

ANNUAL REPORT FOR THE HAMLET OF WHALE COVE

YEAR BEING REPORTED: 2021

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence No. **3BM-WHA2126** issued to the **Hamlet of Whale Cove**.

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 ls combined and estimated sewage water discharge in m³

Month Reported	Quantity of Water Obtained from all sources (m³)	Quantity of Sewage Waste Discharged (m³)
January	1,532.290	Same
February	1,416.540	Same
March	1,625.130	Same
April	1,331.752	Same
May	1,411.139	Same
June	1,717.932	Same
July	1,547.007	Same
August	1,465.554	Same
September	1,463.578	Same
October	1,476.476	Same
November	1,284.212	Same
December	1,135.023	Same
ANNUAL TOTAL	17,406.633	Same

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

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- 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:
- Sewage decant permission was granted by Atuat Shouldice (Inspector- CIRNAC) on July 21, 2021.
- III. A list of unauthorized discharges and summary of follow-up action taken:
- No unauthorized discharges for the infrastructure under license 3BM-WHA2126 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 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 solid waste site with the available funding is expected to begin in 2022.
 - Amendment application to be initiated spring 2022 for the new water intake that is part of the new water treatment plant project.
- 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

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ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- Licence 3BM-WHA2126 was issued on March 26, 2021 to replace licence 3BM-WHA1520.

Water Licensing Sampling Points:



WHA-2: Runoff from Solid Waste Disposal Facilities

WHA-3: Final Discharge Point for effluent from the Sewage Disposal Facility prior to the wetland

WHA-4: Effluent outfall area from the wetland area

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FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- An assessment of the Whale Cove solid waste site is expected to take place in summer 2022. It will evaluate and recommend an approach to improve management of waste including hazardous waste segregation and containment options. The results will be used to develop a business case which is expected to be complete by March 2023. The Business Case and updated project timelines will be submitted to NWB. In the interim CGS will work with the Municipality to store hazardous waste in a seacan.

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Appendix A: WHA-3 Effluent Quality Limits

Appendix B: Weekly Inspections at Monitoring Program Station

**Appendix C: Certificate of Analysis August 9, 2021
Certificate of Analysis August 26, 2021
Certificate of Analysis September 07, 2021**

Appendix D: Hazardous Materials Spill Database, Whale Cove 2021

Appendix E: Whale Cove 2021 Sampling Summary

Appendix E: Whale Cove 2021 CIRNAC Inspection Report

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Appendix A

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3BM-WHA1520 Whale Cove Monitoring Program Results 2021 WHA-3 Effluent Quality limits

Parameter	Maximum Concentration of any grab sample	WHA-3			
		09-Aug-2021	26-Aug-2021	07-Sep-2021	28-Sep-2021
BOD ₅	80 mg/L	13.7	117.9	15.6	-
Total Suspended Solids	100 mg/L	88.6	99.2	114.0	-
Fecal Coliforms	1 x 10 ⁴ CFU/100mL	1860	8660	-	14100
Oil & Grease	no visible sheen	<5.0	<5.0	-	
pH	between 6 and 9	8.62	8.40	8.41	-

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Appendix B

No Weekly Inspections at Monitoring Stations Document was received by CGS

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Appendix C



Hamlet of Whale Cove
ATTN: Brian Flemming
PO Box 120
Whale Cove NU X0C 0I0

Date Received: 11 -AUG -21
Report Date: 24-SEP-21 11:09 (MT)
Version: FINAL REV. 2

Client Phone: 867-896-9561

Certificate of Analysis

Lab Work Order #: L2625306

Project P.O. #: NOT SUBMITTED
Job Reference: WHALE COVE , NU - WASTE WATER
C of C Numbers:
Legal Site Desc:

Craig Riddell, B.Sc.Ag
Account Manager

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2625306-1 WHA-2							
Sampled By: CLIENT on 09-AUG-21 @ 15:59							
Matrix: WATER							
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	160	PEHR	10	MPN/100mL		11-AUG-21	R5549147
Escherichia Coli	<10	PEHR	10	MPN/100mL		11-AUG-21	R5549147
F2-F4 (O.Reg.153/04)							
F2 (C10-C16)	<100		100	ug/L	16-AUG-21	16-AUG-21	R5552504
F3 (C16-C34)	<250		250	ug/L	16-AUG-21	16-AUG-21	R5552504
F4 (C34-C50)	<250		250	ug/L	16-AUG-21	16-AUG-21	R5552504
Chrom. to baseline at nC50	YES				16-AUG-21	16-AUG-21	R5552504
Surrogate: 2-Bromobenzotrifluoride	84.6		60-140	%	16-AUG-21	16-AUG-21	R5552504
CCME PAHs in mg/L							
1-Methylnaphthalene	0.000033		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
2-Methylnaphthalene	0.000029		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Acenaphthene	0.000022		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Acenaphthylene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Anthracene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Acridine	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(a)anthracene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Chrysene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Dibenz(a,h)anthracene	<0.0000050		0.0000050	mg/L	16-AUG-21	18-AUG-21	R5553358
Fluoranthene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Fluorene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Naphthalene	0.000087		0.000050	mg/L	16-AUG-21	18-AUG-21	R5553358
Phenanthrene	<0.000050		0.000050	mg/L	16-AUG-21	18-AUG-21	R5553358
Pyrene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Quinoline	0.000056		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	16-AUG-21	18-AUG-21	R5553358
Surrogate: Naphthalene d8	91.0		50-150	%	16-AUG-21	18-AUG-21	R5553358
Surrogate: Phenanthrene d10	98.7		50-150	%	16-AUG-21	18-AUG-21	R5553358
Surrogate: Chrysene d12	94.5		50-150	%	16-AUG-21	18-AUG-21	R5553358
Surrogate: Acridine d9	98.9		50-150	%	16-AUG-21	18-AUG-21	R5553358
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	213		1.2	mg/L		13-AUG-21	
Alkalinity, Carbonate							
Carbonate (CO3)	3.24		0.60	mg/L		13-AUG-21	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		13-AUG-21	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	180		1.0	mg/L		12-AUG-21	R5549457
Ammonia by colour							
Ammonia, Total (as N)	1.02		0.010	mg/L		17-AUG-21	R5556933
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	2.4		2.0	mg/L		12-AUG-21	R5553837
Carbonaceous BOD							
BOD Carbonaceous	2.8		2.0	mg/L		12-AUG-21	R5553837
Chloride in Water by IC							
Chloride (Cl)	123		0.50	mg/L		11-AUG-21	R5548777

* 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
L2625306-1 WHA-2 Sampled By: CLIENT on 09-AUG-21 @ 15:59 Matrix: WATER							
Conductivity Conductivity	839		1.0	umhos/cm		12-AUG-21	R5549457
Fecal coliforms, 1:10 dilution by QT97 Fecal Coliforms	30	PEHR	10	MPN/100mL		11-AUG-21	R5549083
Hardness Calculated Hardness (as CaCO3)	280	HTC	0.20	mg/L		16-AUG-21	
Mercury Total Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	19-AUG-21	19-AUG-21	R5562396
Nitrate in Water by IC Nitrate (as N)	0.127		0.020	mg/L		11-AUG-21	R5548777
Nitrate+Nitrite Nitrate and Nitrite as N	0.153		0.070	mg/L		12-AUG-21	
Nitrite in Water by IC Nitrite (as N)	0.026		0.010	mg/L		11-AUG-21	R5548777
Oil & Grease - Gravimetric Oil and Grease	<5.0		5.0	mg/L		16-AUG-21	R5557259
Phenol (4AAP) Phenols (4AAP)	0.025	DLM	0.010	mg/L		16-AUG-21	R5554050
Phosphorus, Total Phosphorus (P)-Total	0.106		0.0030	mg/L		18-AUG-21	R5556800
Sulfate in Water by IC Sulfate (SO4)	68.0		0.30	mg/L		11-AUG-21	R5548777
Total Metals in Water by CRC ICPMS Aluminum (Al)-Total	0.0132		0.0030	mg/L	12-AUG-21	12-AUG-21	R5551783
Arsenic (As)-Total	0.00228		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Cadmium (Cd)-Total	0.000110		0.0000050	mg/L	12-AUG-21	12-AUG-21	R5551783
Calcium (Ca)-Total	89.4		0.050	mg/L	12-AUG-21	12-AUG-21	R5551783
Chromium (Cr)-Total	0.00035		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Cobalt (Co)-Total	0.00099		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Copper (Cu)-Total	0.00279		0.00050	mg/L	12-AUG-21	12-AUG-21	R5551783
Iron (Fe)-Total	1.80		0.010	mg/L	12-AUG-21	12-AUG-21	R5551783
Lead (Pb)-Total	0.000378		0.000050	mg/L	12-AUG-21	12-AUG-21	R5551783
Magnesium (Mg)-Total	13.8		0.0050	mg/L	12-AUG-21	12-AUG-21	R5551783
Manganese (Mn)-Total	0.182		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Nickel (Ni)-Total	0.00489		0.00050	mg/L	12-AUG-21	12-AUG-21	R5551783
Potassium (K)-Total	11.4		0.050	mg/L	12-AUG-21	12-AUG-21	R5551783
Sodium (Na)-Total	54.8		0.050	mg/L	12-AUG-21	12-AUG-21	R5551783
Zinc (Zn)-Total	0.0304		0.0030	mg/L	12-AUG-21	12-AUG-21	R5551783
Total Organic Carbon by Combustion Total Organic Carbon	10.6		0.50	mg/L		18-AUG-21	R5559439
Total Suspended Solids Total Suspended Solids	3.4		3.0	mg/L		16-AUG-21	R5554497
pH pH	8.30		0.10	pH units		12-AUG-21	R5549457
L2625306-2 WHA-3 Sampled By: CLIENT on 09-AUG-21 @ 14:35 Matrix: WATER							
BTEX BTX plus F1 by GCMS Benzene	<0.00050		0.00050	mg/L		18-AUG-21	R5572369
Toluene	<0.0010		0.0010	mg/L		18-AUG-21	R5572369
Ethyl benzene	<0.00050		0.00050	mg/L		18-AUG-21	R5572369
o-Xylene	<0.00050		0.00050	mg/L		18-AUG-21	R5572369

* 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
L2625306-2 WHA-3							
Sampled By: CLIENT on 09-AUG-21 @ 14:35							
Matrix: WATER							
BTX plus F1 by GCMS							
m+p-Xylenes	<0.00040		0.00040	mg/L		18-AUG-21	R5572369
F1 (C6-C10)	<0.10		0.10	mg/L		18-AUG-21	R5572369
Surrogate: 4-Bromofluorobenzene (SS)	79.2		70-130	%		18-AUG-21	R5572369
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		31-AUG-21	
F2-Naphth	<0.10		0.10	mg/L		31-AUG-21	
F3-PAH	<0.25		0.25	mg/L		31-AUG-21	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		31-AUG-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	>24200	PEHR	10	MPN/100mL		11-AUG-21	R5549147
Escherichia Coli	3450	PEHR	10	MPN/100mL		11-AUG-21	R5549147
F2-F4 (O.Reg.153/04)							
F2 (C10-C16)	<100		100	ug/L	16-AUG-21	16-AUG-21	R5552504
F3 (C16-C34)	<250		250	ug/L	16-AUG-21	16-AUG-21	R5552504
F4 (C34-C50)	<250		250	ug/L	16-AUG-21	16-AUG-21	R5552504
Chrom. to baseline at nC50	YES				16-AUG-21	16-AUG-21	R5552504
Surrogate: 2-Bromobenzotrifluoride	91.0		60-140	%	16-AUG-21	16-AUG-21	R5552504
CCME PAHs in mg/L							
1-Methylnaphthalene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
2-Methylnaphthalene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Acenaphthene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Acenaphthylene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Anthracene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Acridine	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(a)anthracene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Chrysene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Dibenz(a,h)anthracene	<0.0000050		0.0000050	mg/L	16-AUG-21	18-AUG-21	R5553358
Fluoranthene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Fluorene	<0.000020		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Naphthalene	<0.000050		0.000050	mg/L	16-AUG-21	18-AUG-21	R5553358
Phenanthrene	<0.000050		0.000050	mg/L	16-AUG-21	18-AUG-21	R5553358
Pyrene	<0.000010		0.000010	mg/L	16-AUG-21	18-AUG-21	R5553358
Quinoline	0.000021		0.000020	mg/L	16-AUG-21	18-AUG-21	R5553358
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	16-AUG-21	18-AUG-21	R5553358
Surrogate: Naphthalene d8	95.9		50-150	%	16-AUG-21	18-AUG-21	R5553358
Surrogate: Phenanthrene d10	106.3		50-150	%	16-AUG-21	18-AUG-21	R5553358
Surrogate: Chrysene d12	104.1		50-150	%	16-AUG-21	18-AUG-21	R5553358
Surrogate: Acridine d9	112.0		50-150	%	16-AUG-21	18-AUG-21	R5553358
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	168		1.2	mg/L		13-AUG-21	
Alkalinity, Carbonate							
Carbonate (CO3)	11.4		0.60	mg/L		13-AUG-21	
Alkalinity, Hydroxide							

* 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
L2625306-2 WHA-3 Sampled By: CLIENT on 09-AUG-21 @ 14:35 Matrix: WATER							
Alkalinity, Hydroxide Hydroxide (OH)	<0.34		0.34	mg/L		13-AUG-21	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	157		1.0	mg/L		12-AUG-21	R5549457
Ammonia by colour Ammonia, Total (as N)	16.3		0.010	mg/L		18-AUG-21	R5556933
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	13.7		6.0	mg/L		12-AUG-21	R5553837
Carbonaceous BOD BOD Carbonaceous	9.5		2.0	mg/L		12-AUG-21	R5553837
Chloride in Water by IC Chloride (Cl)	87.4		0.50	mg/L		11-AUG-21	R5548777
Conductivity Conductivity	628		1.0	umhos/cm		12-AUG-21	R5549457
Fecal coliforms, 1:10 dilution by QT97 Fecal Coliforms	1860	PEHR	10	MPN/100mL		11-AUG-21	R5549083
Hardness Calculated Hardness (as CaCO3)	112	HTC	0.20	mg/L		16-AUG-21	
Mercury Total Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	19-AUG-21	19-AUG-21	R5562396
Nitrate in Water by IC Nitrate (as N)	0.686		0.020	mg/L		11-AUG-21	R5548777
Nitrate+Nitrite Nitrate and Nitrite as N	1.63		0.070	mg/L		12-AUG-21	
Nitrite in Water by IC Nitrite (as N)	0.940		0.010	mg/L		11-AUG-21	R5548777
Oil & Grease - Gravimetric Oil and Grease	<5.0		5.0	mg/L		16-AUG-21	R5557259
Phenol (4AAP) Phenols (4AAP)	<0.0010		0.0010	mg/L		16-AUG-21	R5554050
Phosphorus, Total Phosphorus (P)-Total	6.27		0.030	mg/L		18-AUG-21	R5556800
Sulfate in Water by IC Sulfate (SO4)	19.5		0.30	mg/L		11-AUG-21	R5548777
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0242		0.0030	mg/L	12-AUG-21	12-AUG-21	R5551783
Arsenic (As)-Total	0.00089		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Cadmium (Cd)-Total	0.0000071		0.0000050	mg/L	12-AUG-21	12-AUG-21	R5551783
Calcium (Ca)-Total	32.4		0.050	mg/L	12-AUG-21	12-AUG-21	R5551783
Chromium (Cr)-Total	0.00021		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Cobalt (Co)-Total	0.00062		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Copper (Cu)-Total	0.0209		0.00050	mg/L	12-AUG-21	12-AUG-21	R5551783
Iron (Fe)-Total	0.090		0.010	mg/L	12-AUG-21	12-AUG-21	R5551783
Lead (Pb)-Total	0.000112		0.000050	mg/L	12-AUG-21	12-AUG-21	R5551783
Magnesium (Mg)-Total	7.53		0.0050	mg/L	12-AUG-21	12-AUG-21	R5551783
Manganese (Mn)-Total	0.0621		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Nickel (Ni)-Total	0.00238		0.00050	mg/L	12-AUG-21	12-AUG-21	R5551783
Potassium (K)-Total	19.4		0.050	mg/L	12-AUG-21	12-AUG-21	R5551783
Sodium (Na)-Total	66.6		0.050	mg/L	12-AUG-21	12-AUG-21	R5551783
Zinc (Zn)-Total	0.0138		0.0030	mg/L	12-AUG-21	12-AUG-21	R5551783
Total Organic Carbon by Combustion Total Organic Carbon	30.9		0.50	mg/L		18-AUG-21	R5559439
Total Suspended Solids							

