

April 30, 2021

Nunavut Water Board P.O. Box 119 Gjoa Haven, NU XOB 1L0

Attention: Richard Dwyer, Manager of Licensing

Dear Richard,

The Hamlet of Whale Cove is pleased to submit the 2020 Annual Report for water use and disposal of waste as required under the 3BM- WHA-1520 water license from January 1-December 31, 2020. A new license 3BM WHA 2126 was issued on March 26, 2021.

The estimated water use in 2020 was 16,440 m³ which is below the 30,000m³ allowable limit and a 3.4% decrease from last year (17,013 m³). Sampling of sewage effluent was tested at the ALS Laboratory in Winnipeg. The effluent sampled at the lagoon discharge point WHA-3 was below the allowable limits for BOD and TSS.

Thank you for your consideration. Please do not hesitate to contact me with any questions or concerns.

Regards,

Sarah Collins, P. Eng.
Municipal Planning Engineer
Government of Nunavut
Community and Government Services

Phone: 867-975-5478 Email: scollins@gov.nu.ca

S.Collins

YEAR BEING REPORTED: 2020

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water License No. 3BM-WHA1520 issued to the Hamlet of Whale Cove.

- a) tabular summaries of all data generated under the "Monitoring Program";
- b) the monthly and annual quantities in cubic meters of freshwater obtained at the Water Supply Facility;
- c) the monthly and annual quantities in cubic metres of each and all waste 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 (m³)	Quantity of Sewage Waste Discharged (Estimated, m ³)		
January	1,552.272	Same		
February	1,202.823	Same		
March	1,571.989	Same		
April	1,318.667	Same		
May	1,467.983	Same		
June	1,350.177	Same		
July	1,648.151	Same		
August	1,575.068	Same		
September	1,652.102	Same		
October	1,605.763	Same		
November	1,528.436	Same		
December	1,571.571	Same		
ANNUAL TOTAL	16,439.900	Same		

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

- a summary of modifications and/or major maintenance work carried out on the Water Supply Facility, Sewage Disposal Facility, and Solid Waste Disposal Facility, including all associated structures and facilities;
- The Filterboxx temporary water treatment plant went online on August 18th and was available
 for distribution to the public while the boil water advisory remained in place until testing
 confirmed that water was meeting treatment objectives. The system was disconnected and
 winterized on September 28th.
- The boil water advisory began July 22nd, was lifted on August 26, 2021 once the sampling results demonstrated the water was meeting treatment objectives. The boil water advisory was reinstated on September 28th when Filterboxx was taken offline. This advisory was removed on October 9th once the coliform levels subsided in the source water.
- e) a list of unauthorized discharges and summary of follow-up action taken;
- No spills documented
- a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
- None
- g) Any updates or revisions for manuals and plans (including Operations and Maintenance Manual/Plans) as required by changes in operation and/or technology;
- New Operations and Maintenance Manuals will be submitted as part of the Water License renewal.
- h) a summary of any studies or reports requested by the Board that relate to Water use and Waste disposal or restoration, and a brief description of any future studies planned;
- Planning for the new water treatment plant was completed in spring 2021 and a contract for the design will be awarded summer 2021. As the design develops the documents will be submitted to NWB.
- The initial planning contract for the solid waste project will be completed in 2021. The cost
 estimates have indicated that the current funding cannot support moving to a new site so the
 focus of the project will shift to upgrading the current site. A second contract to assess the cost
 of improvements needed at the current site and a construction plan will be undertaken in
 2021/22.

- i) any other details on water use or waste disposal requested by the Board by November 1st of the year being reported.
- None

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

 The renewal application package was submitted on September 16th, 2020 by CGS to the Nunavut Water Board for municipal water license 3BM-WHA1520 and the new license was issued on March 26, 2021.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

• The 3BM-WHA1520 CIRNAC Inspection took place on July 15th, 2020. A copy of the inspection report has not been received at the time of this submission.

