ANNUAL REPORT
FOR THE HAMLET OF WHALE COVE

YEAR BEING REPORTED: 2017

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 (litres)	Quantity of Sewage Waste Discharged (Estimated)
January	1,517,400	Same
February	1,424,200	Same
March	1,360,000	Same
April	1,717,500	Same
May	1,669,100	Same
June	1,778,700	Same
July	1,450,500	Same
August	1,389,200	Same
September	1,355,600	Same
October	1,740,400	Same
November	1,430,300	Same
December	1,852,500	Same
ANNUAL TOTAL	**18,685,400**	**Same**

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;

- Batteries were separated into sea cans.

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 2017 and no work is planned for 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 2017.

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 11, 2017. A copy of the inspection report can be found in Appendix H.

List of Appendixes:

Appendix A: WHA-3 Effluent Quality Limits – 1 page
Appendix B: Certificate of Analysis June 8, 2017 – 11 pages
Appendix C: Certificate of Analysis July 12, 2017 – 11 pages
Appendix D: Certificate of Analysis August 28, 2017– 11 pages
Appendix E: Certificate of Analysis September 22, 2017 – 11 pages
Appendix F: Hazardous Materials Spill Database, Whale Cove 2017 – 1 page
Appendix G: Summary of Sampling Results 2017 – 3 pages
Appendix H: 2017 INAC Inspection Report – 1 page

2017 Whale Cove Monitoring Stations and Sampling Parameters for Water License No. 3BM-WHA1520

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

Parameter	Maximum concentration of any grab sample	WHA-3			
		08-Jun-17	12-Jul-17	28-Aug-17	22-Sep-17
BOD_5	120 mg/L	77	33	39	18.5
Total Suspended Solids	180 mg/L	46	36	68	22
Fecal Coliforms	$1x10^6$ CFU/100mL	24200	15500	12000	19900
Oil + Grease	no visible sheen	14.5	5	5	5.6
pH	between 6 and 9	7.37	8.1	7.6	7.5

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

Date Received: 09-JUN-17
Report Date: 20-JUN-17 15:35 (MT)
Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L1939568

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

Craig Riddell, B.Sc.Ag
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1939568-1 WHA-4							
Sampled By: Don Voisey on 08-JUN-17							
Matrix: Sewage/Waste Water							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	234		1.2	mg/L		13-JUN-17	
Alkalinity, Carbonate							
Carbonate (CO3)	6.72		0.60	mg/L		13-JUN-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		13-JUN-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	203		1.0	mg/L		09-JUN-17	R3744174
Ammonia by colour							
Ammonia, Total (as N)	0.105		0.010	mg/L		13-JUN-17	R3746844
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	10.3		2.0	mg/L		10-JUN-17	R3749233
Carbonaceous BOD							
BOD Carbonaceous	6.4		2.0	mg/L		10-JUN-17	R3749233
Chloride in Water by IC							
Chloride (Cl)	123		0.50	mg/L		09-JUN-17	R3746804
Conductivity							
Conductivity	819		1.0	umhos/cm		09-JUN-17	R3744174
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10		10	MPN/100mL		09-JUN-17	R3744950
Hardness Calculated							
Hardness (as CaCO3)	185	HTC	0.25	mg/L		14-JUN-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	12-JUN-17	13-JUN-17	R3748291
Nitrate in Water by IC							
Nitrate (as N)	0.028		0.020	mg/L		09-JUN-17	R3746804
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		14-JUN-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		09-JUN-17	R3746804
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		15-JUN-17	R3748500
Phenol (4AAP)							
Phenols (4AAP)	0.0039		0.0010	mg/L		20-JUN-17	R3751084
Phosphorus, Total							
Phosphorus (P)-Total	4.19		0.10	mg/L		16-JUN-17	R3750563
Sulfate in Water by IC							
Sulfate (SO4)	30.9		0.30	mg/L		09-JUN-17	R3746804
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0236		0.0050	mg/L	13-JUN-17	13-JUN-17	R3746932
Arsenic (As)-Total	0.00836		0.00020	mg/L	13-JUN-17	13-JUN-17	R3746932
Cadmium (Cd)-Total	0.000012		0.000010	mg/L	13-JUN-17	13-JUN-17	R3746932
Calcium (Ca)-Total	52.3		0.10	mg/L	13-JUN-17	13-JUN-17	R3746932
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	13-JUN-17	13-JUN-17	R3746932
Cobalt (Co)-Total	0.00078		0.00020	mg/L	13-JUN-17	13-JUN-17	R3746932
Copper (Cu)-Total	0.00176		0.00020	mg/L	13-JUN-17	13-JUN-17	R3746932
Iron (Fe)-Total	0.913		0.010	mg/L	13-JUN-17	13-JUN-17	R3746932
Lead (Pb)-Total	0.000100		0.000090	mg/L	13-JUN-17	13-JUN-17	R3746932
Magnesium (Mg)-Total	13.2		0.010	mg/L	13-JUN-17	13-JUN-17	R3746932
Manganese (Mn)-Total	0.114		0.00030	mg/L	13-JUN-17	13-JUN-17	R3746932
Nickel (Ni)-Total	0.0036		0.0020	mg/L	13-JUN-17	13-JUN-17	R3746932

* 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
L1939568-1 WHA-4							
Sampled By: Don Voisey on 08-JUN-17							
Matrix: Sewage/Waste Water							
Total Metals by ICP-MS							
Potassium (K)-Total	28.6		0.020	mg/L	13-JUN-17	13-JUN-17	R3746932
Sodium (Na)-Total	88.7		0.030	mg/L	13-JUN-17	13-JUN-17	R3746932
Zinc (Zn)-Total	0.0023		0.0020	mg/L	13-JUN-17	13-JUN-17	R3746932
Total Organic Carbon by Combustion							
Total Organic Carbon	20.2		0.50	mg/L		15-JUN-17	R3749003
Total Suspended Solids							
Total Suspended Solids	17.0		5.0	mg/L		14-JUN-17	R3748228
pH							
pH	8.48		0.10	pH units		09-JUN-17	R3744174
L1939568-2 WHA-3							
Sampled By: Don Voisey on 08-JUN-17							
Matrix: Sewage/Waste Water							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	338		1.2	mg/L		14-JUN-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		14-JUN-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		14-JUN-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	277		1.0	mg/L		13-JUN-17	R3746992
Ammonia by colour							
Ammonia, Total (as N)	43.8		1.0	mg/L		13-JUN-17	R3746844
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	77		20	mg/L		10-JUN-17	R3749233
Carbonaceous BOD							
BOD Carbonaceous	69		20	mg/L		10-JUN-17	R3749233
Chloride in Water by IC							
Chloride (Cl)	79.9		1.0	mg/L		09-JUN-17	R3746804
Conductivity							
Conductivity	900		1.0	umhos/cm		09-JUN-17	R3744174
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	>24200		10	MPN/100mL		09-JUN-17	R3744950
Hardness Calculated							
Hardness (as CaCO3)	130	HTC	0.25	mg/L		14-JUN-17	
Mercury Total							
Mercury (Hg)-Total	0.0000131		0.0000050	mg/L	12-JUN-17	13-JUN-17	R3748291
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		09-JUN-17	R3746804
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		14-JUN-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		09-JUN-17	R3746804
Oil & Grease - Gravimetric							
Oil and Grease	14.5		5.0	mg/L		15-JUN-17	R3748500
Phenol (4AAP)							
Phenols (4AAP)	0.0641		0.0010	mg/L		20-JUN-17	R3751084
Phosphorus, Total							
Phosphorus (P)-Total	5.80		0.10	mg/L		16-JUN-17	R3750563
Sulfate in Water by IC							
Sulfate (SO4)	38.0		0.60	mg/L		09-JUN-17	R3746804

* 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
L1939568-2 WHA-3							
Sampled By: Don Voisey on 08-JUN-17							
Matrix: Sewage/Waste Water							
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.125		0.0050	mg/L	13-JUN-17	13-JUN-17	R3746932
Arsenic (As)-Total	0.00169		0.00020	mg/L	13-JUN-17	13-JUN-17	R3746932
Cadmium (Cd)-Total	0.000066		0.000010	mg/L	13-JUN-17	13-JUN-17	R3746932
Calcium (Ca)-Total	37.3		0.10	mg/L	13-JUN-17	13-JUN-17	R3746932
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	13-JUN-17	13-JUN-17	R3746932
Cobalt (Co)-Total	0.00170		0.00020	mg/L	13-JUN-17	13-JUN-17	R3746932
Copper (Cu)-Total	0.0708		0.00020	mg/L	13-JUN-17	13-JUN-17	R3746932
Iron (Fe)-Total	0.479		0.010	mg/L	13-JUN-17	13-JUN-17	R3746932
Lead (Pb)-Total	0.000956		0.000090	mg/L	13-JUN-17	13-JUN-17	R3746932
Magnesium (Mg)-Total	8.85		0.010	mg/L	13-JUN-17	13-JUN-17	R3746932
Manganese (Mn)-Total	0.115		0.00030	mg/L	13-JUN-17	13-JUN-17	R3746932
Nickel (Ni)-Total	0.0044		0.0020	mg/L	13-JUN-17	13-JUN-17	R3746932
Potassium (K)-Total	20.5		0.020	mg/L	13-JUN-17	13-JUN-17	R3746932
Sodium (Na)-Total	63.5		0.030	mg/L	13-JUN-17	13-JUN-17	R3746932
Zinc (Zn)-Total	0.0521		0.0020	mg/L	13-JUN-17	13-JUN-17	R3746932
Total Organic Carbon by Combustion							
Total Organic Carbon	82.8		2.5	mg/L		16-JUN-17	R3750131
Total Suspended Solids							
Total Suspended Solids	46.0		5.0	mg/L		14-JUN-17	R3748228
pH							
pH	7.37		0.10	pH units		09-JUN-17	R3744174
L1939568-3 WHA-2							
Sampled By: Don Voisey on 08-JUN-17							
Matrix: Sewage/Waste Water							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		14-JUN-17	R3748482
Toluene	<0.0010		0.0010	mg/L		14-JUN-17	R3748482
Ethyl benzene	<0.00050		0.00050	mg/L		14-JUN-17	R3748482
o-Xylene	<0.00050		0.00050	mg/L		14-JUN-17	R3748482
m+p-Xylenes	<0.00040		0.00040	mg/L		14-JUN-17	R3748482
F1 (C6-C10)	<0.10		0.10	mg/L		14-JUN-17	R3748482
Surrogate: 4-Bromofluorobenzene (SS)	98.8		70-130	%		14-JUN-17	R3748482
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	13-JUN-17	14-JUN-17	R3747836
F3 (C16-C34)	<0.25		0.25	mg/L	13-JUN-17	14-JUN-17	R3747836
F4 (C34-C50)	<0.25		0.25	mg/L	13-JUN-17	14-JUN-17	R3747836
Surrogate: 2-Bromobenzotrifluoride	82.2		60-140	%	13-JUN-17	14-JUN-17	R3747836
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		19-JUN-17	
F2-Naphth	<0.10		0.10	mg/L		19-JUN-17	
F3-PAH	<0.25		0.25	mg/L		19-JUN-17	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		19-JUN-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		15-JUN-17	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.000123		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551
2-Methyl Naphthalene	0.000082		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551
Acenaphthene	<0.000020		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551
Acenaphthylene	0.000023		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551

* 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
L1939568-3 WHA-2							
Sampled By: Don Voisey on 08-JUN-17							
Matrix: Sewage/Waste Water							
Polyaromatic Hydrocarbons (PAHs)							
Anthracene	<0.000010		0.000010	mg/L	13-JUN-17	17-JUN-17	R3750551
Acridine	<0.000020		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551
Benzo(a)anthracene	<0.000010		0.000010	mg/L	13-JUN-17	17-JUN-17	R3750551
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	13-JUN-17	17-JUN-17	R3750551
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	13-JUN-17	17-JUN-17	R3750551
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	13-JUN-17	17-JUN-17	R3750551
Chrysene	<0.000020		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	13-JUN-17	17-JUN-17	R3750551
Fluoranthene	<0.000020		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551
Fluorene	0.000023		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	13-JUN-17	17-JUN-17	R3750551
Naphthalene	0.000109		0.000050	mg/L	13-JUN-17	17-JUN-17	R3750551
Phenanthrene	<0.000050		0.000050	mg/L	13-JUN-17	17-JUN-17	R3750551
Pyrene	<0.000010		0.000010	mg/L	13-JUN-17	17-JUN-17	R3750551
Quinoline	0.000189		0.000020	mg/L	13-JUN-17	17-JUN-17	R3750551
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	13-JUN-17	17-JUN-17	R3750551
Surrogate: Acenaphthene d10	94.0		40-130	%	13-JUN-17	17-JUN-17	R3750551
Surrogate: Acridine d9	112.7		40-130	%	13-JUN-17	17-JUN-17	R3750551
Surrogate: Chrysene d12	69.0		40-130	%	13-JUN-17	17-JUN-17	R3750551
Surrogate: Naphthalene d8	97.0		40-130	%	13-JUN-17	17-JUN-17	R3750551
Surrogate: Phenanthrene d10	91.0		40-130	%	13-JUN-17	17-JUN-17	R3750551
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	154		1.2	mg/L		14-JUN-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		14-JUN-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		14-JUN-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	127		1.0	mg/L		13-JUN-17	R3746992
Ammonia by colour							
Ammonia, Total (as N)	0.99		0.10	mg/L		13-JUN-17	R3746844
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	8.4		2.0	mg/L		10-JUN-17	R3749233
Carbonaceous BOD							
BOD Carbonaceous	6.8		2.0	mg/L		10-JUN-17	R3749233
Chloride in Water by IC							
Chloride (Cl)	123		0.50	mg/L		09-JUN-17	R3746804
Conductivity							
Conductivity	769		1.0	umhos/cm		09-JUN-17	R3744174
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	5170		10	MPN/100mL		09-JUN-17	R3744950
Hardness Calculated							
Hardness (as CaCO3)	221	HTC	0.25	mg/L		14-JUN-17	
Mercury Total							
Mercury (Hg)-Total	0.0000058		0.0000050	mg/L	12-JUN-17	13-JUN-17	R3748291
Nitrate in Water by IC							
Nitrate (as N)	0.113		0.020	mg/L		09-JUN-17	R3746804
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.127		0.070	mg/L		14-JUN-17	
Nitrite in Water by IC							