* 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
L2625306-2	WHA-3							
Sampled By:	CLIENT on 09-AUG-21 @ 14:35							
Matrix:	WATER							
Total Suspended Solids								
Total Suspended Solids		88.6		3.0	mg/L		16-AUG-21	R5554497
pH								
pH		8.62		0.10	pH units		12-AUG-21	R5549457
L2625306-3	WHA-4							
Sampled By:	CLIENT on 09-AUG-21 @ 15:45							
Matrix:	WATER							
Total and E. coli, 1:10 dilution by QT97								
Total Coliforms		3450	PEHR	10	MPN/100mL		11-AUG-21	R5549147
Escherichia Coli		<10	PEHR	10	MPN/100mL		11-AUG-21	R5549147
Nunavut WW Group 1								
Alkalinity, Bicarbonate								
Bicarbonate (HCO3)		265		1.2	mg/L		13-AUG-21	
Alkalinity, Carbonate								
Carbonate (CO3)		<0.60		0.60	mg/L		13-AUG-21	
Alkalinity, Hydroxide								
Hydroxide (OH)		<0.34		0.34	mg/L		13-AUG-21	
Alkalinity, Total (as CaCO3)								
Alkalinity, Total (as CaCO3)		217		1.0	mg/L		12-AUG-21	R5549457
Ammonia by colour								
Ammonia, Total (as N)		0.013		0.010	mg/L		17-AUG-21	R5556933
Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand		3.8		2.0	mg/L		12-AUG-21	R5553837
Carbonaceous BOD								
BOD Carbonaceous		<2.0		2.0	mg/L		12-AUG-21	R5553837
Chloride in Water by IC								
Chloride (Cl)		69.4		0.50	mg/L		11-AUG-21	R5548777
Conductivity								
Conductivity		629		1.0	umhos/cm		12-AUG-21	R5549457
Fecal coliforms, 1:10 dilution by QT97								
Fecal Coliforms		<10	PEHR	10	MPN/100mL		11-AUG-21	R5549083
Hardness Calculated								
Hardness (as CaCO3)		205	HTC	0.20	mg/L		16-AUG-21	
Mercury Total								
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L	19-AUG-21	19-AUG-21	R5562396
Nitrate in Water by IC								
Nitrate (as N)		<0.020		0.020	mg/L		11-AUG-21	R5548777
Nitrate+Nitrite								
Nitrate and Nitrite as N		<0.070		0.070	mg/L		12-AUG-21	
Nitrite in Water by IC								
Nitrite (as N)		<0.010		0.010	mg/L		11-AUG-21	R5548777
Oil & Grease - Gravimetric								
Oil and Grease		<5.0		5.0	mg/L		16-AUG-21	R5557259
Phenol (4AAP)								
Phenols (4AAP)		<0.0010		0.0010	mg/L		16-AUG-21	R5554050
Phosphorus, Total								
Phosphorus (P)-Total		0.494		0.0030	mg/L		18-AUG-21	R5556800
Sulfate in Water by IC								
Sulfate (SO4)		12.6		0.30	mg/L		11-AUG-21	R5548777
Total Metals in Water by CRC ICPMS								
Aluminum (Al)-Total		0.0291		0.0030	mg/L	12-AUG-21	12-AUG-21	R5551783
Arsenic (As)-Total		0.00191		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783

* 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
L2625306-3 WHA-4								
Sampled By: CLIENT on 09-AUG-21 @ 15:45								
Matrix: WATER								
Total Metals in Water by CRC ICPMS								
Cadmium (Cd)-Total		0.0000096		0.0000050	mg/L	12-AUG-21	12-AUG-21	R5551783
Calcium (Ca)-Total		68.3		0.050	mg/L	12-AUG-21	12-AUG-21	R5551783
Chromium (Cr)-Total		0.00018		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Cobalt (Co)-Total		0.00040		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Copper (Cu)-Total		0.00277		0.00050	mg/L	12-AUG-21	12-AUG-21	R5551783
Iron (Fe)-Total		1.07		0.010	mg/L	12-AUG-21	12-AUG-21	R5551783
Lead (Pb)-Total		0.000071		0.000050	mg/L	12-AUG-21	12-AUG-21	R5551783
Magnesium (Mg)-Total		8.36		0.0050	mg/L	12-AUG-21	12-AUG-21	R5551783
Manganese (Mn)-Total		0.169		0.00010	mg/L	12-AUG-21	12-AUG-21	R5551783
Nickel (Ni)-Total		0.00219		0.00050	mg/L	12-AUG-21	12-AUG-21	R5551783
Potassium (K)-Total		5.62		0.050	mg/L	12-AUG-21	12-AUG-21	R5551783
Sodium (Na)-Total		46.4		0.050	mg/L	12-AUG-21	12-AUG-21	R5551783
Zinc (Zn)-Total		<0.0030		0.0030	mg/L	12-AUG-21	12-AUG-21	R5551783
Total Organic Carbon by Combustion								
Total Organic Carbon		7.18		0.50	mg/L		18-AUG-21	R5559439
Total Suspended Solids								
Total Suspended Solids		101		3.0	mg/L		16-AUG-21	R5554497
pH								
pH		7.99		0.10	pH units		12-AUG-21	R5549457

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.

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 transferred 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.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range: 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-WT	Water	F2-F4 (O.Reg.153/04)	MOE DECPH-E3421/CCME TIER 1
Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.			
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.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
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 aqueous 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 Substrate 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 ww - 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.

Quality Control Report

Workorder: L2625306

Report Date: 24-SEP-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOC-HTC-WP								
Batch R5559439								
WG3600273-2	LCS							
Total Organic Carbon			102.0		%		80-120	18-AUG-21
WG3600273-1 MB								
Total Organic Carbon			<0.50		mg/L		0.5	18-AUG-21
CL-IC-N-WP								
Batch R5548777								
WG3595181-2	LCS							
Chloride (Cl)			99.9		%		90-110	11-AUG-21
WG3595181-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	11-AUG-21
EC-WP								
Batch R5549457								
WG3596446-13	LCS							
Conductivity			99.2		%		90-110	12-AUG-21
WG3596446-11 MB								
Conductivity			<1.0		umhos/cm		1	12-AUG-21
F2-F4-WT								
Batch R5552504								
WG3597006-2	LCS							
F2 (C10-C16)			85.7		%		70-130	16-AUG-21
F3 (C16-C34)			86.9		%		70-130	16-AUG-21
F4 (C34-C50)			103.1		%		70-130	16-AUG-21
WG3597006-1 MB								
F2 (C10-C16)			<100		ug/L		100	16-AUG-21
F3 (C16-C34)			<250		ug/L		250	16-AUG-21
F4 (C34-C50)			<250		ug/L		250	16-AUG-21
Surrogate: 2-Bromobenzotrifluoride			77.5		%		60-140	16-AUG-21
FC10-QT97-WP								
Batch R5549083								
WG3595143-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	11-AUG-21
HG-T-CVAA-WP								
Batch R5562396								
WG3601234-3	DUP	L2625306-1						
Mercury (Hg)-Total		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	19-AUG-21
WG3601234-2	LCS							

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WP								
Batch R5562396								
WG3601234-2 LCS								
Mercury (Hg)-Total			100.8		%		80-120	19-AUG-21
WG3601234-1 MB								
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	19-AUG-21
WG3601234-4 MS		L2625306-2						
Mercury (Hg)-Total			94.8		%		70-130	19-AUG-21
MET-T-CCMS-WP								
Batch R5551783								
WG3596445-2 LCS								
Aluminum (Al)-Total			104.2		%		80-120	12-AUG-21
Arsenic (As)-Total			101.0		%		80-120	12-AUG-21
Cadmium (Cd)-Total			98.8		%		80-120	12-AUG-21
Calcium (Ca)-Total			103.6		%		80-120	12-AUG-21
Chromium (Cr)-Total			104.0		%		80-120	12-AUG-21
Cobalt (Co)-Total			101.7		%		80-120	12-AUG-21
Copper (Cu)-Total			103.0		%		80-120	12-AUG-21
Iron (Fe)-Total			102.1		%		80-120	12-AUG-21
Lead (Pb)-Total			93.9		%		80-120	12-AUG-21
Magnesium (Mg)-Total			112.9		%		80-120	12-AUG-21
Manganese (Mn)-Total			103.3		%		80-120	12-AUG-21
Nickel (Ni)-Total			100.2		%		80-120	12-AUG-21
Potassium (K)-Total			102.6		%		80-120	12-AUG-21
Sodium (Na)-Total			104.1		%		80-120	12-AUG-21
Zinc (Zn)-Total			103.8		%		80-120	12-AUG-21
WG3596445-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	12-AUG-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	12-AUG-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	12-AUG-21
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	12-AUG-21
Iron (Fe)-Total			<0.010		mg/L		0.01	12-AUG-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	12-AUG-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	12-AUG-21
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	12-AUG-21

Quality Control Report

Workorder: L2625306

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP	Water							
Batch	R5551783							
WG3596445-1 MB								
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	12-AUG-21
Potassium (K)-Total			<0.050		mg/L		0.05	12-AUG-21
Sodium (Na)-Total			<0.050		mg/L		0.05	12-AUG-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	12-AUG-21
NH3-COL-WP	Water							
Batch	R5556933							
WG3599580-18 LCS								
Ammonia, Total (as N)			98.8		%		85-115	17-AUG-21
WG3599580-17 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	17-AUG-21
NO2-IC-N-WP	Water							
Batch	R5548777							
WG3595181-2 LCS								
Nitrite (as N)			96.9		%		90-110	11-AUG-21
WG3595181-1 MB								
Nitrite (as N)			<0.010		mg/L		0.01	11-AUG-21
NO3-IC-N-WP	Water							
Batch	R5548777							
WG3595181-2 LCS								
Nitrate (as N)			100.3		%		90-110	11-AUG-21
WG3595181-1 MB								
Nitrate (as N)			<0.020		mg/L		0.02	11-AUG-21
OG-GRAV-WP	Water							
Batch	R5557259							
WG3599872-2 LCS								
Oil and Grease			95.7		%		70-130	16-AUG-21
WG3599872-1 MB								
Oil and Grease			<5.0		mg/L		5	16-AUG-21
P-T-COL-WP	Water							
Batch	R5556800							
WG3599013-10 LCS								
Phosphorus (P)-Total			96.0		%		80-120	18-AUG-21
WG3599013-9 MB								
Phosphorus (P)-Total			<0.0030		mg/L		0.003	18-AUG-21
PAH-CCME-PPM-WT	Water							

Quality Control Report

Workorder: L2625306

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-PPM-WT		Water						
Batch	R5553358							
WG3597006-2	LCS							
1-Methylnaphthalene			96.6		%		50-150	17-AUG-21
2-Methylnaphthalene			94.0		%		50-150	17-AUG-21
Acenaphthene			99.4		%		50-150	17-AUG-21
Acenaphthylene			100.8		%		50-150	17-AUG-21
Anthracene			105.9		%		50-150	17-AUG-21
Acridine			120.7		%		50-150	17-AUG-21
Benzo(a)anthracene			121.5		%		50-150	17-AUG-21
Benzo(a)pyrene			94.9		%		50-150	17-AUG-21
Benzo(b&j)fluoranthene			84.9		%		50-150	17-AUG-21
Benzo(g,h,i)perylene			121.9		%		50-150	17-AUG-21
Benzo(k)fluoranthene			103.5		%		50-150	17-AUG-21
Chrysene			117.7		%		50-150	17-AUG-21
Dibenz(a,h)anthracene			113.5		%		50-150	17-AUG-21
Fluoranthene			116.6		%		50-150	17-AUG-21
Fluorene			108.6		%		50-150	17-AUG-21
Indeno(1,2,3-cd)pyrene			133.8		%		50-150	17-AUG-21
Naphthalene			83.4		%		50-150	17-AUG-21
Phenanthrene			117.0		%		50-150	17-AUG-21
Pyrene			117.9		%		50-150	17-AUG-21
Quinoline			116.5		%		50-150	17-AUG-21
WG3597006-1	MB							
1-Methylnaphthalene			<0.000020		mg/L		0.00002	17-AUG-21
2-Methylnaphthalene			<0.000020		mg/L		0.00002	17-AUG-21
Acenaphthene			<0.000020		mg/L		0.00002	17-AUG-21
Acenaphthylene			<0.000020		mg/L		0.00002	17-AUG-21
Anthracene			<0.000010		mg/L		0.00001	17-AUG-21
Acridine			<0.000020		mg/L		0.00002	17-AUG-21
Benzo(a)anthracene			<0.000010		mg/L		0.00001	17-AUG-21
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	17-AUG-21
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	17-AUG-21
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	17-AUG-21
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	17-AUG-21
Chrysene			<0.000020		mg/L		0.00002	17-AUG-21
Dibenz(a,h)anthracene			<0.000005C		mg/L		0.000005	17-AUG-21

Quality Control Report

Workorder: L2625306

Report Date: 24-SEP-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC10-QT97-WP	Water							
Batch	R5549147							
WG3595151-2	DUP	L2625306-1						
Total Coliforms		160	120		MPN/100mL	29	65	11-AUG-21
Escherichia Coli		<10	<10	RPD-NA	MPN/100mL	N/A	65	11-AUG-21
WG3595151-1	MB							
Total Coliforms			<1		MPN/100mL		1	11-AUG-21
Escherichia Coli			<1		MPN/100mL		1	11-AUG-21

Quality Control Report

Workorder: L2625306

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2625306

Report Date: 24-SEP-21

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	1	09-AUG-21 15:59	12-AUG-21 12:00	0.25	68	hours	EHTR-FM
	2	09-AUG-21 14:35	12-AUG-21 12:00	0.25	69	hours	EHTR-FM
	3	09-AUG-21 15:45	12-AUG-21 12:00	0.25	68	hours	EHTR-FM
Bacteriological Tests							
Fecal coliforms, 1:10 dilution by QT97							
	1	09-AUG-21 15:59	11-AUG-21 16:05	30	48	hours	EHTR
	2	09-AUG-21 14:35	11-AUG-21 16:05	30	49	hours	EHTR
	3	09-AUG-21 15:45	11-AUG-21 16:05	30	48	hours	EHTR
Total and E. coli, 1:10 dilution by QT97							
	1	09-AUG-21 15:59	11-AUG-21 16:05	30	48	hours	EHTR
	2	09-AUG-21 14:35	11-AUG-21 16:05	30	49	hours	EHTR
	3	09-AUG-21 15:45	11-AUG-21 16:05	30	48	hours	EHTR
Aggregate Organics							
Biochemical Oxygen Demand (BOD)							
	1	09-AUG-21 15:59	12-AUG-21 07:00	48	63	hours	EHTL
	2	09-AUG-21 14:35	12-AUG-21 07:00	48	64	hours	EHTL
	3	09-AUG-21 15:45	12-AUG-21 07:00	48	63	hours	EHTL
Carbonaceous BOD							
	1	09-AUG-21 15:59	12-AUG-21 07:00	48	63	hours	EHTL
	2	09-AUG-21 14:35	12-AUG-21 07:00	48	64	hours	EHTL
	3	09-AUG-21 15:45	12-AUG-21 07:00	48	63	hours	EHTL

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2625306 were received on 11-AUG-21 12:14.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

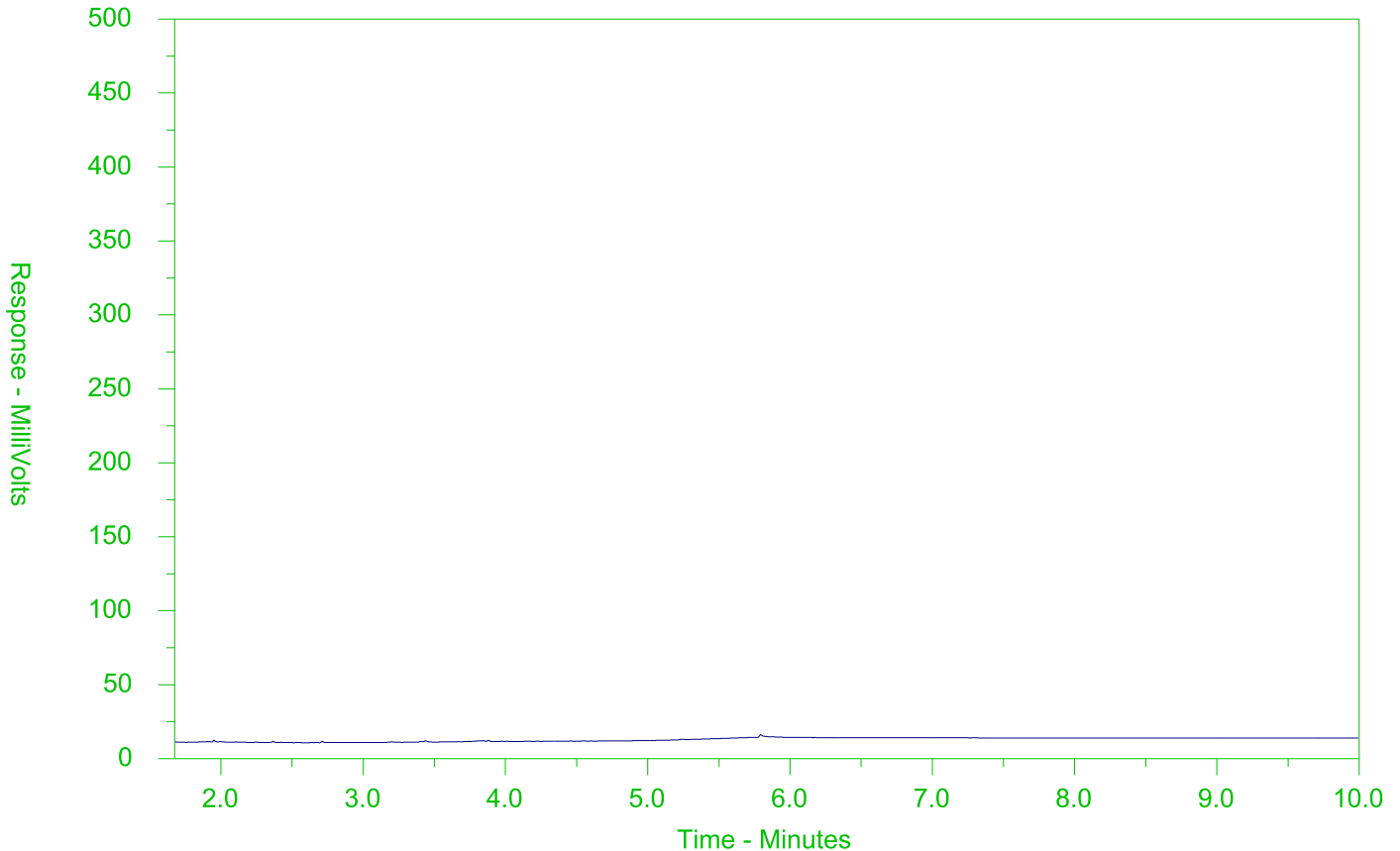
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2625306-1
Client Sample ID: WHA-2



