ANNUAL REPORT
FOR THE HAMLET OF WHALE COVE

YEAR BEING REPORTED: 2018

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water License # 3BM-WHA1520 issued to the Hamlet of Whale Cove.

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

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

Month Reported	Quantity of Water Obtained from all sources (m^3)	Quantity of Sewage Waste Discharged (Estimated)
January	1,544.847	Same
February	1,125.367	Same
March	1,414.145	Same
April	1,390.215	Same
May	1,331.335	Same
June	1,367.425	Same
July	1,508.711	Same
August	1,487.453	Same
September	1,334.654	Same
October	1,585.988	Same
November	1,525.914	Same
December	1,174.351	Same
ANNUAL TOTAL	**16,790.405**	**16,790.405**

Note: There is no meter existing at the Sewage discharge pipe. Therefore the monthly discharge volume is considered as equal to the monthly water consumption volume.

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

-none

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

- No spills documented.

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

- No abandonment and restoration work took place in 2018.

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

- none

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

- No details requested.

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

- No updates or revisions to the Operation and Maintenance Plans in 2018.

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- The Hamlet is working with the Water Compliance Working Group to implement the Solid Waste Workplan goals.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

-The INAC Inspection took place on July 11th, 2018. A copy of the inspection report can be found in Appendix G.

Appendix A: WHA-3 Effluent Quality Limits – 1 page
Appendix B: Weekly Inspections at Monitoring Program Stations - 1 page
Appendix C: Certificate of Analysis June 20, 2018 – 20 pages
Appendix D: Certificate of Analysis July 12, 2018 – 23 pages
Appendix E: Hazardous Materials Spill Database, Whale Cove 2018 – 1 page
Appendix F: Whale Cove 2018 Sampling Summary – 3 pages
Appendix G: INAC Inspection Report - 2 pages

Appendix A

2018 Whale Cove Monitoring Stations and Sampling Parameters for Water License No. 3BM-WHA

Part D, Item 4; WHA-3 Effluent Quality Limits

Parameter	Maximum concentration of any grab sample	WHA-3	
		20-Jun-18	12-Jul-18
BOD_5	120 mg/L	41	27.2
Total Suspended Solids	180 mg/L	32.4	13.6
Fecal Coliforms	$1x10^6$ CFU/100mL	24200	8160
Oil + Grease	no visible sheen	9.1	5.0
pH	between 6 and 9	7.20	7.51

Appendix B

Nunavut Water Board Licence No. 3BM-WHA1520

Whale Cove, NU

Part H, Item 5: Weekly Inspections at Monitoring Program Stations, May to August

Week	Starting Date	WHA-2 Water Present (check)			WHA-3 Water Present (check)			WHA-4 Water Present (check)			Checked By
		Yes	No	Frozen	Yes	No	Frozen	Yes	No	Frozen	
1	30-Apr-18			✓			✓			✓	PV
2	07-May-18			✓			✓			✓	PV
3	14-May-18			✓			✓			✓	PV
4	21-May-18			✓			✓			✓	PV
5	28-May-18			✓			✓			✓	PV
6	04-Jun-18			✓			✓			✓	PV
7	11-Jun-18										
8	18-Jun-18										
9	25-Jun-18										
10	02-Jul-18										
11	09-Jul-18										
12	16-Jul-18										
13	23-Jul-18										
14	30-Jul-18										
15	06-Aug-18										
16	13-Aug-18										
17	20-Aug-18										
18	27-Aug-18										

Monitoring Program Station Locations:

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

* Fax Sheets Weekly to Connor Faulkner at CGS- Rankin Inlet. Fax: (867) 645-8143

Appendix C

Hamlet of Whale Cove
ATTN: IAN COPLAND
PO Box 120
Whale Cove NU X0C 0J0

Date Received: 22-JUN-18
Report Date: 16-JUL-18 11:29 (MT)
Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L2117324

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2117324-1 WHA-2							
Sampled By: CLIENT on 20-JUN-18 @ 09:05							
Matrix: WASTE WATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		26-JUN-18	R4098476
Toluene	0.0025		0.0010	mg/L		26-JUN-18	R4098476
Ethyl benzene	<0.00050		0.00050	mg/L		26-JUN-18	R4098476
o-Xylene	0.00142		0.00050	mg/L		26-JUN-18	R4098476
m+p-Xylenes	0.00111		0.00040	mg/L		26-JUN-18	R4098476
F1 (C6-C10)	<0.10		0.10	mg/L		26-JUN-18	R4098476
Surrogate: 4-Bromofluorobenzene (SS)	90.0		70-130	%		26-JUN-18	R4098476
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	25-JUN-18	26-JUN-18	R4098084
F3 (C16-C34)	<0.25		0.25	mg/L	25-JUN-18	26-JUN-18	R4098084
F4 (C34-C50)	<0.25		0.25	mg/L	25-JUN-18	26-JUN-18	R4098084
Surrogate: 2-Bromobenzotrifluoride	95.4		60-140	%	25-JUN-18	26-JUN-18	R4098084
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		04-JUL-18	
F2-Naphth	<0.10		0.10	mg/L		04-JUL-18	
F3-PAH	<0.25		0.25	mg/L		04-JUL-18	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		04-JUL-18	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.00253		0.00064	mg/L		28-JUN-18	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.000085		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
2-Methyl Naphthalene	0.000077		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
Acenaphthene	<0.000020		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
Acenaphthylene	0.000032		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
Anthracene	<0.000010		0.000010	mg/L	25-JUN-18	29-JUN-18	R4098266
Acridine	<0.000020		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
Benzo(a)anthracene	<0.000020	DLM	0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
Benzo(a)pyrene	<0.000010	DLM	0.000010	mg/L	25-JUN-18	29-JUN-18	R4098266
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	25-JUN-18	29-JUN-18	R4098266
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	25-JUN-18	29-JUN-18	R4098266
Chrysene	<0.000020		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	25-JUN-18	29-JUN-18	R4098266
Fluoranthene	<0.000020		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
Fluorene	0.000024		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	25-JUN-18	29-JUN-18	R4098266
Naphthalene	0.000311		0.000050	mg/L	25-JUN-18	29-JUN-18	R4098266
Phenanthrene	<0.000050		0.000050	mg/L	25-JUN-18	29-JUN-18	R4098266
Pyrene	<0.000010		0.000010	mg/L	25-JUN-18	29-JUN-18	R4098266
Quinoline	0.000161		0.000020	mg/L	25-JUN-18	29-JUN-18	R4098266
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	25-JUN-18	29-JUN-18	R4098266
Surrogate: Acenaphthene d10	76.6		40-130	%	25-JUN-18	29-JUN-18	R4098266
Surrogate: Acridine d9	87.4		40-130	%	25-JUN-18	29-JUN-18	R4098266
Surrogate: Chrysene d12	90.0		40-130	%	25-JUN-18	29-JUN-18	R4098266
Surrogate: Naphthalene d8	79.2		40-130	%	25-JUN-18	29-JUN-18	R4098266
Surrogate: Phenanthrene d10	87.6		40-130	%	25-JUN-18	29-JUN-18	R4098266
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	121		1.2	mg/L		27-JUN-18	
Alkalinity, Carbonate							

* 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
L2117324-1 WHA-2							
Sampled By: CLIENT on 20-JUN-18 @ 09:05							
Matrix: WASTE WATER							
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		27-JUN-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		27-JUN-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	99.3		1.0	mg/L		26-JUN-18	R4097988
Ammonia by colour							
Ammonia, Total (as N)	0.152		0.010	mg/L		27-JUN-18	R4099627
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<6.0		6.0	mg/L		22-JUN-18	R4103167
Carbonaceous BOD							
BOD Carbonaceous	<6.0		6.0	mg/L		22-JUN-18	R4103167
Chloride in Water by IC							
Chloride (Cl)	41.0		0.50	mg/L		22-JUN-18	R4096492
Conductivity							
Conductivity	409		1.0	umhos/cm		26-JUN-18	R4097988
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	90	PEHR	10	MPN/100mL		22-JUN-18	R4095712
Hardness Calculated							
Hardness (as CaCO3)	135	HTC	0.20	mg/L		28-JUN-18	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	25-JUN-18	26-JUN-18	R4098463
Nitrate in Water by IC							
Nitrate (as N)	0.078		0.020	mg/L		22-JUN-18	R4096492
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.088		0.070	mg/L		25-JUN-18	
Nitrite in Water by IC							
Nitrite (as N)	0.010		0.010	mg/L		22-JUN-18	R4096492
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		03-JUL-18	R4112496
Phenol (4AAP)							
Phenols (4AAP)	0.0037		0.0010	mg/L		27-JUN-18	R4101052
Phosphorus, Total							
Phosphorus (P)-Total	0.243		0.0010	mg/L		29-JUN-18	R4108927
Sulfate in Water by IC							
Sulfate (SO4)	42.1		0.30	mg/L		22-JUN-18	R4096492
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0803		0.0030	mg/L	27-JUN-18	27-JUN-18	R4098959
Arsenic (As)-Total	0.00158		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Cadmium (Cd)-Total	0.000102		0.0000050	mg/L	27-JUN-18	27-JUN-18	R4098959
Calcium (Ca)-Total	45.6		0.050	mg/L	27-JUN-18	27-JUN-18	R4098959
Chromium (Cr)-Total	0.00157		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Cobalt (Co)-Total	0.00106		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Copper (Cu)-Total	0.0110		0.00050	mg/L	27-JUN-18	27-JUN-18	R4098959
Iron (Fe)-Total	0.784		0.010	mg/L	27-JUN-18	27-JUN-18	R4098959
Lead (Pb)-Total	0.00104		0.000050	mg/L	27-JUN-18	27-JUN-18	R4098959
Magnesium (Mg)-Total	5.16		0.0050	mg/L	27-JUN-18	27-JUN-18	R4098959
Manganese (Mn)-Total	0.146		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Nickel (Ni)-Total	0.00395		0.00050	mg/L	27-JUN-18	27-JUN-18	R4098959
Potassium (K)-Total	6.90		0.050	mg/L	27-JUN-18	27-JUN-18	R4098959
Sodium (Na)-Total	25.0		0.050	mg/L	27-JUN-18	27-JUN-18	R4098959
Zinc (Zn)-Total	0.0518		0.0030	mg/L	27-JUN-18	27-JUN-18	R4098959
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
L2117324-1 WHA-2							
Sampled By: CLIENT on 20-JUN-18 @ 09:05							
Matrix: WASTE WATER							
Total Organic Carbon by Combustion							
Total Organic Carbon	12.2		0.50	mg/L		13-JUL-18	R4126236
Total Suspended Solids							
Total Suspended Solids	5.6		2.0	mg/L		27-JUN-18	R4100099
pH							
pH	7.19		0.10	pH units		26-JUN-18	R4097988
L2117324-2 WHA-3							
Sampled By: CLIENT on 20-JUN-18 @ 09:20							
Matrix: WASTE WATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	345		1.2	mg/L		27-JUN-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		27-JUN-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		27-JUN-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	283		1.0	mg/L		26-JUN-18	R4097988
Ammonia by colour							
Ammonia, Total (as N)	41.4		1.0	mg/L		27-JUN-18	R4099627
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	41		20	mg/L		22-JUN-18	R4103167
Carbonaceous BOD							
BOD Carbonaceous	<20		20	mg/L		22-JUN-18	R4103167
Note: Multiple dilutions ran, outside of dilution range.							
Chloride in Water by IC							
Chloride (Cl)	92.9		1.0	mg/L		22-JUN-18	R4096492
Conductivity							
Conductivity	919		1.0	umhos/cm		26-JUN-18	R4097988
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	>24200	PEHR	10	MPN/100mL		22-JUN-18	R4095712
Hardness Calculated							
Hardness (as CaCO3)	134	HTC	0.20	mg/L		28-JUN-18	
Mercury Total							
Mercury (Hg)-Total	0.0000073		0.0000050	mg/L	25-JUN-18	26-JUN-18	R4098463
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		22-JUN-18	R4096492
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		25-JUN-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		22-JUN-18	R4096492
Oil & Grease - Gravimetric							
Oil and Grease	9.1		5.0	mg/L		03-JUL-18	R4112496
Phenol (4AAP)							
Phenols (4AAP)	0.0669		0.0010	mg/L		27-JUN-18	R4101052
Phosphorus, Total							
Phosphorus (P)-Total	7.19		0.010	mg/L		29-JUN-18	R4108927
Sulfate in Water by IC							
Sulfate (SO4)	18.4		0.60	mg/L		22-JUN-18	R4096492
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.102		0.0030	mg/L	27-JUN-18	27-JUN-18	R4098959