* 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
L1939568-3 WHA-2							
Sampled By: Don Voisey on 08-JUN-17							
Matrix: Sewage/Waste Water							
Nitrite in Water by IC							
Nitrite (as N)	0.015		0.010	mg/L		09-JUN-17	R3746804
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		15-JUN-17	R3748500
Phenol (4AAP)							
Phenols (4AAP)	0.0057		0.0010	mg/L		20-JUN-17	R3751084
Phosphorus, Total							
Phosphorus (P)-Total	0.210		0.010	mg/L		16-JUN-17	R3750563
Sulfate in Water by IC							
Sulfate (SO4)	76.2		0.30	mg/L		09-JUN-17	R3746804
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.0630		0.0050	mg/L	13-JUN-17	13-JUN-17	R3746932
Arsenic (As)-Total	0.00188		0.00020	mg/L	13-JUN-17	13-JUN-17	R3746932
Cadmium (Cd)-Total	0.000084		0.000010	mg/L	13-JUN-17	13-JUN-17	R3746932
Calcium (Ca)-Total	68.1		0.10	mg/L	13-JUN-17	13-JUN-17	R3746932
Chromium (Cr)-Total	<0.0010		0.0010	mg/L	13-JUN-17	13-JUN-17	R3746932
Cobalt (Co)-Total	0.00144		0.00020	mg/L	13-JUN-17	13-JUN-17	R3746932
Copper (Cu)-Total	0.00930		0.00020	mg/L	13-JUN-17	13-JUN-17	R3746932
Iron (Fe)-Total	2.24		0.010	mg/L	13-JUN-17	13-JUN-17	R3746932
Lead (Pb)-Total	0.00131		0.000090	mg/L	13-JUN-17	13-JUN-17	R3746932
Magnesium (Mg)-Total	12.3		0.010	mg/L	13-JUN-17	13-JUN-17	R3746932
Manganese (Mn)-Total	0.247		0.00030	mg/L	13-JUN-17	13-JUN-17	R3746932
Nickel (Ni)-Total	0.0066		0.0020	mg/L	13-JUN-17	13-JUN-17	R3746932
Potassium (K)-Total	9.92		0.020	mg/L	13-JUN-17	13-JUN-17	R3746932
Sodium (Na)-Total	63.1		0.030	mg/L	13-JUN-17	13-JUN-17	R3746932
Zinc (Zn)-Total	0.0540		0.0020	mg/L	13-JUN-17	13-JUN-17	R3746932
Total Organic Carbon by Combustion							
Total Organic Carbon	12.4		0.50	mg/L		15-JUN-17	R3749003
Total Suspended Solids							
Total Suspended Solids	12.0		5.0	mg/L		14-JUN-17	R3748228
pH							
pH	7.60		0.10	pH units		09-JUN-17	R3744174

* 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-L-MS-WP	Water	Total Metals by ICP-MS	APHA 3030E/EPA 6020A-TL

This analysis involves preliminary sample treatment by hotblock acid digestion (APHA 3030E). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

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

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

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

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

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

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

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

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

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

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus 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)

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

SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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:

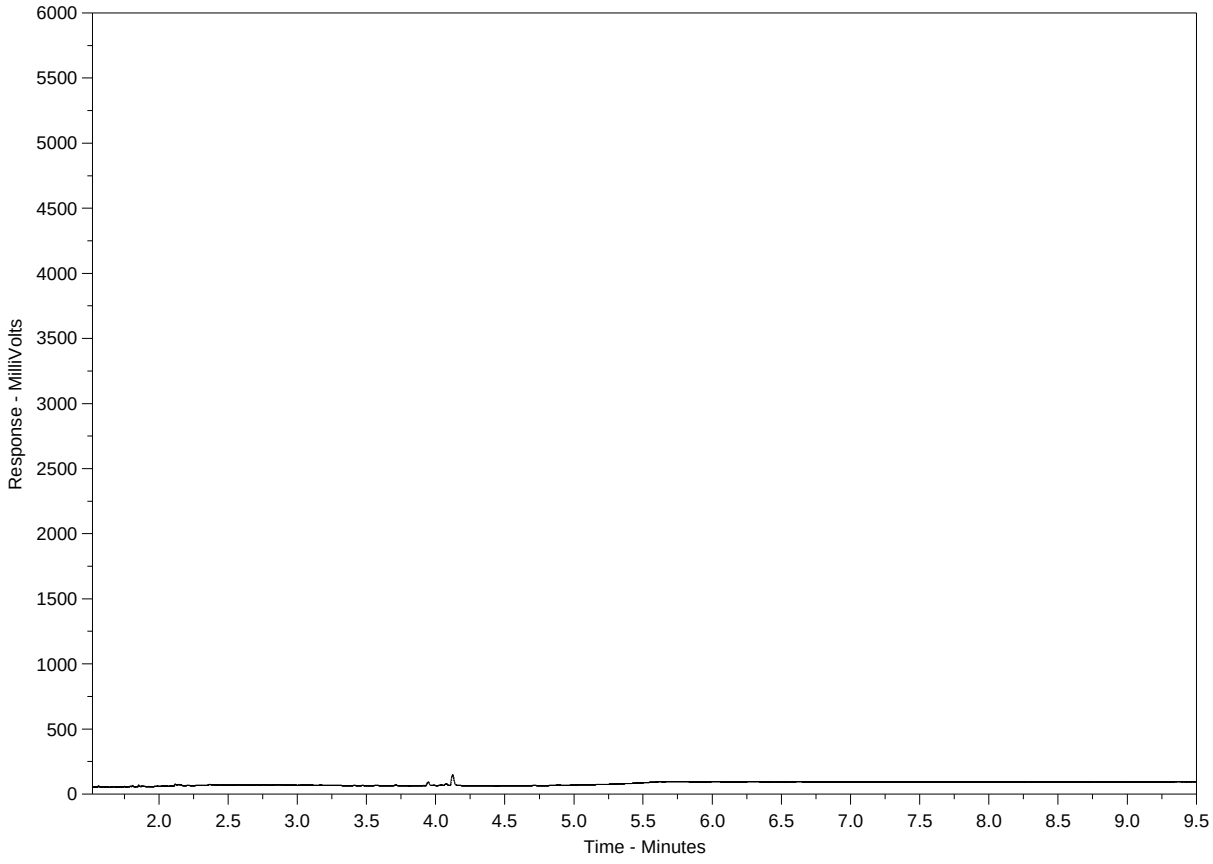
GLOSSARY OF REPORT TERMS

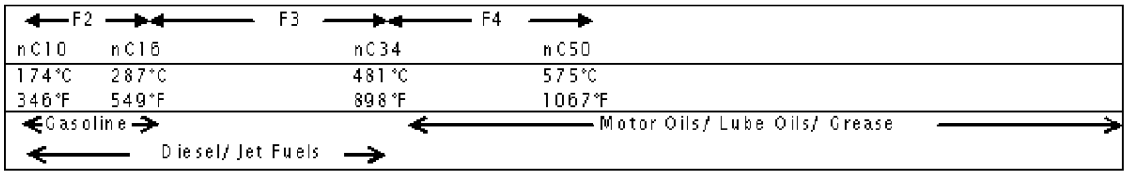
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates 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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1939568-3
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

L1939568-COFC

COC Number: 14 - 503456

Page 1 of 1

L1939568

Report To		Report Format / Distribution		Turnaround Time (TAT) (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:	BOX 120, WHALE COVE NU X0C0J0	☐ 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	Email 1 or Fax	SAO@WHALECOVE.CA.	Specify Date Required for E2,E or P:	
		Email 2			

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:	HAMLET OF WHALE COVE.	Email 2	
Contact:	IAN COPLAND		

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: Don Wiley

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	Routine	BOD	Metals	Nutrients	Bacteria	Oil + Grease x2	Phenols	BTX-F1 x3	F2-F4 x2	PAH	Mercury			Number of Containers
	WHA-4	08-06-17			✓	✓	P	P	P	P	P	P	P	P	P			9
	WHA-3	08-06-17			✓	✓	P	P	P	P	P	P	P	P	P			9
	WHA-2	08-06-17			✓	✓	P	P	P	P	P	P	P	P	P			15

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-CRP1
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		
			10.5		

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:
Don Wiley	June 8/17	10:40	CM	9-6-17	12:20			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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**.

Hamlet of Whale Cove
ATTN: PAUL VOISEY
PO Box 120
Whale Cove NU X0C 0J0

Date Received: 14-JUL-17
Report Date: 03-AUG-17 13:41 (MT)
Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L1958848

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
L1958848-1 WHA-4							
Sampled By: DV on 12-JUL-17 @ 09:15							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	219		1.2	mg/L		19-JUL-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		19-JUL-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		19-JUL-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	180		1.0	mg/L		15-JUL-17	R3776864
Ammonia by colour							
Ammonia, Total (as N)	0.055		0.010	mg/L		19-JUL-17	R3778206
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		15-JUL-17	R3779171
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		15-JUL-17	R3779171
Chloride in Water by IC							
Chloride (Cl)	43.2		0.50	mg/L		14-JUL-17	R3775969
Conductivity							
Conductivity	413		1.0	umhos/cm		15-JUL-17	R3776864
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10	PEHR	10	MPN/100mL		14-JUL-17	R3773109
Hardness Calculated							
Hardness (as CaCO3)	192	HTC	0.20	mg/L		19-JUL-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	19-JUL-17	19-JUL-17	R3778219
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		14-JUL-17	R3775969
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		18-JUL-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		14-JUL-17	R3775969
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		21-JUL-17	R3779594
Phenol (4AAP)							
Phenols (4AAP)	0.0011		0.0010	mg/L		21-JUL-17	R3780437
Phosphorus, Total							
Phosphorus (P)-Total	0.390		0.010	mg/L		18-JUL-17	R3776714
Sulfate in Water by IC							
Sulfate (SO4)	12.2		0.30	mg/L		14-JUL-17	R3775969
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0117		0.0030	mg/L	18-JUL-17	18-JUL-17	R3777311
Arsenic (As)-Total	0.00061		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Cadmium (Cd)-Total	0.0000107		0.0000050	mg/L	18-JUL-17	18-JUL-17	R3777311
Calcium (Ca)-Total	67.9		0.050	mg/L	18-JUL-17	18-JUL-17	R3777311
Chromium (Cr)-Total	0.00012		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Copper (Cu)-Total	0.00323		0.00050	mg/L	18-JUL-17	18-JUL-17	R3777311
Iron (Fe)-Total	0.220		0.010	mg/L	18-JUL-17	18-JUL-17	R3777311
Lead (Pb)-Total	<0.000050		0.000050	mg/L	18-JUL-17	18-JUL-17	R3777311
Magnesium (Mg)-Total	5.54		0.0050	mg/L	18-JUL-17	18-JUL-17	R3777311
Manganese (Mn)-Total	0.0401		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Nickel (Ni)-Total	0.00116		0.00050	mg/L	18-JUL-17	18-JUL-17	R3777311

* 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
L1958848-1 WHA-4							
Sampled By: DV on 12-JUL-17 @ 09:15							
Matrix: WASTEWATER							
Total Metals in Water by CRC ICPMS							
Potassium (K)-Total	1.75		0.050	mg/L	18-JUL-17	18-JUL-17	R3777311
Sodium (Na)-Total	25.6		0.050	mg/L	18-JUL-17	18-JUL-17	R3777311
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	18-JUL-17	18-JUL-17	R3777311
Total Organic Carbon by Combustion							
Total Organic Carbon	4.37		0.50	mg/L		23-JUL-17	R3780524
Total Suspended Solids							
Total Suspended Solids	<5.0		5.0	mg/L		17-JUL-17	R3775869
pH							
pH	7.70		0.10	pH units		15-JUL-17	R3776864
L1958848-2 WHA-3							
Sampled By: DV on 12-JUL-17 @ 09:25							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	330		1.2	mg/L		19-JUL-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		19-JUL-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		19-JUL-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	271		1.0	mg/L		15-JUL-17	R3776864
Ammonia by colour							
Ammonia, Total (as N)	35.2		1.0	mg/L		19-JUL-17	R3778206
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	33		20	mg/L		15-JUL-17	R3779171
Carbonaceous BOD							
BOD Carbonaceous	31.2		6.0	mg/L		15-JUL-17	R3779171
Chloride in Water by IC							
Chloride (Cl)	91.8		1.0	mg/L		14-JUL-17	R3775969
Conductivity							
Conductivity	877		1.0	umhos/cm		15-JUL-17	R3776864
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	15500	PEHR	10	MPN/100mL		14-JUL-17	R3773109
Hardness Calculated							
Hardness (as CaCO3)	152	HTC	0.20	mg/L		19-JUL-17	
Mercury Total							
Mercury (Hg)-Total	0.0000071		0.0000050	mg/L	19-JUL-17	19-JUL-17	R3778219
Nitrate in Water by IC							
Nitrate (as N)	0.085		0.040	mg/L		14-JUL-17	R3775969
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.085		0.070	mg/L		18-JUL-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		14-JUL-17	R3775969
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		21-JUL-17	R3779594
Phenol (4AAP)							
Phenols (4AAP)	0.0015		0.0010	mg/L		21-JUL-17	R3780437
Phosphorus, Total							
Phosphorus (P)-Total	6.07		0.10	mg/L		18-JUL-17	R3776714
Sulfate in Water by IC							
Sulfate (SO4)	56.6		0.60	mg/L		14-JUL-17	R3775969