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

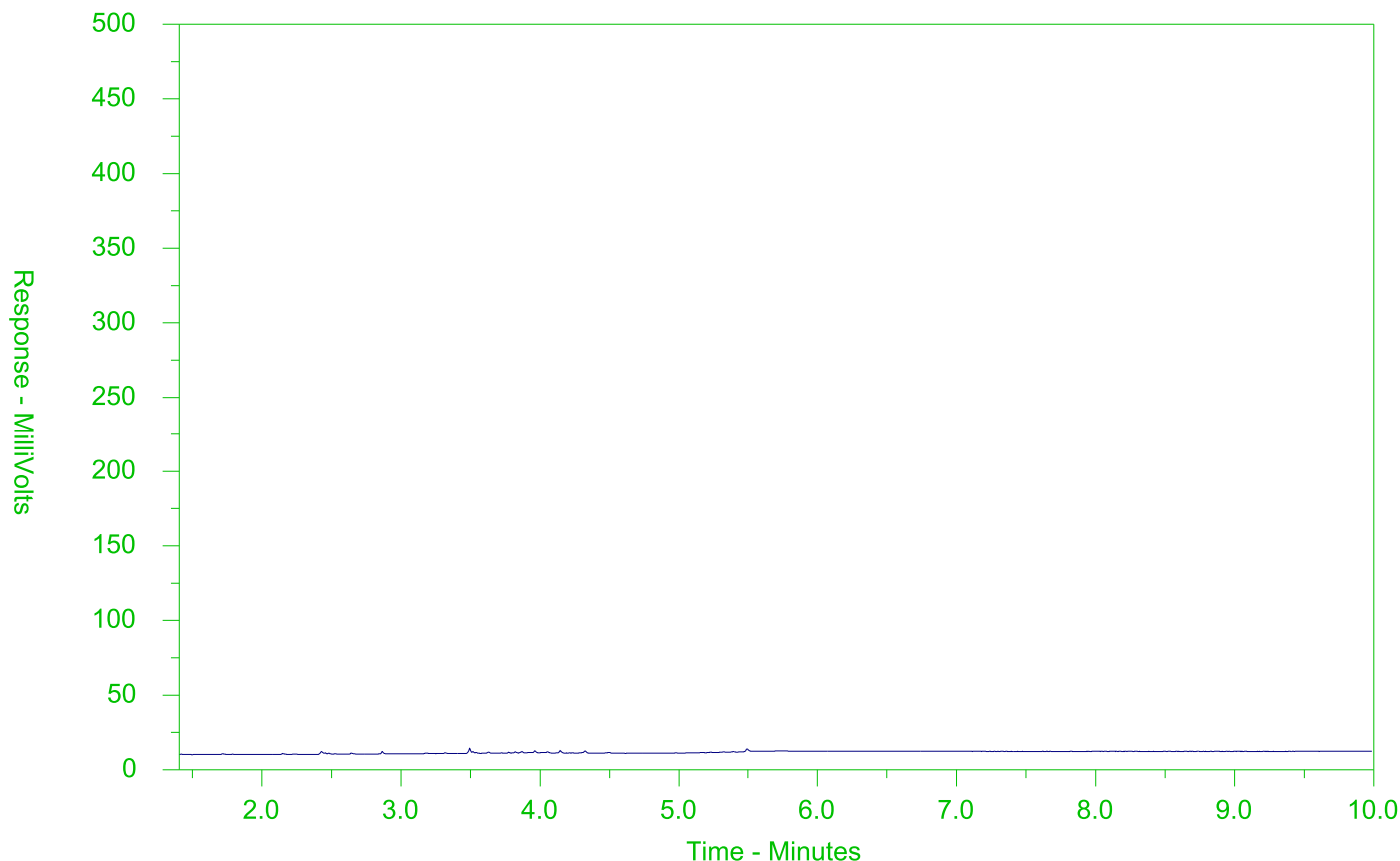
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2625306-2
Client Sample ID: WHA-3



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.



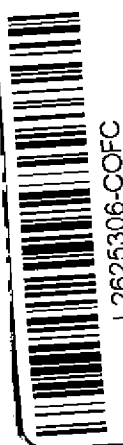
Chain of Custody (COC) / Analytical Request Form

COC Number: 17 - 881205

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2625306-COFC

Report To Contact and company name below will appear on the final report		Report Format Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)	
Company: <u>Whale Cove</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO	
Contact: <u>Brian Flemming</u>		☐ Compare Results to Criteria on Report - provide details below if box checked	
Phone: <u>867-896-9561</u>		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	
Company address below will appear on the final report			
Street: <u>PO Box 120</u>			
City/Province: <u>Whale Cove, Nu</u>			
Postal Code: <u>X0C 0X0</u>			
Invoice To		Invoice Distribution	
Same as Report To ☒ YES ☐ NO	Copy of Invoice with Report ☒ YES ☐ NO	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax	
Contact:		Email 2	
Project Information			
ALS Account # / Quote #: <u>W10623</u>		Oil and Gas Required Fields (client use)	
Job #: <u>W10623</u>		AF/ECost Demar: <u>PO#</u>	
PO / AFE:		Major/Minor Code: <u>Routing Code:</u>	
LSD:		Requisitioner:	
ALS Lab Work Order # (lab use only):		Location:	
ALS Sample # (lab use only)		ALS Contact:	
Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	
<u>WHA-3</u>		<u>9/08/21</u>	
<u>WHA-3</u>		<u>9/08/21</u>	
<u>WHA-4</u>		<u>9/08/21</u>	
Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		Time (hh:mm)	
<u>Nunavut - WW - CRPI</u>		<u>3:53</u>	
<u>BTX-F1-F4, PAH</u>		<u>2:35 PM</u>	
<u>3:45 PM</u>			
Drinking Water (DW) Samples (client use)		Sample Type	
Are samples taken from a Regulated DW System? ☐ YES ☒ NO	Are samples for human consumption/ use? ☐ YES ☒ NO		
SHIPMENT RELEASE (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)	
Released by: <u>Tim OSA</u>	Date: <u>Aug 9/21</u>	Time: <u>4:30</u>	
INITIAL SHIPMENT RECEPTION (lab use only)		Received by: <u>D.A.</u>	
Date: <u>11/8/21</u>		Time: <u>12:14pm</u>	
WHITE - LABORATORY COPY		YELLOW - CLIENT COPY	
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION			
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.			

Analysis Request	
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below	
Regular (R) ☒ Standard TAT (if received by 3 pm - business days - no surcharges apply)	
4 day (P4-20%) ☐ 1 Business day (E - 100%)	
3 day (P3-25%) ☐ Same Day, Weekend or Statutory holiday (E2 - 200%)	
2 day (P2-50%) ☐ (Laboratory opening fees may apply)	
Data and Time Required for all EAP TATs: dd-mm-yy hh:mm	
For tests that can not be performed according to the service level selected, you will be contacted.	
NUMBER OF CONTAINERS	
Bud	10
C600	10
metals	10
Asbestos	10
oil and grease	10
Fluoride	10
BTX-F1-F4	10
PAH-X2	10
Mercury	10
SAMPLES ON HOLD	
SUSPECTED HAZARD (see Special Instructions)	
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
17.3	
FINAL SHIPMENT RECEPTION (lab use only)	
Received by: <u>11/8/21</u>	Date: <u>11/8/21</u>
Time: <u>12:14pm</u>	Time: <u>12:14pm</u>
Temp: 8.2 °C	



Hamlet of Whale Cove
ATTN: JEANI MACKENZIE
PO Box 120
Whale Cove NU X0C 0I0

Date Received: 27-AUG-21
Report Date: 10-SEP-21 10:22 (MT)
Version: FINAL REV. 2

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L2632796

Project P.O. #: NOT SUBMITTED

Job Reference: WHALE COVE, NU - WASTE WATER

C of C Numbers:

Legal Site Desc:

Sewage lagoon decant in progress

Craig Riddell, B.Sc.Ag
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2632796-1 WHA-2							
Sampled By: MH on 26-AUG-21 @ 10:45							
Matrix: MH							
BTEX							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		02-SEP-21	R5580196
Toluene	<0.0010		0.0010	mg/L		02-SEP-21	R5580196
Ethyl benzene	<0.00050		0.00050	mg/L		02-SEP-21	R5580196
o-Xylene	<0.00050		0.00050	mg/L		02-SEP-21	R5580196
m+p-Xylenes	<0.00040		0.00040	mg/L		02-SEP-21	R5580196
F1 (C6-C10)	<0.10		0.10	mg/L		02-SEP-21	R5580196
Surrogate: 4-Bromofluorobenzene (SS)	80.9		70-130	%		02-SEP-21	R5580196
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		07-SEP-21	
F2-Naphth	<0.10		0.10	mg/L		07-SEP-21	
F3-PAH	<0.25		0.25	mg/L		07-SEP-21	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		07-SEP-21	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		07-SEP-21	
Miscellaneous Parameters							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		28-AUG-21	R5578657
BOD Carbonaceous	<2.0		2.0	mg/L		28-AUG-21	R5578657
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	09-SEP-21	09-SEP-21	R5581912
Oil and Grease	<5.0		5.0	mg/L		01-SEP-21	R5575660
Phenols (4AAP)	0.0016		0.0010	mg/L		02-SEP-21	R5576516
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	160		10	MPN/100mL		27-AUG-21	R5572112
Escherichia Coli	10		10	MPN/100mL		27-AUG-21	R5572112
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0071		0.0030	mg/L	30-AUG-21	31-AUG-21	R5573519
Arsenic (As)-Total	0.00147		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
Cadmium (Cd)-Total	0.0000732		0.0000050	mg/L	30-AUG-21	31-AUG-21	R5573519
Calcium (Ca)-Total	86.2		0.050	mg/L	30-AUG-21	31-AUG-21	R5573519
Chromium (Cr)-Total	0.00021		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
Cobalt (Co)-Total	0.00108		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
Copper (Cu)-Total	0.00294		0.00050	mg/L	30-AUG-21	31-AUG-21	R5573519
Iron (Fe)-Total	1.21		0.010	mg/L	30-AUG-21	31-AUG-21	R5573519
Lead (Pb)-Total	0.000282		0.000050	mg/L	30-AUG-21	31-AUG-21	R5573519
Magnesium (Mg)-Total	11.5		0.0050	mg/L	30-AUG-21	31-AUG-21	R5573519
Manganese (Mn)-Total	0.269		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
Nickel (Ni)-Total	0.00460		0.00050	mg/L	30-AUG-21	31-AUG-21	R5573519
Potassium (K)-Total	7.60		0.050	mg/L	30-AUG-21	31-AUG-21	R5573519
Sodium (Na)-Total	40.8		0.050	mg/L	30-AUG-21	31-AUG-21	R5573519
Zinc (Zn)-Total	0.0375		0.0030	mg/L	30-AUG-21	31-AUG-21	R5573519
F2-F4 (O.Reg.153/04)							
F2 (C10-C16)	<100		100	ug/L	31-AUG-21	01-SEP-21	R5574040
F3 (C16-C34)	<250		250	ug/L	31-AUG-21	01-SEP-21	R5574040
F4 (C34-C50)	<250		250	ug/L	31-AUG-21	01-SEP-21	R5574040
Chrom. to baseline at nC50	YES				31-AUG-21	01-SEP-21	R5574040
Surrogate: 2-Bromobenzotrifluoride	83.4		60-140	%	31-AUG-21	01-SEP-21	R5574040
CCME PAHs in mg/L							
1-Methylnaphthalene	0.000062		0.000020	mg/L	31-AUG-21	02-SEP-21	R5573689
2-Methylnaphthalene	0.000061		0.000020	mg/L	31-AUG-21	02-SEP-21	R5573689
Acenaphthene	0.000056		0.000020	mg/L	31-AUG-21	02-SEP-21	R5573689
Acenaphthylene	<0.000020		0.000020	mg/L	31-AUG-21	02-SEP-21	R5573689

* 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
L2632796-1 WHA-2		<i>*Sewage lagoon decant in progress*</i>						
Sampled By: MH on 26-AUG-21 @ 10:45								
Matrix: MH								
CCME PAHs in mg/L								
Anthracene		<0.000010		0.000010	mg/L	31-AUG-21	02-SEP-21	R5573689
Acridine		<0.000020		0.000020	mg/L	31-AUG-21	02-SEP-21	R5573689
Benzo(a)anthracene		<0.000010		0.000010	mg/L	31-AUG-21	02-SEP-21	R5573689
Benzo(a)pyrene		<0.0000050		0.0000050	mg/L	31-AUG-21	02-SEP-21	R5573689
Benzo(b&j)fluoranthene		<0.000010		0.000010	mg/L	31-AUG-21	02-SEP-21	R5573689
Benzo(g,h,i)perylene		<0.000020		0.000020	mg/L	31-AUG-21	02-SEP-21	R5573689
Benzo(k)fluoranthene		<0.000010		0.000010	mg/L	31-AUG-21	02-SEP-21	R5573689
Chrysene		<0.000020		0.000020	mg/L	31-AUG-21	02-SEP-21	R5573689
Dibenz(a,h)anthracene		<0.0000050		0.0000050	mg/L	31-AUG-21	02-SEP-21	R5573689
Fluoranthene		<0.000020		0.000020	mg/L	31-AUG-21	02-SEP-21	R5573689
Fluorene		0.000021		0.000020	mg/L	31-AUG-21	02-SEP-21	R5573689
Indeno(1,2,3-cd)pyrene		<0.000010		0.000010	mg/L	31-AUG-21	02-SEP-21	R5573689
Naphthalene		0.000171		0.000050	mg/L	31-AUG-21	02-SEP-21	R5573689
Phenanthrene		<0.000050		0.000050	mg/L	31-AUG-21	02-SEP-21	R5573689
Pyrene		<0.000010		0.000010	mg/L	31-AUG-21	02-SEP-21	R5573689
Quinoline		<0.000080	DLQ	0.000080	mg/L	31-AUG-21	02-SEP-21	R5573689
B(a)P Total Potency Equivalent		<0.000030		0.000030	mg/L	31-AUG-21	02-SEP-21	R5573689
Surrogate: Naphthalene d8		109.1		50-130	%	31-AUG-21	02-SEP-21	R5573689
Surrogate: Phenanthrene d10		106.4		60-130	%	31-AUG-21	02-SEP-21	R5573689
Surrogate: Chrysene d12		122.9		60-130	%	31-AUG-21	02-SEP-21	R5573689
Surrogate: Acridine d9		99.1		60-130	%	31-AUG-21	02-SEP-21	R5573689
Nunavut WW Group 1								
Alkalinity, Bicarbonate								
Bicarbonate (HCO3)		213		1.2	mg/L		31-AUG-21	
Alkalinity, Carbonate								
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-21	
Alkalinity, Hydroxide								
Hydroxide (OH)		<0.34		0.34	mg/L		31-AUG-21	
Alkalinity, Total (as CaCO3)								
Alkalinity, Total (as CaCO3)		174		1.0	mg/L		30-AUG-21	R5572524
Ammonia by colour								
Ammonia, Total (as N)		0.82		0.10	mg/L		01-SEP-21	R5575318
Chloride in Water by IC								
Chloride (Cl)		86.5		0.50	mg/L		28-AUG-21	R5572977
Conductivity								
Conductivity		778		1.0	umhos/cm		30-AUG-21	R5572524
Fecal coliforms, 1:10 dilution by QT97								
Fecal Coliforms		10		10	MPN/100mL		27-AUG-21	R5572118
Hardness Calculated								
Hardness (as CaCO3)		263	HTC	0.20	mg/L		01-SEP-21	
Nitrate in Water by IC								
Nitrate (as N)		0.161		0.020	mg/L		28-AUG-21	R5572977
Nitrate+Nitrite								
Nitrate and Nitrite as N		0.185		0.070	mg/L		31-AUG-21	
Nitrite in Water by IC								
Nitrite (as N)		0.025		0.010	mg/L		28-AUG-21	R5572977
Phosphorus, Total								
Phosphorus (P)-Total		0.0470		0.0030	mg/L		02-SEP-21	R5577280
Sulfate in Water by IC								
Sulfate (SO4)		77.1		0.30	mg/L		28-AUG-21	R5572977
Total Organic Carbon by Combustion								
Total Organic Carbon		8.35		0.50	mg/L		31-AUG-21	R5573321