* 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
L2117324-2 WHA-3							
Sampled By: CLIENT on 20-JUN-18 @ 09:20							
Matrix: WASTE WATER							
Total Metals in Water by CRC ICPMS							
Arsenic (As)-Total	0.00129		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Cadmium (Cd)-Total	0.0000321		0.0000050	mg/L	27-JUN-18	27-JUN-18	R4098959
Calcium (Ca)-Total	39.8		0.050	mg/L	27-JUN-18	27-JUN-18	R4098959
Chromium (Cr)-Total	0.00046		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Cobalt (Co)-Total	0.00087		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Copper (Cu)-Total	0.0522		0.00050	mg/L	27-JUN-18	27-JUN-18	R4098959
Iron (Fe)-Total	0.279		0.010	mg/L	27-JUN-18	27-JUN-18	R4098959
Lead (Pb)-Total	0.000609		0.000050	mg/L	27-JUN-18	27-JUN-18	R4098959
Magnesium (Mg)-Total	8.54		0.0050	mg/L	27-JUN-18	27-JUN-18	R4098959
Manganese (Mn)-Total	0.105		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Nickel (Ni)-Total	0.00315		0.00050	mg/L	27-JUN-18	27-JUN-18	R4098959
Potassium (K)-Total	20.4		0.050	mg/L	27-JUN-18	27-JUN-18	R4098959
Sodium (Na)-Total	67.2		0.050	mg/L	27-JUN-18	27-JUN-18	R4098959
Zinc (Zn)-Total	0.0337		0.0030	mg/L	27-JUN-18	27-JUN-18	R4098959
Total Organic Carbon by Combustion							
Total Organic Carbon	48.3		0.50	mg/L		13-JUL-18	R4126236
Total Suspended Solids							
Total Suspended Solids	32.4		6.0	mg/L		27-JUN-18	R4100099
pH							
pH	7.20		0.10	pH units		26-JUN-18	R4097988
L2117324-3 WHA-4							
Sampled By: CLIENT on 20-JUN-18 @ 09:45							
Matrix: WASTE WATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	158		1.2	mg/L		27-JUN-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		27-JUN-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		27-JUN-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	130		1.0	mg/L		26-JUN-18	R4097988
Ammonia by colour							
Ammonia, Total (as N)	1.17		0.10	mg/L		27-JUN-18	R4099627
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	8.7		2.0	mg/L		22-JUN-18	R4103167
Carbonaceous BOD							
BOD Carbonaceous	3.9		2.0	mg/L		22-JUN-18	R4103167
Chloride in Water by IC							
Chloride (Cl)	55.0		0.50	mg/L		22-JUN-18	R4096492
Conductivity							
Conductivity	500		1.0	umhos/cm		26-JUN-18	R4097988
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10	PEHR	10	MPN/100mL		22-JUN-18	R4095712
Hardness Calculated							
Hardness (as CaCO3)	140	HTC	0.20	mg/L		28-JUN-18	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	25-JUN-18	26-JUN-18	R4098047
Nitrate in Water by IC							
Nitrate (as N)	0.073		0.020	mg/L		22-JUN-18	R4096492
Nitrate+Nitrite							

* 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
L2117324-3 WHA-4							
Sampled By: CLIENT on 20-JUN-18 @ 09:45							
Matrix: WASTE WATER							
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.073		0.070	mg/L		25-JUN-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		22-JUN-18	R4096492
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		03-JUL-18	R4112496
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		27-JUN-18	R4101052
Phosphorus, Total							
Phosphorus (P)-Total	2.29		0.010	mg/L		29-JUN-18	R4108927
Sulfate in Water by IC							
Sulfate (SO4)	37.0		0.30	mg/L		22-JUN-18	R4096492
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0661		0.0030	mg/L	27-JUN-18	27-JUN-18	R4098959
Arsenic (As)-Total	0.00435		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Cadmium (Cd)-Total	0.0000144		0.0000050	mg/L	27-JUN-18	27-JUN-18	R4098959
Calcium (Ca)-Total	41.7		0.050	mg/L	27-JUN-18	27-JUN-18	R4098959
Chromium (Cr)-Total	0.00017		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Cobalt (Co)-Total	0.00066		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Copper (Cu)-Total	0.00262		0.00050	mg/L	27-JUN-18	27-JUN-18	R4098959
Iron (Fe)-Total	0.813		0.010	mg/L	27-JUN-18	27-JUN-18	R4098959
Lead (Pb)-Total	0.000138		0.000050	mg/L	27-JUN-18	27-JUN-18	R4098959
Magnesium (Mg)-Total	8.60		0.0050	mg/L	27-JUN-18	27-JUN-18	R4098959
Manganese (Mn)-Total	0.336		0.00010	mg/L	27-JUN-18	27-JUN-18	R4098959
Nickel (Ni)-Total	0.00275		0.00050	mg/L	27-JUN-18	27-JUN-18	R4098959
Potassium (K)-Total	12.1		0.050	mg/L	27-JUN-18	27-JUN-18	R4098959
Sodium (Na)-Total	41.5		0.050	mg/L	27-JUN-18	27-JUN-18	R4098959
Zinc (Zn)-Total	0.0050		0.0030	mg/L	27-JUN-18	27-JUN-18	R4098959
Total Organic Carbon by Combustion							
Total Organic Carbon	13.3		0.50	mg/L		13-JUL-18	R4126236
Total Suspended Solids							
Total Suspended Solids	12.4		2.0	mg/L		27-JUN-18	R4100099
pH							
pH	7.39		0.10	pH units		26-JUN-18	R4097988

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
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 transfered into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

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

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

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

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

EC-WP	Water	Conductivity	APHA 2510B

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

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

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

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

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

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

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

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

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

Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°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-CVAF-WP	Water	Mercury Total	EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (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-L-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 Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA SW 846/8270-GC/MS

Water is spiked with a surrogate spike mix and extracted using solvent extraction techniques. Analysis is performed by GC/MS in the selected ion monitoring (SIM) mode.

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		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 aquesous 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:

GLOSSARY OF REPORT TERMS

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

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

Quality Control Report

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

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP	**Water**							
Batch R4097988								
WG2807950-4 LCS								
Alkalinity, Total (as CaCO3)			101.3		%		85-115	26-JUN-18
WG2807950-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	26-JUN-18
BOD-CBOD-WP	**Water**							
Batch R4103167								
WG2804209-17 LCS								
BOD Carbonaceous			86.5		%		85-115	22-JUN-18
WG2804209-16 MB								
BOD Carbonaceous			<2.0		mg/L		2	22-JUN-18
BOD-WP	**Water**							
Batch R4103167								
WG2804209-17 LCS								
Biochemical Oxygen Demand			93.3		%		85-115	22-JUN-18
WG2804209-16 MB								
Biochemical Oxygen Demand			<2.0		mg/L		2	22-JUN-18
BTEXS+F1-HSMS-WP	**Water**							
Batch R4098476								
WG2808032-2 LCS								
Benzene			81.7		%		70-130	26-JUN-18
Toluene			93.2		%		70-130	26-JUN-18
Ethyl benzene			96.4		%		70-130	26-JUN-18
o-Xylene			100.8		%		70-130	26-JUN-18
m+p-Xylenes			102.3		%		70-130	26-JUN-18
WG2808032-3 LCS								
F1 (C6-C10)			122.8		%		70-130	26-JUN-18
WG2808032-1 MB								
Benzene			<0.00050		mg/L		0.0005	26-JUN-18
Toluene			<0.0010		mg/L		0.001	26-JUN-18
Ethyl benzene			<0.00050		mg/L		0.0005	26-JUN-18
o-Xylene			<0.00030		mg/L		0.0003	26-JUN-18
m+p-Xylenes			<0.00040		mg/L		0.0004	26-JUN-18
F1 (C6-C10)			<0.10		mg/L		0.1	26-JUN-18
Surrogate: 4-Bromofluorobenzene (SS)			88.0		%		70-130	26-JUN-18
C-TOC-HTC-WP	**Water**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-TOC-HTC-WP	**Water**							
Batch R4126236								
WG2823305-2 LCS								
Total Organic Carbon			98.1		%		80-120	13-JUL-18
WG2823305-1 MB								
Total Organic Carbon			<0.50		mg/L		0.5	13-JUL-18
CL-IC-N-WP	**Water**							
Batch R4096492								
WG2804557-11 DUP		**L2117324-3**						
Chloride (Cl)		55.0	54.9		mg/L	0.3	20	22-JUN-18
WG2804557-10 LCS								
Chloride (Cl)			102.2		%		90-110	22-JUN-18
WG2804557-9 MB								
Chloride (Cl)			<0.50		mg/L		0.5	22-JUN-18
WG2804557-12 MS		**L2117324-3**						
Chloride (Cl)			99.7		%		75-125	22-JUN-18
EC-WP	**Water**							
Batch R4097988								
WG2807950-3 LCS								
Conductivity			97.8		%		90-110	26-JUN-18
WG2807950-1 MB								
Conductivity			<1.0		umhos/cm		1	26-JUN-18
F2-F4-FID-WP	**Water**							
Batch R4098084								
WG2806374-2 LCS								
F2 (C10-C16)			98		%		70-130	26-JUN-18
F3 (C16-C34)			95		%		70-130	26-JUN-18
F4 (C34-C50)			116		%		70-130	26-JUN-18
WG2806374-1 MB								
F2 (C10-C16)			<0.10		mg/L		0.1	26-JUN-18
F3 (C16-C34)			<0.25		mg/L		0.25	26-JUN-18
F4 (C34-C50)			<0.25		mg/L		0.25	26-JUN-18
Surrogate: 2-Bromobenzotrifluoride			93.9		%		60-140	26-JUN-18
FC10-QT97-WP	**Water**							
Batch R4095712								
WG2804696-1 MB								
Fecal Coliforms			<1		MPN/100mL		1	22-JUN-18
HG-T-CVAF-WP	**Water**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAF-WP	**Water**							
Batch R4098047								
WG2808053-3 DUP		**L2117324-3**						
Mercury (Hg)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	26-JUN-18
WG2808053-2 LCS								
Mercury (Hg)-Total			102.3		%		80-120	26-JUN-18
WG2808053-1 MB								
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	26-JUN-18
Batch R4098463								
WG2808392-2 LCS								
Mercury (Hg)-Total			99.1		%		80-120	26-JUN-18
WG2808392-1 MB								
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	26-JUN-18
MET-T-CCMS-WP	**Water**							
Batch R4098959								
WG2808482-2 LCS								
Aluminum (Al)-Total			106.6		%		80-120	27-JUN-18
Arsenic (As)-Total			104.9		%		80-120	27-JUN-18
Cadmium (Cd)-Total			106.9		%		80-120	27-JUN-18
Calcium (Ca)-Total			103.9		%		80-120	27-JUN-18
Chromium (Cr)-Total			104.6		%		80-120	27-JUN-18
Cobalt (Co)-Total			104.6		%		80-120	27-JUN-18
Copper (Cu)-Total			104.1		%		80-120	27-JUN-18
Iron (Fe)-Total			103.9		%		80-120	27-JUN-18
Lead (Pb)-Total			108.5		%		80-120	27-JUN-18
Magnesium (Mg)-Total			104.7		%		80-120	27-JUN-18
Manganese (Mn)-Total			106.0		%		80-120	27-JUN-18
Nickel (Ni)-Total			105.3		%		80-120	27-JUN-18
Potassium (K)-Total			106.0		%		80-120	27-JUN-18
Sodium (Na)-Total			103.7		%		80-120	27-JUN-18
Zinc (Zn)-Total			101.8		%		80-120	27-JUN-18
WG2808482-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	27-JUN-18
Arsenic (As)-Total			<0.00010		mg/L		0.0001	27-JUN-18
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	27-JUN-18
Calcium (Ca)-Total			<0.050		mg/L		0.05	27-JUN-18
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	27-JUN-18
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	27-JUN-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP	**Water**							
Batch R4098959								
WG2808482-1 MB								
Copper (Cu)-Total			<0.00050		mg/L		0.0005	27-JUN-18
Iron (Fe)-Total			<0.010		mg/L		0.01	27-JUN-18
Lead (Pb)-Total			<0.000050		mg/L		0.00005	27-JUN-18
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	27-JUN-18
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	27-JUN-18
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	27-JUN-18
Potassium (K)-Total			<0.050		mg/L		0.05	27-JUN-18
Sodium (Na)-Total			<0.050		mg/L		0.05	27-JUN-18
Zinc (Zn)-Total			<0.0030		mg/L		0.003	27-JUN-18
NH3-COL-WP	**Water**							
Batch R4099627								
WG2809138-7 DUP		**L2117324-3**						
Ammonia, Total (as N)		1.17	1.15		mg/L	1.5	20	27-JUN-18
WG2809138-6 LCS								
Ammonia, Total (as N)			99.0		%		85-115	27-JUN-18
WG2809138-5 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	27-JUN-18
NO2-IC-N-WP	**Water**							
Batch R4096492								
WG2804557-11 DUP		**L2117324-3**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	22-JUN-18
WG2804557-10 LCS								
Nitrite (as N)			103.2		%		90-110	22-JUN-18
WG2804557-9 MB								
Nitrite (as N)			<0.010		mg/L		0.01	22-JUN-18
WG2804557-12 MS		**L2117324-3**						
Nitrite (as N)			101.3		%		75-125	22-JUN-18
NO3-IC-N-WP	**Water**							
Batch R4096492								
WG2804557-11 DUP		**L2117324-3**						
Nitrate (as N)		0.073	0.072		mg/L	0.8	20	22-JUN-18
WG2804557-10 LCS								
Nitrate (as N)			101.2		%		90-110	22-JUN-18
WG2804557-9 MB								
Nitrate (as N)			<0.020		mg/L		0.02	22-JUN-18
WG2804557-12 MS		**L2117324-3**						