* 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
L1958848-2 WHA-3							
Sampled By: DV on 12-JUL-17 @ 09:25							
Matrix: WASTEWATER							
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0492		0.0030	mg/L	18-JUL-17	18-JUL-17	R3777311
Arsenic (As)-Total	0.00182		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Cadmium (Cd)-Total	0.0000306		0.0000050	mg/L	18-JUL-17	18-JUL-17	R3777311
Calcium (Ca)-Total	45.3		0.050	mg/L	18-JUL-17	18-JUL-17	R3777311
Chromium (Cr)-Total	0.00033		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Cobalt (Co)-Total	0.00131		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Copper (Cu)-Total	0.0304		0.00050	mg/L	18-JUL-17	18-JUL-17	R3777311
Iron (Fe)-Total	0.249		0.010	mg/L	18-JUL-17	18-JUL-17	R3777311
Lead (Pb)-Total	0.000409		0.000050	mg/L	18-JUL-17	18-JUL-17	R3777311
Magnesium (Mg)-Total	9.36		0.0050	mg/L	18-JUL-17	18-JUL-17	R3777311
Manganese (Mn)-Total	0.104		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Nickel (Ni)-Total	0.00421		0.00050	mg/L	18-JUL-17	18-JUL-17	R3777311
Potassium (K)-Total	22.8		0.050	mg/L	18-JUL-17	18-JUL-17	R3777311
Sodium (Na)-Total	69.0		0.050	mg/L	18-JUL-17	18-JUL-17	R3777311
Zinc (Zn)-Total	0.0178		0.0030	mg/L	18-JUL-17	18-JUL-17	R3777311
Total Organic Carbon by Combustion							
Total Organic Carbon	38.8		0.50	mg/L		21-JUL-17	R3780243
Total Suspended Solids							
Total Suspended Solids	36		10	mg/L		17-JUL-17	R3775869
pH							
pH	8.10		0.10	pH units		15-JUL-17	R3776864
L1958848-3 WHA-2							
Sampled By: DV on 12-JUL-17 @ 08:55							
Matrix: WASTEWATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		19-JUL-17	R3777882
Toluene	<0.0010		0.0010	mg/L		19-JUL-17	R3777882
Ethyl benzene	<0.00050		0.00050	mg/L		19-JUL-17	R3777882
o-Xylene	<0.00050		0.00050	mg/L		19-JUL-17	R3777882
m+p-Xylenes	<0.00040		0.00040	mg/L		19-JUL-17	R3777882
F1 (C6-C10)	<0.10		0.10	mg/L		19-JUL-17	R3777882
Surrogate: 4-Bromofluorobenzene (SS)	92.7		70-130	%		19-JUL-17	R3777882
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	19-JUL-17	02-AUG-17	R3781771
F3 (C16-C34)	<0.25		0.25	mg/L	19-JUL-17	02-AUG-17	R3781771
F4 (C34-C50)	<0.25		0.25	mg/L	19-JUL-17	02-AUG-17	R3781771
Surrogate: 2-Bromobenzotrifluoride	116.0		60-140	%	19-JUL-17	02-AUG-17	R3781771
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		03-AUG-17	
F2-Naphth	<0.10		0.10	mg/L		03-AUG-17	
F3-PAH	<0.25		0.25	mg/L		03-AUG-17	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		03-AUG-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		21-JUL-17	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469
Acenaphthene	<0.000020		0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469
Acenaphthylene	<0.000020		0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469

* 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
L1958848-3 WHA-2							
Sampled By: DV on 12-JUL-17 @ 08:55							
Matrix: WASTEWATER							
Polyaromatic Hydrocarbons (PAHs)							
Anthracene	<0.000010		0.000010	mg/L	25-JUL-17	25-JUL-17	R3782469
Acridine	<0.000020		0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469
Benzo(a)anthracene	<0.000010		0.000010	mg/L	25-JUL-17	25-JUL-17	R3782469
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	25-JUL-17	25-JUL-17	R3782469
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	25-JUL-17	25-JUL-17	R3782469
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	25-JUL-17	25-JUL-17	R3782469
Chrysene	<0.000020		0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	25-JUL-17	25-JUL-17	R3782469
Fluoranthene	<0.000020		0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469
Fluorene	<0.000020		0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	25-JUL-17	25-JUL-17	R3782469
Naphthalene	<0.000050		0.000050	mg/L	25-JUL-17	25-JUL-17	R3782469
Phenanthrene	<0.000050		0.000050	mg/L	25-JUL-17	25-JUL-17	R3782469
Pyrene	<0.000010		0.000010	mg/L	25-JUL-17	25-JUL-17	R3782469
Quinoline	0.000175	EMPC	0.000020	mg/L	25-JUL-17	25-JUL-17	R3782469
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	25-JUL-17	25-JUL-17	R3782469
Surrogate: Acenaphthene d10	87.1		40-130	%	25-JUL-17	25-JUL-17	R3782469
Surrogate: Acridine d9	96.7		40-130	%	25-JUL-17	25-JUL-17	R3782469
Surrogate: Chrysene d12	85.8		40-130	%	25-JUL-17	25-JUL-17	R3782469
Surrogate: Naphthalene d8	92.2		40-130	%	25-JUL-17	25-JUL-17	R3782469
Surrogate: Phenanthrene d10	80.3		40-130	%	25-JUL-17	25-JUL-17	R3782469
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	235		1.2	mg/L		19-JUL-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		19-JUL-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		19-JUL-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	192		1.0	mg/L		15-JUL-17	R3776864
Ammonia by colour							
Ammonia, Total (as N)	1.83		0.10	mg/L		19-JUL-17	R3778206
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	3.0		2.0	mg/L		15-JUL-17	R3779171
Carbonaceous BOD							
BOD Carbonaceous	2.3		2.0	mg/L		15-JUL-17	R3779171
Chloride in Water by IC							
Chloride (Cl)	157		1.0	mg/L		14-JUL-17	R3775969
Conductivity							
Conductivity	951		1.0	umhos/cm		15-JUL-17	R3776864
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	10	PEHR	10	MPN/100mL		14-JUL-17	R3773109
Hardness Calculated							
Hardness (as CaCO3)	291	HTC	0.20	mg/L		19-JUL-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	19-JUL-17	19-JUL-17	R3778219
Nitrate in Water by IC							
Nitrate (as N)	0.054		0.040	mg/L		14-JUL-17	R3775969
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		18-JUL-17	
Nitrite in Water by IC							

* 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
L1958848-3 WHA-2							
Sampled By: DV on 12-JUL-17 @ 08:55							
Matrix: WASTEWATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		14-JUL-17	R3775969
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		21-JUL-17	R3779594
Phenol (4AAP)							
Phenols (4AAP)	0.0021		0.0010	mg/L		21-JUL-17	R3780437
Phosphorus, Total							
Phosphorus (P)-Total	0.109		0.010	mg/L		18-JUL-17	R3776714
Sulfate in Water by IC							
Sulfate (SO4)	73.7		0.60	mg/L		14-JUL-17	R3775969
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0099		0.0030	mg/L	18-JUL-17	18-JUL-17	R3777311
Arsenic (As)-Total	0.00238		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Cadmium (Cd)-Total	0.0000199		0.0000050	mg/L	18-JUL-17	18-JUL-17	R3777311
Calcium (Ca)-Total	90.3		0.050	mg/L	18-JUL-17	18-JUL-17	R3777311
Chromium (Cr)-Total	0.00051		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Cobalt (Co)-Total	0.00115		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Copper (Cu)-Total	0.00222		0.00050	mg/L	18-JUL-17	18-JUL-17	R3777311
Iron (Fe)-Total	1.71		0.010	mg/L	18-JUL-17	18-JUL-17	R3777311
Lead (Pb)-Total	0.000326		0.000050	mg/L	18-JUL-17	18-JUL-17	R3777311
Magnesium (Mg)-Total	15.8		0.0050	mg/L	18-JUL-17	18-JUL-17	R3777311
Manganese (Mn)-Total	0.246		0.00010	mg/L	18-JUL-17	18-JUL-17	R3777311
Nickel (Ni)-Total	0.00588		0.00050	mg/L	18-JUL-17	18-JUL-17	R3777311
Potassium (K)-Total	14.6		0.050	mg/L	18-JUL-17	18-JUL-17	R3777311
Sodium (Na)-Total	79.7		0.050	mg/L	18-JUL-17	18-JUL-17	R3777311
Zinc (Zn)-Total	0.0122		0.0030	mg/L	18-JUL-17	18-JUL-17	R3777311
Total Organic Carbon by Combustion							
Total Organic Carbon	12.8		0.50	mg/L		21-JUL-17	R3780243
Total Suspended Solids							
Total Suspended Solids	9.0		5.0	mg/L		17-JUL-17	R3775869
pH							
pH	7.79		0.10	pH units		15-JUL-17	R3776864

* 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).
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
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, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

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

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

F2-F4-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-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus 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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)
Total suspended solids in 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:

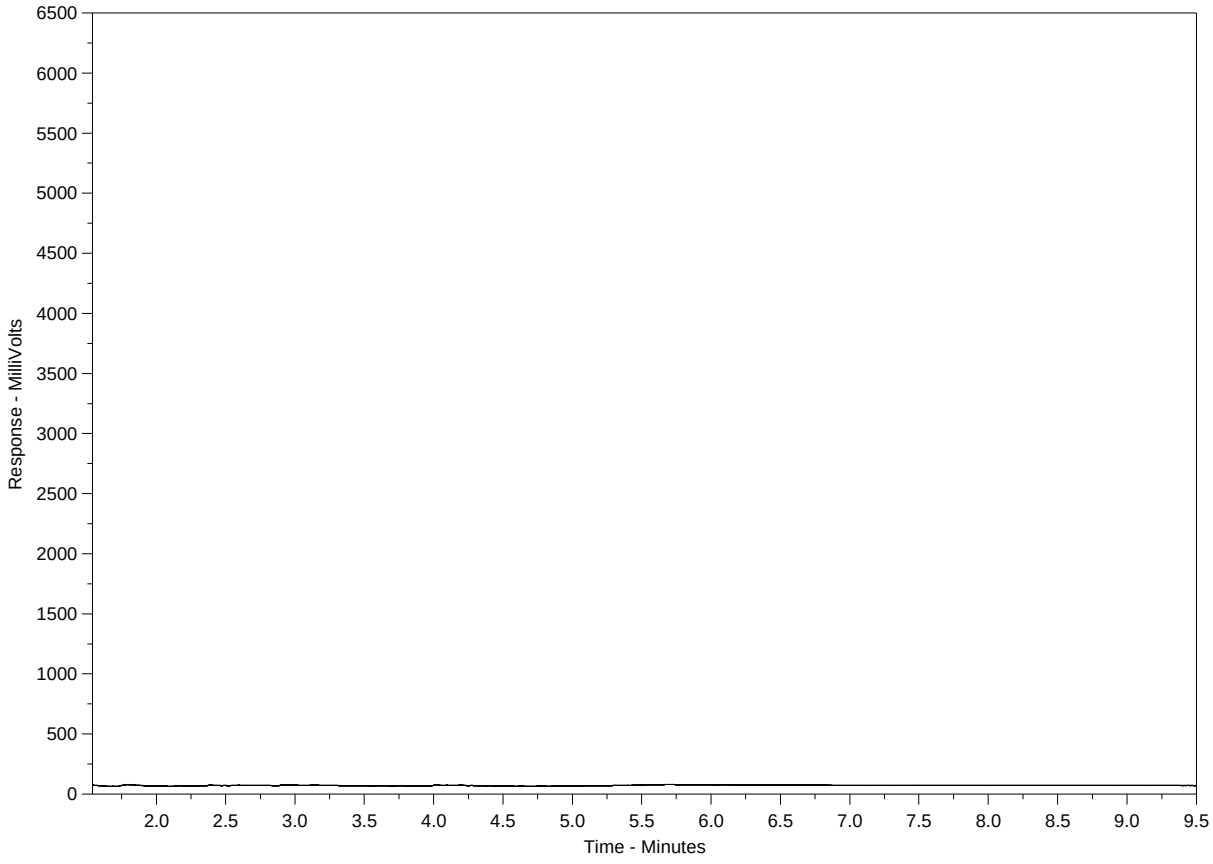
GLOSSARY OF REPORT TERMS

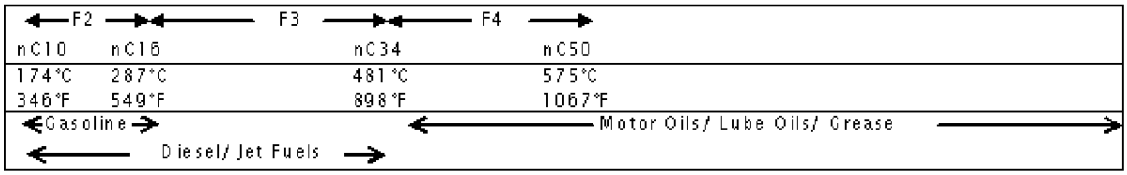
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates 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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1958848-3
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

L1958848-COFC

COC Number: 15 - 571764

Page 1 of 1

L1958848

Report To	Contact and company name below will appear on the final report
Company:	Hamlet of Whale Cove
Contact:	Ian Copland
Phone:	867-896-9961
	Company address below will appear on the final report
Street:	PO Box 120
City/Province:	Whale Cove, NU
Postal Code:	X0C 0J0
Invoice To	Same as Report To: YES NO
	Copy of Invoice with Report: YES NO
Company:	
Contact:	

Report Format / Distribution	
Select Report Format:	PDF EXCEL EDD (DIGITAL)
Quality Control (QC) Report with Report	YES NO
Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	EMAIL MAIL FAX
Email 1 or Fax	sao@whalecove.ca
Email 2	mlustig@gov.nu.ca
Email 3	