* 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
L2632796-1 WHA-2 Sampled By: MH on 26-AUG-21 @ 10:45 Matrix: MH Total Suspended Solids Total Suspended Solids pH pH							
	3.0		3.0	mg/L		31-AUG-21	R5573796
	8.10		0.10	pH units		30-AUG-21	R5572524
L2632796-2 WHA-3 Sampled By: MH on 26-AUG-21 @ 11:15 Matrix: MH Miscellaneous Parameters Biochemical Oxygen Demand BOD Carbonaceous Mercury (Hg)-Total Oil and Grease Phenols (4AAP) Total and E. coli, 1:10 dilution by QT97 Total Coliforms Escherichia Coli Total Metals in Water by CRC ICPMS Aluminum (Al)-Total Arsenic (As)-Total Cadmium (Cd)-Total Calcium (Ca)-Total Chromium (Cr)-Total Cobalt (Co)-Total Copper (Cu)-Total Iron (Fe)-Total Lead (Pb)-Total Magnesium (Mg)-Total Manganese (Mn)-Total Nickel (Ni)-Total Potassium (K)-Total Sodium (Na)-Total Zinc (Zn)-Total Nunavut WW Group 1 Alkalinity, Bicarbonate Bicarbonate (HCO3) Alkalinity, Carbonate Carbonate (CO3) Alkalinity, Hydroxide Hydroxide (OH) Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3) Ammonia by colour Ammonia, Total (as N) Chloride in Water by IC Chloride (Cl) Conductivity Conductivity Fecal coliforms, 1:10 dilution by QT97 Fecal Coliforms Hardness Calculated Hardness (as CaCO3) Nitrate in Water by IC							
	<i>*Sewage lagoon decant in progress*</i>						
	17.9		6.0	mg/L		28-AUG-21	R5578657
	12.5		2.0	mg/L		28-AUG-21	R5578657
	<0.0000050		0.0000050	mg/L	09-SEP-21	09-SEP-21	R5581912
	<5.0		5.0	mg/L		01-SEP-21	R5575660
	0.0014		0.0010	mg/L		02-SEP-21	R5576516
	10100		10	MPN/100mL		27-AUG-21	R5572112
	8700		10	MPN/100mL		27-AUG-21	R5572112
	0.0230		0.0030	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.00089		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.0000112		0.0000050	mg/L	30-AUG-21	31-AUG-21	R5573519
	29.9		0.050	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.00024		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.00063		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.0197		0.00050	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.105		0.010	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.000123		0.000050	mg/L	30-AUG-21	31-AUG-21	R5573519
	7.18		0.0050	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.0661		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.00232		0.00050	mg/L	30-AUG-21	31-AUG-21	R5573519
	18.3		0.050	mg/L	30-AUG-21	31-AUG-21	R5573519
	64.5		0.050	mg/L	30-AUG-21	31-AUG-21	R5573519
	0.0130		0.0030	mg/L	30-AUG-21	31-AUG-21	R5573519
	133		1.2	mg/L		31-AUG-21	
	3.60		0.60	mg/L		31-AUG-21	
	<0.34		0.34	mg/L		31-AUG-21	
	115		1.0	mg/L		30-AUG-21	R5572524
	2.48		0.10	mg/L		01-SEP-21	R5575318
	81.3		0.50	mg/L		28-AUG-21	R5572977
	590		1.0	umhos/cm		30-AUG-21	R5572524
	8660		10	MPN/100mL		27-AUG-21	R5572118
	104	HTC	0.20	mg/L		01-SEP-21	

* 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
L2632796-2	WHA-3							
Sampled By: MH on 26-AUG-21 @ 11:15								
Matrix: MH								
Nitrate in Water by IC								
Nitrate (as N)		2.77		0.020	mg/L		28-AUG-21	R5572977
Nitrate+Nitrite								
Nitrate and Nitrite as N		3.73		0.070	mg/L		31-AUG-21	
Nitrite in Water by IC								
Nitrite (as N)		0.956		0.010	mg/L		28-AUG-21	R5572977
Phosphorus, Total								
Phosphorus (P)-Total		5.84		0.030	mg/L		02-SEP-21	R5577280
Sulfate in Water by IC								
Sulfate (SO4)		17.7		0.30	mg/L		28-AUG-21	R5572977
Total Organic Carbon by Combustion								
Total Organic Carbon		46.8		0.50	mg/L		31-AUG-21	R5573321
Total Suspended Solids								
Total Suspended Solids		99.2		3.0	mg/L		31-AUG-21	R5573796
pH								
pH		8.40		0.10	pH units		30-AUG-21	R5572524
L2632796-3	WHA-4							
Sampled By: MH on 26-AUG-21 @ 11:00								
Matrix: MH								
Miscellaneous Parameters								
Biochemical Oxygen Demand		19.3		6.0	mg/L		28-AUG-21	R5578657
BOD Carbonaceous		13.5		2.0	mg/L		28-AUG-21	R5578657
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L	09-SEP-21	09-SEP-21	R5581912
Oil and Grease		<5.0		5.0	mg/L		01-SEP-21	R5575660
Phenols (4AAP)		<0.0050	DLM	0.0050	mg/L		03-SEP-21	R5578677
Total and E. coli, 1:10 dilution by QT97								
Total Coliforms		>24200		10	MPN/100mL		27-AUG-21	R5572112
Escherichia Coli		>24200		10	MPN/100mL		27-AUG-21	R5572112
Total Metals in Water by CRC ICPMS								
Aluminum (Al)-Total		0.0173		0.0030	mg/L	30-AUG-21	31-AUG-21	R5573519
Arsenic (As)-Total		0.00199		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
Cadmium (Cd)-Total		0.0000239		0.0000050	mg/L	30-AUG-21	31-AUG-21	R5573519
Calcium (Ca)-Total		32.3		0.050	mg/L	30-AUG-21	31-AUG-21	R5573519
Chromium (Cr)-Total		0.00019		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
Cobalt (Co)-Total		0.00075		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
Copper (Cu)-Total		0.0174		0.00050	mg/L	30-AUG-21	31-AUG-21	R5573519
Iron (Fe)-Total		0.257		0.010	mg/L	30-AUG-21	31-AUG-21	R5573519
Lead (Pb)-Total		0.000098		0.000050	mg/L	30-AUG-21	31-AUG-21	R5573519
Magnesium (Mg)-Total		7.30		0.0050	mg/L	30-AUG-21	31-AUG-21	R5573519
Manganese (Mn)-Total		0.0664		0.00010	mg/L	30-AUG-21	31-AUG-21	R5573519
Nickel (Ni)-Total		0.00248		0.00050	mg/L	30-AUG-21	31-AUG-21	R5573519
Potassium (K)-Total		17.7		0.050	mg/L	30-AUG-21	31-AUG-21	R5573519
Sodium (Na)-Total		65.1		0.050	mg/L	30-AUG-21	31-AUG-21	R5573519
Zinc (Zn)-Total		0.0116		0.0030	mg/L	30-AUG-21	31-AUG-21	R5573519
Nunavut WW Group 1								
Alkalinity, Bicarbonate								
Bicarbonate (HCO3)		141		1.2	mg/L		31-AUG-21	
Alkalinity, Carbonate								
Carbonate (CO3)		<0.60		0.60	mg/L		31-AUG-21	
Alkalinity, Hydroxide								
Hydroxide (OH)		<0.34		0.34	mg/L		31-AUG-21	
Alkalinity, Total (as CaCO3)								
Sewage lagoon decant in progress								

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

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2632796-3 WHA-4 Sampled By: MH on 26-AUG-21 @ 11:00 Matrix: MH							
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	116		1.0	mg/L		30-AUG-21	R5572524
Ammonia by colour Ammonia, Total (as N)	1.64		0.10	mg/L		01-SEP-21	R5575318
Chloride in Water by IC Chloride (Cl)	81.1		0.50	mg/L		28-AUG-21	R5572977
Conductivity Conductivity	591		1.0	umhos/cm		30-AUG-21	R5572524
Fecal coliforms, 1:10 dilution by QT97 Fecal Coliforms	15500		10	MPN/100mL		27-AUG-21	R5572118
Hardness Calculated Hardness (as CaCO3)	111	HTC	0.20	mg/L		01-SEP-21	
Nitrate in Water by IC Nitrate (as N)	2.91		0.020	mg/L		28-AUG-21	R5572977
Nitrate+Nitrite Nitrate and Nitrite as N	3.61		0.070	mg/L		31-AUG-21	
Nitrite in Water by IC Nitrite (as N)	0.699		0.010	mg/L		28-AUG-21	R5572977
Phosphorus, Total Phosphorus (P)-Total	5.57		0.030	mg/L		02-SEP-21	R5577280
Sulfate in Water by IC Sulfate (SO4)	17.5		0.30	mg/L		28-AUG-21	R5572977
Total Organic Carbon by Combustion Total Organic Carbon	49.8		0.50	mg/L		31-AUG-21	R5573321
Total Suspended Solids Total Suspended Solids	97.6		3.0	mg/L		31-AUG-21	R5573796
pH pH	7.99		0.10	pH units		30-AUG-21	R5572524

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
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 transferred 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.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range: 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-WT	Water	F2-F4 (O.Reg.153/04)	MOE DECPH-E3421/CCME TIER 1
Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.			
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.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
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 aqueous 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 Substrate 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 ww - 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

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2632796-COFC

DOC Number: 15 -

Page 1 of 1

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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

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

OCTOBER 2015 FRONT

Temp: 9.6°C



Hamlet of Whale Cove
ATTN: PAUL VOISEY
PO Box 120
Whale Cove NU X0C 0I0

Date Received: 15-SEP-21
Report Date: 29-SEP-21 11:04 (MT)
Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L2639781

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

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639781-1 WHA-2							
Sampled By: TF on 07-SEP-21 @ 13:30							
Matrix: WW							
Miscellaneous Parameters							
Xylenes (Total)	<0.00064		0.00064	mg/L		26-SEP-21	
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		24-SEP-21	R5599887
Toluene	<0.0010		0.0010	mg/L		24-SEP-21	R5599887
Ethyl benzene	<0.00050		0.00050	mg/L		24-SEP-21	R5599887
o-Xylene	<0.00050		0.00050	mg/L		24-SEP-21	R5599887
m+p-Xylenes	<0.00040		0.00040	mg/L		24-SEP-21	R5599887
F1 (C6-C10)	<0.10		0.10	mg/L		24-SEP-21	R5599887
Surrogate: 4-Bromofluorobenzene (SS)	102.1		70-130	%		24-SEP-21	R5599887
Surrogate: 3,4-Dichlorotoluene (SS)	117.0		70-130	%		24-SEP-21	R5599887
F2-F4 (O.Reg.153/04)							
F2 (C10-C16)	<100		100	ug/L	27-SEP-21	28-SEP-21	R5602856
F3 (C16-C34)	<250		250	ug/L	27-SEP-21	28-SEP-21	R5602856
F4 (C34-C50)	<250		250	ug/L	27-SEP-21	28-SEP-21	R5602856
Chrom. to baseline at nC50	YES				27-SEP-21	28-SEP-21	R5602856
Surrogate: 2-Bromobenzotrifluoride	90.6		60-140	%	27-SEP-21	28-SEP-21	R5602856
CCME PAHs in mg/L							
1-Methylnaphthalene	0.000036		0.000020	mg/L	27-SEP-21	27-SEP-21	R5601919
2-Methylnaphthalene	0.000032		0.000020	mg/L	27-SEP-21	27-SEP-21	R5601919
Acenaphthene	<0.000020		0.000020	mg/L	27-SEP-21	27-SEP-21	R5601919
Acenaphthylene	<0.000020		0.000020	mg/L	27-SEP-21	27-SEP-21	R5601919
Anthracene	<0.000010		0.000010	mg/L	27-SEP-21	27-SEP-21	R5601919
Acridine	<0.000020		0.000020	mg/L	27-SEP-21	27-SEP-21	R5601919
Benzo(a)anthracene	<0.000010		0.000010	mg/L	27-SEP-21	27-SEP-21	R5601919
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	27-SEP-21	27-SEP-21	R5601919
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	27-SEP-21	27-SEP-21	R5601919
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	27-SEP-21	27-SEP-21	R5601919
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	27-SEP-21	27-SEP-21	R5601919
Chrysene	<0.000020		0.000020	mg/L	27-SEP-21	27-SEP-21	R5601919
Dibenz(a,h)anthracene	<0.0000050		0.0000050	mg/L	27-SEP-21	27-SEP-21	R5601919
Fluoranthene	<0.000020		0.000020	mg/L	27-SEP-21	27-SEP-21	R5601919
Fluorene	<0.000020		0.000020	mg/L	27-SEP-21	27-SEP-21	R5601919
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	27-SEP-21	27-SEP-21	R5601919
Naphthalene	0.000079		0.000050	mg/L	27-SEP-21	27-SEP-21	R5601919
Phenanthrene	<0.000050		0.000050	mg/L	27-SEP-21	27-SEP-21	R5601919
Pyrene	<0.000010		0.000010	mg/L	27-SEP-21	27-SEP-21	R5601919
Quinoline	<0.000044	DLQ	0.000044	mg/L	27-SEP-21	27-SEP-21	R5601919
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	27-SEP-21	27-SEP-21	R5601919
Surrogate: Naphthalene d8	84.9		50-130	%	27-SEP-21	27-SEP-21	R5601919
Surrogate: Phenanthrene d10	94.4		60-130	%	27-SEP-21	27-SEP-21	R5601919
Surrogate: Chrysene d12	87.3		60-130	%	27-SEP-21	27-SEP-21	R5601919
Surrogate: Acridine d9	85.2		60-130	%	27-SEP-21	27-SEP-21	R5601919
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	159		1.2	mg/L		24-SEP-21	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		24-SEP-21	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		24-SEP-21	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	131		1.0	mg/L		23-SEP-21	R5596917
Ammonia by colour							

* 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
L2639781-1	WHA-2							
Sampled By:	TF on 07-SEP-21 @ 13:30							
Matrix:	WW							
Ammonia by colour								
Ammonia, Total (as N)		1.24		0.10	mg/L		23-SEP-21	R5597959
Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand		<2.0		2.0	mg/L		23-SEP-21	R5603874
Carbonaceous BOD								
BOD Carbonaceous		<2.0		2.0	mg/L		23-SEP-21	R5603874
Chloride in Water by IC								
Chloride (Cl)		49.3		0.50	mg/L		22-SEP-21	R5597550
Conductivity								
Conductivity		471		1.0	umhos/cm		23-SEP-21	R5596917
Hardness Calculated								
Hardness (as CaCO3)		240	HTC	0.20	mg/L		24-SEP-21	
Mercury Total								
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L	23-SEP-21	23-SEP-21	R5595899
Nitrate in Water by IC								
Nitrate (as N)		0.117		0.020	mg/L		22-SEP-21	R5597550
Nitrate+Nitrite								
Nitrate and Nitrite as N		0.117		0.070	mg/L		24-SEP-21	
Nitrite in Water by IC								
Nitrite (as N)		<0.010		0.010	mg/L		22-SEP-21	R5597550
Oil & Grease - Gravimetric								
Oil and Grease		<5.0		5.0	mg/L		23-SEP-21	R5598697
Phenol (4AAP)								
Phenols (4AAP)		0.0019		0.0010	mg/L		24-SEP-21	R5600976
Phosphorus, Total								
Phosphorus (P)-Total		0.0937		0.0030	mg/L		24-SEP-21	R5601224
Sulfate in Water by IC								
Sulfate (SO4)		28.9		0.30	mg/L		22-SEP-21	R5597550
Total Metals in Water by CRC ICPMS								
Aluminum (Al)-Total		0.0076		0.0030	mg/L	23-SEP-21	23-SEP-21	R5597509
Arsenic (As)-Total		0.00135		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Cadmium (Cd)-Total		0.0000293		0.0000050	mg/L	23-SEP-21	23-SEP-21	R5597509
Calcium (Ca)-Total		79.2		0.050	mg/L	23-SEP-21	23-SEP-21	R5597509
Chromium (Cr)-Total		0.00015		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Cobalt (Co)-Total		0.00056		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Copper (Cu)-Total		0.00163		0.00050	mg/L	23-SEP-21	23-SEP-21	R5597509
Iron (Fe)-Total		1.38		0.010	mg/L	23-SEP-21	23-SEP-21	R5597509
Lead (Pb)-Total		0.000271		0.000050	mg/L	23-SEP-21	23-SEP-21	R5597509
Magnesium (Mg)-Total		10.1		0.0050	mg/L	23-SEP-21	23-SEP-21	R5597509
Manganese (Mn)-Total		0.233		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Nickel (Ni)-Total		0.00282		0.00050	mg/L	23-SEP-21	23-SEP-21	R5597509
Potassium (K)-Total		6.90		0.050	mg/L	23-SEP-21	23-SEP-21	R5597509
Sodium (Na)-Total		38.3		0.050	mg/L	23-SEP-21	23-SEP-21	R5597509
Zinc (Zn)-Total		0.0159		0.0030	mg/L	23-SEP-21	23-SEP-21	R5597509
Total Organic Carbon by Combustion								
Total Organic Carbon		6.28		0.50	mg/L		25-SEP-21	R5600886
Total Suspended Solids								
Total Suspended Solids		16.4		3.0	mg/L		22-SEP-21	R5595481
pH								
pH		7.96		0.10	pH units		23-SEP-21	R5596917
L2639781-2	WHA-3							
Sampled By:	TF on 07-SEP-21 @ 13:45							
Matrix:	WW							