List of Appendices

Appendix A: WHA-3 Effluent Quality Limits – 1 page

Appendix B: Weekly Inspections at Monitoring Program Stations - 1 page

Appendix C: Laboratory Certificate of Analysis

- Certificate of Analysis July 7, 2020 19 pages
- Certificate of Analysis July 16, 2020 24 pages
- Certificate of Analysis August 18, 2020 20 pages

Appendix D: Hazardous Materials Spill Database, Whale Cove 2020 – 1 page

Appendix E: Whale Cove 2020 Sampling Summary – 3 pages

Appendix F: CIRNAC Inspection Report - 1 pages

Appendix A: WHA-3 Effluent Quality Limits

3BM-WHA1520 Whale Cove Monitoring Program Results 2020 for Effluent Quality

Davamatav	Maximum concentration of	WHA-3				
Parameter	any grab sample	07-Jul-20	16-Jul-20	18-Aug-20		
BOD ₅	120 mg/L	8.3	27.9	23.4		
Total Suspended Solids	180 mg/L	21.4	33.1	36.6		
Fecal Coliforms	1x10 ⁶ CFU/100mL	880	14100	15500		
Oil + Grease	no visible sheen	5	5	38.2		
рН	between 6 and 9	7.65	8.01	8.2		

Appendix B: Weekly Inspections at Monitoring Program Stations

Weekly inspection of monitoring sites was not received by CGS.

Appendix C: Laboratory Certificate of Analysis



Hamlet of Whale Cove

ATTN: JEANI MacKENZIE (SAO)

PO Box 120

Whale Cove NU XOC 0J0

Date Received: 10-JUL-20

Report Date: 23-JUL-20 13:08 (MT)

Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L2472521
Project P.O. #: NOT SUBMITTED

Job Reference: HAMLET OF WHALE COVE - WASTE WATER

C of C Numbers: Legal Site Desc:

Comments: ADDITIONAL 15-JUL-20 08:04

Hua Wo

Chemistry Laboratory Manager

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

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2472521-1 SEWAGE LAGOON RUNOFF							
Sampled By: CLIENT on 07-JUL-20 @ 12:00							
Matrix: Waste Water							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	253		1.2	mg/L		16-JUL-20	
Alkalinity, Carbonate Carbonate (CO3)	<0.60		0.60	mg/L		16-JUL-20	
Alkalinity, Hydroxide Hydroxide (OH)	<0.34		0.34	mg/L		16-JUL-20	
Alkalinity, Total (as CaCO3)			0.01				
Alkalinity, Total (as CaCO3) Ammonia by colour	208		1.0	mg/L		15-JUL-20	R5154480
Ammonia, Total (as N)	0.12		0.10	mg/L		15-JUL-20	R5154364
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	8.3		2.0	mg/L		17-JUL-20	R5163581
Carbonaceous BOD BOD Carbonaceous	8.8		2.0	mg/L		17-JUL-20	R5163581
Chloride in Water by IC			2.0	ilig/L		17-00L-20	130100001
Chloride (CI) Conductivity	64.6		0.50	mg/L		15-JUL-20	R5161876
Conductivity	589		1.0	umhos/cm		16-JUL-20	R5156988
Fecal coliforms, 1:10 dilution by QT97 Fecal Coliforms	880	PEHR	10	MPN/100mL		15-JUL-20	R5154800
Hardness Calculated Hardness (as CaCO3)	161	HTC	0.20	mg/L		17-JUL-20	
Mercury Total	101		0.20	mg/L			
Mercury (Hg)-Total Nitrate in Water by IC	<0.000050		0.0000050	mg/L	16-JUL-20	16-JUL-20	R5156978
Nitrate (as N)	0.027		0.020	mg/L		15-JUL-20	R5161876
Nitrate+Nitrite Nitrate and Nitrite as N	<0.070		0.070	mg/L		22-JUL-20	
Nitrite in Water by IC			0.070				
Nitrite (as N) Oil & Grease - Gravimetric	<0.010		0.010	mg/L		15-JUL-20	R5161876
Oil and Grease	<5.0		5.0	mg/L		16-JUL-20	R5154766
Phenol (4AAP) Phenols (4AAP)	<0.0010		0.0010	mg/L		16-JUL-20	R5156146
Phosphorus, Total							
Phosphorus (P)-Total Sulfate in Water by IC	3.32		0.030	mg/L		16-JUL-20	R5154645
Sulfate (SO4)	14.8		0.30	mg/L		15-JUL-20	R5161876
Total Metals in Water by CRC ICPMS					40 11 11 07	40 11 11 00	D=1=6===
Aluminum (Al)-Total	0.0343		0.0030	mg/L	16-JUL-20	16-JUL-20	R5156998
Arsenic (As)-Total	0.00382		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998
Cadmium (Cd)-Total	0.0000077		0.0000050	mg/L	16-JUL-20	16-JUL-20	R5156998
Calcium (Ca)-Total	48.0		0.050	mg/L	16-JUL-20	16-JUL-20	R5156998
Chromium (Cr)-Total	0.00024		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998
Cobalt (Co)-Total	0.00051		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998
Copper (Cu)-Total	0.00204		0.00050	mg/L	16-JUL-20	16-JUL-20	R5156998
Iron (Fe)-Total	0.877		0.010	mg/L	16-JUL-20	16-JUL-20	R5156998
Lead (Pb)-Total	0.000086		0.000050	mg/L	16-JUL-20	16-JUL-20	R5156998
Magnesium (Mg)-Total	9.91		0.0050	mg/L	16-JUL-20	16-JUL-20	R5156998
Manganese (Mn)-Total	0.187		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998
Nickel (Ni)-Total	0.00268		0.00050	mg/L	16-JUL-20	16-JUL-20	R5156998
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^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2472521-1 SEWAGE LAGOON RUNOFF							