Invoice Distribution	
Select Invoice Distribution:	EMAIL MAIL FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	W10623
Job #:	
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only)

ALS Contact: Craig Riddell

Sampler: DoN V

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

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

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

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

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

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

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Routine	BOD	Metals	Nutrients	Oil + Grease x2	Phenols	Mercury	BTX-F1 x3	F2-F4 x2	PAH				Number of Containers
	WHA-4	12-07-17	09:15AM	wastewater	✓	✓	P	P	P	P	P	[redacted]	[redacted]	[redacted]				9
	WHA-3	12-07-17	09:25AM	wastewater	✓	✓	P	P	P	P	P	[redacted]	[redacted]	[redacted]				9
	WHA-2	12-07-17	08:55AM	wastewater	✓	✓	P	P	P	P	P	P	(P)	P				14

1 F2-F4 bottle was broken

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? NO	Nunavut - WW - GRP1
Are samples for human drinking water use? NO	BTX-F1-F4, PAH

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen		SIF Observations	Yes / No
Ice Packs	Ice Cubes	Custody seal intact	Yes / No
Cooling Initiated			

12.4°C

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Don Voisin	Date: June 12/17	Time: 9:40	Received by: AG	Date: July 14/17	Time: 12:35	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

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

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

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

Date Received: 31-AUG-17
Report Date: 13-SEP-17 12:57 (MT)
Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L1984293

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
L1984293-1 WHA-4							
Sampled By: CLIENT on 28-AUG-17 @ 15:00							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	302		1.2	mg/L		01-SEP-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		01-SEP-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		01-SEP-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	248		1.0	mg/L		31-AUG-17	R3816718
Ammonia by colour							
Ammonia, Total (as N)	0.021		0.010	mg/L		08-SEP-17	R3822830
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0	BODQ	2.0	mg/L		31-AUG-17	R3820502
Carbonaceous BOD							
BOD Carbonaceous	<2.0	BODQ	2.0	mg/L		31-AUG-17	R3820502
Chloride in Water by IC							
Chloride (Cl)	95.9		1.0	mg/L		31-AUG-17	R3818525
Conductivity							
Conductivity	845		1.0	umhos/cm		31-AUG-17	R3816718
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	<10	PEHR	10	MPN/100mL		31-AUG-17	R3816611
Hardness Calculated							
Hardness (as CaCO3)	355	HTC	0.20	mg/L		06-SEP-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	01-SEP-17	05-SEP-17	R3820950
Nitrate in Water by IC							
Nitrate (as N)	<0.040	DLM	0.040	mg/L		31-AUG-17	R3818525
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-SEP-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		31-AUG-17	R3818525
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		11-SEP-17	R3823430
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		05-SEP-17	R3820191
Phosphorus, Total							
Phosphorus (P)-Total	0.301		0.010	mg/L		01-SEP-17	R3816753
Sulfate in Water by IC							
Sulfate (SO4)	122		0.60	mg/L		31-AUG-17	R3818525
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.159		0.0030	mg/L	01-SEP-17	05-SEP-17	R3820268
Arsenic (As)-Total	0.00104		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Cadmium (Cd)-Total	0.0000163		0.0000050	mg/L	01-SEP-17	05-SEP-17	R3820268
Calcium (Ca)-Total	119		0.050	mg/L	01-SEP-17	05-SEP-17	R3820268
Chromium (Cr)-Total	0.00051		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Cobalt (Co)-Total	0.00030		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Copper (Cu)-Total	0.00341		0.00050	mg/L	01-SEP-17	05-SEP-17	R3820268
Iron (Fe)-Total	0.739		0.010	mg/L	01-SEP-17	05-SEP-17	R3820268
Lead (Pb)-Total	0.000129		0.000050	mg/L	01-SEP-17	05-SEP-17	R3820268
Magnesium (Mg)-Total	13.9		0.0050	mg/L	01-SEP-17	05-SEP-17	R3820268
Manganese (Mn)-Total	0.0465		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Nickel (Ni)-Total	0.00224		0.00050	mg/L	01-SEP-17	05-SEP-17	R3820268

* 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
L1984293-1 WHA-4							
Sampled By: CLIENT on 28-AUG-17 @ 15:00							
Matrix: WASTEWATER							
Total Metals in Water by CRC ICPMS							
Potassium (K)-Total	7.39		0.050	mg/L	01-SEP-17	05-SEP-17	R3820268
Sodium (Na)-Total	74.1		0.050	mg/L	01-SEP-17	05-SEP-17	R3820268
Zinc (Zn)-Total	0.0055		0.0030	mg/L	01-SEP-17	05-SEP-17	R3820268
Total Organic Carbon by Combustion							
Total Organic Carbon	7.51		0.50	mg/L		05-SEP-17	R3820396
Total Suspended Solids							
Total Suspended Solids	<5.0		5.0	mg/L		01-SEP-17	R3819039
pH							
pH	7.95		0.10	pH units		31-AUG-17	R3816718
L1984293-2 WHA-3							
Sampled By: CLIENT on 28-AUG-17 @ 15:00							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	252		1.2	mg/L		01-SEP-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		01-SEP-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		01-SEP-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	207		1.0	mg/L		31-AUG-17	R3816718
Ammonia by colour							
Ammonia, Total (as N)	20.9		1.0	mg/L		12-SEP-17	R3826833
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	39	BODQ	20	mg/L		31-AUG-17	R3820502
Carbonaceous BOD							
BOD Carbonaceous	11.2	BODQ	6.0	mg/L		31-AUG-17	R3820502
Chloride in Water by IC							
Chloride (Cl)	99.7		1.0	mg/L		31-AUG-17	R3818525
Conductivity							
Conductivity	774		1.0	umhos/cm		31-AUG-17	R3816718
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	12000	PEHR	10	MPN/100mL		31-AUG-17	R3816611
Hardness Calculated							
Hardness (as CaCO3)	164	HTC	0.20	mg/L		06-SEP-17	
Mercury Total							
Mercury (Hg)-Total	<0.000025		0.000025	mg/L	01-SEP-17	05-SEP-17	R3820950
Nitrate in Water by IC							
Nitrate (as N)	0.287	DLM	0.040	mg/L		31-AUG-17	R3818525
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.766		0.070	mg/L		05-SEP-17	
Nitrite in Water by IC							
Nitrite (as N)	0.480		0.020	mg/L		31-AUG-17	R3818525
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		11-SEP-17	R3823430
Phenol (4AAP)							
Phenols (4AAP)	0.0016		0.0010	mg/L		05-SEP-17	R3820191
Phosphorus, Total							
Phosphorus (P)-Total	7.88		0.20	mg/L		01-SEP-17	R3816753
Sulfate in Water by IC							
Sulfate (SO4)	50.1		0.60	mg/L		31-AUG-17	R3818525

* 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
L1984293-2 WHA-3							
Sampled By: CLIENT on 28-AUG-17 @ 15:00							
Matrix: WASTEWATER							
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.140		0.0030	mg/L	01-SEP-17	05-SEP-17	R3820268
Arsenic (As)-Total	0.00184		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Cadmium (Cd)-Total	0.0000393		0.0000050	mg/L	01-SEP-17	05-SEP-17	R3820268
Calcium (Ca)-Total	48.6		0.050	mg/L	01-SEP-17	05-SEP-17	R3820268
Chromium (Cr)-Total	0.00049		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Cobalt (Co)-Total	0.00119		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Copper (Cu)-Total	0.0251		0.00050	mg/L	01-SEP-17	05-SEP-17	R3820268
Iron (Fe)-Total	0.484		0.010	mg/L	01-SEP-17	05-SEP-17	R3820268
Lead (Pb)-Total	0.000503		0.000050	mg/L	01-SEP-17	05-SEP-17	R3820268
Magnesium (Mg)-Total	10.3		0.0050	mg/L	01-SEP-17	05-SEP-17	R3820268
Manganese (Mn)-Total	0.141		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Nickel (Ni)-Total	0.00505		0.00050	mg/L	01-SEP-17	05-SEP-17	R3820268
Potassium (K)-Total	24.0		0.050	mg/L	01-SEP-17	05-SEP-17	R3820268
Sodium (Na)-Total	77.7		0.050	mg/L	01-SEP-17	05-SEP-17	R3820268
Zinc (Zn)-Total	0.0408		0.0030	mg/L	01-SEP-17	05-SEP-17	R3820268
Total Organic Carbon by Combustion							
Total Organic Carbon	62.0		5.0	mg/L		05-SEP-17	R3820396
Total Suspended Solids							
Total Suspended Solids	68		10	mg/L		01-SEP-17	R3819039
pH							
pH	7.60		0.10	pH units		31-AUG-17	R3816718
L1984293-3 WHA-2							
Sampled By: CLIENT on 28-AUG-17 @ 15:00							
Matrix: WASTEWATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		02-SEP-17	R3818931
Toluene	<0.0010		0.0010	mg/L		02-SEP-17	R3818931
Ethyl benzene	<0.00050		0.00050	mg/L		02-SEP-17	R3818931
o-Xylene	<0.00050		0.00050	mg/L		02-SEP-17	R3818931
m+p-Xylenes	<0.00040		0.00040	mg/L		02-SEP-17	R3818931
F1 (C6-C10)	<0.10		0.10	mg/L		02-SEP-17	R3818931
Surrogate: 4-Bromofluorobenzene (SS)	101.3		70-130	%		02-SEP-17	R3818931
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	07-SEP-17	07-SEP-17	R3822936
F3 (C16-C34)	<0.25		0.25	mg/L	07-SEP-17	07-SEP-17	R3822936
F4 (C34-C50)	<0.25		0.25	mg/L	07-SEP-17	07-SEP-17	R3822936
Surrogate: 2-Bromobenzotrifluoride	86.0		60-140	%	07-SEP-17	07-SEP-17	R3822936
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		12-SEP-17	
F2-Naphth	<0.10		0.10	mg/L		12-SEP-17	
F3-PAH	<0.25		0.25	mg/L		12-SEP-17	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		12-SEP-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		05-SEP-17	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212
Acenaphthene	<0.000020		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212
Acenaphthylene	<0.000020		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212

* 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
L1984293-3 WHA-2							
Sampled By: CLIENT on 28-AUG-17 @ 15:00							
Matrix: WASTEWATER							
Polyaromatic Hydrocarbons (PAHs)							
Anthracene	<0.000010		0.000010	mg/L	08-SEP-17	11-SEP-17	R3824212
Acridine	<0.000020		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212
Benzo(a)anthracene	<0.000010		0.000010	mg/L	08-SEP-17	11-SEP-17	R3824212
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	08-SEP-17	11-SEP-17	R3824212
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	08-SEP-17	11-SEP-17	R3824212
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	08-SEP-17	11-SEP-17	R3824212
Chrysene	<0.000020		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	08-SEP-17	11-SEP-17	R3824212
Fluoranthene	<0.000020		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212
Fluorene	<0.000020		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	08-SEP-17	11-SEP-17	R3824212
Naphthalene	<0.00010	DLM	0.00010	mg/L	08-SEP-17	11-SEP-17	R3824212
Phenanthrene	<0.000050		0.000050	mg/L	08-SEP-17	11-SEP-17	R3824212
Pyrene	<0.000010		0.000010	mg/L	08-SEP-17	11-SEP-17	R3824212
Quinoline	0.000081		0.000020	mg/L	08-SEP-17	11-SEP-17	R3824212
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	08-SEP-17	11-SEP-17	R3824212
Surrogate: Acenaphthene d10	88.4		40-130	%	08-SEP-17	11-SEP-17	R3824212
Surrogate: Acridine d9	107.6		40-130	%	08-SEP-17	11-SEP-17	R3824212
Surrogate: Chrysene d12	90.1		40-130	%	08-SEP-17	11-SEP-17	R3824212
Surrogate: Naphthalene d8	84.9		40-130	%	08-SEP-17	11-SEP-17	R3824212
Surrogate: Phenanthrene d10	90.5		40-130	%	08-SEP-17	11-SEP-17	R3824212
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	258		1.2	mg/L		01-SEP-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		01-SEP-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		01-SEP-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	212		1.0	mg/L		31-AUG-17	R3816718
Ammonia by colour							
Ammonia, Total (as N)	1.85		0.10	mg/L		08-SEP-17	R3822830
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	2.0	BODQ	2.0	mg/L		31-AUG-17	R3820502
Carbonaceous BOD							
BOD Carbonaceous	<2.0	BODQ	2.0	mg/L		31-AUG-17	R3820502
Chloride in Water by IC							
Chloride (Cl)	184		1.0	mg/L		31-AUG-17	R3818525
Conductivity							
Conductivity	964		1.0	umhos/cm		31-AUG-17	R3816718
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	20	PEHR	10	MPN/100mL		31-AUG-17	R3816611
Hardness Calculated							
Hardness (as CaCO3)	316	HTC	0.20	mg/L		06-SEP-17	
Mercury Total							
Mercury (Hg)-Total	0.0000064		0.0000050	mg/L	01-SEP-17	05-SEP-17	R3820950
Nitrate in Water by IC							
Nitrate (as N)	0.043		0.040	mg/L		31-AUG-17	R3818525
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		05-SEP-17	
Nitrite in Water by IC							

* 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
L1984293-3 WHA-2							
Sampled By: CLIENT on 28-AUG-17 @ 15:00							
Matrix: WASTEWATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.020	DLM	0.020	mg/L		31-AUG-17	R3818525
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		11-SEP-17	R3823430
Phenol (4AAP)							
Phenols (4AAP)	0.0014		0.0010	mg/L		05-SEP-17	R3820191
Phosphorus, Total							
Phosphorus (P)-Total	0.114		0.010	mg/L		01-SEP-17	R3816753
Sulfate in Water by IC							
Sulfate (SO4)	77.9		0.60	mg/L		31-AUG-17	R3818525
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0143		0.0030	mg/L	01-SEP-17	05-SEP-17	R3820268
Arsenic (As)-Total	0.00208		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Cadmium (Cd)-Total	0.0000155		0.0000050	mg/L	01-SEP-17	05-SEP-17	R3820268
Calcium (Ca)-Total	94.6		0.050	mg/L	01-SEP-17	05-SEP-17	R3820268
Chromium (Cr)-Total	0.00034		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Cobalt (Co)-Total	0.00087		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Copper (Cu)-Total	0.00156		0.00050	mg/L	01-SEP-17	05-SEP-17	R3820268
Iron (Fe)-Total	2.16		0.010	mg/L	01-SEP-17	05-SEP-17	R3820268
Lead (Pb)-Total	0.000362		0.000050	mg/L	01-SEP-17	05-SEP-17	R3820268
Magnesium (Mg)-Total	19.4		0.0050	mg/L	01-SEP-17	05-SEP-17	R3820268
Manganese (Mn)-Total	0.251		0.00010	mg/L	01-SEP-17	05-SEP-17	R3820268
Nickel (Ni)-Total	0.00441		0.00050	mg/L	01-SEP-17	05-SEP-17	R3820268
Potassium (K)-Total	12.8		0.050	mg/L	01-SEP-17	05-SEP-17	R3820268
Sodium (Na)-Total	99.4		0.050	mg/L	01-SEP-17	05-SEP-17	R3820268
Zinc (Zn)-Total	0.0116		0.0030	mg/L	01-SEP-17	05-SEP-17	R3820268
Total Organic Carbon by Combustion							
Total Organic Carbon	8.85		0.50	mg/L		05-SEP-17	R3820396
Total Suspended Solids							
Total Suspended Solids	18		10	mg/L		01-SEP-17	R3819039
pH							
pH	7.83		0.10	pH units		31-AUG-17	R3816718

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
BODQ	BOD Qualification: Lab Control Sample outside standard 85-115% objective (see QC report). Sample(s) cannot be rerun due to hold time expiry.
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.
RRQC	Refer to report remarks for information regarding this QC result.