* 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
L2639781-2	WHA-3							
Sampled By:	TF on 07-SEP-21 @ 13:45							
Matrix:	WW							
Nunavut WW Group 1								
Alkalinity, Bicarbonate								
Bicarbonate (HCO3)		124		1.2	mg/L		24-SEP-21	
Alkalinity, Carbonate								
Carbonate (CO3)		3.24		0.60	mg/L		24-SEP-21	
Alkalinity, Hydroxide								
Hydroxide (OH)		<0.34		0.34	mg/L		24-SEP-21	
Alkalinity, Total (as CaCO3)								
Alkalinity, Total (as CaCO3)		107		1.0	mg/L		23-SEP-21	R5596917
Ammonia by colour								
Ammonia, Total (as N)		0.329		0.010	mg/L		23-SEP-21	R5597959
Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand		15.6		2.0	mg/L		23-SEP-21	R5603874
Carbonaceous BOD								
BOD Carbonaceous		14.9		2.0	mg/L		23-SEP-21	R5603874
Chloride in Water by IC								
Chloride (Cl)		99.0		0.50	mg/L		22-SEP-21	R5597550
Conductivity								
Conductivity		624		1.0	umhos/cm		23-SEP-21	R5596917
Hardness Calculated								
Hardness (as CaCO3)		116	HTC	0.20	mg/L		24-SEP-21	
Mercury Total								
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L	23-SEP-21	23-SEP-21	R5595899
Nitrate in Water by IC								
Nitrate (as N)		2.76		0.020	mg/L		22-SEP-21	R5597550
Nitrate+Nitrite								
Nitrate and Nitrite as N		3.20		0.070	mg/L		24-SEP-21	
Nitrite in Water by IC								
Nitrite (as N)		0.439		0.010	mg/L		22-SEP-21	R5597550
Phenol (4AAP)								
Phenols (4AAP)		0.0015		0.0010	mg/L		24-SEP-21	R5600976
Phosphorus, Total								
Phosphorus (P)-Total		5.52		0.030	mg/L		24-SEP-21	R5601224
Sulfate in Water by IC								
Sulfate (SO4)		32.6		0.30	mg/L		22-SEP-21	R5597550
Total Metals in Water by CRC ICPMS								
Aluminum (Al)-Total		0.0281		0.0030	mg/L	23-SEP-21	23-SEP-21	R5597509
Arsenic (As)-Total		0.00109		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Cadmium (Cd)-Total		0.0000145		0.0000050	mg/L	23-SEP-21	23-SEP-21	R5597509
Calcium (Ca)-Total		35.4		0.050	mg/L	23-SEP-21	23-SEP-21	R5597509
Chromium (Cr)-Total		0.00023		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Cobalt (Co)-Total		0.00072		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Copper (Cu)-Total		0.0181		0.00050	mg/L	23-SEP-21	23-SEP-21	R5597509
Iron (Fe)-Total		0.184		0.010	mg/L	23-SEP-21	23-SEP-21	R5597509
Lead (Pb)-Total		0.000155		0.000050	mg/L	23-SEP-21	23-SEP-21	R5597509
Magnesium (Mg)-Total		6.67		0.0050	mg/L	23-SEP-21	23-SEP-21	R5597509
Manganese (Mn)-Total		0.0894		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Nickel (Ni)-Total		0.00244		0.00050	mg/L	23-SEP-21	23-SEP-21	R5597509
Potassium (K)-Total		17.2		0.050	mg/L	23-SEP-21	23-SEP-21	R5597509
Sodium (Na)-Total		63.6		0.050	mg/L	23-SEP-21	23-SEP-21	R5597509
Zinc (Zn)-Total		0.0199		0.0030	mg/L	23-SEP-21	23-SEP-21	R5597509
Total Organic Carbon by Combustion								

* 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
L2639781-2	WHA-3							
Sampled By:	TF on 07-SEP-21 @ 13:45							
Matrix:	WW							
Total Organic Carbon by Combustion								
Total Organic Carbon		43.8		0.50	mg/L		25-SEP-21	R5600886
Total Suspended Solids								
Total Suspended Solids		114		3.0	mg/L		22-SEP-21	R5595481
pH								
pH		8.41		0.10	pH units		23-SEP-21	R5596917
L2639781-3	WHA-4							
Sampled By:	TF on 07-SEP-21 @ 14:00							
Matrix:	WW							
Nunavut WW Group 1								
Alkalinity, Bicarbonate								
Bicarbonate (HCO3)		157		1.2	mg/L		24-SEP-21	
Alkalinity, Carbonate								
Carbonate (CO3)		<0.60		0.60	mg/L		24-SEP-21	
Alkalinity, Hydroxide								
Hydroxide (OH)		<0.34		0.34	mg/L		24-SEP-21	
Alkalinity, Total (as CaCO3)								
Alkalinity, Total (as CaCO3)		129		1.0	mg/L		23-SEP-21	R5596917
Ammonia by colour								
Ammonia, Total (as N)		0.061		0.010	mg/L		23-SEP-21	R5597959
Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand		12.2		2.0	mg/L		23-SEP-21	R5603874
Carbonaceous BOD								
BOD Carbonaceous		5.9		2.0	mg/L		23-SEP-21	R5603874
Chloride in Water by IC								
Chloride (Cl)		66.6		0.50	mg/L		22-SEP-21	R5597550
Conductivity								
Conductivity		499		1.0	umhos/cm		23-SEP-21	R5596917
Hardness Calculated								
Hardness (as CaCO3)		130	HTC	0.20	mg/L		24-SEP-21	
Mercury Total								
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L	23-SEP-21	23-SEP-21	R5595899
Nitrate in Water by IC								
Nitrate (as N)		0.523		0.020	mg/L		22-SEP-21	R5597550
Nitrate+Nitrite								
Nitrate and Nitrite as N		0.523		0.070	mg/L		24-SEP-21	
Nitrite in Water by IC								
Nitrite (as N)		<0.010		0.010	mg/L		22-SEP-21	R5597550
Oil & Grease - Gravimetric								
Oil and Grease		<5.0		5.0	mg/L		23-SEP-21	R5598697
Phenol (4AAP)								
Phenols (4AAP)		<0.010	DLM	0.010	mg/L		24-SEP-21	R5600976
Phosphorus, Total								
Phosphorus (P)-Total		3.06		0.030	mg/L		24-SEP-21	R5601224
Sulfate in Water by IC								
Sulfate (SO4)		13.1		0.30	mg/L		22-SEP-21	R5597550
Total Metals in Water by CRC ICPMS								
Aluminum (Al)-Total		0.0119		0.0030	mg/L	23-SEP-21	23-SEP-21	R5597509
Arsenic (As)-Total		0.00260		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Cadmium (Cd)-Total		0.0000191		0.0000050	mg/L	23-SEP-21	23-SEP-21	R5597509
Calcium (Ca)-Total		41.4		0.050	mg/L	23-SEP-21	23-SEP-21	R5597509
Chromium (Cr)-Total		0.00013		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509

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

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2639781-3	WHA-4							
Sampled By:	TF on 07-SEP-21 @ 14:00							
Matrix:	WW							
Total Metals in Water by CRC ICPMS								
Cobalt (Co)-Total		0.00063		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Copper (Cu)-Total		0.00812		0.00050	mg/L	23-SEP-21	23-SEP-21	R5597509
Iron (Fe)-Total		0.571		0.010	mg/L	23-SEP-21	23-SEP-21	R5597509
Lead (Pb)-Total		0.000053		0.000050	mg/L	23-SEP-21	23-SEP-21	R5597509
Magnesium (Mg)-Total		6.54		0.0050	mg/L	23-SEP-21	23-SEP-21	R5597509
Manganese (Mn)-Total		0.0387		0.00010	mg/L	23-SEP-21	23-SEP-21	R5597509
Nickel (Ni)-Total		0.00240		0.00050	mg/L	23-SEP-21	23-SEP-21	R5597509
Potassium (K)-Total		12.7		0.050	mg/L	23-SEP-21	23-SEP-21	R5597509
Sodium (Na)-Total		54.9		0.050	mg/L	23-SEP-21	23-SEP-21	R5597509
Zinc (Zn)-Total		0.0053		0.0030	mg/L	23-SEP-21	23-SEP-21	R5597509
Total Organic Carbon by Combustion								
Total Organic Carbon		31.2		0.50	mg/L		25-SEP-21	R5600886
Total Suspended Solids								
Total Suspended Solids		57.0		3.0	mg/L		22-SEP-21	R5595481
pH								
pH		8.16		0.10	pH units		23-SEP-21	R5596917

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
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 transferred 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.			
F2-F4-WT	Water	F2-F4 (O.Reg.153/04)	MOE DECPH-E3421/CCME TIER 1
Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.			
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.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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)
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 aqueous matrices is determined gravimetrically after drying the residue at 103 105°C.			
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:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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 ww - 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.

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Client: Hamlet of Whale Cove
PO Box 120
Whale Cove NU X0C 0J0

Contact: PAUL VOISEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP Water								
Batch	R5596917							
WG3623314-4 LCS								
Alkalinity, Total (as CaCO ₃)			100.2		%		85-115	23-SEP-21
WG3623314-1 MB								
Alkalinity, Total (as CaCO ₃)			<1.0		mg/L		1	23-SEP-21
BOD-CBOD-WP Water								
Batch	R5603874							
WG3622947-2 LCS								
BOD Carbonaceous			101.3		%		85-115	23-SEP-21
WG3622947-1 MB								
BOD Carbonaceous			<2.0		mg/L		2	23-SEP-21
BOD-WP Water								
Batch	R5603874							
WG3622947-2 LCS								
Biochemical Oxygen Demand			101.2		%		85-115	23-SEP-21
WG3622947-1 MB								
Biochemical Oxygen Demand			<2.0		mg/L		2	23-SEP-21
BTEXS+F1-HSMS-WP Water								
Batch	R5599887							
WG3624659-4 DUP		L2639781-1						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	24-SEP-21
Toluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	24-SEP-21
Ethyl benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	24-SEP-21
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	24-SEP-21
m+p-Xylenes		<0.00040	<0.00040	RPD-NA	mg/L	N/A	30	24-SEP-21
F1 (C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	24-SEP-21
WG3624659-2 LCS								
Benzene			87.2		%		70-130	24-SEP-21
Toluene			87.7		%		70-130	24-SEP-21
Ethyl benzene			91.7		%		70-130	24-SEP-21
o-Xylene			95.2		%		70-130	24-SEP-21
m+p-Xylenes			94.6		%		70-130	24-SEP-21
WG3624659-3 LCS								
F1 (C6-C10)			75.6		%		70-130	24-SEP-21
WG3624659-1 MB								
Benzene			<0.00050		mg/L		0.0005	24-SEP-21
Toluene			<0.0010		mg/L		0.001	24-SEP-21
Ethyl benzene			<0.00050		mg/L		0.0005	24-SEP-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTEXS+F1-HSMS-WP								
Batch R5599887								
WG3624659-1 MB								
o-Xylene			<0.00050		mg/L		0.0005	24-SEP-21
m+p-Xylenes			<0.00040		mg/L		0.0004	24-SEP-21
F1 (C6-C10)			<0.10		mg/L		0.1	24-SEP-21
Surrogate: 4-Bromofluorobenzene (SS)			110.2		%		70-130	24-SEP-21
Surrogate: 3,4-Dichlorotoluene (SS)			100.0		%		70-130	24-SEP-21
WG3624659-5 MS		L2639781-1						
Benzene			88.2		%		50-150	24-SEP-21
Toluene			80.8		%		50-150	24-SEP-21
Ethyl benzene			84.5		%		50-150	24-SEP-21
o-Xylene			89.2		%		50-150	24-SEP-21
m+p-Xylenes			87.6		%		50-150	24-SEP-21
WG3624659-6 MS		L2639781-1						
F1 (C6-C10)			80.6		%		50-150	24-SEP-21
C-TOC-HTC-WP								
Batch R5600886								
WG3625644-2 LCS								
Total Organic Carbon			100.9		%		80-120	25-SEP-21
WG3625644-1 MB								
Total Organic Carbon			<0.50		mg/L		0.5	25-SEP-21
CL-IC-N-WP								
Batch R5597550								
WG3622669-7 DUP		L2639781-1						
Chloride (Cl)		49.3	49.7		mg/L	0.9	20	22-SEP-21
WG3622669-2 LCS								
Chloride (Cl)			100.1		%		90-110	22-SEP-21
WG3622669-6 LCS								
Chloride (Cl)			101.0		%		90-110	22-SEP-21
WG3622669-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	22-SEP-21
WG3622669-5 MB								
Chloride (Cl)			<0.50		mg/L		0.5	22-SEP-21
WG3622669-8 MS		L2639781-1						
Chloride (Cl)			98.8		%		75-125	22-SEP-21
EC-WP								
Water								