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-N-WP	**Water**							
Batch R4096492								
WG2804557-12 MS		**L2117324-3**						
Nitrate (as N)			98.7		%		75-125	22-JUN-18
OG-GRAV-WP	**Water**							
Batch R4112496								
WG2812422-2 LCS								
Oil and Grease			91.6		%		70-130	03-JUL-18
WG2812422-1 MB								
Oil and Grease			<5.0		mg/L		5	03-JUL-18
P-T-L-COL-WP	**Water**							
Batch R4108927								
WG2810407-15 DUP		**L2117324-3**						
Phosphorus (P)-Total		2.29	2.24		mg/L	2.1	20	29-JUN-18
WG2810407-10 LCS								
Phosphorus (P)-Total			97.2		%		80-120	29-JUN-18
WG2810407-14 LCS								
Phosphorus (P)-Total			98.4		%		80-120	29-JUN-18
WG2810407-13 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	29-JUN-18
WG2810407-9 MB								
Phosphorus (P)-Total			0.0012	B	mg/L		0.001	29-JUN-18
PAH,PANH-WP	**Water**							
Batch R4098266								
WG2806983-2 LCS								
1-Methyl Naphthalene			126.3		%		60-130	26-JUN-18
2-Methyl Naphthalene			115.4		%		60-130	26-JUN-18
Acenaphthene			120.4		%		60-130	26-JUN-18
Acenaphthylene			112.3		%		60-130	26-JUN-18
Anthracene			111.6		%		60-130	26-JUN-18
Acridine			107.8		%		60-130	26-JUN-18
Benzo(a)anthracene			110.7		%		60-130	26-JUN-18
Benzo(a)pyrene			99.5		%		60-130	26-JUN-18
Benzo(b&j)fluoranthene			100.8		%		60-130	26-JUN-18
Benzo(g,h,i)perylene			108.3		%		60-130	26-JUN-18
Benzo(k)fluoranthene			117.8		%		60-130	26-JUN-18
Chrysene			117.8		%		60-130	26-JUN-18
Dibenzo(a,h)anthracene			125.4		%		60-130	26-JUN-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP	**Water**							
Batch R4098266								
WG2806983-2 LCS								
Fluoranthene			120.5		%		60-130	26-JUN-18
Fluorene			117.7		%		60-130	26-JUN-18
Indeno(1,2,3-cd)pyrene			103.7		%		60-130	26-JUN-18
Naphthalene			122.1		%		50-130	26-JUN-18
Phenanthrene			121.8		%		60-130	26-JUN-18
Pyrene			120.8		%		60-130	26-JUN-18
Quinoline			121.0		%		60-130	26-JUN-18
WG2806983-1 MB								
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	26-JUN-18
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	26-JUN-18
Acenaphthene			<0.000020		mg/L		0.00002	26-JUN-18
Acenaphthylene			<0.000020		mg/L		0.00002	26-JUN-18
Anthracene			<0.000010		mg/L		0.00001	26-JUN-18
Acridine			<0.000020		mg/L		0.00002	26-JUN-18
Benzo(a)anthracene			<0.000010		mg/L		0.00001	26-JUN-18
Benzo(a)pyrene			<0.000005		mg/L		0.000005	26-JUN-18
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	26-JUN-18
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	26-JUN-18
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	26-JUN-18
Chrysene			<0.000020		mg/L		0.00002	26-JUN-18
Dibenzo(a,h)anthracene			<0.000005		mg/L		0.000005	26-JUN-18
Fluoranthene			<0.000020		mg/L		0.00002	26-JUN-18
Fluorene			<0.000020		mg/L		0.00002	26-JUN-18
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	26-JUN-18
Naphthalene			<0.000050		mg/L		0.00005	26-JUN-18
Phenanthrene			<0.000050		mg/L		0.00005	26-JUN-18
Pyrene			<0.000010		mg/L		0.00001	26-JUN-18
Quinoline			<0.000020		mg/L		0.00002	26-JUN-18
Surrogate: Acenaphthene d10			81.1		%		40-130	26-JUN-18
Surrogate: Acridine d9			77.2		%		40-130	26-JUN-18
Surrogate: Chrysene d12			87.9		%		40-130	26-JUN-18
Surrogate: Naphthalene d8			81.6		%		40-130	26-JUN-18
Surrogate: Phenanthrene d10			82.2		%		40-130	26-JUN-18
PH-WP	**Water**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WP	**Water**							
Batch R4097988								
WG2807950-2 LCS								
pH			7.37		pH units		7.3-7.5	26-JUN-18
PHENOLS-4AAP-WT	**Water**							
Batch R4101052								
WG2808702-27 DUP		**L2117324-3**						
Phenols (4AAP)		<0.0010	0.0010	RPD-NA	mg/L	N/A	20	27-JUN-18
WG2808702-10 LCS								
Phenols (4AAP)			97.7		%		85-115	27-JUN-18
WG2808702-26 LCS								
Phenols (4AAP)			99.8		%		85-115	27-JUN-18
WG2808702-25 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	27-JUN-18
WG2808702-9 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	27-JUN-18
WG2808702-28 MS		**L2117324-3**						
Phenols (4AAP)			98.2		%		75-125	27-JUN-18
SO4-IC-N-WP	**Water**							
Batch R4096492								
WG2804557-11 DUP		**L2117324-3**						
Sulfate (SO4)		37.0	37.0		mg/L	0.2	20	22-JUN-18
WG2804557-10 LCS								
Sulfate (SO4)			103.0		%		90-110	22-JUN-18
WG2804557-9 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	22-JUN-18
WG2804557-12 MS		**L2117324-3**						
Sulfate (SO4)			99.1		%		75-125	22-JUN-18
SOLIDS-TOTSUS-WP	**Water**							
Batch R4100099								
WG2807508-14 LCS								
Total Suspended Solids			95.3		%		85-115	27-JUN-18
WG2807508-13 MB								
Total Suspended Solids			<2.0		mg/L		2	27-JUN-18

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
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	1	20-JUN-18 09:05	26-JUN-18 12:00	0.25	147	hours	EHTR-FM
	2	20-JUN-18 09:20	26-JUN-18 12:00	0.25	147	hours	EHTR-FM
	3	20-JUN-18 09:45	26-JUN-18 12:00	0.25	146	hours	EHTR-FM
Bacteriological Tests							
Fecal coliforms, 1:10 dilution by QT97							
	1	20-JUN-18 09:05	22-JUN-18 15:50	30	55	hours	EHTR
	2	20-JUN-18 09:20	22-JUN-18 15:50	30	54	hours	EHTR
	3	20-JUN-18 09:45	22-JUN-18 15:50	30	54	hours	EHTR

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 L2117324 were received on 22-JUN-18 12:15.

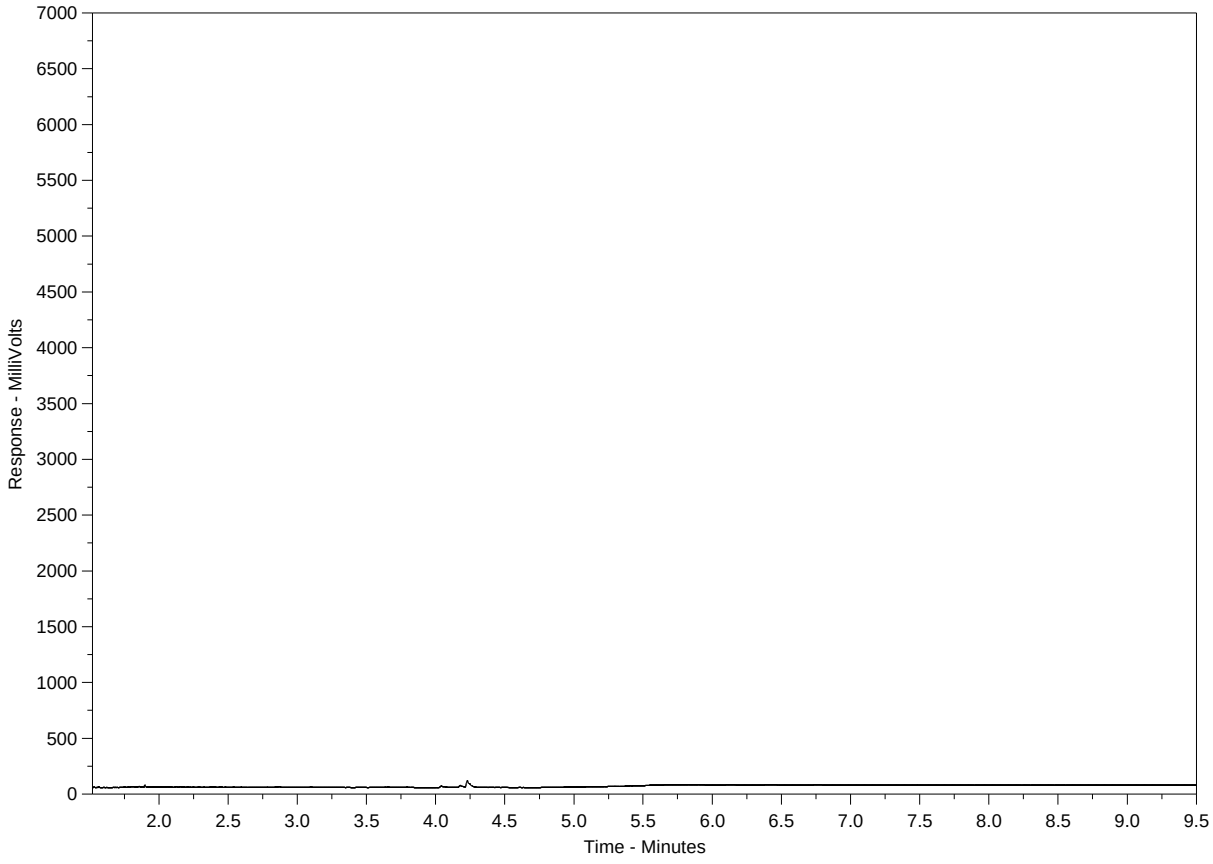
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where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

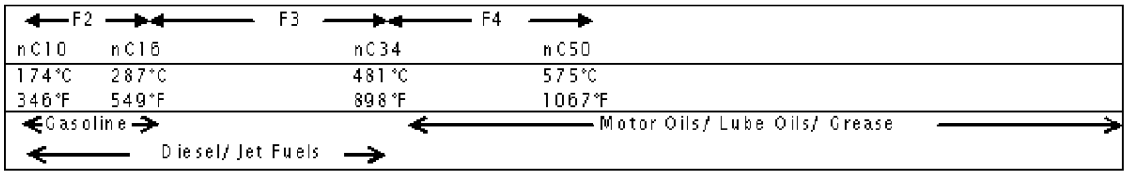
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2117324-1
Client Sample ID: WHA-2





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 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.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2117324-COFC