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

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.
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-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus 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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)
Total suspended solids in 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:

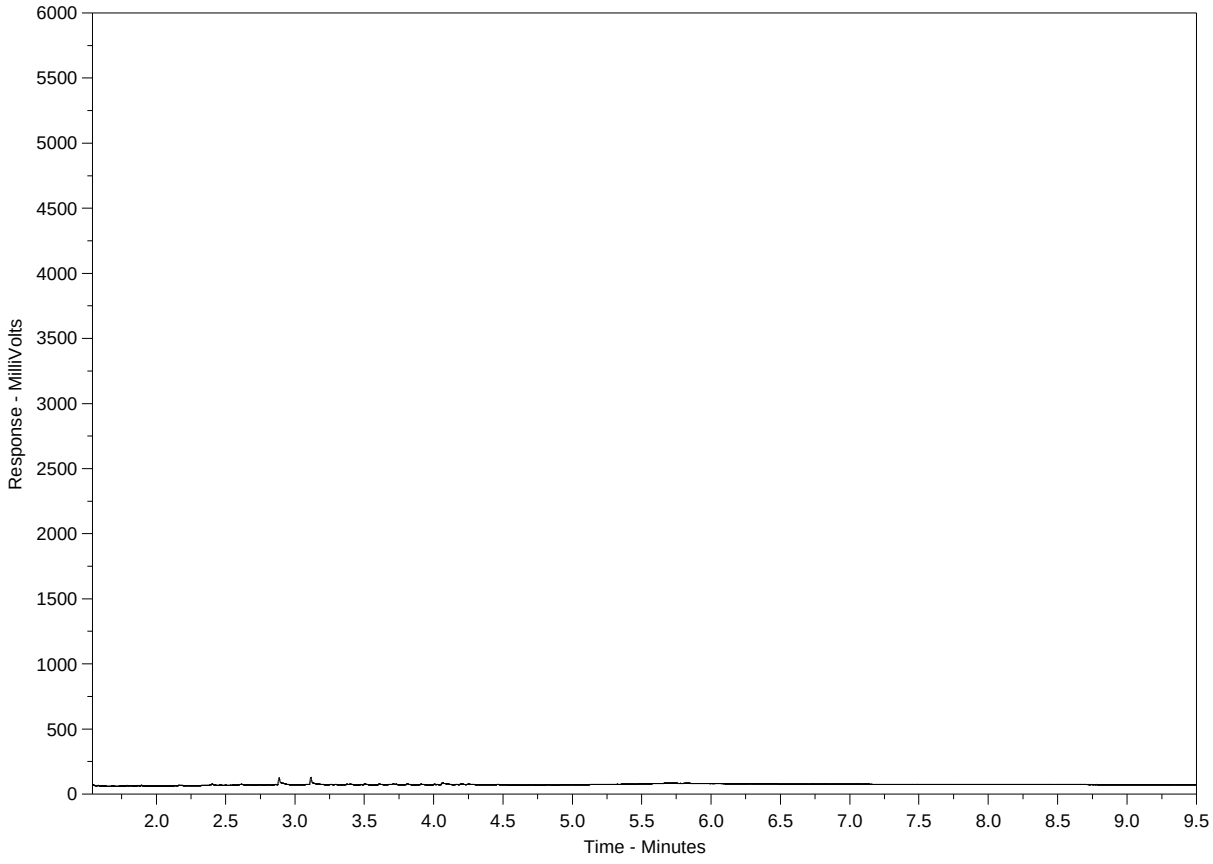
GLOSSARY OF REPORT TERMS

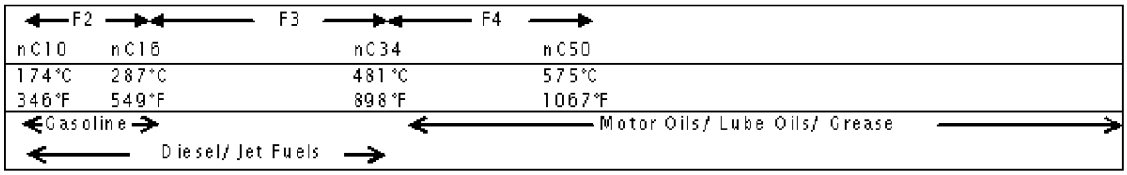
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates 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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1984293-3
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

L1984293-COFC

COC Number: 15 - 571765

Page 1 of 1

L1984293

Report To	Contact and company name below will appear on the final report
Company:	Hamlet of Whale Cove
Contact:	Ian Copland
Phone:	867-896-9964
	Company address below will appear on the final report
Street:	PO Box 120
City/Province:	Whale Cove, NU
Postal Code:	X0C 0J0
Invoice To	Same as Report To [✓] YES [ ] NO
	Copy of Invoice with Report [✓] YES [ ] NO
Company:	
Contact:	

Report Format / Distribution	
Select Report Format:	[✓] PDF [✓] EXCEL [ ] EDD (DIGITAL)
Quality Control (QC) Report with Report	[ ] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	[✓] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax	Saop@whalecove.ca
Email 2	mlusty@gov.nu.ca
Email 3	

Invoice Distribution	
Select Invoice Distribution:	[ ] EMAIL [✓] MAIL [ ] FAX
Email 1 or Fax	
Email 2	

Project Information	
ALS Account # / Quote #:	W10623
Job #:	
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Craig Riddell

Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

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

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

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

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

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

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Routine	BOD	Metals	Nutrients	Bacteria	Phenols	Mercury	Oil + Grease x2	BTX, F1 x3	F2-F4 x2	PAH			Number of Containers
	WHA-4	28/08/17	3:00pm	wastewater	✓	✓	P	P	P	P	P	P						9
	WHA-3	28/08/17	3:00pm	wastewater	✓	✓	P	P	P	P	P	P						9
	WHA-2	28/08/17	3:00pm	wastewater	✓	✓	P	P	P	P	P	P	P	P	P			15

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
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 [ ] Ice Cubes [ ] | Custody seal intact Yes [ ] No [ ]

Cooling initiated [ ]

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
			15.2		

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:
Ian Copland	28/08/17	3pm		31-8-17	8:13			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

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

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

Hamlet of Whale Cove
ATTN: PAUL VOISEY
PO Box 120
Whale Cove NU X0C 0J0

Date Received: 22-SEP-17
Report Date: 05-OCT-17 08:48 (MT)
Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L1996042

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
L1996042-1 WHA-4							
Sampled By: CLIENT							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	186		1.2	mg/L		26-SEP-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		26-SEP-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	153		1.0	mg/L		23-SEP-17	R3838028
Ammonia by colour							
Ammonia, Total (as N)	0.017		0.010	mg/L		25-SEP-17	R3837944
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		23-SEP-17	R3840939
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		23-SEP-17	R3840939
Chloride in Water by IC							
Chloride (Cl)	56.0		0.50	mg/L		23-SEP-17	R3837599
Conductivity							
Conductivity	562		1.0	umhos/cm		23-SEP-17	R3838028
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	30		10	MPN/100mL		22-SEP-17	R3837119
Hardness Calculated							
Hardness (as CaCO3)	171	HTC	0.20	mg/L		29-SEP-17	
Mercury Total							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L	25-SEP-17	25-SEP-17	R3838518
Nitrate in Water by IC							
Nitrate (as N)	0.040		0.020	mg/L		23-SEP-17	R3837599
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		27-SEP-17	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		23-SEP-17	R3837599
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		29-SEP-17	R3841172
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		29-SEP-17	R3840686
Phosphorus, Total							
Phosphorus (P)-Total	0.185		0.010	mg/L		26-SEP-17	R3838272
Sulfate in Water by IC							
Sulfate (SO4)	65.9		0.30	mg/L		23-SEP-17	R3837599
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0050		0.0030	mg/L	26-SEP-17	28-SEP-17	R3840700
Arsenic (As)-Total	0.00109		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	26-SEP-17	28-SEP-17	R3840700
Calcium (Ca)-Total	53.4		0.050	mg/L	26-SEP-17	28-SEP-17	R3840700
Chromium (Cr)-Total	<0.00010		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Cobalt (Co)-Total	0.00022		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Copper (Cu)-Total	0.00288		0.00050	mg/L	26-SEP-17	28-SEP-17	R3840700
Iron (Fe)-Total	0.095		0.010	mg/L	26-SEP-17	28-SEP-17	R3840700
Lead (Pb)-Total	<0.000050		0.000050	mg/L	26-SEP-17	28-SEP-17	R3840700
Magnesium (Mg)-Total	9.21		0.0050	mg/L	26-SEP-17	28-SEP-17	R3840700
Manganese (Mn)-Total	0.0197		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Nickel (Ni)-Total	0.00173		0.00050	mg/L	26-SEP-17	28-SEP-17	R3840700

* 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
L1996042-1 WHA-4							
Sampled By: CLIENT							
Matrix: WASTEWATER							
Total Metals in Water by CRC ICPMS							
Potassium (K)-Total	8.03		0.050	mg/L	26-SEP-17	28-SEP-17	R3840700
Sodium (Na)-Total	48.0		0.050	mg/L	26-SEP-17	28-SEP-17	R3840700
Zinc (Zn)-Total	0.0086		0.0030	mg/L	26-SEP-17	28-SEP-17	R3840700
Total Organic Carbon by Combustion							
Total Organic Carbon	6.66		0.50	mg/L		03-OCT-17	R3846431
Total Suspended Solids							
Total Suspended Solids	<5.0		5.0	mg/L		28-SEP-17	R3841145
pH							
pH	8.01		0.10	pH units		23-SEP-17	R3838028
L1996042-2 WHA-3							
Sampled By: CLIENT							
Matrix: WASTEWATER							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	238		1.2	mg/L		26-SEP-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		26-SEP-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	195		1.0	mg/L		23-SEP-17	R3838028
Ammonia by colour							
Ammonia, Total (as N)	21.0		2.0	mg/L		26-SEP-17	R3838798
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	18.5		6.0	mg/L		23-SEP-17	R3840939
Carbonaceous BOD							
BOD Carbonaceous	9.0		6.0	mg/L		23-SEP-17	R3840939
Chloride in Water by IC							
Chloride (Cl)	83.8		0.50	mg/L		25-SEP-17	R3839359
Conductivity							
Conductivity	729		1.0	umhos/cm		23-SEP-17	R3838028
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	19900		10	MPN/100mL		22-SEP-17	R3837119
Hardness Calculated							
Hardness (as CaCO3)	126	HTC	0.20	mg/L		29-SEP-17	
Mercury Total							
Mercury (Hg)-Total	0.0000148		0.0000050	mg/L	25-SEP-17	25-SEP-17	R3838518
Nitrate in Water by IC							
Nitrate (as N)	0.257		0.020	mg/L		25-SEP-17	R3839359
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.346		0.070	mg/L		27-SEP-17	
Nitrite in Water by IC							
Nitrite (as N)	0.089		0.010	mg/L		25-SEP-17	R3839359
Oil & Grease - Gravimetric							
Oil and Grease	5.6		5.0	mg/L		29-SEP-17	R3841172
Phenol (4AAP)							
Phenols (4AAP)	0.0018		0.0010	mg/L		29-SEP-17	R3840686
Phosphorus, Total							
Phosphorus (P)-Total	5.70		0.10	mg/L		26-SEP-17	R3838272
Sulfate in Water by IC							
Sulfate (SO4)	41.6		0.30	mg/L		25-SEP-17	R3839359

