	Courier (Client account)	<input checked="" type="checkbox"/>	Invoice	Report by Fax	<input type="checkbox"/>	Received By (print):	Signature:	
Sign:	DK	Jeelka ABE	Courier (Caduceus account)	<input type="checkbox"/>		Report by Email	<input type="checkbox"/>	Date Received (yy-mm-dd):	Time Received:	
			Drop Off	<input type="checkbox"/>	# of Pliccos	Invoice by Email	<input type="checkbox"/>	Laboratory Prepared Bottles:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	Aug-25-21 9:10	Aug-25-21 9:10	Caduceus (Pick-up)	<input type="checkbox"/>		Invoice by Mail	<input type="checkbox"/>	Sample Temperature °C:	Labeled by:	
	Date (yy-mm-dd) time	Date (yy-mm-dd) time								

Comments:

11-L Amber, OSG, PTC, Pet., R, 2NP, phenol, 2yoc, M, Hg, Bact


QUOTATION FOR ANALYTICAL SERVICES

Quote #: P21_Nunavut
Organization: Government of Nunavut, Baffin Region
Contact: Bhabesh Roy
Telephone: 867 899 7314
Facsimile: 867 899 7328
Email: broy@gov.nu.ca
Project #:
Address: P.O.Box 379, Pond Inlet, X0A 0S0
Additional Info: **QUOTE # (S) MUST BE ON C OF C TO APPLY** If not listed, General pricing will be applied.
Additional Info: 11 communities in the Baffin region
Date: January 1, 2021 Valid Until: December 31, 2021

Item #	Quantity	Analysis Request	Matrix	Unit Cost, \$	Amount, \$
1	1	LEACHATE ANALYSIS: TPH/BTEX, PAH's, BOD, pH, TSS, NO ₂ /NO ₃ , Phenols (4AAP), Faecal Coliforms, Conductivity, Oil & Grease - Total, Ammonia Nitrogen, Alkalinity, Sulphate, Chloride, TOC; Total Phosphorus & Metals - As, Cu, Fe, Hg, Ca, K, Cd, Cr, Pb, Ni, Co, Al, Zn, Mn & Hardness	Leachate	540.00	\$540.00
2	1	RAW WATER - Surfactants, TDS, Chloride, Fluoride, Nitrate, Sulphate, DOC, Cyanide (Total), Phenolics (4AAP) & E.Coli, Alkalinity, Ammonia, Colour, Conductivity, pH, TOC, Turbidity, Metals - Al, Sb, As, B, Ba, Ca, Cd, Cr, CrVI, Cu, Fe, Pb, Mg, Mn, K, Se, Ag, Na, U, Zn & Hardness	Raw Water	344.00	\$344.00
3	1	WASTE WATER - BOD, TSS, Conductivity, Alkalinity, Oil and Grease (Total), Chloride, Ammonia Nitrogen, Faecal Coliforms, pH, NO ₂ /NO ₃ , Phenols (4AAP), Sulphate, TOC & Metals - Mg, Na, Cd, Co, Cr, Cu, Al, Hg, Ca, K, Zn, Fe, Mn, Ni, Pb, As & Hardness	Waste Water	292.50	\$292.50
Subtotal					1,176.50
HST					152.95
Total Cost					\$1,329.45

Prices do not include shipping unless otherwise stated.

****NOTE**** The Ottawa laboratory will keep track of the samples bottle sets sent to the communities. Nearing the end of the year Caduceon staff will compare what has been sent in supplies versus what has been submitted. Missing/unreturned supplies will be charged at the same rate as listed above. Far too many cooler sets/supplies have not been sent back leading Caduceon to implement this measure. Additionally, past reports can be retrieved from Caduceon's CadConnect Web Portal. Should clients require Caduceon to retrieve them an administration charge may be applicable up to \$100 for retrieval of historical reports. Should you require a CadConnect account, please contact it@caduceonlabs and Caduceon can provide you with an account setup.


Damien Gilbert
Business Development
Caduceon Environmental Laboratories
dgilbert@caduceonlabs.com
Cell: 613-331-1743

Laboratory Locations

Kingston - 285 Dallon Ave. Kingston, ON K7K 6Z1 Tel: (613) 544-2001 Fax: (613) 544-2770
Ottawa - 2378 Holly Lane Ottawa, ON K1V 7P1 Tel: (613) 526-0123 Fax: (613) 526-1244
Richmond Hill - 110 West Beaver Creek Road (Unit 14), Richmond Hill, ON L4B 1J9 Tel: (888) 475-5442 Fax: (866) 562-1963
Windsor - #5-3201 Marenquette Ave. Windsor, ON N8X 4G3 Tel: (519) 966-9541 Fax: (519) 966-9587

C.O.C.: G095972

REPORT No. B21-23176

Report To:

Hamlet of Sanirajak
P.O. Box 198,
Sanirajak NU K0A 0K0 Canada

Attention: Louis Primeau

Caduceon Environmental Laboratories

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

DATE RECEIVED: 23-Jul-21

JOB/PROJECT NO.:

DATE REPORTED: 04-Aug-21

P.O. NUMBER:

SAMPLE MATRIX: Leachate

WATERWORKS NO.