COC Number: 14 - 450490

Page 1 of 1

Report To		Report Format / D		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	HAMLET OF WHALE COVE.	Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3pm)
Contact:	IAN COPLAND.	Quality Control (QC) Report with Report	☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:	PO Box 120, WHALE COVE, NU X0C 0J0.	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:	867-896-9961 (EXT 255).	Email 1 or Fax	SAO@whalecove.ca	Specify Date Required for E2,E or P:
		Email 2	cfaulkner@gov.nu.ca	

Invoice To		Invoice Distribution	
	Same as Report To ☑ Yes ☐ No	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
	Copy of Invoice with Report ☑ Yes ☐ No	Email 1 or Fax	SAO@whalecove.ca
Company:		Email 2	
Contact:			

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	W10623	Approver ID:	Cost Center:
Job #:		GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler: Ian

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD	Routine	Metals	Nutrients	Bacteria	Oil + Grease x2	Phenols	BTX-F1 x3	F2-F4 x2	PAH x2	Mercury			Number of Containers
	WHA-2	20-06-18	9:05 AM		✓	✓	P	P	P	P	P	P	P	P	P			16
	WHA-3	20-06-18	9:20 AM		✓	✓	P	P	P	P	P				P			9
	WHA-4	20-06-18	9:45 AM		✓	✓	P	P	P	P	P				P			9

Drinking Water (DW) Samples' (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☒ No	Nunavut - WW - GRPI
Are samples for human drinking water use? ☐ Yes ☒ No	BTX - F1 - F4, PAH

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐			SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐		Custody seal intact	Yes ☐	No ☐	
Cooling Initiated	☐						

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
					6.0

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	06/20/18	10:10 AM		22/6/18	1215			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0025e v05 Front/03 October 2013

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

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

Appendix D

Hamlet of Whale Cove
ATTN: IAN COPLAND
PO Box 120
Whale Cove NU X0C 0J0

Date Received: 13-JUL-18
Report Date: 24-JUL-18 10:39 (MT)
Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L2128984

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2128984-1 WHA-2							
Sampled By: CLIENT on 12-JUL-18 @ 09:10							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		17-JUL-18	R4131791
Toluene	<0.0010		0.0010	mg/L		17-JUL-18	R4131791
Ethyl benzene	<0.00050		0.00050	mg/L		17-JUL-18	R4131791
o-Xylene	<0.00050		0.00050	mg/L		17-JUL-18	R4131791
m+p-Xylenes	<0.00040		0.00040	mg/L		17-JUL-18	R4131791
F1 (C6-C10)	<0.10		0.10	mg/L		17-JUL-18	R4131791
Surrogate: 4-Bromofluorobenzene (SS)	95.9		70-130	%		17-JUL-18	R4131791
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	16-JUL-18	17-JUL-18	R4130550
F3 (C16-C34)	0.28		0.25	mg/L	16-JUL-18	17-JUL-18	R4130550
F4 (C34-C50)	<0.25		0.25	mg/L	16-JUL-18	17-JUL-18	R4130550
Surrogate: 2-Bromobenzotrifluoride	82.9		60-140	%	16-JUL-18	17-JUL-18	R4130550
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		20-JUL-18	
F2-Naphth	<0.10		0.10	mg/L		20-JUL-18	
F3-PAH	0.28		0.25	mg/L		20-JUL-18	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		20-JUL-18	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		18-JUL-18	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.000027		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
2-Methyl Naphthalene	0.000024		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Acenaphthene	0.000052		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Acenaphthylene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Anthracene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Acridine	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(a)anthracene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Chrysene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Fluoranthene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Fluorene	<0.000020		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Naphthalene	0.000123		0.000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Phenanthrene	<0.000050		0.000050	mg/L	18-JUL-18	18-JUL-18	R4134327
Pyrene	<0.000010		0.000010	mg/L	18-JUL-18	18-JUL-18	R4134327
Quinoline	0.000044		0.000020	mg/L	18-JUL-18	18-JUL-18	R4134327
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	18-JUL-18	18-JUL-18	R4134327
Surrogate: Acenaphthene d10	87.3		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Acridine d9	91.7		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Chrysene d12	90.1		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Naphthalene d8	81.7		40-130	%	18-JUL-18	18-JUL-18	R4134327
Surrogate: Phenanthrene d10	90.4		40-130	%	18-JUL-18	18-JUL-18	R4134327
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	237		1.2	mg/L		17-JUL-18	
Alkalinity, Carbonate							

* 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
L2128984-1 WHA-2							
Sampled By: CLIENT on 12-JUL-18 @ 09:10							
Matrix: WW							
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		17-JUL-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		17-JUL-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	195		1.0	mg/L		16-JUL-18	R4128971
Ammonia by colour							
Ammonia, Total (as N)	0.049		0.020	mg/L		14-JUL-18	R4129527
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	12.5		6.0	mg/L		14-JUL-18	R4134017
Carbonaceous BOD							
BOD Carbonaceous	8.3		6.0	mg/L		14-JUL-18	R4134017
Chloride in Water by IC							
Chloride (Cl)	74.3		0.50	mg/L		14-JUL-18	R4131207
Conductivity							
Conductivity	695		1.0	umhos/cm		16-JUL-18	R4128971
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	420		10	MPN/100mL		13-JUL-18	R4124985
Hardness Calculated							
Hardness (as CaCO3)	191	HTC	0.20	mg/L		19-JUL-18	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	16-JUL-18	18-JUL-18	R4132708
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		14-JUL-18	R4131207
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		18-JUL-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		14-JUL-18	R4131207
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		23-JUL-18	R4138284
Phenol (4AAP)							
Phenols (4AAP)	0.0032		0.0010	mg/L		17-JUL-18	R4131590
Phosphorus, Total							
Phosphorus (P)-Total	0.249		0.0010	mg/L		19-JUL-18	R4133029
Sulfate in Water by IC							
Sulfate (SO4)	47.5		0.30	mg/L		14-JUL-18	R4131207
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0196		0.0030	mg/L	17-JUL-18	18-JUL-18	R4132485
Antimony (Sb)-Total	0.00516		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Arsenic (As)-Total	0.00276		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Barium (Ba)-Total	0.0324		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Boron (B)-Total	0.204		0.010	mg/L	17-JUL-18	18-JUL-18	R4132485
Cadmium (Cd)-Total	0.0000473		0.0000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Calcium (Ca)-Total	60.0		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Cesium (Cs)-Total	0.000044		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Chromium (Cr)-Total	0.00105		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Cobalt (Co)-Total	0.00186		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Copper (Cu)-Total	0.00571		0.00050	mg/L	17-JUL-18	18-JUL-18	R4132485
Iron (Fe)-Total	2.55		0.010	mg/L	17-JUL-18	18-JUL-18	R4132485
Lead (Pb)-Total	0.000686		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Lithium (Li)-Total	0.0083		0.0010	mg/L	17-JUL-18	18-JUL-18	R4132485

* 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
L2128984-1 WHA-2							
Sampled By: CLIENT on 12-JUL-18 @ 09:10							
Matrix: WW							
Total Metals in Water by CRC ICPMS							
Magnesium (Mg)-Total	9.93		0.0050	mg/L	17-JUL-18	18-JUL-18	R4132485
Manganese (Mn)-Total	0.370		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Molybdenum (Mo)-Total	0.0321		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Nickel (Ni)-Total	0.00667		0.00050	mg/L	17-JUL-18	18-JUL-18	R4132485
Potassium (K)-Total	11.5		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Phosphorus (P)-Total	0.244		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Rubidium (Rb)-Total	0.0120		0.00020	mg/L	17-JUL-18	18-JUL-18	R4132485
Selenium (Se)-Total	0.000188		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Silicon (Si)-Total	1.55		0.10	mg/L	17-JUL-18	18-JUL-18	R4132485
Silver (Ag)-Total	0.000015		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Sodium (Na)-Total	52.2		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Strontium (Sr)-Total	0.385		0.00020	mg/L	17-JUL-18	18-JUL-18	R4132485
Sulfur (S)-Total	20.1		0.50	mg/L	17-JUL-18	18-JUL-18	R4132485
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	17-JUL-18	18-JUL-18	R4132485
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Thorium (Th)-Total	<0.00010		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Tin (Sn)-Total	0.00024		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Titanium (Ti)-Total	0.00075		0.00030	mg/L	17-JUL-18	18-JUL-18	R4132485
Tungsten (W)-Total	0.00022		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Uranium (U)-Total	0.000529		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Vanadium (V)-Total	0.00055		0.00050	mg/L	17-JUL-18	18-JUL-18	R4132485
Zinc (Zn)-Total	0.196		0.0030	mg/L	17-JUL-18	18-JUL-18	R4132485
Zirconium (Zr)-Total	0.000163		0.000060	mg/L	17-JUL-18	18-JUL-18	R4132485
Total Organic Carbon by Combustion							
Total Organic Carbon	17.1		0.50	mg/L		23-JUL-18	R4138739
Total Suspended Solids							
Total Suspended Solids	12.2		3.0	mg/L		19-JUL-18	R4138185
pH							
pH	7.56		0.10	pH units		16-JUL-18	R4128971
L2128984-2 WHA-3							
Sampled By: CLIENT on 12-JUL-18 @ 09:30							
Matrix: WW							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	309		1.2	mg/L		17-JUL-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		17-JUL-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		17-JUL-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	253		1.0	mg/L		16-JUL-18	R4128971
Ammonia by colour							
Ammonia, Total (as N)	0.037		0.010	mg/L		14-JUL-18	R4129527
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	9.0		2.0	mg/L		14-JUL-18	R4134017
Carbonaceous BOD							
BOD Carbonaceous	7.0		2.0	mg/L		14-JUL-18	R4134017
Chloride in Water by IC							
Chloride (Cl)	113		1.0	mg/L		14-JUL-18	R4131207
Conductivity							
Conductivity	871		1.0	umhos/cm		16-JUL-18	R4128971

* 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
L2128984-2 WHA-3							
Sampled By: CLIENT on 12-JUL-18 @ 09:30							
Matrix: WW							
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	20		10	MPN/100mL		13-JUL-18	R4124985
Hardness Calculated							
Hardness (as CaCO3)	216	HTC	0.20	mg/L		19-JUL-18	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	16-JUL-18	18-JUL-18	R4132708
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		14-JUL-18	R4131207
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		18-JUL-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		14-JUL-18	R4131207
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		23-JUL-18	R4138284
Phenol (4AAP)							
Phenols (4AAP)	0.0012		0.0010	mg/L		17-JUL-18	R4131590
Phosphorus, Total							
Phosphorus (P)-Total	5.71		0.010	mg/L		19-JUL-18	R4133029
Sulfate in Water by IC							
Sulfate (SO4)	27.3		0.60	mg/L		14-JUL-18	R4131207
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0794		0.0030	mg/L	17-JUL-18	18-JUL-18	R4132485
Antimony (Sb)-Total	0.00020		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Arsenic (As)-Total	0.00637		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Barium (Ba)-Total	0.0227		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Boron (B)-Total	0.247		0.010	mg/L	17-JUL-18	18-JUL-18	R4132485
Cadmium (Cd)-Total	0.0000091		0.0000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Calcium (Ca)-Total	62.8		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Cesium (Cs)-Total	0.000022		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Chromium (Cr)-Total	0.00042		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Cobalt (Co)-Total	0.00073		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Copper (Cu)-Total	0.00238		0.00050	mg/L	17-JUL-18	18-JUL-18	R4132485
Iron (Fe)-Total	1.24		0.010	mg/L	17-JUL-18	18-JUL-18	R4132485
Lead (Pb)-Total	0.000166		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Lithium (Li)-Total	0.0123		0.0010	mg/L	17-JUL-18	18-JUL-18	R4132485
Magnesium (Mg)-Total	14.3		0.0050	mg/L	17-JUL-18	18-JUL-18	R4132485
Manganese (Mn)-Total	0.481		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Molybdenum (Mo)-Total	0.00219		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Nickel (Ni)-Total	0.00393		0.00050	mg/L	17-JUL-18	18-JUL-18	R4132485
Potassium (K)-Total	15.2		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Phosphorus (P)-Total	6.87		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Rubidium (Rb)-Total	0.00946		0.00020	mg/L	17-JUL-18	18-JUL-18	R4132485
Selenium (Se)-Total	0.000195		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Silicon (Si)-Total	3.15		0.10	mg/L	17-JUL-18	18-JUL-18	R4132485
Silver (Ag)-Total	<0.000010		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Sodium (Na)-Total	106		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Strontium (Sr)-Total	0.378		0.00020	mg/L	17-JUL-18	18-JUL-18	R4132485
Sulfur (S)-Total	13.7		0.50	mg/L	17-JUL-18	18-JUL-18	R4132485
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	17-JUL-18	18-JUL-18	R4132485
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Thorium (Th)-Total	<0.00010		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485