* 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
L1996042-2 WHA-3							
Sampled By: CLIENT							
Matrix: WASTEWATER							
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.224		0.0030	mg/L	26-SEP-17	28-SEP-17	R3840700
Arsenic (As)-Total	0.00228		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Cadmium (Cd)-Total	0.0000603		0.0000050	mg/L	26-SEP-17	28-SEP-17	R3840700
Calcium (Ca)-Total	35.8		0.050	mg/L	26-SEP-17	28-SEP-17	R3840700
Chromium (Cr)-Total	0.00055		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Cobalt (Co)-Total	0.00137		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Copper (Cu)-Total	0.0355		0.00050	mg/L	26-SEP-17	28-SEP-17	R3840700
Iron (Fe)-Total	0.738		0.010	mg/L	26-SEP-17	28-SEP-17	R3840700
Lead (Pb)-Total	0.000842		0.000050	mg/L	26-SEP-17	28-SEP-17	R3840700
Magnesium (Mg)-Total	8.79		0.0050	mg/L	26-SEP-17	28-SEP-17	R3840700
Manganese (Mn)-Total	0.136		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Nickel (Ni)-Total	0.00493		0.00050	mg/L	26-SEP-17	28-SEP-17	R3840700
Potassium (K)-Total	18.2		0.050	mg/L	26-SEP-17	28-SEP-17	R3840700
Sodium (Na)-Total	64.1		0.050	mg/L	26-SEP-17	28-SEP-17	R3840700
Zinc (Zn)-Total	0.0459		0.0030	mg/L	26-SEP-17	28-SEP-17	R3840700
Total Organic Carbon by Combustion							
Total Organic Carbon	42.8		0.50	mg/L		03-OCT-17	R3846431
Total Suspended Solids							
Total Suspended Solids	22.0		5.0	mg/L		28-SEP-17	R3841145
pH							
pH	7.50		0.10	pH units		23-SEP-17	R3838028
L1996042-3 WHA-2							
Sampled By: CLIENT							
Matrix: WASTEWATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		29-SEP-17	R3840305
Toluene	<0.0010		0.0010	mg/L		29-SEP-17	R3840305
Ethyl benzene	<0.00050		0.00050	mg/L		29-SEP-17	R3840305
o-Xylene	<0.00050		0.00050	mg/L		29-SEP-17	R3840305
m+p-Xylenes	<0.00040		0.00040	mg/L		29-SEP-17	R3840305
F1 (C6-C10)	<0.10		0.10	mg/L		29-SEP-17	R3840305
Surrogate: 4-Bromofluorobenzene (SS)	78.2		70-130	%		29-SEP-17	R3840305
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	25-SEP-17	25-SEP-17	R3838933
F3 (C16-C34)	<0.25		0.25	mg/L	25-SEP-17	25-SEP-17	R3838933
F4 (C34-C50)	<0.25		0.25	mg/L	25-SEP-17	25-SEP-17	R3838933
Surrogate: 2-Bromobenzotrifluoride	95.4		60-140	%	25-SEP-17	25-SEP-17	R3838933
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		02-OCT-17	
F2-Naphth	<0.10		0.10	mg/L		02-OCT-17	
F3-PAH	<0.25		0.25	mg/L		02-OCT-17	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		02-OCT-17	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		02-OCT-17	
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.000028		0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371
2-Methyl Naphthalene	0.000026		0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371
Acenaphthene	<0.000020		0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371
Acenaphthylene	<0.000020		0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371

* 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
L1996042-3 WHA-2							
Sampled By: CLIENT							
Matrix: WASTEWATER							
Polyaromatic Hydrocarbons (PAHs)							
Anthracene	<0.000010		0.000010	mg/L	28-SEP-17	01-OCT-17	R3843371
Acridine	<0.000020		0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371
Benzo(a)anthracene	<0.000010		0.000010	mg/L	28-SEP-17	01-OCT-17	R3843371
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	28-SEP-17	01-OCT-17	R3843371
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	28-SEP-17	01-OCT-17	R3843371
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	28-SEP-17	01-OCT-17	R3843371
Chrysene	<0.000020		0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	28-SEP-17	01-OCT-17	R3843371
Fluoranthene	<0.000020		0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371
Fluorene	<0.000020		0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	28-SEP-17	01-OCT-17	R3843371
Naphthalene	0.000070		0.000050	mg/L	28-SEP-17	01-OCT-17	R3843371
Phenanthrene	<0.000050		0.000050	mg/L	28-SEP-17	01-OCT-17	R3843371
Pyrene	<0.000010		0.000010	mg/L	28-SEP-17	01-OCT-17	R3843371
Quinoline	0.000025	EMPC	0.000020	mg/L	28-SEP-17	01-OCT-17	R3843371
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	28-SEP-17	01-OCT-17	R3843371
Surrogate: Acenaphthene d10	99.8		40-130	%	28-SEP-17	01-OCT-17	R3843371
Surrogate: Acridine d9	114.3		40-130	%	28-SEP-17	01-OCT-17	R3843371
Surrogate: Chrysene d12	95.2		40-130	%	28-SEP-17	01-OCT-17	R3843371
Surrogate: Naphthalene d8	98.5		40-130	%	28-SEP-17	01-OCT-17	R3843371
Surrogate: Phenanthrene d10	96.3		40-130	%	28-SEP-17	01-OCT-17	R3843371
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	194		1.2	mg/L		26-SEP-17	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		26-SEP-17	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		26-SEP-17	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	159		1.0	mg/L		23-SEP-17	R3838028
Ammonia by colour							
Ammonia, Total (as N)	0.226		0.010	mg/L		25-SEP-17	R3837944
Biochemical Oxygen Demand (BOD)							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		23-SEP-17	R3840939
Carbonaceous BOD							
BOD Carbonaceous	<2.0		2.0	mg/L		23-SEP-17	R3840939
Chloride in Water by IC							
Chloride (Cl)	70.2		0.50	mg/L		25-SEP-17	R3839359
Conductivity							
Conductivity	604		1.0	umhos/cm		23-SEP-17	R3838028
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	20		10	MPN/100mL		22-SEP-17	R3837119
Hardness Calculated							
Hardness (as CaCO3)	196	HTC	0.20	mg/L		29-SEP-17	
Mercury Total							
Mercury (Hg)-Total	0.0000063		0.0000050	mg/L	25-SEP-17	25-SEP-17	R3838518
Nitrate in Water by IC							
Nitrate (as N)	0.140		0.020	mg/L		25-SEP-17	R3839359
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.140		0.070	mg/L		27-SEP-17	
Nitrite in Water by IC							

* 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
L1996042-3 WHA-2							
Sampled By: CLIENT							
Matrix: WASTEWATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		25-SEP-17	R3839359
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		29-SEP-17	R3841172
Phenol (4AAP)							
Phenols (4AAP)	<0.0010		0.0010	mg/L		29-SEP-17	R3840686
Phosphorus, Total							
Phosphorus (P)-Total	0.071		0.010	mg/L		26-SEP-17	R3838272
Sulfate in Water by IC							
Sulfate (SO4)	59.5		0.30	mg/L		25-SEP-17	R3839359
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0245		0.0030	mg/L	26-SEP-17	28-SEP-17	R3840700
Arsenic (As)-Total	0.00104		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Cadmium (Cd)-Total	0.0000578		0.0000050	mg/L	26-SEP-17	28-SEP-17	R3840700
Calcium (Ca)-Total	62.3		0.050	mg/L	26-SEP-17	28-SEP-17	R3840700
Chromium (Cr)-Total	0.00032		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Cobalt (Co)-Total	0.00054		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Copper (Cu)-Total	0.00629		0.00050	mg/L	26-SEP-17	28-SEP-17	R3840700
Iron (Fe)-Total	0.698		0.010	mg/L	26-SEP-17	28-SEP-17	R3840700
Lead (Pb)-Total	0.000707		0.000050	mg/L	26-SEP-17	28-SEP-17	R3840700
Magnesium (Mg)-Total	9.70		0.0050	mg/L	26-SEP-17	28-SEP-17	R3840700
Manganese (Mn)-Total	0.102		0.00010	mg/L	26-SEP-17	28-SEP-17	R3840700
Nickel (Ni)-Total	0.00481		0.00050	mg/L	26-SEP-17	28-SEP-17	R3840700
Potassium (K)-Total	6.47		0.050	mg/L	26-SEP-17	28-SEP-17	R3840700
Sodium (Na)-Total	45.1		0.050	mg/L	26-SEP-17	28-SEP-17	R3840700
Zinc (Zn)-Total	0.0397		0.0030	mg/L	26-SEP-17	28-SEP-17	R3840700
Total Organic Carbon by Combustion							
Total Organic Carbon	6.14		0.50	mg/L		03-OCT-17	R3846431
Total Suspended Solids							
Total Suspended Solids	7.0		5.0	mg/L		28-SEP-17	R3841145
pH							
pH	7.89		0.10	pH units		23-SEP-17	R3838028

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
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-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus 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:

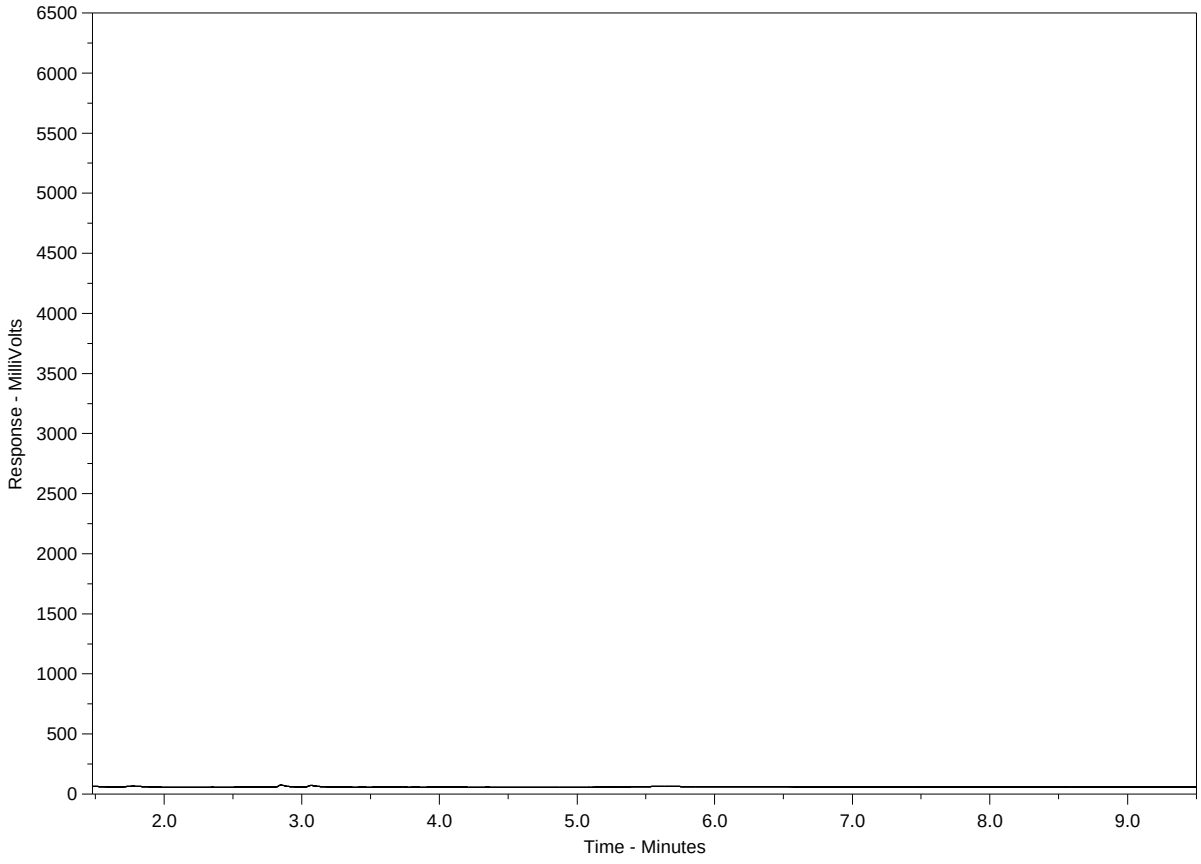
GLOSSARY OF REPORT TERMS

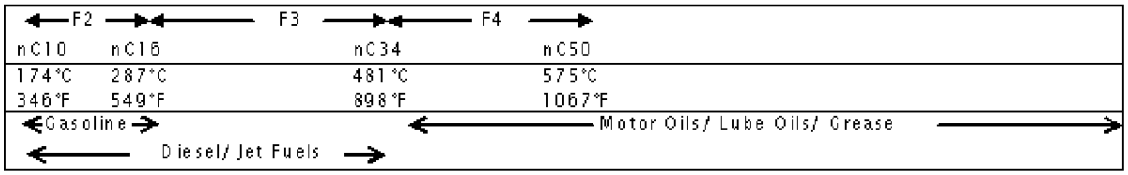
Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates 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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1996042-3
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.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1

L1996042-COFC

COC Number: 14 - 503459

Page 1 of 1

L1996042

Report To
Company: Hamlet of Whale Cove
Contact: Ian Copland
Address: PO Box 120, Whale Cove, NU, X0C 0J0
Phone: 867-896-9961

Invoice To Same as Report To ☑ Yes ☐ No
Copy of Invoice with Report ☑ Yes ☐ No
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Contact:

Project Information
ALS Quote #: W10625
Job #:
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LSD:

ALS Lab Work Order # (lab use only)

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Email 1 or Fax:
Email 2:

Oil and Gas Required Fields (client use)
AFE/Cost Center:
GL Account: Routing Code:
Activity Code:
Location:

ALS Contact: Craig Sampler:

Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
☑ Regular (Standard TAT if received by 3pm)
P ☐ Priority (2-4 business days if received by 3pm)
E ☐ Emergency (1-2 business days if received by 3pm)
E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.
Specify Date Required for E2,E or P:

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-mm-yy)	Time (hh:mm)	Sample Type	Benzene	Toluene	Ethylbenzene	Xylenes	BTX, F1 x3	F2-PH x2	PAH	Oil + Grease	Number of Containers
	WHA-4				P	P	P	P	P	P		P	9
	WHA-3				P	P	P	P	P	P		P	9
	WHA-2				P	P	P	P	P	P	P	P	45

Drinking Water (DW) Samples[1] (client use)
Are samples taken from a Regulated DW System? ☐ Yes ☒ No
Are samples for human drinking water use? ☐ Yes ☒ No

Special Instructions / Specify Criteria to add on report (client use)
Nunavut-WW-GRP1
BTX, F1-F4, PAH

SIF Observations Yes ☐ No ☐
Custody seal intact Yes ☐ No ☐
Frozen ☐ Ice packs ☐ Cooling initiated ☐
FIELD COOLER TEMPERATURES °C

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date: 2/9/17	Time: 1210	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326a v09 Front04 January 2014

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.