			Client I.D.	HALL-2			
			Sample I.D.	B21-23176-1			
			Date Collected	21-Jul-21			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Hardness (as CaCO ₃)	mg/L	1	SM 3120	27-Jul-21/O	531		
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	23-Jul-21/O	415		
pH @25°C	pH Units		SM 4500H	23-Jul-21/O	8.08		
Conductivity @25°C	µmho/cm	1	SM 2510B	23-Jul-21/O	1710		
Total Suspended Solids	mg/L	3	SM2540D	27-Jul-21/K	12		
Chloride	mg/L	0.5	SM4110C	28-Jul-21/O	219		
Nitrite (N)	mg/L	0.1	SM4110C	28-Jul-21/O	< 1		
Nitrate (N)	mg/L	0.1	SM4110C	28-Jul-21/O	< 1		
Sulphate	mg/L	1	SM4110C	28-Jul-21/O	70		
Aluminum	mg/L	0.01	SM 3120	27-Jul-21/O	0.11		
Arsenic	mg/L	0.0005	EPA 200.8	28-Jul-21/O	0.0020		
Cadmium	mg/L	0.000070	EPA 200.8	28-Jul-21/O	< 0.000070		
Calcium	mg/L	0.02	SM 3120	27-Jul-21/O	159		
Chromium	mg/L	0.002	SM 3120	27-Jul-21/O	0.004		
Cobalt	mg/L	0.005	SM 3120	27-Jul-21/O	0.006		
Copper	mg/L	0.002	SM 3120	27-Jul-21/O	0.008		
Iron	mg/L	0.005	SM 3120	27-Jul-21/O	1.72		
Lead	mg/L	0.0001	EPA 200.8	28-Jul-21/O	0.0017		
Manganese	mg/L	0.001	SM 3120	27-Jul-21/O	0.217		
Mercury	mg/L	0.00002	SM 3112 B	29-Jul-21/O	< 0.00002		
Nickel	mg/L	0.01	SM 3120	27-Jul-21/O	< 0.01		
Potassium	mg/L	0.1	SM 3120	27-Jul-21/O	37.4		
Zinc	mg/L	0.005	SM 3120	27-Jul-21/O	0.030		
Ammonia (N)-Total	mg/L	0.01	SM4500-NH ₃ -H	28-Jul-21/K	7.54		
Phosphorus-Total	mg/L	0.01	E3199A.1	29-Jul-21/K	0.26		
Phenolics	mg/L	0.002	MOEE 3179	28-Jul-21/K	0.732		
BOD(5 day)	mg/L	3	SM 5210B	23-Jul-21/K	85		

NOTE: Fecal Coliform passed acceptable holding time of 48 hrs upon arrival at Lab.



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

R.L. = Reporting Limit

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

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

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C.O.C.: G095972

REPORT No. B21-23176

Report To:

Hamlet of Sanirajak
P.O. Box 198,
Sanirajak NU K0A 0K0 Canada

Attention: Louis Primeau

Caduceon Environmental Laboratories

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

DATE RECEIVED: 23-Jul-21

JOB/PROJECT NO.:

DATE REPORTED: 04-Aug-21

P.O. NUMBER:

SAMPLE MATRIX: Leachate

WATERWORKS NO.

			Client I.D.		HALL-2			
			Sample I.D.		B21-23176-1			
			Date Collected		21-Jul-21			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed				
Total Organic Carbon	mg/L	0.2	EPA 415.2	26-Jul-21/O	21.3			
Oil & Grease-Total	mg/L	1.0	SM 5520	28-Jul-21/K	1.7			
Fecal Coliform	cfu/100mL	1	MOE E3371	23-Jul-21/O	730			
Benzene	µg/L	0.5	EPA 8260	27-Jul-21/R	16.0			
Toluene	µg/L	0.5	EPA 8260	27-Jul-21/R	4.5			
Ethylbenzene	µg/L	0.5	EPA 8260	27-Jul-21/R	0.6			
Xylene, m,p-	µg/L	1.0	EPA 8260	27-Jul-21/R	< 1.0			
Xylene, o-	µg/L	0.5	EPA 8260	27-Jul-21/R	< 0.5			
Xylene, m,p,o-	µg/L	1.1	EPA 8260	27-Jul-21/R	< 1.1			
Toluene-d8 (SS)	% rec.		EPA 8260	27-Jul-21/R	107			
PHC F1 (C6-C10)	µg/L	25	MOE E3421	28-Jul-21/R	104			
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	27-Jul-21/K	< 50			
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	27-Jul-21/K	< 400			
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	27-Jul-21/K	< 400			
Acenaphthene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.08			
Acenaphthylene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.06			
Anthracene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.05			
Benzo(a)anthracene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.2			
Benzo(a)pyrene	µg/L	0.01	EPA 8270	28-Jul-21/K	< 0.03			
Benzo(b)fluoranthene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.06			
Benzo(b+k)fluoranthene	µg/L	0.1	EPA 8270	28-Jul-21/K	< 0.1			
Benzo(g,h,i)perylene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.06			
Benzo(k)fluoranthene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.05			
Chrysene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.06			
Dibenzo(a,h)anthracene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.06			
Fluoranthene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.05			
Fluorene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.05			

NOTE: Fecal Coliform passed acceptable holding time of 48 hrs upon arrival at Lab.