* 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
L2128984-2 WHA-3							
Sampled By: CLIENT on 12-JUL-18 @ 09:30							
Matrix: WW							
Total Metals in Water by CRC ICPMS							
Tin (Sn)-Total	0.00015		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Titanium (Ti)-Total	0.00391		0.00030	mg/L	17-JUL-18	18-JUL-18	R4132485
Tungsten (W)-Total	<0.00010		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Uranium (U)-Total	0.00120		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Vanadium (V)-Total	0.00156		0.00050	mg/L	17-JUL-18	18-JUL-18	R4132485
Zinc (Zn)-Total	0.0048		0.0030	mg/L	17-JUL-18	18-JUL-18	R4132485
Zirconium (Zr)-Total	0.000176		0.000060	mg/L	17-JUL-18	18-JUL-18	R4132485
Total Organic Carbon by Combustion							
Total Organic Carbon	25.9		0.50	mg/L		23-JUL-18	R4138739
Total Suspended Solids							
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-18	R4138185
pH							
pH	7.60		0.10	pH units		16-JUL-18	R4128971
L2128984-3 WHA-4							
Sampled By: CLIENT on 12-JUL-18 @ 09:40							
Matrix: WW							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	299		1.2	mg/L		17-JUL-18	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		17-JUL-18	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		17-JUL-18	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	245		1.0	mg/L		16-JUL-18	R4128971
Ammonia by colour							
Ammonia, Total (as N)	33.8		5.0	mg/L		17-JUL-18	R4131900
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	27.2		6.0	mg/L		14-JUL-18	R4134017
Carbonaceous BOD							
BOD Carbonaceous	18.4		6.0	mg/L		14-JUL-18	R4134017
Chloride in Water by IC							
Chloride (Cl)	82.6		1.0	mg/L		14-JUL-18	R4131207
Conductivity							
Conductivity	822		1.0	umhos/cm		16-JUL-18	R4128971
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	8160		10	MPN/100mL		13-JUL-18	R4124985
Hardness Calculated							
Hardness (as CaCO3)	113	HTC	0.20	mg/L		19-JUL-18	
Mercury Total							
Mercury (Hg)-Total	0.0000067		0.0000050	mg/L	16-JUL-18	18-JUL-18	R4132708
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		14-JUL-18	R4131207
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		18-JUL-18	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		14-JUL-18	R4131207
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		23-JUL-18	R4138284
Phenol (4AAP)							
Phenols (4AAP)	0.0026		0.0010	mg/L		17-JUL-18	R4131590

* 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
L2128984-3 WHA-4							
Sampled By: CLIENT on 12-JUL-18 @ 09:40							
Matrix: WW							
Phosphorus, Total							
Phosphorus (P)-Total	6.48		0.020	mg/L		19-JUL-18	R4133029
Sulfate in Water by IC							
Sulfate (SO4)	24.6		0.60	mg/L		14-JUL-18	R4131207
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0570		0.0030	mg/L	17-JUL-18	18-JUL-18	R4132485
Antimony (Sb)-Total	0.00019		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Arsenic (As)-Total	0.00093		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Barium (Ba)-Total	0.00481		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Bismuth (Bi)-Total	0.000239		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Boron (B)-Total	0.113		0.010	mg/L	17-JUL-18	18-JUL-18	R4132485
Cadmium (Cd)-Total	0.0000197		0.0000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Calcium (Ca)-Total	33.6		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Cesium (Cs)-Total	0.000109		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Chromium (Cr)-Total	0.00031		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Cobalt (Co)-Total	0.00064		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Copper (Cu)-Total	0.0294		0.00050	mg/L	17-JUL-18	18-JUL-18	R4132485
Iron (Fe)-Total	0.169		0.010	mg/L	17-JUL-18	18-JUL-18	R4132485
Lead (Pb)-Total	0.000685		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Lithium (Li)-Total	0.0035		0.0010	mg/L	17-JUL-18	18-JUL-18	R4132485
Magnesium (Mg)-Total	7.12		0.0050	mg/L	17-JUL-18	18-JUL-18	R4132485
Manganese (Mn)-Total	0.0823		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Molybdenum (Mo)-Total	0.000848		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Nickel (Ni)-Total	0.00245		0.00050	mg/L	17-JUL-18	18-JUL-18	R4132485
Potassium (K)-Total	17.2		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Phosphorus (P)-Total	6.11		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Rubidium (Rb)-Total	0.0179		0.00020	mg/L	17-JUL-18	18-JUL-18	R4132485
Selenium (Se)-Total	0.000338		0.000050	mg/L	17-JUL-18	18-JUL-18	R4132485
Silicon (Si)-Total	2.33		0.10	mg/L	17-JUL-18	18-JUL-18	R4132485
Silver (Ag)-Total	0.000087		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Sodium (Na)-Total	56.9		0.050	mg/L	17-JUL-18	18-JUL-18	R4132485
Strontium (Sr)-Total	0.149		0.00020	mg/L	17-JUL-18	18-JUL-18	R4132485
Sulfur (S)-Total	13.9		0.50	mg/L	17-JUL-18	18-JUL-18	R4132485
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	17-JUL-18	18-JUL-18	R4132485
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Thorium (Th)-Total	<0.00010		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Tin (Sn)-Total	0.00079		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Titanium (Ti)-Total	0.00818		0.00030	mg/L	17-JUL-18	18-JUL-18	R4132485
Tungsten (W)-Total	<0.00010		0.00010	mg/L	17-JUL-18	18-JUL-18	R4132485
Uranium (U)-Total	0.000074		0.000010	mg/L	17-JUL-18	18-JUL-18	R4132485
Vanadium (V)-Total	<0.00050		0.00050	mg/L	17-JUL-18	18-JUL-18	R4132485
Zinc (Zn)-Total	0.0175		0.0030	mg/L	17-JUL-18	18-JUL-18	R4132485
Zirconium (Zr)-Total	0.00173		0.000060	mg/L	17-JUL-18	18-JUL-18	R4132485
Total Organic Carbon by Combustion							
Total Organic Carbon	26.4		0.50	mg/L		23-JUL-18	R4138739
Total Suspended Solids							
Total Suspended Solids	13.6		6.0	mg/L		19-JUL-18	R4138185
pH							
pH	7.51		0.10	pH units		16-JUL-18	R4128971

* 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.

Test Method References:

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

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

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

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

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

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

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

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

BOD-CBOD-WP	Water	Carbonaceous BOD	APHA 5210 B

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

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

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

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

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

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

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

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

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

EC-WP	Water	Conductivity	APHA 2510B

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

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

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

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

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

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

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

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

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

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

Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°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-CVAF-WP	Water	Mercury Total	EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (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-L-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 Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA SW 846/8270-GC/MS

Water is spiked with a surrogate spike mix and extracted using solvent extraction techniques. Analysis is performed by GC/MS in the selected ion monitoring (SIM) mode.

PH-WP	Water	pH	APHA 4500H

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

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

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

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)
Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