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

No Spills Found

Your search returned zero results

Whale Cove
WHA-2

			2014			2015		2017				Statistics		
Parameter	**Unit**	**DL**	**23-Jul-14**	**14-Aug-14**	**09-Sep-14**	**24-Jun-15**	**05-Aug-15**	**08-Jun-17**	**12-Jul-17**	**28-Aug-17**	**22-Sep-17**	**Min**	**Max**	**Average**
Alkalinity														
Bicarbonate (HCO3)	mg/L	1.2	/	/	/	131	265	154	235	258	194	131	265	206.17
Carbonate (CO3)	mg/L	0.60	/	/	/	0.60	3.00	0.60	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	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	207	238	236	108	223	127	192	212	159	108	238	189.11
Ammonia by Colour														
Total (as N)	mg/L	0.20	1.35	2.54	4.36	0.304	0.65	0.99	1.83	1.85	0.226	0.226	4.36	1.57
Biochemical Oxygen Demand (BOD)														
Biochemical Oxygen Demand	mg/L	6.0	6.0	6.0	6.0	4.7	2.8	8.4	3.0	2	2.0	2	8.4	4.54
Carbonaceous BOD														
BOD Carbonaceous	mg/L	6.0	/	/	/	2.8	2.0	6.8	2.3	2	2	2.0	6.8	2.98
Chloride in Water by IC														
Chloride (Cl)	mg/L	10	90.7	105	88.2	29.8	72.5	123	157	184	70.2	29.8	184	102.27
Conductivity														
Conductivity	umhos/cm	1.0	829	892	714	401	734	769	951	964	604	401	964	762.00
Fecal Coliforms														
Fecal Coliforms	MPN/100mL	3	93	43	4	2300	150	5170	10	20	20	4	5170	867.78
Hardness Calculated														
Hardness (as CaCO3)	mg/L	0.30	285	289	142	152	127	221	291	316	196	127	316	224.33
Mercury Total														
Mercury (Hg)	mg/L	0.00020	/	/	/	0.000020	0.000020	0.0000058	0.0000050	0.0000064	0.0000063	0.0000050	0.000020	0.000011
Nitrate in Water by IC														
Nitrate (as N)	mg/L	0.40	/	/	/	0.077	0.061	0.113	0.054	0.043	0.14	0.043	0.14	0.081
Nitrate + Nitrite														
Nitrate and Nitrite as N	mg/L	0.45	0.071	0.071	1.56	0.077	0.070	0.127	0.070	0.07	0.140	0.070	1.56	0.25
Nitrite in Water by IC														
Nitrite (as N)	mg/L	0.20	/	/	/	0.010	0.010	0.015	0.020	0.02	0.010	0.010	0.020	0.014
Oil & Grease - Gravimetric														
Oil and Grease	mg/L	5.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0	5.0	5.0	2.0	5.0	3.33
Phenol														
Phenols	mg/L	0.0010	0.0011	0.0011	0.0010	0.0033	0.0027	0.0057	0.0021	0.0014	0.001	0.001	0.0057	0.0022
Phosphorus, Total														
Phosphorus (P)	mg/L	0.010	/	/	/	0.119	0.137	0.210	0.109	0.114	0.071	0.071	0.21	0.13
Sulfate in Water by IC														
Sulfate (SO4)	mg/L	6.0	77.6	54.3	3.73	55.0	57.6	76.2	73.7	77.9	59.5	3.73	77.9	59.50
Total Metals by ICP-MS														
Aluminium (Al)	mg/L	0.0050	0.009	0.020	0.0091	0.0795	0.0099	0.0630	0.0099	0.0143	0.0245	0.009	0.0795	0.0266
Arsenic (As)	mg/L	0.00020	0.00245	0.0027	0.00513	0.00225	0.00639	0.00188	0.00238	0.00208	0.00104	0.00104	0.00639	0.00292
Cadmium (Cd)	mg/L	0.000010	0.000028	0.00020	0.000014	0.000060	0.000010	0.000084	0.0000199	0.0000155	0.0000578	0.00001	0.0002	0.00005
Calcium (Ca)	mg/L	0.10	88.7	90.1	44.3	52.2	40.1	68.1	90.3	94.6	62.3	40.1	94.6	70.08
Chromium (Cr)	mg/L	0.0010	0.0010	0.0020	0.0010	0.0019	0.0010	0.0010	0.00051	0.0003	0.00032	0.00032	0.002	0.0010
Cobalt (Co)	mg/L	0.00020	0.00152	0.00121	0.00065	0.00102	0.00088	0.00144	0.00115	0.00087	0.00054	0.00054	0.00152	0.0010
Copper (Cu)	mg/L	0.00020	0.00286	0.0020	0.00199	0.00738	0.00157	0.00930	0.00222	0.00156	0.00629	0.00156	0.0093	0.0039
Iron (Fe)	mg/L	0.010	1.56	1.9	0.26	1.10	0.91	2.24	1.71	2.16	0.698	0.26	2.24	1.39
Lead (Pb)	mg/L	0.000090	0.000408	0.0010	0.000090	0.00156	0.000090	0.00131	0.000326	0.000362	0.000707	0.00009	0.00156	0.0007
Magnesium (Mg)	mg/L	0.010	15.4	15.5	7.7	5.26	6.62	12.3	15.8	19.4	9.7	5.26	19.4	11.96
Manganese (Mn)	mg/L	0.00030	0.430	0.523	0.109	0.194	0.315	0.247	0.246	0.251	0.102	0.102	0.523	0.27
Nickel (Ni)	mg/L	0.0020	0.0066	0.0051	0.0025	0.0038	0.0027	0.0066	0.00588	0.00441	0.00481	0.0025	0.0066	0.0047
Potassium (K)	mg/L	0.020	12.8	11.8	17.7	4.54	15.5	9.92	14.6	12.8	6.47	4.54	17.7	11.79
Sodium (Na)	mg/L	0.030	64.4	67	73.7	21.1	59.3	63.1	79.7	99.4	45.1	21.1	99.4	63.64
Zinc (Zn)	mg/L	0.0020	0.0162	0.020	0.0044	0.0429	0.0020	0.0540	0.0122	0.0116	0.0397	0.0020	0.054	0.023
Total Organic Carbon by Combustion														
Total Organic Carbon	mg/L	0.50	/	/	/	4.5	12.6	12.4	12.8	8.85	6.14	4.5	12.8	9.55
Total Suspended Solids														
Total Suspended Solids	mg/L	13	9.0	12.0	5.0	12.0	5.0	12.0	9.0	18.0	7.0	5.0	18	9.89
pH														
pH	pH Units	0.10	7.98	8.38	7.66	7.74	8.30	7.60	7.79	7.83	7.89	7.6	8.38	7.91
Benzene	mg/L	0.00050	/	/	/	/	/	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Toluene	mg/L	0.0010	/	/	/	/	/	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
Ethyl Benzene	mg/L	0.00050	/	/	/	/	/	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
o-Xylene	mg/L	0.00050	/	/	/	/	/	0.00050	0.00050	0.00050	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	0.10	0.10
F2 (C10-C16)	mg/L	0.25	/	/	/	/	/	0.10	0.10	0.10	0.10	0.10	0.10	0.10
F3 (C16-C34)	mg/L	0.25	/	/	/	/	/	0.25	0.25	0.25	0.25	0.25	0.25	0.25
F4 (C34-C50)	mg/L	0.25	/	/	/	/	/	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	/	/	/	/	0.38	0.38	0.38	0.1	0.1	0.38	0.31

Whale Cove
WHA-3

			2014			2015		2016		2017				Statistics		
Parameter	**Unit**	**DL**	**23-Jul-14**	**14-Aug-14**	**09-Sep-14**	**24-Jun-15**	**05-Aug-15**	**13-Jul-16**	**26-Jul-16**	**08-Jun-17**	**12-Jul-17**	**28-Aug-17**	**22-Sep-17**	**Min**	**Max**	**Average**
Alkalinity																
Bicarbonate (HCO3)	mg/L	1.2	/	/	/	264	254	191	185	338	330	252	238	185	338	256.50
Carbonate (CO3)	mg/L	0.60	/	/	/	0.60	6.36	0.60	0.60	0.60	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	0.34	0.34	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	105	136	170	216	219	157	152	277	271	207	195	105	277	191.36
Ammonia by Colour																
Total (as N)	mg/L	0.20	4.7	9	14.8	30.2	9.4	16.1	2.55	43.8	35.2	20.9	21	2.55	43.8	18.88
Biochemical Oxygen Demand (BOD)																
Biochemical Oxygen Demand	mg/L	6.0	15.2	6.0	12.9	24	3.0	23.8	67	77	33	39	18.5	3.0	77	29.04
Carbonaceous BOD																
BOD Carbonaceous	mg/L	6.0	/	/	/	30	2.0	18.5	63	69	31.2	11.2	9	2.0	69	29.24
Chloride in Water by IC																
Chloride (Cl)	mg/L	10	85.3	106	85.7	73.3	95.0	84.8	86.7	79.9	91.8	99.7	83.8	73.3	106	88.36
Conductivity																
Conductivity	umhos/cm	1.0	766	656	707	719	717	666	625	900	877	774	729	625	900	739.64
Fecal Coliforms																
Fecal Coliforms	MPN/100mL	3	200	2300	3800	110000	7	2400	430	24200	15500	12000	19900	7	110000	17339.73
Hardness Calculated																
Hardness (as CaCO3)	mg/L	0.30	98.6	101	96.9	82.4	127	95.3	99.3	130	152	164	126	82.4	164	115.68
Mercury Total																
Mercury (Hg)	mg/L	0.00020	/	/	/	0.00020	0.000020	0.000020	0.000020	0.0000131	0.0000071	0.000025	0.0000148	0.0000071	0.0002	0.000040
Nitrate in Water by IC																
Nitrate (as N)	mg/L	0.40	/	/	/	0.020	0.020	0.861	0.020	0.040	0.085	0.287	0.257	0.020	0.861	0.20
Nitrate + Nitrite																
Nitrate and Nitrite as N	mg/L	0.45	0.968	0.071	0.127	0.070	0.070	1.38	0.070	0.070	0.085	0.766	0.346	0.070	1.38	0.37
Nitrite in Water by IC																
Nitrite (as N)	mg/L	0.20	/	/	/	0.010	0.010	0.518	0.010	0.020	0.020	0.480	0.089	0.010	0.518	0.145
Oil & Grease - Gravimetric																
Oil and Grease	mg/L	5.0	2.0	2.0	2.0	3.5	2.0	5.0	5.3	14.5	5.0	5	5.6	2.0	14.5	4.72
Phenol																
Phenols	mg/L	0.0010	0.0010	0.0010	0.0014	0.0504	0.0017	0.0019	0.0026	0.0641	0.0015	0.0016	0.0018	0.0010	0.0641	0.012
Phosphorus, Total																
Phosphorus (P)	mg/L	0.010	/	/	/	6.32	4.44	5.66	5.56	5.80	6.07	7.88	5.70	4.44	7.88	5.93
Sulfate in Water by IC																
Sulfate (SO4)	mg/L	6.0	22.7	53	26.8	20.0	9.41	22.2	20.8	38.0	56.6	50.1	41.6	9.41	56.6	32.84
Total Metals by ICP-MS																
Aluminium (Al)	mg/L	0.0050	0.0516	0.128	0.328	0.107	0.0087	0.0688	0.103	0.125	0.0492	0.14	0.2240	0.0087	0.328	0.12
Arsenic (As)	mg/L	0.00020	0.00073	<0.0010	0.00092	0.00060	0.00618	0.00075	0.00084	0.00169	0.00182	0.00184	0.00228	0.0006	0.00618	0.00177
Cadmium (Cd)	mg/L	0.000010	0.000010	0.00025	0.000058	0.000021	0.000010	0.000013	0.000017	0.000066	0.0000306	0.0000393	0.0000603	0.00001	0.00025	0.00005
Calcium (Ca)	mg/L	0.10	28.6	28.9	27.4	23.0	40.5	27.7	28.8	37.3	45.3	48.6	35.8	23	48.6	33.81
Chromium (Cr)	mg/L	0.0010	0.0010	0.0020	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.00033	0.0005	0.00055	0.00033	0.0020	0.0009
Cobalt (Co)	mg/L	0.00020	0.00034	0.00050	0.00049	0.00041	0.00087	0.00041	0.00046	0.00170	0.00131	0.00119	0.00137	0.00034	0.0017	0.00082
Copper (Cu)	mg/L	0.00020	0.0152	0.0209	0.0404	0.0374	0.00147	0.0223	0.0228	0.0708	0.0304	0.0251	0.0355	0.00147	0.0708	0.029
Iron (Fe)	mg/L	0.010	0.10	0.23	0.52	0.22	0.88	0.109	0.142	0.479	0.249	0.484	0.738	0.10	0.88	0.38
Lead (Pb)	mg/L	0.000090	0.000090	0.0010	0.000791	0.000457	0.000090	0.000231	0.000227	0.000956	0.000409	0.000503	0.000842	0.000090	0.0010	0.00051
Magnesium (Mg)	mg/L	0.010	6.58	7.01	6.94	6.08	6.36	6.35	6.66	8.85	9.36	10.3	8.79	6.08	10.3	7.57
Manganese (Mn)	mg/L	0.00030	0.0373	0.068	6.94	0.0603	0.311	0.0512	0.0613	0.115	0.104	0.141	0.136	0.0373	6.94	0.73
Nickel (Ni)	mg/L	0.0020	0.0020	0.0025	0.0026	0.0020	0.0026	0.0020	0.0022	0.0044	0.00421	0.00505	0.00493	0.002	0.00505	0.0031
Potassium (K)	mg/L	0.020	18.2	19.4	17.8	17.5	15.2	19.0	18.7	20.5	22.8	24	18.2	15.2	24	19.21
Sodium (Na)	mg/L	0.030	67.5	70.2	67.5	59.3	57.5	63.4	69.8	63.5	69.0	77.7	64.1	57.5	77.7	66.32
Zinc (Zn)	mg/L	0.0020	0.0102	0.023	0.0523	0.0285	0.0020	0.0153	0.0177	0.0521	0.0178	0.408	0.0459	0.002	0.408	0.061
Total Organic Carbon by Combustion																
Total Organic Carbon	mg/L	0.50	/	/	/	28.2	16.3	28.3	32.7	82.8	38.8	62	42.8	16.3	82.8	41.49
Total Suspended Solids																
Total Suspended Solids	mg/L	13	35.0	9.0	5.0	11.0	5.0	27.0	970	46.0	36	68.0	22	5.0	970	112.18
pH																
pH	pH Units	0.10	8.25	8.13	7.5	7.72	8.46	7.55	7.06	7.37	8.10	7.60	7.50	7.06	8.46	7.75
Benzene	mg/L	0.00050	/	/	/	/	0.00050	/	/	/	/	/	/	0.0005	0.0005	0.00050
Toluene	mg/L	0.0010	/	/	/	/	0.0010	/	/	/	/	/	/	0.0010	0.0010	0.0010
Ethyl Benzene	mg/L	0.00050	/	/	/	/	0.00050	/	/	/	/	/	/	0.00050	0.00050	0.00050
o-Xylene	mg/L	0.00050	/	/	/	/	0.00050	/	/	/	/	/	/	0.00050	0.00050	0.00050
F1 (C6-C10)	mg/L	0.10	/	/	/	/	0.10	/	/	/	/	/	/	0.10	0.10	0.10
F2 (C10-C16)	mg/L	0.25	/	/	/	/	0.25	/	/	/	/	/	/	0.25	0.25	0.25
F3 (C16-C34)	mg/L	0.25	/	/	/	/	0.25	/	/	/	/	/	/	0.25	0.25	0.25
F4 (C34-C50)	mg/L	0.25	/	/	/	/	0.25	/	/	/	/	/	/	0.25	0.25	0.25
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	/	/	/	0.44	/	/	/	/	/	/	0.44	0.44	0.44