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WP								
Water								
Batch R5596917								
WG3623314-3	LCS							
Conductivity			100.8		%		90-110	23-SEP-21
WG3623314-1 MB								
Conductivity			<1.0		umhos/cm		1	23-SEP-21
F2-F4-WT								
Water								
Batch R5602856								
WG3625456-2	LCS							
F2 (C10-C16)			98.6		%		70-130	28-SEP-21
F3 (C16-C34)			107.2		%		70-130	28-SEP-21
F4 (C34-C50)			110.7		%		70-130	28-SEP-21
WG3625456-1 MB								
F2 (C10-C16)			<100		ug/L		100	28-SEP-21
F3 (C16-C34)			<250		ug/L		250	28-SEP-21
F4 (C34-C50)			<250		ug/L		250	28-SEP-21
Surrogate: 2-Bromobenzotrifluoride			50.1	MBS	%		60-140	28-SEP-21
HG-T-CVAA-WP								
Water								
Batch R5595899								
WG3623809-2	LCS							
Mercury (Hg)-Total			95.6		%		80-120	23-SEP-21
WG3623809-1 MB								
Mercury (Hg)-Total			<0.0000050		mg/L		0.000005	23-SEP-21
MET-T-CCMS-WP								
Water								
Batch R5597509								
WG3623813-4	DUP	L2639781-1						
Aluminum (Al)-Total		0.0076	0.0106	J	mg/L	0.0030	0.006	23-SEP-21
Arsenic (As)-Total		0.00135	0.00139		mg/L	2.7	20	23-SEP-21
Cadmium (Cd)-Total		0.0000293	0.0000291		mg/L	0.7	20	23-SEP-21
Calcium (Ca)-Total		79.2	83.5		mg/L	5.2	20	23-SEP-21
Chromium (Cr)-Total		0.00015	0.00017		mg/L	9.0	20	23-SEP-21
Cobalt (Co)-Total		0.00056	0.00059		mg/L	4.9	20	23-SEP-21
Copper (Cu)-Total		0.00163	0.00170		mg/L	4.6	20	23-SEP-21
Iron (Fe)-Total		1.38	1.42		mg/L	3.2	20	23-SEP-21
Lead (Pb)-Total		0.000271	0.000285		mg/L	5.0	20	23-SEP-21
Magnesium (Mg)-Total		10.1	10.4		mg/L	2.5	20	23-SEP-21
Manganese (Mn)-Total		0.233	0.236		mg/L	1.3	20	23-SEP-21
Nickel (Ni)-Total		0.00282	0.00285		mg/L	1.0	20	23-SEP-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP								
Water								
Batch	R5597509							
WG3623813-4 DUP		L2639781-1						
Potassium (K)-Total		6.90	6.77		mg/L	1.9	20	23-SEP-21
Sodium (Na)-Total		38.3	38.7		mg/L	1.2	20	23-SEP-21
Zinc (Zn)-Total		0.0159	0.0157		mg/L	1.6	20	23-SEP-21
WG3623813-2 LCS								
Aluminum (Al)-Total			99.0		%		80-120	23-SEP-21
Arsenic (As)-Total			101.4		%		80-120	23-SEP-21
Cadmium (Cd)-Total			99.0		%		80-120	23-SEP-21
Calcium (Ca)-Total			102.9		%		80-120	23-SEP-21
Chromium (Cr)-Total			102.4		%		80-120	23-SEP-21
Cobalt (Co)-Total			99.8		%		80-120	23-SEP-21
Copper (Cu)-Total			98.0		%		80-120	23-SEP-21
Iron (Fe)-Total			96.8		%		80-120	23-SEP-21
Lead (Pb)-Total			103.0		%		80-120	23-SEP-21
Magnesium (Mg)-Total			101.0		%		80-120	23-SEP-21
Manganese (Mn)-Total			100.3		%		80-120	23-SEP-21
Nickel (Ni)-Total			99.3		%		80-120	23-SEP-21
Potassium (K)-Total			102.0		%		80-120	23-SEP-21
Sodium (Na)-Total			106.7		%		80-120	23-SEP-21
Zinc (Zn)-Total			99.8		%		80-120	23-SEP-21
WG3623813-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	23-SEP-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	23-SEP-21
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	23-SEP-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	23-SEP-21
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	23-SEP-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	23-SEP-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	23-SEP-21
Iron (Fe)-Total			<0.010		mg/L		0.01	23-SEP-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	23-SEP-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	23-SEP-21
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	23-SEP-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	23-SEP-21
Potassium (K)-Total			<0.050		mg/L		0.05	23-SEP-21
Sodium (Na)-Total			<0.050		mg/L		0.05	23-SEP-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	23-SEP-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP								
Water								
Batch	R5597509							
WG3623813-5 MS		L2639781-1						
Aluminum (Al)-Total			94.4		%		70-130	23-SEP-21
Arsenic (As)-Total			98.8		%		70-130	23-SEP-21
Cadmium (Cd)-Total			95.2		%		70-130	23-SEP-21
Calcium (Ca)-Total			N/A	MS-B	%		-	23-SEP-21
Chromium (Cr)-Total			96.8		%		70-130	23-SEP-21
Cobalt (Co)-Total			95.7		%		70-130	23-SEP-21
Copper (Cu)-Total			90.9		%		70-130	23-SEP-21
Iron (Fe)-Total			95.8		%		70-130	23-SEP-21
Lead (Pb)-Total			97.6		%		70-130	23-SEP-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	23-SEP-21
Manganese (Mn)-Total			N/A	MS-B	%		-	23-SEP-21
Nickel (Ni)-Total			92.5		%		70-130	23-SEP-21
Potassium (K)-Total			N/A	MS-B	%		-	23-SEP-21
Sodium (Na)-Total			N/A	MS-B	%		-	23-SEP-21
Zinc (Zn)-Total			93.9		%		70-130	23-SEP-21
NH3-COL-WP								
Water								
Batch	R5597959							
WG3624410-2 LCS								
Ammonia, Total (as N)			101.1		%		85-115	23-SEP-21
WG3624410-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	23-SEP-21
NO2-IC-N-WP								
Water								
Batch	R5597550							
WG3622669-7 DUP		L2639781-1						
Nitrite (as N)		<0.010	0.011	RPD-NA	mg/L	N/A	20	22-SEP-21
WG3622669-2 LCS								
Nitrite (as N)			101.6		%		90-110	22-SEP-21
WG3622669-6 LCS								
Nitrite (as N)			102.1		%		90-110	22-SEP-21
WG3622669-1 MB								
Nitrite (as N)			<0.010		mg/L		0.01	22-SEP-21
WG3622669-5 MB								
Nitrite (as N)			<0.010		mg/L		0.01	22-SEP-21
WG3622669-8 MS		L2639781-1						
Nitrite (as N)			102.6		%		75-125	22-SEP-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-N-WP								
Batch R5597550								
WG3622669-7	DUP	L2639781-1						
Nitrate (as N)		0.117	0.119		mg/L	1.4	20	22-SEP-21
WG3622669-2	LCS							
Nitrate (as N)			100.1		%		90-110	22-SEP-21
WG3622669-6	LCS							
Nitrate (as N)			101.4		%		90-110	22-SEP-21
WG3622669-1	MB							
Nitrate (as N)			<0.020		mg/L		0.02	22-SEP-21
WG3622669-5	MB							
Nitrate (as N)			<0.020		mg/L		0.02	22-SEP-21
WG3622669-8	MS	L2639781-1						
Nitrate (as N)			103.8		%		75-125	22-SEP-21
OG-GRAV-WP								
Batch R5598697								
WG3624763-2	LCS							
Oil and Grease			93.6		%		70-130	23-SEP-21
WG3624763-1	MB							
Oil and Grease			<5.0		mg/L		5	23-SEP-21
P-T-COL-WP								
Batch R5601224								
WG3623924-10	LCS							
Phosphorus (P)-Total			96.9		%		80-120	24-SEP-21
WG3623924-9	MB							
Phosphorus (P)-Total			<0.0030		mg/L		0.003	24-SEP-21
PAH-CCME-PPM-WT								
Batch R5601919								
WG3625456-2	LCS							
1-Methylnaphthalene			100.8		%		60-130	27-SEP-21
2-Methylnaphthalene			95.9		%		60-130	27-SEP-21
Acenaphthene			92.7		%		60-130	27-SEP-21
Acenaphthylene			90.3		%		60-130	27-SEP-21
Anthracene			81.3		%		60-130	27-SEP-21
Acridine			84.9		%		60-130	27-SEP-21
Benzo(a)anthracene			84.9		%		60-130	27-SEP-21
Benzo(a)pyrene			74.1		%		60-130	27-SEP-21
Benzo(b&j)fluoranthene			83.0		%		60-130	27-SEP-21
Benzo(g,h,i)perylene			96.6		%		60-130	27-SEP-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-PPM-WT		Water						
Batch	R5601919							
WG3625456-2	LCS							
Benzo(k)fluoranthene			98.7		%		60-130	27-SEP-21
Chrysene			101.0		%		60-130	27-SEP-21
Dibenz(a,h)anthracene			90.9		%		60-130	27-SEP-21
Fluoranthene			97.2		%		60-130	27-SEP-21
Fluorene			92.9		%		60-130	27-SEP-21
Indeno(1,2,3-cd)pyrene			87.3		%		60-130	27-SEP-21
Naphthalene			87.2		%		50-130	27-SEP-21
Phenanthrene			96.0		%		60-130	27-SEP-21
Pyrene			96.0		%		60-130	27-SEP-21
Quinoline			113.4		%		60-130	27-SEP-21
WG3625456-1	MB							
1-Methylnaphthalene			<0.000020		mg/L		0.00002	27-SEP-21
2-Methylnaphthalene			<0.000020		mg/L		0.00002	27-SEP-21
Acenaphthene			<0.000020		mg/L		0.00002	27-SEP-21
Acenaphthylene			<0.000020		mg/L		0.00002	27-SEP-21
Anthracene			<0.000010		mg/L		0.00001	27-SEP-21
Acridine			<0.000020		mg/L		0.00002	27-SEP-21
Benzo(a)anthracene			<0.000010		mg/L		0.00001	27-SEP-21
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	27-SEP-21
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	27-SEP-21
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	27-SEP-21
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	27-SEP-21
Chrysene			<0.000020		mg/L		0.00002	27-SEP-21
Dibenz(a,h)anthracene			<0.0000050		mg/L		0.000005	27-SEP-21
Fluoranthene			<0.000020		mg/L		0.00002	27-SEP-21
Fluorene			<0.000020		mg/L		0.00002	27-SEP-21
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	27-SEP-21
Naphthalene			<0.000050		mg/L		0.00005	27-SEP-21
Phenanthrene			<0.000050		mg/L		0.00005	27-SEP-21
Pyrene			<0.000010		mg/L		0.00001	27-SEP-21
Quinoline			<0.000020		mg/L		0.00002	27-SEP-21
Surrogate: Naphthalene d8			49.8	SURQC	%		50-130	27-SEP-21
Surrogate: Phenanthrene d10			53.5	SURQC	%		60-130	27-SEP-21
Surrogate: Chrysene d12			52.3	SURQC	%		60-130	27-SEP-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-PPM-WT								
Batch R5601919								
WG3625456-1 MB								
Surrogate: Acridine d9								
			50.0	SURQC	%		60-130	27-SEP-21
PH-WP								
Batch R5596917								
WG3623314-2 LCS								
pH								
			6.99		pH units		6.9-7.1	23-SEP-21
PHENOLS-4AAP-WT								
Batch R5600976								
WG3624666-2 LCS								
Phenols (4AAP)								
			95.8		%		85-115	24-SEP-21
WG3624666-1 MB								
Phenols (4AAP)								
			<0.0010		mg/L		0.001	24-SEP-21
SO4-IC-N-WP								
Batch R5597550								
WG3622669-7 DUP								
Sulfate (SO4)								
		L2639781-1	28.9		mg/L	1.5	20	22-SEP-21
WG3622669-2 LCS								
Sulfate (SO4)								
			101.1		%		90-110	22-SEP-21
WG3622669-6 LCS								
Sulfate (SO4)								
			101.8		%		90-110	22-SEP-21
WG3622669-1 MB								
Sulfate (SO4)								
			<0.30		mg/L		0.3	22-SEP-21
WG3622669-5 MB								
Sulfate (SO4)								
			<0.30		mg/L		0.3	22-SEP-21
WG3622669-8 MS								
Sulfate (SO4)								
		L2639781-1	102.1		%		75-125	22-SEP-21
SOLIDS-TOTSUS-WP								
Batch R5595481								
WG3622039-8 LCS								
Total Suspended Solids								
			99.0		%		85-115	22-SEP-21
WG3622039-7 MB								
Total Suspended Solids								
			<3.0		mg/L		3	22-SEP-21

Quality Control Report

Workorder: L2639781

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MBS	Surrogate recovery in Method Blank was outside ALS DQO. Moderately low-biased results in the MB do not significantly affect its purpose.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
SURQC	Surrogate recovery marginally exceeded DQO in QC sample (MB, LCS, RM, or MS). Surrogates are less important for QC samples than for test samples. Refer to regular (non-surrogate) analyte results in affected QC sample for assessment of potential impacts to those analytes.

Quality Control Report

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Total Suspended Solids	1	07-SEP-21 13:30	22-SEP-21 07:00	7	15	days	EHTR
	2	07-SEP-21 13:45	22-SEP-21 07:00	7	15	days	EHTR
	3	07-SEP-21 14:00	22-SEP-21 07:00	7	15	days	EHTR
pH	1	07-SEP-21 13:30	23-SEP-21 12:00	0.25	383	hours	EHTR-FM
	2	07-SEP-21 13:45	23-SEP-21 12:00	0.25	382	hours	EHTR-FM
	3	07-SEP-21 14:00	23-SEP-21 12:00	0.25	382	hours	EHTR-FM
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	1	07-SEP-21 13:30	23-SEP-21 12:00	14	16	days	EHT
	2	07-SEP-21 13:45	23-SEP-21 12:00	14	16	days	EHT
	3	07-SEP-21 14:00	23-SEP-21 12:00	14	16	days	EHT
Nitrate in Water by IC	1	07-SEP-21 13:30	22-SEP-21 12:00	3	15	days	EHTR
	2	07-SEP-21 13:45	22-SEP-21 12:00	3	15	days	EHTR
	3	07-SEP-21 14:00	22-SEP-21 12:00	3	15	days	EHTR
Nitrite in Water by IC	1	07-SEP-21 13:30	22-SEP-21 12:00	3	15	days	EHTR
	2	07-SEP-21 13:45	22-SEP-21 12:00	3	15	days	EHTR
	3	07-SEP-21 14:00	22-SEP-21 12:00	3	15	days	EHTR
Aggregate Organics							
Biochemical Oxygen Demand (BOD)	1	07-SEP-21 13:30	23-SEP-21 07:00	48	378	hours	EHTR
	2	07-SEP-21 13:45	23-SEP-21 07:00	48	377	hours	EHTR
	3	07-SEP-21 14:00	23-SEP-21 07:00	48	377	hours	EHTR
Carbonaceous BOD	1	07-SEP-21 13:30	23-SEP-21 07:00	48	378	hours	EHTR
	2	07-SEP-21 13:45	23-SEP-21 07:00	48	377	hours	EHTR
	3	07-SEP-21 14:00	23-SEP-21 07:00	48	377	hours	EHTR
Volatile Organic Compounds							
BTX plus F1 by GCMS	1	07-SEP-21 13:30	24-SEP-21 20:52	14	17	days	EHT
Hydrocarbons							
F2-F4 (O.Reg.153/04)	1	07-SEP-21 13:30	27-SEP-21 17:34	14	20	days	EHT
Polycyclic Aromatic Hydrocarbons							
CCME PAHs in mg/L	1	07-SEP-21 13:30	27-SEP-21 17:34	14	20	days	EHT

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
 EHTR: Exceeded ALS recommended hold time prior to sample receipt.
 EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
 EHT: Exceeded ALS recommended hold time prior to analysis.
 Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
 Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2639781 were received on 15-SEP-21 14:00.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government

Quality Control Report

Workorder: L2639781

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requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

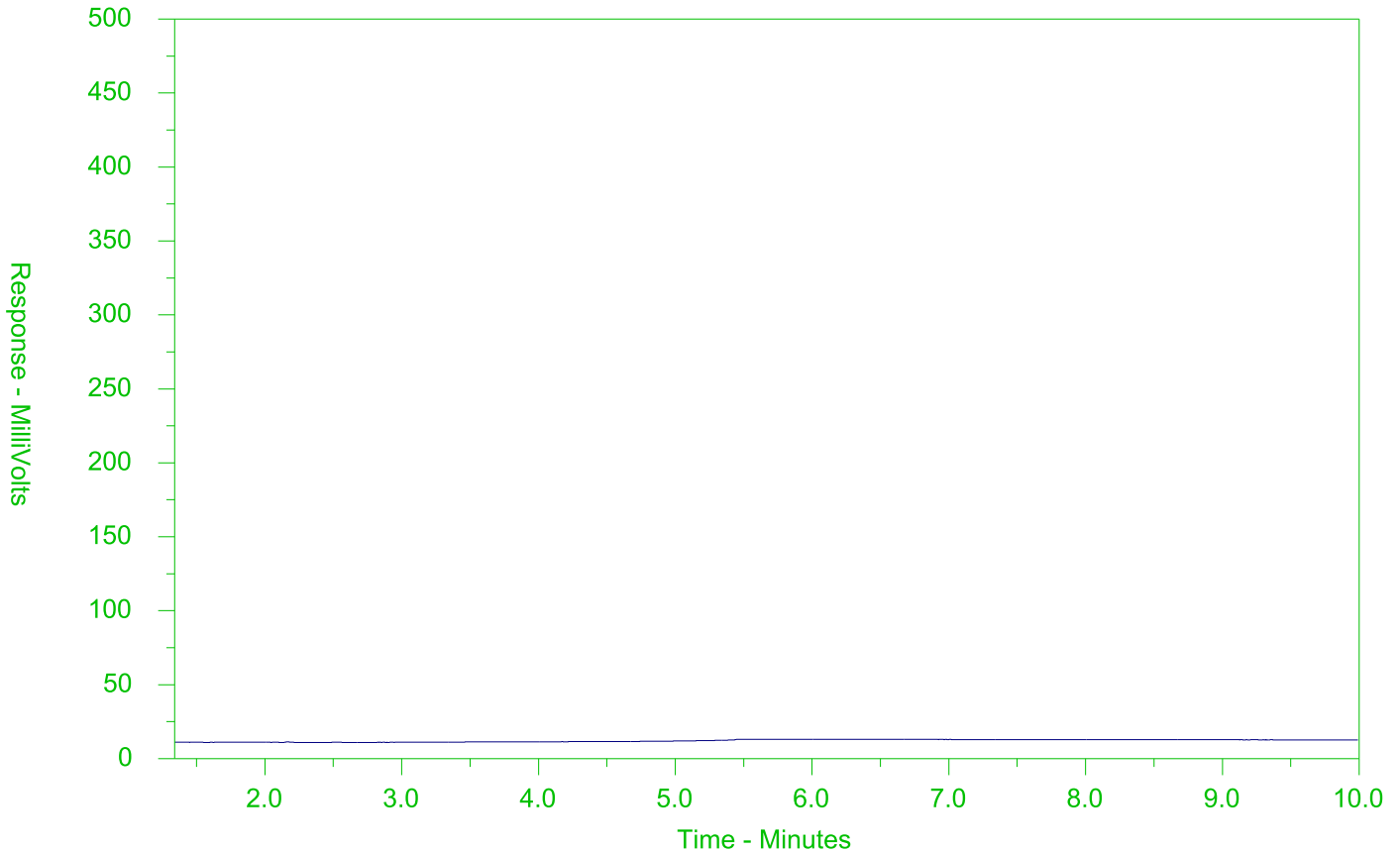
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2639781-1
Client Sample ID: WHA-2



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

[Home](#) > [Work Orders](#) > Work Order Results

Work Order L2645851

RESULTS

MANAGE GUIDELINES

EXPORT TO EXCEL

VIEW WORK ORDER

Apply Guidelines

- Select Client or ALS/Regulator: ▼

Header #1			Sample ID ▼	WHA-2	WHA-3	WHA-4
#2			ALS ID ▼	L2645851-1	L2645851-2	L2645851-3
#3			Date Sampled ▼	9/28/2021 12:00:00 PM	9/28/2021 12:00:00 PM	9/28/2021 12:00:00 PM
Analyte	Units	LOR		Water	Water	Water
Fecal Coliforms	MPN/100mL	1		70	14100 *	1

*Bacteria re-sample for W.O. # L2639781

**ANNUAL REPORT
FOR THE HAMLET OF WHALE COVE**

Appendix D

No spills reported to the NT-NU Spill Report Line and listed on the Hazardous Materials Spills Database of Whale Cove in 2021