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

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

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

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

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

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

Quality Control Report

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

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP	**Water**							
Batch R4128971								
WG2824108-5 DUP		**L2128984-1**						
Alkalinity, Total (as CaCO3)		195	194		mg/L	0.1	20	16-JUL-18
WG2824108-4 LCS								
Alkalinity, Total (as CaCO3)			102.5		%		85-115	16-JUL-18
WG2824108-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	16-JUL-18
BOD-CBOD-WP	**Water**							
Batch R4134017								
WG2822428-3 DUP		**L2128984-1**						
BOD Carbonaceous		8.3	9.1		mg/L	9.2	20	14-JUL-18
WG2822428-2 LCS								
BOD Carbonaceous			93.2		%		85-115	14-JUL-18
WG2822428-1 MB								
BOD Carbonaceous			<2.0		mg/L		2	14-JUL-18
BOD-WP	**Water**							
Batch R4134017								
WG2822428-2 LCS								
Biochemical Oxygen Demand			97.8		%		85-115	14-JUL-18
WG2822428-1 MB								
Biochemical Oxygen Demand			<2.0		mg/L		2	14-JUL-18
BTEXS+F1-HSMS-WP	**Water**							
Batch R4131791								
WG2825106-2 LCS								
Benzene			112.0		%		70-130	17-JUL-18
Toluene			113.6		%		70-130	17-JUL-18
Ethyl benzene			123.7		%		70-130	17-JUL-18
o-Xylene			118.5		%		70-130	17-JUL-18
m+p-Xylenes			128.7		%		70-130	17-JUL-18
WG2825106-3 LCS								
F1 (C6-C10)			91.6		%		70-130	17-JUL-18
WG2825106-1 MB								
Benzene			<0.00050		mg/L		0.0005	17-JUL-18
Toluene			<0.0010		mg/L		0.001	17-JUL-18
Ethyl benzene			<0.00050		mg/L		0.0005	17-JUL-18
o-Xylene			<0.00030		mg/L		0.0003	17-JUL-18
m+p-Xylenes			<0.00040		mg/L		0.0004	17-JUL-18
F1 (C6-C10)			<0.10		mg/L		0.1	17-JUL-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTEXS+F1-HSMS-WP	**Water**							
Batch R4131791								
WG2825106-1 MB								
Surrogate: 4-Bromofluorobenzene (SS)			93.3		%		70-130	17-JUL-18
C-TOC-HTC-WP	**Water**							
Batch R4138739								
WG2830567-2 LCS								
Total Organic Carbon			98.9		%		80-120	23-JUL-18
WG2830567-1 MB								
Total Organic Carbon			<0.50		mg/L		0.5	23-JUL-18
CL-IC-N-WP	**Water**							
Batch R4131207								
WG2822669-7 DUP		**L2128984-1**						
Chloride (Cl)		74.3	74.3		mg/L	0.0	20	14-JUL-18
WG2822669-2 LCS								
Chloride (Cl)			101.9		%		90-110	14-JUL-18
WG2822669-6 LCS								
Chloride (Cl)			102.0		%		90-110	14-JUL-18
WG2822669-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	14-JUL-18
WG2822669-5 MB								
Chloride (Cl)			<0.50		mg/L		0.5	14-JUL-18
WG2822669-8 MS		**L2128984-1**						
Chloride (Cl)			101.3		%		75-125	14-JUL-18
EC-WP	**Water**							
Batch R4128971								
WG2824108-5 DUP		**L2128984-1**						
Conductivity		695	679		umhos/cm	2.3	10	16-JUL-18
WG2824108-3 LCS								
Conductivity			98.0		%		90-110	16-JUL-18
WG2824108-1 MB								
Conductivity			<1.0		umhos/cm		1	16-JUL-18
F2-F4-FID-WP	**Water**							
Batch R4130550								
WG2823496-2 LCS								
F2 (C10-C16)			97.0		%		70-130	17-JUL-18
F3 (C16-C34)			106.4		%		70-130	17-JUL-18
F4 (C34-C50)			92.2		%		70-130	17-JUL-18
WG2823496-1								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-FID-WP	**Water**							
Batch R4130550								
WG2823496-1 MB								
F2 (C10-C16)			<0.10		mg/L		0.1	17-JUL-18
F3 (C16-C34)			<0.25		mg/L		0.25	17-JUL-18
F4 (C34-C50)			<0.25		mg/L		0.25	17-JUL-18
Surrogate: 2-Bromobenzotrifluoride			83.9		%		60-140	17-JUL-18
FC10-QT97-WP	**Water**							
Batch R4124985								
WG2821922-2 DUP		**L2128984-1**						
Fecal Coliforms		420	410		MPN/100mL	1.9	65	13-JUL-18
WG2821922-1 MB								
Fecal Coliforms			<1		MPN/100mL		1	13-JUL-18
HG-T-CVAF-WP	**Water**							
Batch R4132708								
WG2826724-2 LCS								
Mercury (Hg)-Total			92.8		%		80-120	18-JUL-18
WG2826724-1 MB								
Mercury (Hg)-Total			<0.000005		mg/L		0.000005	18-JUL-18
MET-T-CCMS-WP	**Water**							
Batch R4132485								
WG2824230-2 LCS								
Aluminum (Al)-Total			101.1		%		80-120	18-JUL-18
Antimony (Sb)-Total			103.4		%		80-120	18-JUL-18
Arsenic (As)-Total			102.5		%		80-120	18-JUL-18
Barium (Ba)-Total			104.9		%		80-120	18-JUL-18
Beryllium (Be)-Total			105.4		%		80-120	18-JUL-18
Bismuth (Bi)-Total			107.4		%		80-120	18-JUL-18
Boron (B)-Total			107.3		%		80-120	18-JUL-18
Cadmium (Cd)-Total			104.0		%		80-120	18-JUL-18
Calcium (Ca)-Total			103.3		%		80-120	18-JUL-18
Cesium (Cs)-Total			103.3		%		80-120	18-JUL-18
Chromium (Cr)-Total			104.7		%		80-120	18-JUL-18
Cobalt (Co)-Total			104.7		%		80-120	18-JUL-18
Copper (Cu)-Total			103.9		%		80-120	18-JUL-18
Iron (Fe)-Total			103.8		%		80-120	18-JUL-18
Lead (Pb)-Total			105.1		%		80-120	18-JUL-18
Lithium (Li)-Total			99.1		%		80-120	18-JUL-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP	**Water**							
Batch R4132485								
WG2824230-2 LCS								
Magnesium (Mg)-Total			108.6		%		80-120	18-JUL-18
Manganese (Mn)-Total			104.4		%		80-120	18-JUL-18
Molybdenum (Mo)-Total			101.1		%		80-120	18-JUL-18
Nickel (Ni)-Total			105.0		%		80-120	18-JUL-18
Potassium (K)-Total			109.1		%		80-120	18-JUL-18
Phosphorus (P)-Total			111.3		%		80-120	18-JUL-18
Rubidium (Rb)-Total			111.0		%		80-120	18-JUL-18
Selenium (Se)-Total			103.3		%		80-120	18-JUL-18
Silicon (Si)-Total			108.4		%		80-120	18-JUL-18
Silver (Ag)-Total			105.1		%		80-120	18-JUL-18
Sodium (Na)-Total			107.1		%		80-120	18-JUL-18
Strontium (Sr)-Total			102.5		%		80-120	18-JUL-18
Sulfur (S)-Total			97.9		%		80-120	18-JUL-18
Tellurium (Te)-Total			105.2		%		80-120	18-JUL-18
Thallium (Tl)-Total			103.8		%		80-120	18-JUL-18
Thorium (Th)-Total			102.0		%		80-120	18-JUL-18
Tin (Sn)-Total			102.3		%		80-120	18-JUL-18
Titanium (Ti)-Total			101.8		%		80-120	18-JUL-18
Tungsten (W)-Total			101.9		%		80-120	18-JUL-18
Uranium (U)-Total			107.5		%		80-120	18-JUL-18
Vanadium (V)-Total			108.3		%		80-120	18-JUL-18
Zinc (Zn)-Total			101.4		%		80-120	18-JUL-18
Zirconium (Zr)-Total			96.4		%		80-120	18-JUL-18
WG2824230-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	18-JUL-18
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Arsenic (As)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Barium (Ba)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	18-JUL-18
Boron (B)-Total			<0.010		mg/L		0.01	18-JUL-18
Cadmium (Cd)-Total			<0.000005(		mg/L		0.000005	18-JUL-18
Calcium (Ca)-Total			<0.050		mg/L		0.05	18-JUL-18
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	18-JUL-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP	**Water**							
Batch R4132485								
WG2824230-1 MB								
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Copper (Cu)-Total			<0.00050		mg/L		0.0005	18-JUL-18
Iron (Fe)-Total			<0.010		mg/L		0.01	18-JUL-18
Lead (Pb)-Total			<0.000050		mg/L		0.00005	18-JUL-18
Lithium (Li)-Total			<0.0010		mg/L		0.001	18-JUL-18
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	18-JUL-18
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	18-JUL-18
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	18-JUL-18
Potassium (K)-Total			<0.050		mg/L		0.05	18-JUL-18
Phosphorus (P)-Total			<0.050		mg/L		0.05	18-JUL-18
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	18-JUL-18
Selenium (Se)-Total			<0.000050		mg/L		0.00005	18-JUL-18
Silicon (Si)-Total			<0.10		mg/L		0.1	18-JUL-18
Silver (Ag)-Total			<0.000010		mg/L		0.00001	18-JUL-18
Sodium (Na)-Total			<0.050		mg/L		0.05	18-JUL-18
Strontium (Sr)-Total			<0.00020		mg/L		0.0002	18-JUL-18
Sulfur (S)-Total			<0.50		mg/L		0.5	18-JUL-18
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	18-JUL-18
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	18-JUL-18
Thorium (Th)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Tin (Sn)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	18-JUL-18
Tungsten (W)-Total			<0.00010		mg/L		0.0001	18-JUL-18
Uranium (U)-Total			<0.000010		mg/L		0.00001	18-JUL-18
Vanadium (V)-Total			<0.00050		mg/L		0.0005	18-JUL-18
Zinc (Zn)-Total			<0.0030		mg/L		0.003	18-JUL-18
Zirconium (Zr)-Total			<0.000060		mg/L		0.00006	18-JUL-18
NH3-COL-WP	**Water**							
Batch R4129527								
WG2824197-6 LCS								
Ammonia, Total (as N)			99.6		%		85-115	14-JUL-18
WG2824197-5 MB								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP	**Water**							
Batch R4129527								
WG2824197-5 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	14-JUL-18
Batch R4131900								
WG2825489-2 LCS								
Ammonia, Total (as N)			105.6		%		85-115	17-JUL-18
WG2825489-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	17-JUL-18
NO2-IC-N-WP	**Water**							
Batch R4131207								
WG2822669-7 DUP		**L2128984-1**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	14-JUL-18
WG2822669-2 LCS								
Nitrite (as N)			102.1		%		90-110	14-JUL-18
WG2822669-6 LCS								
Nitrite (as N)			101.5		%		90-110	14-JUL-18
WG2822669-1 MB								
Nitrite (as N)			<0.010		mg/L		0.01	14-JUL-18
WG2822669-5 MB								
Nitrite (as N)			<0.010		mg/L		0.01	14-JUL-18
WG2822669-8 MS		**L2128984-1**						
Nitrite (as N)			100.2		%		75-125	14-JUL-18
NO3-IC-N-WP	**Water**							
Batch R4131207								
WG2822669-7 DUP		**L2128984-1**						
Nitrate (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	14-JUL-18
WG2822669-2 LCS								
Nitrate (as N)			101.3		%		90-110	14-JUL-18
WG2822669-6 LCS								
Nitrate (as N)			101.2		%		90-110	14-JUL-18
WG2822669-1 MB								
Nitrate (as N)			<0.020		mg/L		0.02	14-JUL-18
WG2822669-5 MB								
Nitrate (as N)			<0.020		mg/L		0.02	14-JUL-18
WG2822669-8 MS		**L2128984-1**						
Nitrate (as N)			98.4		%		75-125	14-JUL-18
OG-GRAV-WP	**Water**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OG-GRAV-WP	**Water**							
Batch R4138284								
WG2827993-2 LCS								
Oil and Grease			91.5		%		70-130	23-JUL-18
WG2827993-1 MB								
Oil and Grease			<5.0		mg/L		5	23-JUL-18
P-T-L-COL-WP	**Water**							
Batch R4133029								
WG2825387-6 LCS								
Phosphorus (P)-Total			95.6		%		80-120	19-JUL-18
WG2825387-5 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	19-JUL-18
PAH,PANH-WP	**Water**							
Batch R4134327								
WG2826083-2 LCS								
1-Methyl Naphthalene			110.9		%		60-130	18-JUL-18
2-Methyl Naphthalene			103.8		%		60-130	18-JUL-18
Acenaphthene			105.7		%		60-130	18-JUL-18
Acenaphthylene			97.4		%		60-130	18-JUL-18
Anthracene			101.1		%		60-130	18-JUL-18
Acridine			101.3		%		60-130	18-JUL-18
Benzo(a)anthracene			99.5		%		60-130	18-JUL-18
Benzo(a)pyrene			85.3		%		60-130	18-JUL-18
Benzo(b&j)fluoranthene			90.0		%		60-130	18-JUL-18
Benzo(g,h,i)perylene			95.4		%		60-130	18-JUL-18
Benzo(k)fluoranthene			120.7		%		60-130	18-JUL-18
Chrysene			103.2		%		60-130	18-JUL-18
Dibenzo(a,h)anthracene			108.1		%		60-130	18-JUL-18
Fluoranthene			106.4		%		60-130	18-JUL-18
Fluorene			103.5		%		60-130	18-JUL-18
Indeno(1,2,3-cd)pyrene			89.8		%		60-130	18-JUL-18
Naphthalene			112.4		%		50-130	18-JUL-18
Phenanthrene			109.0		%		60-130	18-JUL-18
Pyrene			108.1		%		60-130	18-JUL-18
Quinoline			120.8		%		60-130	18-JUL-18
WG2826083-1 MB								
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	18-JUL-18
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	18-JUL-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP	**Water**							
Batch R4134327								
WG2826083-1 MB								
Acenaphthene			<0.000020		mg/L		0.00002	18-JUL-18
Acenaphthylene			<0.000020		mg/L		0.00002	18-JUL-18
Anthracene			<0.000010		mg/L		0.00001	18-JUL-18
Acridine			<0.000020		mg/L		0.00002	18-JUL-18
Benzo(a)anthracene			<0.000010		mg/L		0.00001	18-JUL-18
Benzo(a)pyrene			<0.000005		mg/L		0.000005	18-JUL-18
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	18-JUL-18
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	18-JUL-18
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	18-JUL-18
Chrysene			<0.000020		mg/L		0.00002	18-JUL-18
Dibenzo(a,h)anthracene			<0.000005		mg/L		0.000005	18-JUL-18
Fluoranthene			<0.000020		mg/L		0.00002	18-JUL-18
Fluorene			<0.000020		mg/L		0.00002	18-JUL-18
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	18-JUL-18
Naphthalene			<0.000050		mg/L		0.00005	18-JUL-18
Phenanthrene			<0.000050		mg/L		0.00005	18-JUL-18
Pyrene			<0.000010		mg/L		0.00001	18-JUL-18
Quinoline			<0.000020		mg/L		0.00002	18-JUL-18
Surrogate: Acenaphthene d10			92.2		%		40-130	18-JUL-18
Surrogate: Acridine d9			100.3		%		40-130	18-JUL-18
Surrogate: Chrysene d12			107.8		%		40-130	18-JUL-18
Surrogate: Naphthalene d8			89.9		%		40-130	18-JUL-18
Surrogate: Phenanthrene d10			95.4		%		40-130	18-JUL-18
PH-WP	**Water**							
Batch R4128971								
WG2824108-5 DUP		**L2128984-1**						
pH		7.56	7.55	J	pH units	0.01	0.2	16-JUL-18
WG2824108-2 LCS								
pH			7.43		pH units		7.3-7.5	16-JUL-18
PHENOLS-4AAP-WT	**Water**							
Batch R4131590								
WG2823731-10 LCS								
Phenols (4AAP)			101.4		%		85-115	17-JUL-18
WG2823731-9 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	17-JUL-18

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WP	**Water**							
Batch R4131207								
WG2822669-7 DUP		**L2128984-1**						
Sulfate (SO4)		47.5	47.4		mg/L	0.2	20	14-JUL-18
WG2822669-2 LCS								
Sulfate (SO4)			102.5		%		90-110	14-JUL-18
WG2822669-6 LCS								
Sulfate (SO4)			102.8		%		90-110	14-JUL-18
WG2822669-1 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	14-JUL-18
WG2822669-5 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	14-JUL-18
WG2822669-8 MS		**L2128984-1**						
Sulfate (SO4)			100.2		%		75-125	14-JUL-18
SOLIDS-TOTSUS-WP	**Water**							
Batch R4138185								
WG2827786-29 LCS								
Total Suspended Solids			102.4		%		85-115	19-JUL-18
WG2827786-28 MB								
Total Suspended Solids			<2.0		mg/L		2	19-JUL-18

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

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	1	12-JUL-18 09:10	16-JUL-18 12:00	0.25	99	hours	EHTR-FM
	2	12-JUL-18 09:30	16-JUL-18 12:00	0.25	98	hours	EHTR-FM
	3	12-JUL-18 09:40	16-JUL-18 12:00	0.25	98	hours	EHTR-FM

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 L2128984 were received on 13-JUL-18 10:15.