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

R.L. = Reporting Limit

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

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

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C.O.C.: G095972

REPORT No. B21-23176

Report To:

Hamlet of Sanirajak
P.O. Box 198,
Sanirajak NU K0A 0K0 Canada

Attention: Louis Primeau

Caduceon Environmental Laboratories

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

DATE RECEIVED: 23-Jul-21

JOB/PROJECT NO.:

DATE REPORTED: 04-Aug-21

P.O. NUMBER:

SAMPLE MATRIX: Leachate

WATERWORKS NO.

			Client I.D.	HALL-2			
			Sample I.D.	B21-23176-1			
			Date Collected	21-Jul-21			
Parameter	Units	R.L.	Reference Method	Date/Site Analyzed			
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.06		
Methylnaphthalene,1-	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.07		
Methylnaphthalene,2-	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.07		
Naphthalene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.2		
Phenanthrene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.08		
Pyrene	µg/L	0.05	EPA 8270	28-Jul-21/K	< 0.05		
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	28-Jul-21/K	78.0		

1. NOTE: Elevated RLs due to sample matrix interferences.

NOTE: Fecal Coliform passed acceptable holding time of 48 hrs upon arrival at Lab.



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

R.L. = Reporting Limit

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

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

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

QUOTATION FOR ANALYTICAL SERVICES

Quote #:	P21_Nunavut
Organization:	Government of Nunavut, Baffin Region
Contact:	Bhabesh Roy
Telephone:	867 899 7314
Facsimile:	867 899 7328
Email:	brov@gov.nu.ca
Project #:	
Address:	P.O.Box 379, Pond Inlet, X0A 0S0
Additional info:	QUOTE # (S) MUST BE ON C OF C TO APPLY If not listed, General pricing will be applied.
Additional info:	11 communities in the Baffin region
Date:	January 1, 2021

Valid Until: December 31, 2021

Item #	Quantity	Analysis Request	Matrix	Unit Cost, \$	Amount, \$
1	1	LEACHATE ANALYSIS: TPH/BTEX, PAHs, BOD, pH, TSS, NO2/NO3, Phenols (4AAP), Faecal Coliforms, Conductivity, Oil & Grease - Total, Ammonia Nitrogen, Alkalinity, Sulphate, Chloride, TOC, Total Phosphorus & Metals - As, Cu, Fe, Hg, Ca, K, Cd, Cr, Pb, Ni, Co, Al, Zn, Mn & Hardness	Leachate	540.00	\$540.00
2	1	RAW WATER - Surfactants, TDS, Chloride, Fluoride, Nitrate, Sulphate, DOC, Cyanide (Total), Phenolics (4AAP) & E.Coli, Alkalinity, Ammonia, Colour, Conductivity, pH, TOC, Turbidity, Metals - Al, Sb, As, B, Ba, Ca, Cd, Cr, CrVI, Cu, Fe, Pb, Mg, Mn, K, Se, Ag, Na, U, Zn & Hardness	Raw Water	344.00	\$344.00
3	1	WASTE WATER - BOD, TSS, Conductivity, Alkalinity, Oil and Grease (Total), Chloride, Ammonia Nitrogen, Faecal Coliforms, pH, NO2/NO3, Phenols (4AAP), Sulphate, TOC & Metals - Mg, Na, Cd, Co, Cr, Cu, Al, Hg, Ca, K, Zn, Fe, Mn, Ni, Pb, As & Hardness	Waste Water	292.50	\$292.50
Subtotal					1,176.50
HST					152.95
Total Cost					\$1,329.45

Prices do not include shipping unless otherwise stated.

****NOTE**** The Ottawa laboratory will keep track of the samples bottle sets sent to the communities. Nearing the end of the year Caduceon staff will compare what has been sent in supplies versus what has been submitted. Missing/unreturned supplies will be charged at the same rate as listed above. Far too many cooler sets/supplies have not been sent back leading Caduceon to implement this measure. Additionally, past reports can be retrieved from Caduceon's CadConnect Web Portal. Should clients require Caduceon to retrieve them an administration charge may be applicable up to \$100 for retrieval of historical reports. Should you require a CadConnect account, please contact it@caduceonlabs.com and Caduceon can provide you with an account setup.