**ANNUAL REPORT
FOR THE HAMLET OF WHALE COVE**

Appendix E

WHA-2

Parameter	Unit	DL	08-Jun-17	12-Jul-17	28-Aug-17	22-Sep-17	20-Jun-18	12-Jul-18	11-Jul-19	07-Jul-20	16-Jul-20	18-Aug-20	09-Aug-21	26-Aug-21	07-Sep-21	28-Sep-21	Min	Max	Average
Alkalinity	mg/L	1.2	154	235	258	194	121	237	161	259	269	323	213	213	159	-	121	323	215.08
Carbonate (HCO3)	mg/L	0.60	0.60	0.60	0.60	0.60	0.6	0.6	0.6	0.60	0.60	7.80	3.24	<0.60	<0.60	-	0.6	7.8	1.49
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	<0.34	<0.34	<0.34	-	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	127	192	212	159	99.3	195	132	212	221	277	180	174	131	-	99.3	277	177.79
Ammonia by Colour																			
Total (as N)	mg/L	0.20	0.99	1.83	1.85	0.226	0.152	0.049	0.428	24.3	1.11	4.5	1.02	0.82	1.24	-	0.049	24.3	2.96
Biochemical Oxygen Demand (BOD)																			
Biochemical Oxygen Demand	mg/L	6.0	8.4	3.0	2	2.0	6	12.5	3.3	12.8	10.9	3.9	2.4	<2.0	<2.0	-	2	12.8	6.11
Carbonaceous BOD																			
BOD Carbonaceous	mg/L	6.0	6.8	2.3	2	2	6	8.3	2	10.6	8.4	4.8	2.8	<0.20	<2.0	-	2	10.6	5.09
Chloride in Water by IC																			
Chloride (Cl)	mg/L	10	123	157	184	70.2	41.0	74.3	30.4	75	69.6	83.4	123	86.5	49.3	-	30.4	184	89.75
Conductivity																			
Conductivity	umhos/cm	1.0	769	951	964	604	409	695	464	681	698	816	839	778	471	-	409	964	703.00
Fecal Coliforms																			
Fecal Coliforms	MPN/100mL	3	5170	10	20	20	90	420		6130	190	170	30	10	-	70	10	6130	1027.50
Hardness Calculated																			
Hardness (as CaCO3)	mg/L	0.30	221	291	316	196	135	191	168	95.1	238	270	280	263	240	-	95.1	316	223.39
Mercury Total																			
Mercury (Hg)	mg/L	0.00020	0.0000058	0.0000050	0.0000064	0.0000063	0.000005	0.000005	0.0000050	0.0000090	0.0000050	0.0000080	<0.0000050	<0.0000050	<0.0000050	-	0.000005	0.000009	0.00
Nitrate in Water by IC																			
Nitrate (as N)	mg/L	0.40	0.113	0.054	0.043	0.14	0.078	0.02	0.318	0.020	0.032	0.020	0.127	0.161	0.117	-	0.02	0.318	0.10
Nitrate + Nitrite																			
Nitrate + Nitrite as N	mg/L	0.45	0.127	0.070	0.07	0.140	0.088	0.07	0.335	0.070	0.070	0.070	0.153	0.185	0.117	-	0.07	0.335	0.12
Nitrite in Water by IC																			
Nitrite (as N)	mg/L	0.20	0.015	0.020	0.02	0.010	0.010	0.01	0.018	0.010	0.010	0.010	0.026	0.025	<0.010	-	0.01	0.026	0.02
Oil & Grease - Gravimetric																			
Oil and Grease	mg/L	5.0	5.0	5.0	5.0	5.0	5	5	5	6.4	5.0	42.6	<5.0	<5.0	<5.0	-	5	42.6	8.90
Phenol																			
Phenols	mg/L	0.0010	0.0057	0.0021	0.0014	0.001	0.0037	0.0032	0.0065	0.0050	0.0022	0.0091	0.0250	0.0016	0.0019	-	0.001	0.025	0.01
Phosphorus Total																			
Phosphorus (P)	mg/L	0.010	0.210	0.109	0.114	0.071	0.243	0.249	0.0915	5.83	0.245	0.242	0.11	0.047	0.084	-	0.047	5.83	0.59
Sulfate in Water by IC																			
Sulfate (SO4)	mg/L	6.0	76.2	73.7	77.9	59.5	42.1	47.5	62.6	13.9	58	48.3	68	77.1	28.9	-	13.9	77.9	56.44
Total Metals by ICP-MS																			
Aluminium (Al)	mg/L	0.0050	0.0630	0.0099	0.0143	0.0245	0.0803	0.0196	0.0369	0.0377	0.0170	0.0303	0.0132	0.0071	0.0076	-	0.0071	0.0803	0.03
Arsenic (As)	mg/L	0.00020	0.00188	0.00238	0.00208	0.00104	0.00158	0.00276	0.00123	0.00087	0.00242	0.0041	0.00228	0.00147	0.00135	-	0.00087	0.0041	0.00
Cadmium (Cd)	mg/L	0.000010	0.000084	0.0000199	0.0000155	0.0000578	0.0000102	0.0000473	0.0000843	0.0000187	0.0000564	0.000102	0.000011	0.0000732	0.0000293	-	0.0000155	0.000102	0.00
Calcium (Ca)	mg/L	0.10	68.1	90.3	94.6	62.3	45.6	60.0	55.9	27.4	77.9	87.1	89.4	86.2	79.2	-	27.4	94.6	71.08
Chromium (Cr)	mg/L	0.0010	0.0010	0.00051	0.00087	0.00032	0.00157	0.00105	0.00077	0.00035	0.00106	0.00106	0.00095	0.00021	0.00015	-	0.00015	0.00015	0.00
Cobalt (Co)	mg/L	0.00020	0.00144	0.00015	0.00033	0.00054	0.00106	0.00186	0.00084	0.00081	0.00181	0.00195	0.00099	0.00108	0.00056	-	0.00054	0.00195	0.00
Copper (Cu)	mg/L	0.00020	0.00930	0.00222	0.00156	0.00629	0.0110	0.00571	0.0138	0.0360	0.00627	0.00932	0.0028	0.00294	0.00163	-	0.00156	0.036	0.01
Iron (Fe)	mg/L	0.010	2.24	1.71	2.16	0.698	0.784	2.55	0.763	0.173	2.015	3	1.8	1.21	1.38	-	0.173	3	1.59
Lead (Pb)	mg/L	0.00090	0.000131	0.000326	0.000362	0.000707	0.00104	0.000686	0.000842	0.000353	0.000536	0.00173	0.000378	0.000282	0.000271	-	0.000271	0.00173	0.00
Magnesium (Mg)	mg/L	0.010	12.3	15.8	19.4	9.7	5.16	9.70	6.93	6.97	10.6	12.7	13.8	11.5	10.1	-	5.16	19.4	11.11
Manganese (Mn)	mg/L	0.00030	0.247	0.246	0.251	0.102	0.146	0.303	0.0841	0.0887	0.355	0.612	0.182	0.269	0.233	-	0.0841	0.612	0.25
Nickel (Ni)	mg/L	0.0020	0.0066	0.00588	0.00441	0.00481	0.00395	0.00667	0.00548	0.000548	0.000651	0.00467	0.00489	0.00046	0.00282	-	0.00205	0.00667	0.00
Potassium (K)	mg/L	0.020	9.92	14.6	12.8	6.47	6.90	11.5	6.21	16.5	10.8	11.7	11.4	7.6	6.9	-	6.21	16.5	10.25
Sodium (Na)	mg/L	0.030	63.1	79.7	99.4	45.1	25.0	52.2	36	54.0	48.6	56.2	54.8	40.8	38.3	-	25	99.4	52.55
Zinc (Zn)	mg/L	0.0020	0.0540	0.0122	0.0116	0.0397	0.0518	0.196	0.0577	0.0226	0.0279	0.0424	0.0304	0.0375	0.0159	-	0.0116	0.196	0.05
Total Organic Carbon by Combustion																			
Total Organic Carbon	mg/L	0.50	12.4	12.8	8.85	6.14	12.2	17.1	11.3	33.5	15.5	17.5	10.6	8.35	6.28	-	6.14	33.5	13.27
Total Suspended Solids																			
Total Suspended Solids	mg/L	13	12.0	9.0	18.0	7.0	5.6	12.2	2.7	26.4	10.9	7.6	3.4	3.0	16.4	-	2.7	26.4	10.32
pH																			
pH	pH Units	0.10	7.60	7.79	7.83	7.89	7.19	7.56	7.82	7.35	8.12	8.41	8.30	8.10	7.96	-	7.19	8.41	7.84
Benzene	mg/L	0.00050	0.00050	0.00050	0.00050	0.00050	0.0005	0.0005	0.00053	0.00050	0.00050	0.00050	N/A	<0.00050	<0.00050	-	0.0005	0.00053	0.00
Toluene	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0025	0.001	0.0012	0.0011	0.0010	0.0010	N/A	<0.0010	<0.0010	-	0.001	0.0025	0.00
Ethyl Benzene	mg/L	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.0005	0.00050	0.00050	0.00050	0.00050	N/A	<0.00050	<0.00050	-	0.0005	0.0005	0.00
o-Xylene	mg/L	0.00050	0.00050	0.00050	0.00050	0.00050	0.00142	0.0005	0.00050	0.00050	0.00050	0.00050	N/A	<0.00050	<0.00050	-	0.0005	0.00142	0.00
F1 (C6-Cl0)	mg/L	0.10	0.10	0.10	0.10	0.10	0.1	0.1	0.10	0.10	0.10	0.10	N/A	<0.10	<0.10	-	0.1	0.10	0.10
F2 (Cl0-Cl6)	mg/L	0.25	0.10	0.10	0.10	0.10	0.1	0.1	0.10	0.18	0.10	0.10	<100	<100	<10	-	0.1	0.18	0.11
F3 (Cl6-C34)	mg/L	0.25	0.25	0.25	0.25	0.25	0.25	0.28	0.25	2.53	0.25	1.34	<250	<250	<0.25	-	0.25	2.53	0.59
F4 (C34-C50)	mg/L	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.91	0.25	0.83	<250	<250	<0.25	-	0.91	0.91	0.37
Total Hydrocarbons (C6-C50)	mg/L	0.44	0.38	0.38	0.38	0.1	0.38	0.38	0.38	3.62	0.38	2.16	N/A	<0.38	<0.38	-	0.1	3.62	0.85

Whale Cove
WHA-3

Parameter	Unit	DL	2017				2018		2019	2020				2021				Statistics		
			08-Jun-17	12-Jul-17	28-Aug-17	22-Sep-17	20-Jun-18	12-Jul-18	11-Jul-19	07-Jul-20	16-Jul-20	18-Aug-20	09-Aug-21	26-Aug-21	07-Sep-21	28-Sep-21	Min	Max	Average	
Alkalinity	mg/L	1.2	338	330	252	238	345	299	196	253	248	217	168	133	124	-	124	345	241.62	
	Bicarbonate (HCO3)																			
	Carbonate (CO3)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	11.40	3.60	3.24	-	0.6	11.4	1.86	
	Hydroxide (OH)	0.34	0.34	0.34	0.34	0.34	0.34	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	277	271	207	195	283	245	161	208	203	178	157	115	107	-	107	283	200.54
Ammonia by Colour																				
Total (as N)			mg/L	43.8	35.2	20.9	21	41.4	33.8	0.182	0.12	23.4	16	16.3	2.48	0.329	-	0.12	43.8	19.61
Biochemical Oxygen Demand (BOD)																				
Biochemical Oxygen Demand			mg/L	6.0	77	33	39	18.5	41	27.2	2.7	8.3	27.9	23.4	13.7	117.9	15.6	2.7	117.9	34.25
Carbonaceous BOD																				
BOD Carbonaceous			mg/L	6.0	69	31.2	11.2	9	20	18.4	2	8.8	20.9	9.3	9.5	12.5	14.9	2	69	18.21
Chloride in Water by IC																				
Chloride (Cl)			mg/L	10	79.9	91.8	99.7	83.8	92.9	82.6	37	64.6	77	82.4	87.4	81.3	99	37	99.7	81.49
Conductivity																				
Conductivity			umhos/cm	1.0	900	877	774	729	919	822	452	589	685	650	628	590	624	452	919	710.69
Fecal Coliforms																				
Fecal Coliforms			MPN/100mL	3	24200	15500	12000	19900	24200	8160	170	880	14100	15500	1860	8660	-	14100	24200	12248.46
Hardness Calculated																				
Hardness (as CaCO3)			mg/L	0.30	130	152	164	126	134	113	141	161	103	109	112	104	116	103	164	128.08
Mercury Total																				
Mercury (Hg)			mg/L	0.00020	0.0000131	0.0000071	0.0000025	0.0000148	0.0000073	0.0000067	0.0000050	0.0000050	0.0000060	0.0000060	<0.0000050	<0.0000050	-	0.000005	2.5E-05	0.00
Nitrate in Water by IC																				
Nitrate (as N)			mg/L	0.40	0.040	0.085	0.287	0.257	0.04	0.04	0.023	0.027	0.020	0.322	0.686	2.770	2.760	0.02	2.77	0.57
Nitrate + Nitrite																				
Nitrate and Nitrite as N			mg/L	0.45	0.070	0.085	0.766	0.346	0.07	0.07	0.070	0.070	0.070	0.907	1.630	3.730	3.200	0.07	3.73	0.85
Nitrite in Water by IC																				
Nitrite (as N)			mg/L	0.20	0.020	0.020	0.480	0.089	0.020	0.020	0.010	0.010	0.010	0.585	0.940	0.956	0.439	0.01	0.956	0.28
Oil & Grease - Gravimetric																				
Oil and Grease			mg/L	5.0	14.5	5.0	5	5.6	9.1	5.0	24.2	5.0	5.0	38.2	<5.0	<5.00	-	5	38.2	11.66
Phenol																				
Phenol			mg/L	0.0010	0.0641	0.0015	0.0016	0.0018	0.0669	0.0026	0.0017	0.0010	0.0011	0.0017	<0.0010	0.0014	0.0015	0.001	0.0669	0.01
Phosphorus, Total																				
Phosphorus (P)			mg/L	0.010	5.80	6.07	7.88	5.70	7.19	6.48	2.55	3.32	5.79	5.69	6.27	5.840	5.520	2.55	7.88	5.70
Sulfate in Water by IC																				
Sulfate (SO4)			mg/L	6.0	38.0	56.6	50.1	41.6	18.4	24.6	25.9	14.8	15.5	17.9	19.5	17.7	32.6	14.8	56.6	28.71
Total Metals by ICP-MS																				
Aluminium (Al)			mg/L	0.0050	0.125	0.0492	0.14	0.2240	0.102	0.0570	0.0210	0.0343	0.0296	0.0238	0.0242	0.0230	0.0281	0.021	0.224	0.07
Arsenic (As)			mg/L	0.00020	0.00169	0.00182	0.00184	0.00228	0.00129	0.00093	0.00308	0.00382	0.00083	0.00092	0.00089	0.00109	-	0.00083	0.00382	0.00
Cadmium (Cd)			mg/L	0.000010	0.000066	0.0000306	0.0000393	0.0000603	0.0000321	0.0000197	0.0000062	0.0000077	0.000185	0.0000093	0.0000071	0.0000145	-	0.0000062	0.00019	0.00
Calcium (Ca)			mg/L	0.10	37.3	45.3	48.6	35.8	39.8	33.6	42.4	48	30	32.5	32.4	29.9	35.4	29.9	48.6	37.77
Chromium (Cr)			mg/L	0.0010	0.0010	0.00033	0.0005	0.00055	0.00046	0.00031	0.00020	0.00024	0.00027	0.00021	0.00024	0.00023	-	0.0002	0.001	0.00
Cobalt (Co)			mg/L	0.00020	0.00170	0.00131	0.00119	0.00137	0.00087	0.00064	0.00045	0.00051	0.00062	0.00061	0.00062	0.00072	-	0.00045	0.0017	0.00
Copper (Cu)			mg/L	0.00020	0.0708	0.0304	0.0251	0.0355	0.0522	0.0284	0.00376	0.00204	0.0303	0.0169	0.0209	0.01970	0.0180	0.00204	0.0708	0.03
Iron (Fe)			mg/L	0.010	0.479	0.249	0.484	0.738	0.279	0.169	0.833	0.877	0.145	0.103	0.09	0.184	-	0.09	0.877	0.35
Lead (Pb)			mg/L	0.00090	0.000956	0.000409	0.000503	0.000842	0.000609	0.000685	0.000089	0.000086	0.000272	0.000091	0.000112	0.000123	0.000155	0.000086	0.00096	0.00
Magnesium (Mg)			mg/L	0.010	8.85	9.36	10.3	8.79	8.54	7.12	8.54	9.91	6.90	6.81	7.53	7.18	6.67	6.67	10.3	8.19
Manganese (Mn)			mg/L	0.00030	0.115	0.104	0.141	0.136	0.105	0.000848	0.237	0.187	0.0908	0.0717	0.0621	0.0661	0.0894	0.000848	0.237	0.11
Nickel (Ni)			mg/L	0.0020	0.0044	0.00421	0.00505	0.00493	0.00315	0.00245	0.00273	0.00268	0.00216	0.00223	0.00238	0.00244	-	0.000245	0.00505	0.00
Potassium (K)			mg/L	0.020	20.5	22.8	24	18.2	20.4	17.2	6.36	13.8	16.9	16.8	19.4	18.3	17.2	6.36	24	17.84
Sodium (Na)			mg/L	0.030	63.5	69.0	77.7	64.1	67.2	56.9	40.0	56.8	55.9	57.0	66.6	64.5	63.6	40	77.7	61.75
Zinc (Zn)			mg/L	0.0020	0.0521	0.0178	0.408	0.0459	0.0337	0.0175	0.0046	0.0171	0.0205	0.0219	0.0138	0.0130	0.0199	0.0046	0.408	0.05
Total Organic Carbon by Combustion																				
Total Organic Carbon			mg/L	0.50	82.8	38.8	62	42.8	48.3	26.4	12	20.3	24.2	27.2	30.9	46.8	43.8	12	82.8	38.95
Total Suspended Solids																				
Total Suspended Solids			mg/L	13	46.0	36	68.0	22	32.4	13.6	6.7	21.4	33.1	36.6	88.6	99.2	114.0	6.7	114	47.51
pH																				
pH			pH Units	0.10	7.37	8.10	7.60	7.50	7.20	7.51	7.93	7.65	8.01	8.20	8.62	8.40	8.41	7.2	8.62	7.88
Benzene			mg/L	0.00050	/	/	/	/	N/A	N/A	/	N/A	0.00050	N/A	<0.00050	N/A	-	0.0005	0.0005	0.00
Toluene			mg/L	0.0010	/	/	/	/	N/A	N/A	/	N/A	0.0010	N/A	<0.0010	N/A	-	0.001	0.001	0.00
Ethyl Benzene			mg/L	0.00050	/	/	/	/	N/A	N/A	/	N/A	0.00050	N/A	<0.00050	N/A	-	0.0005	0.0005	0.00
o-Xylene			mg/L	0.00050	/	/	/	/	N/A	N/A	/	N/A	0.00050	N/A	<0.00050	N/A	-	0.0005	0.0005	0.00
F1 (C6-C10)			mg/L	0.10	/	/	/	/	N/A	N/A	/	N/A	0.10	N/A	<0.10	N/A	-	0.1	0.1	0.10
F2 (C10-C16)			mg/L	0.25	/	/	/	/	N/A	N/A	/	N/A	0.10	N/A	<100	N/A	-	0.1	0.1	0.10
F3 (C16-C34)			mg/L	0.25	/	/	/	/	N/A	N/A	/	N/A	1.01	N/A	<250	N/A	-	1.01	1.01	1.01
F4 (C34-C50)			mg/L	0.25	/	/	/	/	N/A	N/A	/	N/A	0.48	N/A	<250	N/A	-	0.48	0.48	0.48
Total Hydrocarbons (C6-C50)			mg/L	0.44	/	/	/	/	N/A	N/A	/	N/A	2	N/A	<0.38	N/A	-	1.5	1.5	1.50