Sampled By: CLIENT on 07-JUL-20 @ 12:00							
Matrix: Waste Water							
Total Metals in Water by CRC ICPMS							
Potassium (K)-Total	13.8		0.050	mg/L	16-JUL-20	16-JUL-20	R5156998
Sodium (Na)-Total	56.8		0.050	mg/L	16-JUL-20	16-JUL-20	R5156998
Zinc (Zn)-Total	0.0171		0.0030	mg/L	16-JUL-20	16-JUL-20	R5156998
Total Organic Carbon by Combustion							
Total Organic Carbon	20.3		0.50	mg/L		15-JUL-20	R5154334
Total Suspended Solids	04.4		0.0			45 1111 00	D5457074
Total Suspended Solids	21.4		3.0	mg/L		15-JUL-20	R5157074
pH pH	7.65		0.10	pH units		16-JUL-20	R5156988
L2472521-2 WHA-2 - SET WITH PAH	7.00		0.10	p d			11010000
Sampled By: CLIENT on 07-JUL-20 @ 12:00							
Matrix: Waste Water							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		16-JUL-20	R5154921
Toluene	0.0011		0.0010	mg/L		16-JUL-20	R5154921
Ethyl benzene	<0.00050		0.00050	mg/L		16-JUL-20	R5154921
o-Xylene	<0.00050		0.00050	mg/L		16-JUL-20	R5154921
m+p-Xylenes	<0.00040		0.00040	mg/L		16-JUL-20	R5154921
F1 (C6-C10)	<0.10		0.10	mg/L		16-JUL-20	R5154921
Surrogate: 4-Bromofluorobenzene (SS)	85.7		70-130	%		16-JUL-20	R5154921
CCME PHC F2-F4 in Water F2 (C10-C16)	0.18		0.10	mg/L	15-JUL-20	15-JUL-20	R5156656
F3 (C16-C34)	2.53		0.10	mg/L	15-JUL-20	15-30L-20 15-JUL-20	R5156656
F4 (C34-C50)	0.91		0.25	mg/L	15-JUL-20	15-JUL-20	R5156656
Surrogate: 2-Bromobenzotrifluoride	112.6		60-140	%	15-JUL-20	15-JUL-20	R5156656
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		20-JUL-20	
F2-Naphth	0.18		0.10	mg/L		20-JUL-20	
F3-PAH	2.53		0.25	mg/L		20-JUL-20	
Total Hydrocarbons (C6-C50)	3.62		0.38	mg/L		20-JUL-20	
Sum of Xylene Isomer Concentrations Xylenes (Total)	<0.00064		0.00064	ma/l		16-JUL-20	
Ayleries (Total)	<0.00064		0.00064	mg/L		10-JUL-20	
CCME PAHs in mg/L							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	16-JUL-20	20-JUL-20	R5158059
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	16-JUL-20	20-JUL-20	R5158059
Acenaphthene	<0.000020		0.000020	mg/L	16-JUL-20	20-JUL-20	R5158059
Acenaphthylene	<0.000020		0.000020	mg/L	16-JUL-20	20-JUL-20	R5158059
Anthracene	<0.000010		0.000010	mg/L	16-JUL-20	20-JUL-20	R5158059
Acridine	<0.000020		0.000020	mg/L	16-JUL-20	20-JUL-20	R5158059
Benzo(a)anthracene	<0.000010		0.000010	mg/L	16-JUL-20 16-JUL-20	20-JUL-20	R5158059
Benzo(a)pyrene Benzo(b&j)fluoranthene	<0.0000050 <0.000010		0.0000050 0.000010	mg/L mg/L	16-JUL-20 16-JUL-20	20-JUL-20 20-JUL-20	R5158059 R5158059
Benzo(g,h,i)perylene	<0.000010		0.000010	mg/L	16-JUL-20 16-JUL-20	20-JUL-20 20-JUL-20	R5158059 R5158059
Benzo(k)fluoranthene	<0.000020		0.000020	mg/L	16-JUL-20	20-JUL-20 20-JUL-20	R5158059
Chrysene	<0.000010		0.000010	mg/L	16-JUL-20	20-JUL-20	R5158059
Dibenzo(a,h)anthracene	<0.000050		0.0000050	mg/L	16-JUL-20	20-JUL-20	R5158059
Fluoranthene	<0.000020		0.000020	mg/L	16-JUL-20	20-JUL-20	R5158059
Fluorene	<0.000020		0.000020	mg/L	16-JUL-20	20-JUL-20	R5158059
	<0.000010	1 1	0.000010	mg/L	16-JUL-20	20-JUL-20	R5158059