Damien Gilbert
Business Development
Caduceon Environmental Laboratories
dgilbert@caduceonlabs.com
Cell: 613-331-1743

Laboratory Locations

Kingston - 285 Dalton Ave. Kingston, ON K7K 8Z1 Tel: (813) 544-2001 Fax: (813) 544-2770
Ottawa - 2378 Holly Lane Ottawa, ON K1V 7P1 Tel: (813) 528-0123 Fax: (813) 528-1244
Richmond Hill - 110 West Beaver Creek Road (Unit 14), Richmond Hill, ON L4B 1J9 Tel: (289) 475-5442 Fax: (666) 562-1963
Windsor - #5-3201 Marantette Ave. Windsor, ON N8X 4G3 Tel: (519) 966-9541 Fax: (519) 966-9567

GENERAL SAMPLE SUBMISSION FORM

SAMPLES SUBMITTED TO:

TESTING REQUIREMENTS

C A D U C E

ENVIRONMENTAL LABORATORIES
Client committed. Quality assured. Proudly Canadian.Kingston
Ottawa
Richmond Hill
Barrie
London
WindsorOReg 153/04
OReg 406/19
RPI
Coarse
MISA
Other:Table (1 - 9)
Table (1 - 9.1)
ICC
Medium/Fine
PWOC
Record of Site
SPLP Table (1 - 9.1)
Agricultural
OReg 558 TCLP
Landfill MonitoringJULY 23 2021
B21-23176

Are any samples to be submitted intended for Human Consumption under any Drinking Water Regulations?

Yes ☐ No ☐ (If yes, submit all Drinking Water Samples on a Drinking Water Chain of Custody)

Organization:

Address:

Invoicing Address (if different):

ANALYSES REQUESTED

TURNAROUND SERVICE

Contact:

P.O. Box 198

Sanitjak

Tel:

NUN, X0A0K0

Project Name#:

Fax:

P21-Nunavut

Additional Info:

Email:

SAG-116hamlet@ginig.com

Quote #:

Additional Info (email, cell, etc):

municipal@ginig.com

P.O. #:

Sample Matrix Legend: WW=Waste Water, SW=Surface Water, GW=Groundwater, LS=Liquid Sludge, SS=Solid Sludge, S=Soil, Sed=Sediment, PC=Paint Chips, F=Filter, Oil=Oil

Sample Source and/or Sample Identification

S.P.L.

Sample Matrix *

Date Collected (yy-mm-dd)

Time Collected

By Using A Check Mark In The Box Provided

Indicate Test For Each Sample

X

pH

Temp.

Bottles/ Sample

Field Filtered Y/N

Leachate Hall-2

13 Bottles Attached.

21-07-21

9:00am

Leachate

Asper

Quate

Suspected Highly Contaminated

Platinum*

Gold*

Silver

Bronze

Standard

5-7 days

Specific Date:

Requested (see back page)

200% Surcharge

100% Surcharge

50% Surcharge

25% Surcharge

5-7 days

Sample Temperature °C:

Labeled by:

Signature:

Date Received (yy-mm-dd):

Time Received:

Print:

Trisha Nguyen

Courier (Caduceon account)

Drop Off

of Pieces

Invoice by Email

Invoice by Mail

Sample Temperature °C:

Labeled by:

Signature:

Date Received (yy-mm-dd):

Time Received:

Sign:

Trisha Nguyen

Courier (Caduceon account)

Drop Off

of Pieces

Invoice by Email

Invoice by Mail

Sample Temperature °C:

Labeled by:

Signature:

Date Received (yy-mm-dd):

Time Received:

Comments:

Date (yy-mm-dd) Time:

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WATER LICENCE INSPECTION FORM

☒ Original

☐ Follow-Up Report

Licensee	Licensee Representative
Hamlet of Hall Beach	Bhabesh Roy
Licence No. / Expiry	Representative's Title
3BM-HAL2025	Municipal Engineer
Land / Other Authorizations	Land / Other Authorizations
Date of Inspection	Inspector
September 8, 2021	Joseph Monteith
Activities Inspected	
<div><div><input type="checkbox"/> Camp</div><div><input type="checkbox"/> Drilling</div><div><input type="checkbox"/> Mining</div><div><input type="checkbox"/> Construction</div><div><input type="checkbox"/> Reclamation</div><div><input type="checkbox"/> Fuel Storage</div></div> <div><div><input type="checkbox"/> Roads/Hauling</div><div><input checked="" type="checkbox"/> Other: Potable Water Source, Waste Water Treatment Facility, and Solid Waste Facility</div><div><input type="checkbox"/> Other:</div></div>	

Conditions:	A- Acceptable	U-Unacceptable	C-Concern	NI-Not Inspected	NA- Not applicable
PART:				Condition	Observation No.*
A: SCOPE, DEFINITIONS AND ENFORCEMENT				A	
B: GENERAL CONDITIONS				A	
C: CONDITIONS APPLYING TO SECURITY				NI	
D: CONDITIONS APPLYING TO WATER USE				A	1-6
E: CONDITIONS APPLYING TO WASTE DISPOSAL AND MANAGEMENT				C	7-17
F: CONDITIONS APPLYING TO MODIFICATIONS				NI	
G: CONDITIONS APPLYING TO CONSTRUCTION				NI	
H: CONDITIONS APPLYING TO EMERGENCY RESPONSE AND CONTINGENCY PLANNING				U	
I: CONDITIONS APPLYING TO ABANDONMENT, RECLAMATION AND CLOSURE PLANNING				NA	
J: CONDITIONS APPLYING TO MONITORING				A	
SCHEDULES				A	
*The licence and the observation number corresponds with specific comments provided below.					
Samples taken by Inspector:		Location(s): Latitude: N 68.790757°, W81.236942°			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					