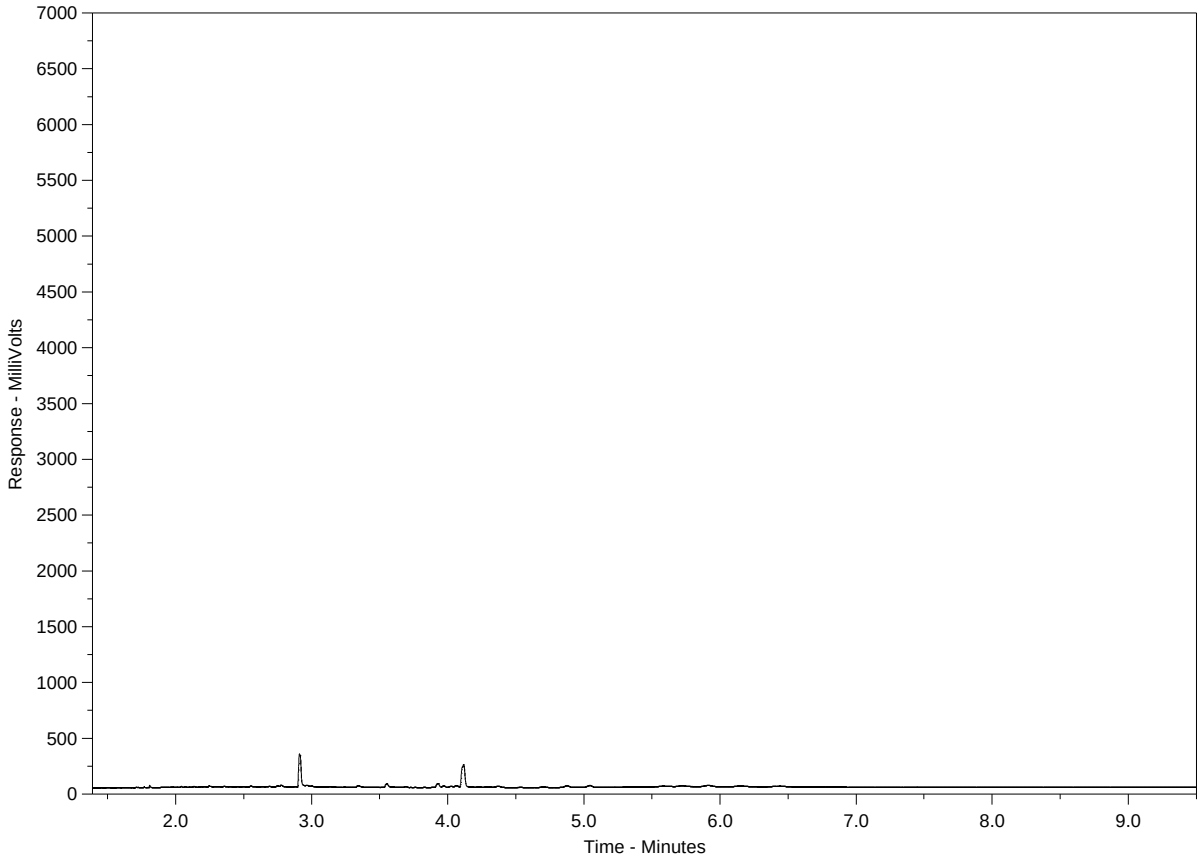
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where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

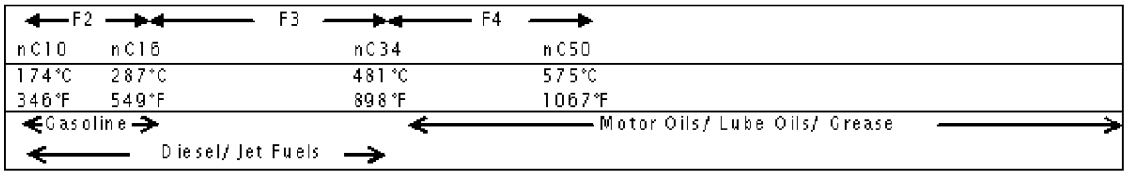
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2128984-1
Client Sample ID: WHA-2





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 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.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analyt Request Form

Canada Toll Free: 1 800 668 9878

L2128984-COFC

COC Number: 14 - 450493

Page 1 of 1

Report To		Report Format / Distribution		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Hamlet of Whale Cove	Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3pm)
Contact:	IAN COPLAND	Quality Control (QC) Report with Report	☐ Yes ☐ No	P ☐ Priority (2-4 business days if received by 3pm)
Address:	PO Box 120 Whale Cove, NU X0C 0S0	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 business days if received by 3pm)
		Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Phone:	867-896-9961 (ext 255).	Email 1 or Fax	sao@whalecove.ca	Specify Date Required for E2,E or P:
		Email 2	Cfaulkner@gov.nu.ca	

Invoice To		Invoice Distribution	
	Same as Report To ☑ Yes ☐ No	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
	Copy of Invoice with Report ☑ Yes ☐ No	Email 1 or Fax	
Company:		Email 2	
Contact:			

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	W10623	Approver ID:	Cost Center:
Job #:		GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler: Preston Mimmalik Tupa Ford

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD	Routine	Metals	Mercury	Bacteria	Oil + Grease x2	Phenols	BTX-F1 x3	F2-F4 x2	PAH x2	Numerics			Number of Containers
	WHA-2	12-Jul-18	9:10 AM	WW	✓	✓	P	P	P	P	P	P	P	P	P			16
	WHA-3	12-Jul-18	9:30 AM	WW	✓	✓	P	P	P	P	P				P			9
	WHA-4	12-Jul-18	9:40 AM	WW	✓	✓	P	P	P	P	P				P			9

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☒ No	Nunavut - WW - GRP1
Are samples for human drinking water use? ☐ Yes ☒ No	BTX - F1 - F4, PAH

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐ No ☐
Cooling Initiated	☐			

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
16.6					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Preston Mimmalik	July 12/18	10:07 AM	GRH	07/13/18	10:15			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v08 Front/03 October 2013

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

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

Appendix E

Spills

Occurance Date

Start date

Jan | 1 | 2018

End date

Dec | 31 | 2018

Spill Region

- Any -

Spill Location

--Whale Cove

Spill Location Description

Report Number

Items per page

100

Go

Reset

No matching spills

Appendix F

Whale Cove
WHA-2

			2018		Statistics		
Parameter	**Unit**	**DL**	**20-Jun-18**	**12-Jul-18**	**Min**	**Max**	**Average**
Alkalinity							
Bicarbonate (HCO3)	mg/L	1.2	121	237	131	265	206.17
Carbonate (CO3)	mg/L	0.60	<0.60	<0.60	0.60	3.00	1.00
Hydroxide (OH)	mg/L	0.34	<0.34	<0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	99.3	195	108	238	189.11
Ammonia by Colour							
Total (as N)	mg/L	0.20	0.152	0.049	0.226	4.36	1.57
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	mg/L	6.0	<6.0	12.5	2	8.4	4.54
Carbonaceous BOD							
BOD Carbonaceous	mg/L	6.0	<6.0	8.3	2.0	6.8	2.98
Chloride in Water by IC							
Chloride (Cl)	mg/L	10	41.0	74.3	29.8	184	102.27
Conductivity							
Conductivity	umhos/cm	1.0	409	695	401	964	762.00
Fecal Coliforms							
Fecal Coliforms	MPN/100mL	3	90	420	4	5170	867.78
Hardness Calculated							
Hardness (as CaCO3)	mg/L	0.30	135	191	127	316	224.33
Mercury Total							
Mercury (Hg)	mg/L	0.00020	<0.0000050	<0.0000050	0.0000050	0.000020	0.000011
Nitrate in Water by IC							
Nitrate (as N)	mg/L	0.40	0.078	<0.020	0.043	0.14	0.081
Nitrate + Nitrite							
Nitrate and Nitrite as N	mg/L	0.45	0.088	<0.070	0.070	1.56	0.25
Nitrite in Water by IC							
Nitrite (as N)	mg/L	0.20	0.010	<0.010	0.010	0.020	0.014
Oil & Grease - Gravimetric							
Oil and Grease	mg/L	5.0	<5.0	<5.0	2.0	5.0	3.33
Phenol							
Phenols	mg/L	0.0010	0.0037	0.0032	0.001	0.0057	0.0022
Phosphorus, Total							
Phosphorus (P)	mg/L	0.010	0.243	0.249	0.071	0.21	0.13
Sulfate in Water by IC							
Sulfate (SO4)	mg/L	6.0	42.1	47.5	3.73	77.9	59.50
Total Metals by ICP-MS							
Aluminium (Al)	mg/L	0.0050	0.0803	0.0196	0.009	0.0795	0.0266
Arsenic (As)	mg/L	0.00020	0.00158	0.00276	0.00104	0.00639	0.00292
Cadmium (Cd)	mg/L	0.000010	0.000102	0.0000473	0.00001	0.0002	0.00005
Calcium (Ca)	mg/L	0.10	45.6	60.0	40.1	94.6	70.08
Chromium (Cr)	mg/L	0.0010	0.00157	0.00105	0.00032	0.002	0.0010
Cobalt (Co)	mg/L	0.00020	0.00106	0.00186	0.00054	0.00152	0.0010
Copper (Cu)	mg/L	0.00020	0.0110	0.00571	0.00156	0.0093	0.0039
Iron (Fe)	mg/L	0.010	0.784	2.55	0.26	2.24	1.39
Lead (Pb)	mg/L	0.000090	0.00104	0.000686	0.00009	0.00156	0.0007
Magnesium (Mg)	mg/L	0.010	5.16	9.93	5.26	19.4	11.96
Manganese (Mn)	mg/L	0.00030	0.146	0.370	0.102	0.523	0.27
Nickel (Ni)	mg/L	0.0020	0.00395	0.00667	0.0025	0.0066	0.0047
Potassium (K)	mg/L	0.020	6.90	11.5	4.54	17.7	11.79
Sodium (Na)	mg/L	0.030	25.0	52.2	21.1	99.4	63.64
Zinc (Zn)	mg/L	0.0020	0.0518	0.196	0.0020	0.054	0.023
Total Organic Carbon by Combustion							
Total Organic Carbon	mg/L	0.50	12.2	17.1	4.5	12.8	9.55
Total Suspended Solids							
Total Suspended Solids	mg/L	13	5.6	12.2	5.0	18	9.89
pH							
pH	pH Units	0.10	7.19	7.56	7.6	8.38	7.91
Benzene	mg/L	0.00050	<0.00050	<0.00050	0.00050	0.00050	0.00050
Toluene	mg/L	0.0010	0.0025	<0.0010	0.0010	0.0010	0.0010
Ethyl Benzene	mg/L	0.00050	<0.00050	<0.00050	0.00050	0.00050	0.00050
o-Xylene	mg/L	0.00050	0.00142	<0.00050	0.00050	0.00050	0.00050
F1 (C6-C10)	mg/L	0.10	<0.10	<0.10	0.10	0.10	0.10
F2 (C10-C16)	mg/L	0.25	<0.10	<0.10	0.10	0.10	0.10
F3 (C16-C34)	mg/L	0.25	<0.25	0.28	0.25	0.25	0.25
F4 (C34-C50)	mg/L	0.25	<0.25	<0.25	0.25	0.25	0.25
Total Hydrocarbons (C6-C50)	mg/L	0.44	<0.38	<0.38	0.1	0.38	0.31