Whale Cove
WHA-4

			2014			2015		2016			2017				Statistics		
Parameter	**Unit**	**DL**	**23-Jul-14**	**14-Aug-14**	**09-Sep-14**	**24-Jun-15**	**05-Aug-15**	**13-Jul-16**	**26-Jul-16**	**31-Aug-16**	**08-Jun-17**	**12-Jul-17**	**28-Aug-17**	**22-Sep-17**	**Min**	**Max**	**Average**
Alkalinity																	
Bicarbonate (HCO3)	mg/L	1.2	/	/	/	211	136	188	224	60.4	234	219	302	186	60.4	302	195.60
Carbonate (CO3)	mg/L	0.60	/	/	/	0.60	0.60	0.60	0.60	0.60	6.72	0.600	0.60	0.600	0.60	6.72	1.28
Hydroxide (OH)	mg/L	0.34	/	/	/	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	180	189	169	173	112	154	184	49.5	203	180	248	153	49.5	248	166.21
Ammonia by Colour																	
Total (as N)	mg/L	0.20	0.69	2.48	1.21	7.2	9.2	12.9	1.77	0.038	0.105	0.055	0.021	0.017	0.017	12.9	2.97
Biochemical Oxygen Demand (BOD)																	
Biochemical Oxygen Demand	mg/L	6.0	6.0	6.0	6.0	6.2	24.2	19.2	8.4	2.0	10.3	2.0	2	2.0	2.0	24.2	7.86
Carbonaceous BOD																	
BOD Carbonaceous	mg/L	6.0	/	/	/	5.9	14.0	11.3	7.9	2.0	6.4	2.0	2	2.0	2.0	14	5.94
Chloride in Water by IC																	
Chloride (Cl)	mg/L	10	89.6	89.2	114	66.6	78.8	86.2	98.2	9.32	123	43.2	95.9	56	9.32	123	79.17
Conductivity																	
Conductivity	umhos/cm	1.0	675	716	709	555	564	661	704	133	819	413	845	562	133	845	613.00
Fecal Coliforms																	
Fecal Coliforms	MPN/100mL	3	4	3	750	23	430	4300	/	3	10	10	10	30	3	4300	506.64
Hardness Calculated																	
Hardness (as CaCO3)	mg/L	0.30	158	149	263	124	89.1	109	183	52.9	185	192	355	171	52.9	355	169.25
Mercury Total																	
Mercury (Hg)	mg/L	0.00020	/	/	/	0.000020	0.00020	0.000020	0.000020	0.000020	0.0000050	0.0000050	0.0000050	0.0000050	0.000005	0.0002	0.000033
Nitrate in Water by IC																	
Nitrate (as N)	mg/L	0.40	/	/	/	0.161	0.418	1.27	2.03	0.039	0.028	0.020	0.04	0.040	0.02	2.03	0.45
Nitrate + Nitrite																	
Nitrate and Nitrite as N	mg/L	0.45	3.12	0.34	0.071	0.183	0.956	1.64	2.12	0.070	0.070	0.070	0.070	0.070	0.07	3.12	0.73
Nitrite in Water by IC																	
Nitrite (as N)	mg/L	0.20	/	/	/	0.022	0.538	0.371	0.099	0.010	0.010	0.010	0.020	0.010	0.01	0.538	0.12
Oil & Grease - Gravimetric																	
Oil and Grease	mg/L	5.0	2.0	89.2	2.0	2.0	2.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0	89.2	11.02
Phenol																	
Phenols	mg/L	0.0010	0.0010	0.0010	0.0010	0.0045	0.0028	0.0018	0.0013	0.0024	0.0039	0.0011	0.001	0.001	0.001	0.0045	0.00
Phosphorus, Total																	
Phosphorus (P)	mg/L	0.010	/	/	/	3.34	5.15	5.40	2.26	0.019	4.19	0.390	0.301	0.185	0.019	5.4	2.36
Sulfate in Water by IC																	
Sulfate (SO4)	mg/L	6.0	2.82	23.7	52.8	6.92	23.1	18.6	7.49	4.43	30.9	12.2	122	65.9	2.82	122	30.91
Total Metals by ICP-MS																	
Aluminium (Al)	mg/L	0.0050	0.0299	0.021	0.0111	0.0607	0.0357	0.0732	0.0457	0.0665	0.0236	0.0117	0.159	0.0050	0.005	0.159	0.05
Arsenic (As)	mg/L	0.00020	0.00482	0.0045	0.00161	0.00526	0.00067	0.00362	0.00359	0.00025	0.00836	0.00061	0.00104	0.00109	0.00025	0.00836	0.00295
Cadmium (Cd)	mg/L	0.000010	0.000011	0.00020	0.000039	0.000030	0.000012	0.000016	0.000010	0.000010	0.000012	0.0000107	0.0000163	0.000005	0.000005	0.0002	0.000031
Calcium (Ca)	mg/L	0.10	50.7	46.3	82.4	39.7	25.6	33.0	59.2	17.5	52.3	67.9	119	53.4	17.5	119	53.92
Chromium (Cr)	mg/L	0.0010	0.0010	0.0020	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.00012	0.0005	0.0001	0.0001	0.002	0.0009
Cobalt (Co)	mg/L	0.00020	0.00056	0.00057	0.00094	0.00195	0.00038	0.00071	0.00074	0.00020	0.00078	0.00010	0.0003	0.00022	0.0001	0.00195	0.0006
Copper (Cu)	mg/L	0.00020	0.0019	0.0020	0.00262	0.00540	0.0187	0.0134	0.00234	0.00975	0.00176	0.00323	0.00341	0.00288	0.00176	0.0187	0.006
Iron (Fe)	mg/L	0.010	0.62	0.37	1.66	3.14	0.10	0.682	1.43	0.082	0.913	0.220	0.739	0.095	0.082	3.14	0.84
Lead (Pb)	mg/L	0.000090	0.000090	0.0010	0.000501	0.000189	0.000130	0.000185	0.000090	0.000191	0.000100	0.000050	0.000129	0.000050	0.00005	0.001	0.0002
Magnesium (Mg)	mg/L	0.010	7.66	8.05	13.8	6.02	6.09	6.53	8.61	2.23	13.2	5.54	13.9	9.21	2.23	13.9	8.40
Manganese (Mn)	mg/L	0.00030	0.0671	0.0387	0.244	0.674	0.0411	0.125	0.254	0.00205	0.114	0.0401	0.0465	0.0197	0.00205	0.674	0.14
Nickel (Ni)	mg/L	0.0020	0.0029	0.0029	0.0047	0.0032	0.0020	0.0023	0.0031	0.0027	0.0036	0.00116	0.00224	0.00173	0.00116	0.0047	0.0027
Potassium (K)	mg/L	0.020	12.0	15.0	9.31	16.2	17.5	17.8	10.5	0.575	28.6	1.75	7.39	8.03	0.575	28.6	12.05
Sodium (Na)	mg/L	0.030	77.6	79.8	67.4	54.3	57.9	63.8	75.9	8.95	88.7	25.6	74.1	48	8.95	88.7	60.17
Zinc (Zn)	mg/L	0.0020	0.0023	0.020	0.0361	0.0090	0.0123	0.0086	0.0022	0.0020	0.0023	0.0030	0.0055	0.0086	0.002	0.0361	0.01
Total Organic Carbon by Combustion																	
Total Organic Carbon	mg/L	0.50	/	/	/	19.0	29.6	24.0	13.7	6.62	20.2	4.37	7.51	6.66	4.37	29.6	14.63
Total Suspended Solids																	
Total Suspended Solids	mg/L	13	10.0	9.0	7.0	15.0	19.0	17.0	5.0	5.0	17.0	5.00	5.0	5.00	5	19	9.92
pH																	
pH	pH Units	0.10	8.46	8.27	7. 43	7.94	7.61	7.45	7.70	7.90	8.48	7.70	7.95	8.01	7.45	8.48	7.95
Benzene	mg/L	0.00050	/	/	/	/	/	/	/	/	/	/	/	/	0	0	0.00
Toluene	mg/L	0.0010	/	/	/	/	/	/	/	/	/	/	/	/	0	0	0.00
Ethyl Benzene	mg/L	0.00050	/	/	/	/	/	/	/	/	/	/	/	/	0	0	0.00
o-Xylene	mg/L	0.00050	/	/	/	/	/	/	/	/	/	/	/	/	0	0	0.00
F1 (C6-C10)	mg/L	0.10	/	/	/	/	/	/	/	/	/	/	/	/	0	0	0.00
F2 (C10-C16)	mg/L	0.25	/	/	/	/	/	/	/	/	/	/	/	/	0	0	0.00
F3 (C16-C34)	mg/L	0.25	/	/	/	/	/	/	/	/	/	/	/	/	0	0	0.00
F4 (C34-C50)	mg/L	0.25	/	/	/	/	/	/	/	/	/	/	/	/	0	0	0.00
Total Hydrocarbons (C6-C50)	mg/L	0.44	/	/	/	/	/	/	/	/	/	/	/	/	0	0	0.00

Indigenous and Northern Affairs Canada | Affaires autochtones et du Nord Canada

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	Senior Administrative Officer
Land / Other Authorizations	**Land / Other Authorizations**
	--
Date of Inspection	**Inspector**
July 11th 2017	Atuat Shouldice

Activities Inspected

☐ Camp ☐ Drilling ☐ Mining ☐ Construction ☐ Reclamation ☒ Fuel Storage
☐ Roads/Hauling ☒ Other: Spill no. 17-103 ☐ Other:

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

Summary

On July 11th, 2017 Indigenous and Northern Affairs Canada's Water Resource Officer, Atuat Shouldice completed an annual Community inspection of the hamlet of Rankin Inlet permit 3BM-WHA1520. The inspection was conducted with Megan Lusty, Municipal Planning Engineer with the Government of Nunavut.

SECTION 2 ☒ Comments (s.__) ☐ **Non-Compliance with Act or Licence (s.2)** ☐ Action Required (s.__)

Observations

LANDFILL

The Hamlet has completed the landfill fencing repairs that were requested in 2016. Cross pieces added to the center of the posts and this upgrade has allowed the fence to withstand high winds and high snow load during the winter. Efforts at segregating bulky items from domestic waste have been initiated. With limited equipment this is an on-going process and the inspector encourages the Hamlet to continue this work.

SEWAGE

Upgrades to the sewage lagoon initiated in 2016 have been completed. These upgrades have ensured that no leaching was noted around the perimeter of the lagoon.

WATER

Water is trucked in to community and is metered during delivery. Records have been provided to the inspector for review.

Hazardous waste

Discarded batteries are stored in a seacan next to the Hamlet storage garage. The Hamlet is encouraged to continue segregating hazardous waste and storing this waste in a manner that will prevent waste from entering fresh water.

SECTION 3 ☐ Comments (s.__) ☐ Non-Compliance with Act or Licence, (s.__) ☒ **Action Required (s.3)**

The Hamlet of Whale Cove has been making significant progress in meeting the terms and conditions of its water license.

For the summer of 2018, the inspector requests that work be done on the following:

1. The Hamlet should inform the community about how hazardous waste is being collected and segregated at the landfill. It should be clear where residents are to drop off the various types of waste.
2. Waste oil drums should be palletised and capped so they do not leach in to environment.

Licensee or Representative	Inspector's Name
	WRO A Shouldice
Signature	**Signature**
Date	**Date**
	4/19/2018

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

cc. Erik Allain, Manager Field Operations, INAC

Canada