SECTION 1	<input checked="" type="checkbox"/> Comments (s. __)	<input type="checkbox"/> Non-Compliance with Act or Licence (s. __)	<input type="checkbox"/> Action Required (s. __)
BACKGROUND <p>On April 23, 2020, The Nunavut Water Board(NWB) issued 3BM-HAL2025. The Type “B” water license authorizes the use of 40,000m³ per annum or maximum of 299m³ per day. Effective as of April 30, 2020, and expiry April 29, 2025.</p> <p>The Hamlet of Hall Beach owns and operates several municipal facilities aimed at providing relevant services to the residents of the community including a potable Water Supply Facility (WSF), Solid Waste Disposal Facility (SWDF), and a Sewage Disposal Facility (SDF). The Hamlet shares the same Potable Water Source with the Department of National Defence – North Warning Sites.</p> Inspector Statement <p>On September 8, 2021, a water licence inspection was conducted to verify compliance with the water license 3BM-HAL2025 by Water Resource Officer(WRO) Joseph Monteith at the Hamlet of Hall Beach, Qikiqtani Region, Nunavut.</p> General Condition <p>ON April 23, 2020, Sylvia Ekelik, Licensing Administrative Assistant, NWB, emailed a copy of the Hamlet’s 2020 Annual Report.</p> Water Use Related Structures <ol style="list-style-type: none">Water withdrawal is conducted from South Lake to the Water Storage Reservoir. The Water from South Lake is recharged by opening up a gate on a dyke which is also a man-made reservoir. The Storage Reservoir has a capacity of 60,000m³ Erosion is happening on dyke that separates the water source and a historically contaminated man made lake (See photo 1). The road on the dyke is only used by Transport Canada, or Nav Canada to access an antenna, and the dyke is used as wall to separate historical contamination, and the source of water for the community and FOX-M, the North Warning Site operated			

- by Raytheon. Discussions with CGS is ongoing into see who is responsible to maintain the road/dyke.
- At the time of the inspection a yellow triangle sign was observed titled HAL 1 at the pump house of the water treatment facility indicating a monitoring site at Fundo Lake.
 - The water reservoir appeared to be working as intended(photo 5).
 - Two pumping stations at the Water Storage Reservoir. One for community, and another for the North Warning Site.
 - Water meter used to record usage amounts . At the time of the inspection the flow metre read 1492382.2m³ (photo 2), and the logs read the same amount as of July 11, 2018 on the log sheet (See photo 3).
 - The monthly water consumption report recorded 0053422.8m³ used for September 12, 2021 totals for the month (photo 4).

Waste Water Treatment Facility

- The Water Treatment Facility consists of two cells. Cell #1 is the south side cell of the two; whereas, Cell #2 is the north side of the two cells. At the time of the inspection the sewage lagoon was under construction for repairs (photo 6).
- The fencing looked like it was operating as intended, but the base of the fencing looked as if it was causing some structural damage to the lagoon walls, this may need to be maintained and should be monitored.
- The freeboard was in good standing above 1 metre.
- A leak was observed at the South East corner of Cell # 1 at the time of the inspection. A spill report was requested to be submitted. On June 24, 2019 at 16:00 hrs a Spill Report – Spill 2019-253 was submitted to the Spill Line as per Part B: Subsection 6. On June 26, 2019 an update was submitted to the Spills line with an estimated quantity of 593317 litres, and a 10,000 square metres area of contamination. The reason was a cracked liner, damaged as result of sewage seeping/leaking through the berm to the sandy wetlands. The migration of waste travelled through the sandy wetlands for 3km before being received by the receiving marine environment. The type of lagoon is exfiltration, and its natural migration was the same migration path of the spill. No concerns of spill migrating to any fresh water, or impacting any fish bearing waters. This spill will not be closed off till all obligations for follow up have been met.
- Another occurrence at the same lagoon generated another spill report 2020-198. The leak spilled 7843869 Litres of sewage. These two spill reports will be closed together when the obligations for post clean-up have been met.
- Spill Report 2021-289 submitted July 8, 2021 informs the spill of 181,52m³ sewage spill from a breakage in the walls of the sewage lagoon. Follow up report after 30 days hasn’t been provided. (photo 7,8,&9)).

Solid Waste Facility

- The Solid Waste Facility located next to the Water Treatment Facility segregates their waste into metals, burnable waste, hazardous waste, and woods.
- Fencing requires maintenance around burnable waste section.
- Hazardous waste is located throughout in the Solid Waste Facility. This should be removed and segregated appropriately and deposited into the Hazardous Waste Disposal Facility. (See photo 14).
- The Hazardous Waste section is a non engineered berm, with a liner. A gap in the north west section of the Hazardous Waste Facility has been closed off (Photo 11, 12, & 13).
- The old Bulk Metals section of the Solid Waste Facility (photo 15).