Whale Cove
WHA-3

			2018		Statistics		
Parameter	**Unit**	**DL**	**20-Jun-18**	**12-Jul-18**	**Min**	**Max**	**Average**
Alkalinity							
Bicarbonate (HCO3)	mg/L	1.2	345	299	185	338	256.50
Carbonate (CO3)	mg/L	0.60	<0.60	<0.60	0.60	6.36	1.32
Hydroxide (OH)	mg/L	0.34	<0.34	<0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	283	245	105	277	191.36
Ammonia by Colour							
Total (as N)	mg/L	0.20	41.4	33.8	2.55	43.8	18.88
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	mg/L	6.0	41	27.2	3.0	77	29.04
Carbonaceous BOD							
BOD Carbonaceous	mg/L	6.0	<20	18.4	2.0	69	29.24
Chloride in Water by IC							
Chloride (Cl)	mg/L	10	92.9	82.6	73.3	106	88.36
Conductivity							
Conductivity	umhos/cm	1.0	919	822	625	900	739.64
Fecal Coliforms							
Fecal Coliforms	MPN/100mL	3	>24200	8160	7	110000	17339.73
Hardness Calculated							
Hardness (as CaCO3)	mg/L	0.30	134	113	82.4	164	115.68
Mercury Total							
Mercury (Hg)	mg/L	0.00020	0.0000073	0.0000067	0.0000071	0.0002	0.000040
Nitrate in Water by IC							
Nitrate (as N)	mg/L	0.40	<0.040	<0.040	0.020	0.861	0.20
Nitrate + Nitrite							
Nitrate and Nitrite as N	mg/L	0.45	<0.070	<0.070	0.070	1.38	0.37
Nitrite in Water by IC							
Nitrite (as N)	mg/L	0.20	<0.020	<0.020	0.010	0.518	0.145
Oil & Grease - Gravimetric							
Oil and Grease	mg/L	5.0	9.1	<5.0	2.0	14.5	4.72
Phenol							
Phenols	mg/L	0.0010	0.0669	0.0026	0.0010	0.0641	0.012
Phosphorus, Total							
Phosphorus (P)	mg/L	0.010	7.19	6.48	4.44	7.88	5.93
Sulfate in Water by IC							
Sulfate (SO4)	mg/L	6.0	18.4	24.6	9.41	56.6	32.84
Total Metals by ICP-MS							
Aluminium (Al)	mg/L	0.0050	0.102	0.0570	0.0087	0.328	0.12
Arsenic (As)	mg/L	0.00020	0.00129	0.00093	0.0006	0.00618	0.00177
Cadmium (Cd)	mg/L	0.000010	0.0000321	0.0000197	0.00001	0.00025	0.00005
Calcium (Ca)	mg/L	0.10	39.8	33.6	23	48.6	33.81
Chromium (Cr)	mg/L	0.0010	0.00046	0.00031	0.00033	0.0020	0.0009
Cobalt (Co)	mg/L	0.00020	0.00087	0.00064	0.00034	0.0017	0.00082
Copper (Cu)	mg/L	0.00020	0.0522	0.0294	0.00147	0.0708	0.029
Iron (Fe)	mg/L	0.010	0.279	0.169	0.10	0.88	0.38
Lead (Pb)	mg/L	0.000090	0.000609	0.000685	0.000090	0.0010	0.00051
Magnesium (Mg)	mg/L	0.010	8.54	7.12	6.08	10.3	7.57
Manganese (Mn)	mg/L	0.00030	0.105	0.000848	0.0373	6.94	0.73
Nickel (Ni)	mg/L	0.0020	0.00315	0.000245	0.002	0.00505	0.0031
Potassium (K)	mg/L	0.020	20.4	17.2	15.2	24	19.21
Sodium (Na)	mg/L	0.030	67.2	56.9	57.5	77.7	66.32
Zinc (Zn)	mg/L	0.0020	0.0337	0.0175	0.002	0.408	0.061
Total Organic Carbon by Combustion							
Total Organic Carbon	mg/L	0.50	48.3	26.4	16.3	82.8	41.49
Total Suspended Solids							
Total Suspended Solids	mg/L	13	32.4	13.6	5.0	970	112.18
pH							
pH	pH Units	0.10	7.20	7.51	7.06	8.46	7.75
Benzene	mg/L	0.00050	N/A	N/A	0.0005	0.0005	0.00050
Toluene	mg/L	0.0010	N/A	N/A	0.0010	0.0010	0.0010
Ethyl Benzene	mg/L	0.00050	N/A	N/A	0.00050	0.00050	0.00050
o-Xylene	mg/L	0.00050	N/A	N/A	0.00050	0.00050	0.00050
F1 (C6-C10)	mg/L	0.10	N/A	N/A	0.10	0.10	0.10
F2 (C10-C16)	mg/L	0.25	N/A	N/A	0.25	0.25	0.25
F3 (C16-C34)	mg/L	0.25	N/A	N/A	0.25	0.25	0.25
F4 (C34-C50)	mg/L	0.25	N/A	N/A	0.25	0.25	0.25
Total Hydrocarbons (C6-C50)	mg/L	0.44	N/A	N/A	0.44	0.44	0.44

Whale Cove
WHA-4

			2018		Statistics		
Parameter	**Unit**	**DL**	**20-Jun-18**	**12-Jul-18**	**Min**	**Max**	**Average**
Alkalinity							
Bicarbonate (HCO3)	mg/L	1.2	158	309	60.4	302	195.60
Carbonate (CO3)	mg/L	0.60	<0.60	<0.60	0.60	6.72	1.28
Hydroxide (OH)	mg/L	0.34	<0.34	<0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	130	253	49.5	248	166.21
Ammonia by Colour							
Total (as N)	mg/L	0.20	1.17	0.037	0.017	12.9	2.97
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	mg/L	6.0	8.7	9.0	2.0	24.2	7.86
Carbonaceous BOD							
BOD Carbonaceous	mg/L	6.0	3.9	7.0	2.0	14	5.94
Chloride in Water by IC							
Chloride (Cl)	mg/L	10	55.0	113	9.32	123	79.17
Conductivity							
Conductivity	umhos/cm	1.0	500	871	133	845	613.00
Fecal Coliforms							
Fecal Coliforms	MPN/100mL	3	<10	20	3	4300	506.64
Hardness Calculated							
Hardness (as CaCO3)	mg/L	0.30	140	216	52.9	355	169.25
Mercury Total							
Mercury (Hg)	mg/L	0.00020	<0.0000050	<0.0000050	0.000005	0.0002	0.000033
Nitrate in Water by IC							
Nitrate (as N)	mg/L	0.40	0.073	<0.040	0.02	2.03	0.45
Nitrate + Nitrite							
Nitrate and Nitrite as N	mg/L	0.45	0.073	<0.070	0.07	3.12	0.73
Nitrite in Water by IC							
Nitrite (as N)	mg/L	0.20	<0.010	<0.020	0.01	0.538	0.12
Oil & Grease - Gravimetric							
Oil and Grease	mg/L	5.0	<5.0	<5.0	2.0	89.2	11.02
Phenol							
Phenols	mg/L	0.0010	<0.0010	0.0012	0.001	0.0045	0.00
Phosphorus, Total							
Phosphorus (P)	mg/L	0.010	2.29	5.71	0.019	5.4	2.36
Sulfate in Water by IC							
Sulfate (SO4)	mg/L	6.0	37.0	27.3	2.82	122	30.91
Total Metals by ICP-MS							
Aluminium (Al)	mg/L	0.0050	0.0661	0.0794	0.005	0.159	0.05
Arsenic (As)	mg/L	0.00020	0.00435	0.00637	0.00025	0.00836	0.00295
Cadmium (Cd)	mg/L	0.000010	0.0000144	0.0000091	0.000005	0.0002	0.000031
Calcium (Ca)	mg/L	0.10	41.7	62.8	17.5	119	53.92
Chromium (Cr)	mg/L	0.0010	0.00017	0.00042	0.0001	0.002	0.0009
Cobalt (Co)	mg/L	0.00020	0.00066	0.00073	0.0001	0.00195	0.0006
Copper (Cu)	mg/L	0.00020	0.00262	0.00238	0.00176	0.0187	0.006
Iron (Fe)	mg/L	0.010	0.813	1.24	0.082	3.14	0.84
Lead (Pb)	mg/L	0.000090	0.000138	0.000166	0.00005	0.001	0.0002
Magnesium (Mg)	mg/L	0.010	8.60	14.3	2.23	13.9	8.40
Manganese (Mn)	mg/L	0.00030	0.336	0.481	0.00205	0.674	0.14
Nickel (Ni)	mg/L	0.0020	0.00275	0.00393	0.00116	0.0047	0.0027
Potassium (K)	mg/L	0.020	12.1	15.2	0.575	28.6	12.05
Sodium (Na)	mg/L	0.030	41.5	106	8.95	88.7	60.17
Zinc (Zn)	mg/L	0.0020	0.0050	0.0048	0.002	0.0361	0.01
Total Organic Carbon by Combustion							
Total Organic Carbon	mg/L	0.50	13.3	25.9	4.37	29.6	14.63
Total Suspended Solids							
Total Suspended Solids	mg/L	13	12.4	<3.0	5	19	9.92
pH							
pH	pH Units	0.10	7.39	7.60	7.45	8.48	7.95
Benzene	mg/L	0.00050	N/A	N/A	0	0	0.00
Toluene	mg/L	0.0010	N/A	N/A	0	0	0.00
Ethyl Benzene	mg/L	0.00050	N/A	N/A	0	0	0.00
o-Xylene	mg/L	0.00050	N/A	N/A	0	0	0.00
F1 (C6-C10)	mg/L	0.10	N/A	N/A	0	0	0.00
F2 (C10-C16)	mg/L	0.25	N/A	N/A	0	0	0.00
F3 (C16-C34)	mg/L	0.25	N/A	N/A	0	0	0.00
F4 (C34-C50)	mg/L	0.25	N/A	N/A	0	0	0.00
Total Hydrocarbons (C6-C50)	mg/L	0.44	N/A	N/A	0	0	0.00

Appendix G

WATER LICENCE INSPECTION FORM

☒ **Original**
☐ **Follow-Up Report**

Licensee	**Licensee Representative**
Hamlet of Whale Cove	Ian Copland
Licence No. / Expiry	**Representative's Title**
3BM-WHA1520/June 3rd, 2020	Senior Administrative Officer
Land / Other Authorizations	**Land / Other Authorizations**
--	--
Date of Inspection	**Inspector**
11/07/2018	Atuat Shouldice

Activities Inspected

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

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

PART:	**Item No.***	**Condition**	**Observation No.***
A: SCOPE AND DEFINITIONS	--	--	--
B: GENERAL CONDITIONS	1,6,	U,A,	1,2,
C: CONDITIONS APPLYING TO WATER USE	1,	A/C,	3/4,
D: CONDITIONS APPLYING TO WASTE DISPOSAL	1,5,15,16	A,A,C,C	5,6,7,8
E: CONDITIONS APPLYING TO MODIFICATIONS AND CONSTRUCTION	--	--	--
F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE	--	--	--
G: CONDITIONS APPLYING TO ABANDONMENT AND RECLAMATION	--	--	--
H: CONDITIONS APPLYING TO MONITORING PROGRAM	--	--	--

**The item number corresponds with specific conditions within the licence and the observation number corresponds with specific comments provided below.*

Samples taken by Inspector:	Location(s): WHA-2, Run-off from the Solid Waste Disposal Facility
☒ Yes ☐ No	

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

BACKGROUND

Whale Cove is a Hamlet located 74 km South Southwest of Rankin Inlet and 145 km Northeast of Arviat, in Kivalliq Region, Nunavut. The Hamlet is allotted 30,000 m^3 of fresh water annually or 299m^3 per day.

Inspector's Statement

On July 11th, 2018, a water licence inspection was conducted of water licence 3BM-WHA1520. Guy Panika, Hamlet of Whale Cove and Connor Faulkner, Community and Government Services assisted with the inspection.

Observations

1. The 2016 and 2018 annual reports are not available for review on the Nunavut Water Board's FTP website. For the purpose of this inspection the 2017 has been reviewed.
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 2017 annual report indicates that a total of 18,685,400 m^3 was used which appears to be incorrect.
5. Sewage is directed to the Sewage Disposal Facility ('SDF'), pursuant to PART C item 1.
6. The SDF's berm has one meter of freeboard and the liner on the berm appears to be in good shape with no rips or tears.
7. The Hamlet has segregated some hazardous waste (e.g.: oil, batteries, and propane), though with the population size of Whale Cove the amount seems low.
8. Leachate from the Solid Waste Disposal Facility ('SWDF') drains into the marine environment at monitoring station no. WHA-2 (Akunniq Bay). A berm was constructed at this location to allow for containment of leachate. A culvert is placed at the toe of the berm which allows leachate little to no holding time before directly discharging into the marine environment. Samples have been collected at monitoring station WHA-2.

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

Concerns related to Water Licence no. 3BM-WHA1520;

PART B item 1: Failure to file 2016 and 2018 Annual Reports

— The Licensee shall submit the outstanding annual reports, as required, before the term of the next inspection.

Additional comments

The samples collected at WHA-2 have been sent out for analysis. The results will be shared with the Hamlet.

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

The Hamlet of Whale Cove is encouraged to continue to implement the goals of the Water Licence Compliance Group. The Inspector is concerned with the progress from 2017 to 2018. The 2019 inspection will focus on the discharge from the Solid Waste Disposal Facility. Samples will be collected at this location.

Licensee or Representative	Inspector's Name
Ian Copland	Atuat Shouldice
Signature	**Signature**
	Sent Electronically
Date	**Date**
	January 12th, 2018

CC: Licensing Department, NWB
Justin Hack, Manager of Field Operations, CIRNAC
Megan Lusty, Municipal Works, CGS