WHA-4

Parameter	Unit	DL	2017				2018				2019				2020				2021				Statistics	
			08-Jun-17	12-Jul-17	28-Aug-17	22-Sep-17	20-Jun-18	12-Jul-18	11-Jul-19	07-Jul-20	18-Aug-20	09-Aug-21	26-Aug-21	07-Sep-21	28-Sep-21	Min	Max	Average						
Biochemical Oxygen Demand (BOD)	Bicarbonate (HCO3)	mg/L	1.2	234	219	302	186	158	309	280	244	307	214	265	141	157	-	141	309	232.00	1.21			
	Carbonate (CO3)	mg/L	0.60	6.72	0.600	0.60	0.6	0.6	0.6	0.6	0.60	0.60	<0.60	<0.60	<0.60	<0.60	-	0.6	6.72	1.21				
	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	<0.34	<0.34	<0.34	-	0.34	0.34	0.34				
	Total (as CaCO3)	mg/L	1.0	203	180	248	153	130	253	230	200	252	176	217	116	129	-	116	253	191.31				
	Ammonia by Colour	mg/L	0.20	0.105	0.055	0.021	0.017	1.17	0.037	32.3	0.58	0.110	3.62	0.013	1.64	0.061	-	0.013	32.3	3.06				
	Total (as N)	mg/L	6.0	10.3	2.0	2	2.0	8.7	9.0	23.0	7.5	4.6	19.9	3.8	19.3	12.2	-	2	23	9.56				
	Carbonaceous BOD	mg/L	6.0	6.4	2.0	2	2.0	3.9	7.0	13.7	5.3	4.3	3.5	<2.0	13.5	5.9	-	2	13.7	5.79				
	Chloride in Water by IC	mg/L	10	123	43.2	95.9	56	55.0	113	87.1	69.6	67.2	80.2	69.4	81.1	66.6	-	43.2	123	77.48				
	Conductivity	umhos/cm	1.0	819	413	845	562	500	871	768	672	632	615	629	591	490	-	413	871	646.69				
	Fecal Coliforms	MPN/100mL	3	10	10	10	30	10	20	1726	210	20	4110	<10	15500	-	1	15500	1804.25	1				
Hardness Calculated	mg/L	0.30	185	192	355	171	140	216	114	212	192	146	205	111	130	-	111	355	182.23					
Hardness (as CaCO3)	mg/L	0.00020	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	0.0000050	<0.0000050	<0.0000050	<0.0000050	-	0.000005	5E-06	0.00					
Mercury (Hg)	mg/L	0.40	0.028	0.020	0.04	0.040	0.073	0.040	0.020	0.020	0.020	3.35	<0.020	2.910	0.523	-	0.02	3.35	0.59					
Nitrate in Water by IC	mg/L	0.45	0.070	0.070	0.070	0.070	0.073	0.070	0.070	0.070	0.070	3.65	<0.070	3.610	0.523	-	0.07	3.65	0.70					
Nitrate + Nitrite	mg/L	0.20	0.010	0.010	0.020	0.010	0.01	0.02	0.010	0.010	0.010	0.298	<0.010	0.699	<0.010	-	0.01	0.699	0.10					
Nitrite and Nitrate as N	mg/L	5.0	5.0	5.0	5.0	5.0	5	5	31.4	5.0	5.0	70.6	<5.0	<5.0	<5.0	-	5	70.6	14.20					
Nitrite (as N)	mg/L	0.0010	0.0039	0.0011	0.001	0.001	0.001	0.0012	0.0018	0.0036	0.0010	0.0015	<0.0010	<0.0050	<0.010	-	0.001	0.0039	0.00					
Nitrite in Water by IC	mg/L	0.010	4.19	0.390	0.301	0.185	2.29	5.71	5.79	0.360	4.51	3.38	0.49	5.570	3.060	-	0.185	5.79	2.79					
Oil & Grease - Gravimetric	mg/L	6.0	30.9	12.2	122	65.9	37.0	27.3	21.4	57.1	4.96	8.84	12.6	17.5	13.1	-	4.96	122	33.14					
Phenol	mg/L	0.0050	0.0236	0.0117	0.159	0.0050	0.0661	0.0794	0.0281	0.0446	0.0144	0.0302	0.0291	0.0173	0.0119	-	0.005	0.159	0.04					
Phenols	mg/L	0.0020	0.00836	0.00661	0.00104	0.00109	0.00435	0.00637	0.00091	0.00271	0.00375	0.00355	0.00191	0.00199	0.0026	-	0.00061	0.00836	0.00					
Total Metals by CP-MS	mg/L	0.00010	0.000012	0.0000107	0.0000163	0.000005	0.0000144	0.0000091	0.0000160	0.0000823	0.000008823	0.00000891	0.0000096	0.0000239	0.0000191	-	0.000005	8.2E-05	0.00					
Aluminium (Al)	mg/L	0.10	52.3	67.9	119	53.4	41.7	62.8	32.1	69.6	57.9	44.8	68.3	32.3	41.4	-	32.1	119	56.16	0.00				
Arsenic (As)	mg/L	0.0010	0.0010	0.00012	0.0005	0.0001	0.00017	0.00042	0.00055	0.00019	0.00019	0.00018	0.00018	0.00019	0.00013	-	0.0001	0.00137	0.00					
Cadmium (Cd)	mg/L	0.0020	0.00078	0.00010	0.0003	0.00022	0.00066	0.00073	0.00061	0.00183	0.00050	0.00082	0.0004	0.00075	0.00063	-	0.0001	0.00183	0.00					
Calcium (Ca)	mg/L	0.0020	0.00176	0.00323	0.00341	0.00288	0.00262	0.00328	0.0369	0.00735	0.00148	0.00609	0.0038	0.01740	0.00812	-	0.00148	0.0369	0.01					
Chromium (Cr)	mg/L	0.010	0.913	0.220	0.739	0.095	0.813	1.24	0.148	3.63	1.30	1.07	0.707	0.257	0.571	-	0.095	3.63	0.95					
Cobalt (Co)	mg/L	0.00090	0.000100	0.000050	0.000129	0.000050	0.000138	0.000166	0.000333	0.000758	0.000097	0.000071	0.000071	0.000098	0.000053	-	0.00005	0.00076	0.00					
Copper (Cu)	mg/L	0.010	13.2	5.54	13.9	9.21	8.60	14.3	8.16	9.36	11.5	8.26	8.36	7.63	6.54	-	5.54	14.3	9.56					
Iron (Fe)	mg/L	0.030	0.114	0.0465	0.0197	0.336	0.481	0.0882	0.455	0.271	0.226	0.169	0.0664	0.0387	0.0387	-	0.0197	0.481	0.18					
Magnesium (Mg)	mg/L	0.0020	0.0036	0.00116	0.00224	0.00173	0.00275	0.00393	0.00240	0.00676	0.00292	0.00271	0.00219	0.00248	0.0024	-	0.00116	0.00676	0.00					
Manganese (Mn)	mg/L	0.020	28.6	1.75	7.39	8.03	12.1	15.2	17.7	10.6	13.8	13.5	5.62	17.7	12.7	-	1.75	28.6	12.67	0.00				
Nickel (Ni)	mg/L	0.030	88.7	25.6	74.1	48	41.5	106	61.6	46.6	61.2	58.2	46.4	65.1	54.9	-	25.6	106	59.84					
Potassium (K)	mg/L	0.0020	0.0023	0.0030	0.0055	0.0086	0.0050	0.0048	0.0246	0.0402	0.0072	0.0096	<0.0030	0.0116	0.0053	-	0.0023	0.0402	0.01					
Sodium (Na)	mg/L	0.50	20.2	4.37	7.51	6.66	13.3	25.9	31.5	18.9	20.8	21.3	7.18	49.8	31.2	-	4.37	49.8	19.89					
Zinc (Zn)	mg/L	13	17.0	5.00	5.0	5.00	12.4	3	26.2	19.8	24.1	20.2	101.0	97.6	57.0	-	3	101	30.25					
Total Organic Carbon by Combustion	mg/L	0.10	8.48	7.70	7.95	8.01	7.39	7.60	8.03	7.35	8.18	7.90	7.99	7.99	8.16	-	7.35	8.48	7.90					
Total Organic Carbon	pH	0.0050	/	/	/	/	N/A	N/A	N/A	N/A	0.00050	N/A	N/A	N/A	-	-	0.0005	0.0005	0.00					
Total Suspended Solids	mg/L	0.0010	/	/	/	/	N/A	N/A	N/A	N/A	0.0010	N/A	N/A	N/A	-	-	0.001	0.001	0.00					
Total Suspended Solids	mg/L	0.00050	/	/	/	/	N/A	N/A	N/A	N/A	0.00050	N/A	N/A	N/A	-	-	0.0005	0.0005	0.00					
pH	mg/L	0.00050	/	/	/	/	N/A	N/A	N/A	N/A	0.00050	N/A	N/A	N/A	-	-	0.0005	0.0005	0.00					
Benzene	mg/L	0.10	/	/	/	/	N/A	N/A	N/A	N/A	0.10	N/A	N/A	N/A	-	-	0.1	0.10	0.10					
Ethyl Benzene	mg/L	0.25	/	/	/	/	N/A	N/A	N/A	N/A	0.10	N/A	N/A	N/A	-	-	0.1	0.10	0.10					
o-Xylene	mg/L	0.25	/	/	/	/	N/A	N/A	N/A	N/A	0.10	N/A	N/A	N/A	-	-	0.1	0.10	0.10					
F1 (G6-C10)	mg/L	0.25	/	/	/	/	N/A	N/A	N/A	N/A	0.10	N/A	N/A	N/A	-	-	0.1	0.10	0.10					
F2 (C10-C16)	mg/L	0.25	/	/	/	/	N/A	N/A	N/A	N/A	0.10	N/A	N/A	N/A	-	-	0.1	0.10	0.10					
F3 (C16-C34)	mg/L	0.25	/	/	/	/	N/A	N/A	N/A	N/A	0.10	N/A	N/A	N/A	-	-	0.1	0.10	0.10					
F4 (C34-C50)	mg/L	0.25	/	/	/	/	N/A	N/A	N/A	N/A	0.10	N/A	N/A	N/A	-	-	0.1	0.10	0.10					
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	/	/	/	N/A	N/A	N/A	N/A	0.38	N/A	N/A	N/A	-	-	0.38	0.38	0.38					

**ANNUAL REPORT
FOR THE HAMLET OF WHALE COVE**

Appendix F

**WATER LICENCE INSPECTION FORM**☒ Original
☐ Follow-Up Report

Licensee	Licensee Representative
Hamlet of Whale Cove	Brain Fleming
Licence No. / Expiry	Representative's Title
3BM-WHA2126/ March 25, 2026	Senior Administrative Officer
Date of Inspection	Inspector
August 24 th 2021	Atuat Shouldice
Activities Inspected	
☐ Camp ☐ Drilling ☐ Mining ☐ Construction ☐ Reclamation ☐ Fuel Storage	
☐ Roads/Hauling ☒ Other: Waste Disposal Facility ☒ Other: Water Treatment Facility	

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

On August 24th, 2021, a regularly scheduled inspection was conducted of the Nunavut Water Board (NWB) water licence no. 3BM-WHA2126 issued to the Hamlet of Whale Cove. The inspection was conducted to ensure compliance with applicable terms and conditions of the licence. Community and Government Services representatives Matthew Hewey accompanied the Inspector on the inspection.

Observation

1. The 2020 annual report was available for review as required by PART B item 1.
2. Appropriate signage was observed at the monitoring stations, as required by PART B item 6.
3. Fresh water is obtained from Fish Lake, as required by PART C item 1.
4. The total water used in 2020, according to the Annual Report was 16,439.900 m³.
5. From Fish Lake the water is pumped in to a temporary filtration system called a Filterboxx then put in water trucks and delivered to the community.
6. Water use number are calculated from truck fill totals.
7. Sewage is directed to the Sewage Lagoon from truck. Prior to discharge from the Lagoon samples are collected at WHA-3 and provided to the Inspector. Discharge from the Lagoon commenced on July 30th 2021.
8. Samples were collected at WHA-3 and provided to the Inspector in 2020 and 2021.
9. The segregated and collection of hazardous waste (e.g.: oil, batteries, and propane) requires improvement.
10. The Hamlet has been working on segregating bulk items within the Landfill.

[Click here to enter text.](#)

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

- All outstanding Annual reports were submitted as requested by the Inspector in the 2020 inspection report [2020-KIV05-AS] 3BM-WHA1520.
- During the writing of this report a new water licence was issued to the Hamlet of Whale Cove, 3BM-WHA2126.
- The Hamlet will submit a letter, as to how they will begin the collection and storage of hazardous waste for 2021/2022 season. This letter will be submit to the Inspector by November 29th, 2021 as a commitment to improving these efforts.

Licensee or Representative	Inspector's Name
Brain Fleming	Atuat Shouldice
Signature	Signature
	Sent Electronically
Date	Date
	October 26 th , 2021

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



Date:	Authorization Number:	Camera/Model:	Inspector:
August 24th, 2021	3BM-WHA2126	Samsung S9	RMO Shouldice
Photo #:		Location:	
1		Landfill	



Description:

Road dividing domestic waste (right) and bulk waste (left), image facing North-West.



Date:	Authorization Number:	Camera/Model:	Inspector:
August 24th, 2021	3BM-WHA2126	Samsung S9	RMO Shouldice
Photo #:		Location:	
2		Landfill	



Description:

Contact water pond down hill of bulk fuel storage, image facing West.



Date: August 24th, 2021	Authorization Number: 3BM-WHA2126	Camera/Model: Samsung S9	Inspector: RMO Shouldice
Photo #: 3		Location: Landfill	
			
Description: Berm in image is the community Landfarm (left)			



Date: August 24th, 2021	Authorization Number: 3BM-WHA2126	Camera/Model: Samsung S9	Inspector: RMO Shouldice
Photo # 4		Location: Sewage discharge	
			
Description: Sewage Lagoon			



Date: August 24th, 2021	Authorization Number: 3BM-WHA2126	Camera/Model: Samsung S9	Inspector: RMO Shouldice
Photo #: 5		Location: N/A	
			
Description: Water fill station			