SECTION 2	<input type="checkbox"/> Comments	<input type="checkbox"/> Non-Compliance with Act or Licence	<input checked="" type="checkbox"/> Action Required
<p>The following information is a summary of the actions Required by the licensee to promote and ensure compliance:</p> <ul style="list-style-type: none">Maintain fencing at burnable waste facilityRemove hazardous waste from bulk metal storage facility, deposit in the Hazardous Waste Storage Facility (see photo 11).Seek consultation about the interaction of wildlife at the water reservoir.Report all spills within hazardous waste facility, the solid waste facility, the 2 cell sewage lagoons, the water source, water storage, and water treatment/pump house facility as per conditions of water license.Follow up with Spill reporting requirements as per the water license terms and conditions Part F: 8.(c) for spill reports 2019-253, 2020-198, and 2021-289Provide accurate GPS Coordinates of actual location of spills for 2019-253, 2020-198, 2021, 289.As Per Part F: section 7. 7. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector. Due to the frequency, and large amount of product being spilled over the last 3 years, we request more frequent inspections of the engineered facility in Hall Beach.Provide Engineers Report, or Contractors Report indicating the work conducted to repair the sewage lagoon walls			

SECTION 3	<input type="checkbox"/> Comments	<input checked="" type="checkbox"/> Non-Compliance with Act or Licence	<input type="checkbox"/> Action Required
<div>Part F: Conditions Applying to Operations and Maintenance</div> <div>8. If, during the period of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:</div> <div>a. employ the appropriate contingency measures outlined in the Spill Contingency Plan for the Hamlet of Hall Beach. Take whatever steps are immediately practicable to protect human life, health and the environment;</div> <div>b. report the incident immediately to the NWT/NU 24-Hour Spill Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and</div> <div>c. for each spill occurrence, submit to the Inspector, within thirty (30) days after initially reporting the event, a detailed report that provides the necessary information on the location (including the GPS coordinates), initial response action, remediation/clean-up, status of response (ongoing, complete), proposed disposal options for dealing with contaminated materials and any preventative measures to be implemented.</div>			

Licensee or Representative	Inspector's Name
Bhabesh Roy	Joseph Monteith
Signature	Signature
Date	Date
	November 15, 2021

CC: Licensing Department, NWB
Justin Hack, Manager of Field Operations, INAC


PHOTO LOG

Date	Camera	Inspector
August 12, 2020	Nikon Coolpix N16D3-52000738	Joseph Monteith
Photo Log #1		Location:
Photo 1		Water Source Reservoir/Dyke Road, Hall Beach, NU



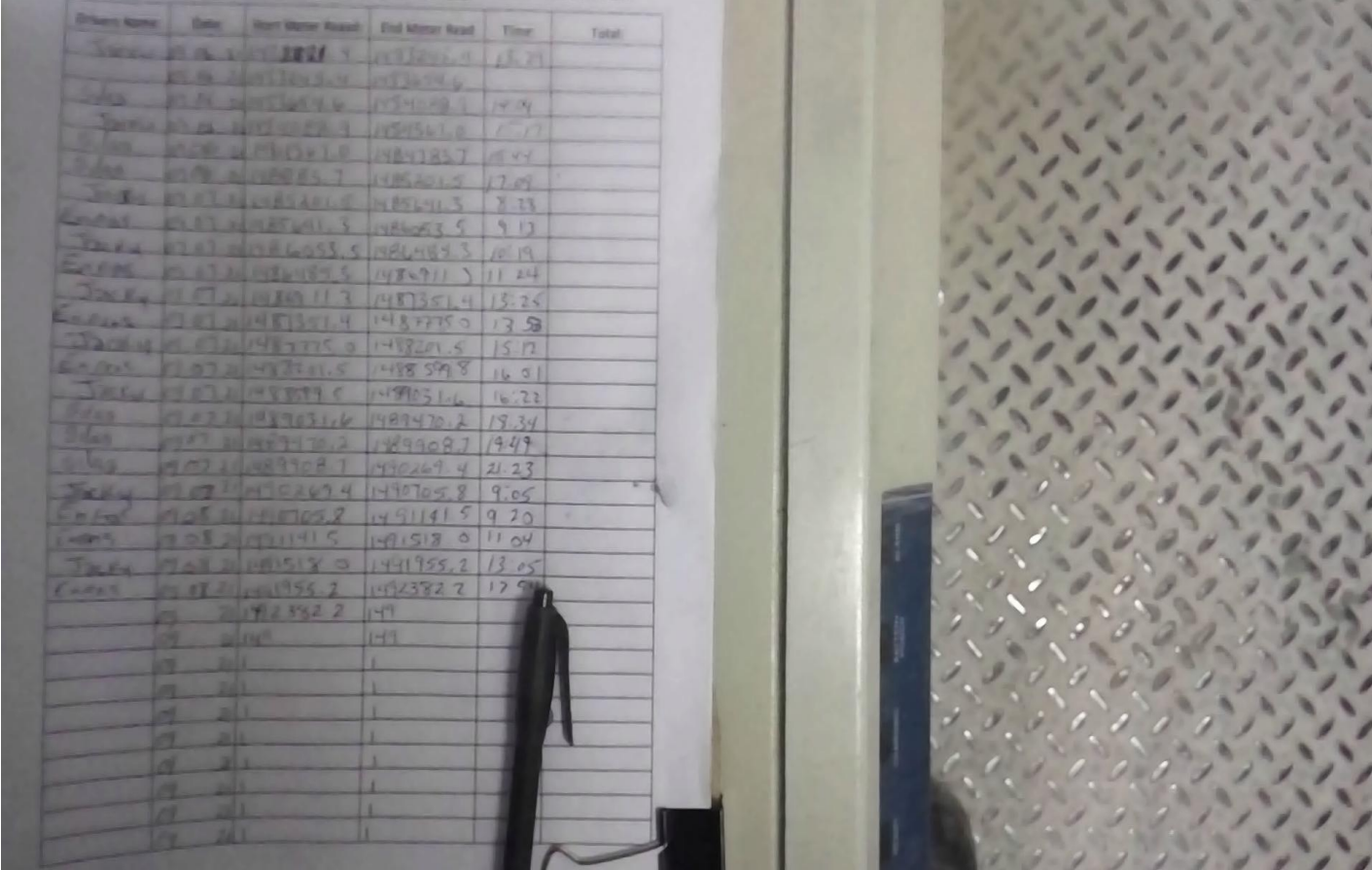
Description: Water Source on left hand side of road wall. Culverts allow water on the historically contaminated side of the dyke road, bypassing interaction with the man made reservoir.

Photo Log	Location
Photo 2	Water Treatment/water truck pump house, Hall Beach, NU



Description: Water Meter – reads 1492382.2 x 100 litres. Signet Flow Gauge Accumulator

Photo Log	Location
Photo 3	Water Treatment/water truck pump house, Hall Beach, NU



Description: Water Usage Logs from Water Pump House – “end meter read” “1492382.2” on September 8, 2021 at 17:04pm

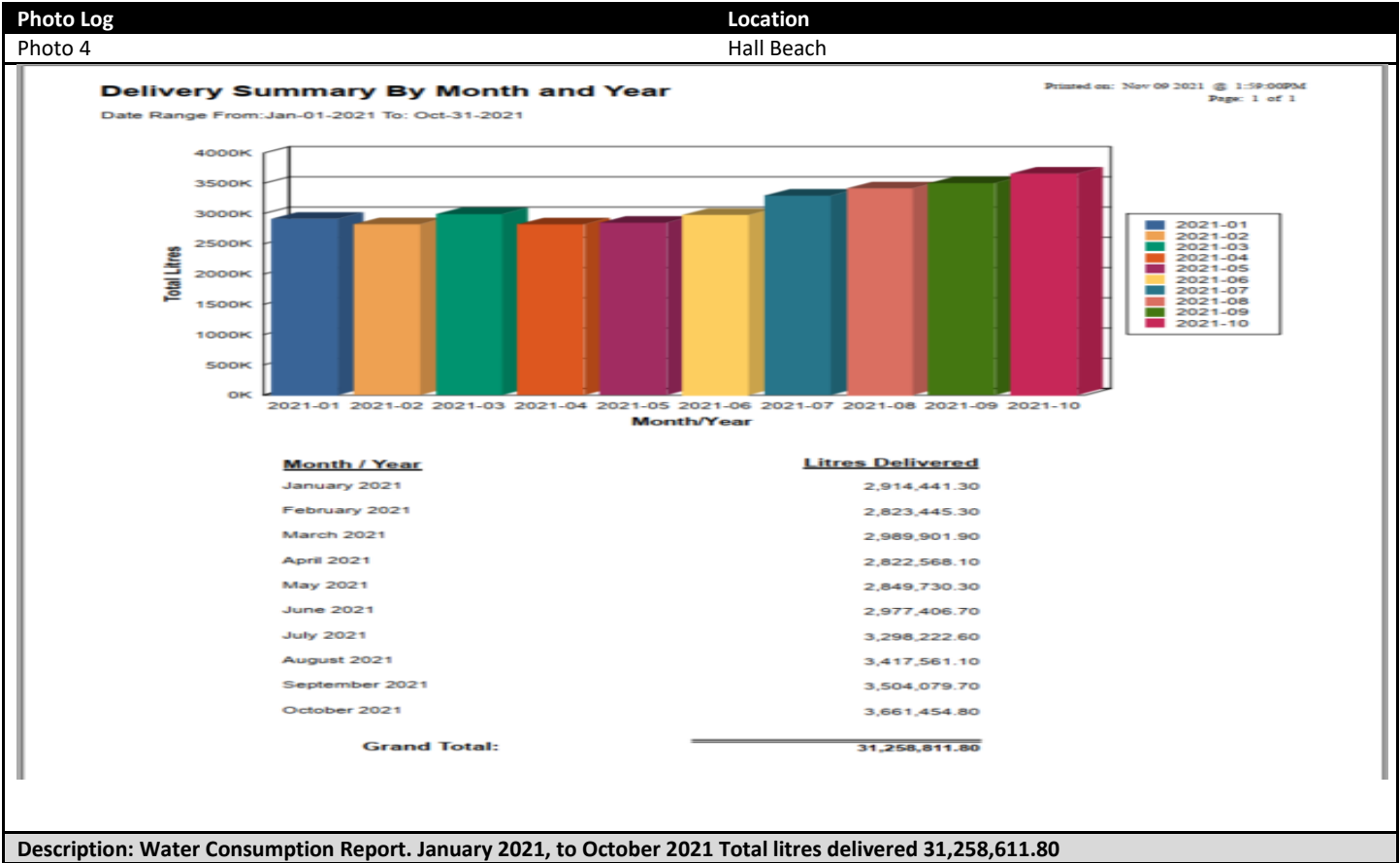




Photo Log	Location
Photo 6	Hall Beach
	
Description: New gravel laid down after repairs	


Photo Log	Location
Photo 7	Hall Beach
	
Description: Spill appears to have migrated from under the supports installed at the base of the sewage lagoon. Spill migrated top left of the photo. Distance from	

Photo Log

Photo 8

Location

Hall Beach

spill-2021289

View

Edit

Timeline

Thursday, July 8, 2021 - 12:14

Spill Status

Lead Agency: CIRNAC - Crown-Indigenous Relations and Northern Affairs Canada

Spill Status: Open

Occurance Date/Time: Thursday, July 8, 2021 - 00:00

Received Method: Email

Potential Spill: No

Responsible Party/Vessel Address: Canada

Contractor Address: Canada

Spill Information

Spill Region: Baffin

Spill Location: Hall Beach, Community, Nunavut

Spill Location Description: Hall Beach Sewage Lagoon

Geolocation: Geolocation is 68.778333, -81.2394194

Land Sea Indicator: Land

Spill Source: Sewage Lagoon

Spill Cause: Breakage

Product Spilled: Wastewater (sewage, mine tailings)

Product Spilled Description: Sewage

Spill Quantity: 18152793.00

Measurement: Litres

Supporting Information

Additional Information: Spill Source: Berm failure One of the two cells of the Hamlet's sewage lagoon has been leaking since constructed (see previous spill reports filed 19/06/26 for 2019 and 20/06/29 for previous two years). When the cell was checked this morning it showed that the cell had started leaking again. As both lagoon cells are approximately the same size, the estimated volume of the spill is 50% of the previous fiscal year's water deliveries, as eventually the full contents of the leaking cell will leak. The GN is working with its contractor to effect repairs for the sewage lagoon berm leak; it is hoped that the cell will be repaired to prevent future leaking this summer.

Description: Spill Report 2021-289 – Source of leak repaired at the time of the inspection.

Photo Log

Photo 9

Location

Hall Beach

2021-289

181,52m3 sewage spill

Distance to Ocean 232.77 metres

Ruler

Line Path Polygon Circle 3D path 3D poly

Measure the distance between two points on the ground

Map Length: 232.77 Meters

Ground Length: 232.77

Heading: 68.36 degrees

☒ Mouse Navigation

Save Clear

Legend

Historical Spill Report Source

Historical Spill Report Source

Google Earth

Image © 2021 Maxar Technologies

600 ft

Description: Spill Report 2021-289 GoogleEarth Map. Distance to ocean is 232.77 metres.

Location

Hall Beach



Description: Hazardous Waste: Open Paint Cans, and other hazardous waste laid across the bulk metal section of the Solid Waste Facility.

Location

Hall Beach



Description: Gap in the walls of the hazardous waste facility has been closed, and confirmed by photo emailed to WRO Joseph Monteith by the foremen.

Photo Log	Location
Photo 12	Hall Beach



Description: Hazardous Waste Section of the Solid Waste Facility. Non-engineered walls prevent water from entering and mixing with Hazardous waste.

Photo Log	Location
Photo 13	Hall Beach



Description: Hazardous Waste sea can locked. New box to receive small hazardous waste materials a new addition to the facility.

	Location
Photo 14	Hall Beach
	
Description: Bulk Metals : Signs of hazardous waste spill unreported.	

Photo Log	Location
Photo 15	Hall Beach
	
Description: Bulk Metal Storage. A separate Bulk Metal Storage Facility, with Government of Nunavut vehicles in it.	

**ANNUAL REPORT
FOR THE HAMLET OF SANIRAJAK (HALL BEACH), NUNAVUT, 2021**

Appendix C

**ANNUAL REPORT
FOR THE HAMLET OF HALL SANIRAJAK (HALL BEACH), NUNAVUT, 2021**

Appendix D

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

Spill	Occurrence Date	Location Description	Product Spilled	Quantity
2021298	12- July- 2021	Hall Beach Co-Op	Other	Unknown
2021289	08-July- 2021	Hall Beach Sewage Lagoon	Wastewater (sewage, mine tailings)	18152793.00 L
2021286	07-July- 2021	SANIRAJAK, NWS SITE FOX-M, NU (ocean) Latitude: 68 degrees 46 minutes 15 seconds Longitude: 81 degrees 13 minutes 50 seconds	Petroleum - fuel oil (jet A, diesel, turbo A, heat)	1.00 L