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

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2472521-2 WHA-2 - SET WITH PAH							
Sampled By: CLIENT on 07-JUL-20 @ 12:00							
Matrix: Waste Water							
CCME PAHs in mg/L							
Naphthalene	<0.000050		0.000050	mg/L	16-JUL-20	20-JUL-20	R5158059
Phenanthrene Pyrene	<0.000050 <0.000010		0.000050 0.000010	mg/L mg/L	16-JUL-20 16-JUL-20	20-JUL-20 20-JUL-20	R5158059 R5158059
Quinoline	0.000010		0.000010	mg/L	16-JUL-20	20-JUL-20	R5158059
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	16-JUL-20	20-JUL-20	R5158059
Surrogate: d8-Naphthalene	133.6		50-150	%	16-JUL-20	20-JUL-20	R5158059
Surrogate: d10-Phenanthrene	94.2		50-150	%	16-JUL-20	20-JUL-20	R5158059
Surrogate: d12-Chrysene	85.3		50-150	%	16-JUL-20	20-JUL-20	R5158059
Surrogate: d10-Acenaphthene Surrogate: d9-Acridine (SS)	99.7 95.8		50-150 50-150	% %	16-JUL-20 16-JUL-20	20-JUL-20 20-JUL-20	R5158059 R5158059
Nunavut WW Group 1	95.0		30-130	/0	10-30L-20	20-30L-20	K3130039
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	259		1.2	mg/L		16-JUL-20	
Alkalinity, Carbonate	20.00		0.00	m a/l		16 1111 00	
Carbonate (CO3) Alkalinity, Hydroxide	<0.60		0.60	mg/L		16-JUL-20	
Hydroxide (OH)	<0.34		0.34	mg/L		16-JUL-20	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	242		1.0	m a/l		15-JUL-20	DE4E4400
Ammonia by colour	212		1.0	mg/L		15-JUL-20	R5154480
Ammonia, Total (as N)	24.3		1.0	mg/L		15-JUL-20	R5154364
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	12.8		6.0	mg/L		17-JUL-20	R5163581
Carbonaceous BOD							
BOD Carbonaceous	10.6		6.0	mg/L		17-JUL-20	R5163581
Chloride in Water by IC Chloride (CI)	75.0		0.50	mg/L		15-JUL-20	R5161876
Conductivity Conductivity	681		1.0	umhos/cm		16-JUL-20	R5156988
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	6130	PEHR	10	MPN/100mL		15-JUL-20	R5154800
Hardness Calculated Hardness (as CaCO3)	95.1	HTC	0.20	mg/L		17-JUL-20	
Mercury Total					40 11 11 00		DE450050
Mercury (Hg)-Total Nitrate in Water by IC	0.0000090		0.0000050	mg/L	16-JUL-20	16-JUL-20	R5156978
Nitrate in Water by iC Nitrate (as N)	<0.020		0.020	mg/L		15-JUL-20	R5161876
Nitrate+Nitrite Nitrate and Nitrite as N	<0.070		0.070	mg/L		22-JUL-20	
Nitrite in Water by IC							
Nitrite (as N) Oil & Grease - Gravimetric	<0.010		0.010	mg/L		15-JUL-20	R5161876
Oil & Grease - Gravimetric Oil and Grease	6.4		5.0	mg/L		16-JUL-20	R5154766
Phenol (4AAP) Phenols (4AAP)	<0.0050	DLM	0.0050	mg/L		16-JUL-20	R5156146
Phosphorus, Total Phosphorus (P)-Total							
Sulfate in Water by IC	5.83		0.030	mg/L		16-JUL-20	R5154645
Sulfate (SO4)	13.9		0.30	mg/L		15-JUL-20	R5161876
Total Metals in Water by CRC ICPMS Aluminum (Al)-Total	0.0377		0.0030	mg/L	16-JUL-20	16-JUL-20	R5156998
Arsenic (As)-Total	0.00087		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998

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

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
 L2472521-2 WHA-2 - SET WITH PAH							
Sampled By: CLIENT on 07-JUL-20 @ 12:00							
Matrix: Waste Water							
Total Metals in Water by CRC ICPMS							
Cadmium (Cd)-Total	0.0000187		0.0000050	mg/L	16-JUL-20	16-JUL-20	R5156998
Calcium (Ca)-Total	27.4		0.050	mg/L	16-JUL-20	16-JUL-20	R5156998
Chromium (Cr)-Total	0.00035		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998
Copper (Cu) Total	0.00061		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998
Copper (Cu)-Total Iron (Fe)-Total	0.0360 0.173		0.00050 0.010	mg/L mg/L	16-JUL-20 16-JUL-20	16-JUL-20 16-JUL-20	R5156998 R5156998
Lead (Pb)-Total	0.000353		0.00050	mg/L	16-JUL-20	16-JUL-20	R5156998
Magnesium (Mg)-Total	6.47		0.0050	mg/L	16-JUL-20	16-JUL-20	R5156998
Manganese (Mn)-Total	0.0887		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998
Nickel (Ni)-Total	0.00205		0.00050	mg/L	16-JUL-20	16-JUL-20	R5156998
Potassium (K)-Total	16.5		0.050	mg/L	16-JUL-20	16-JUL-20	R5156998
Sodium (Na)-Total	54.0		0.050	mg/L	16-JUL-20	16-JUL-20	R5156998
Zinc (Zn)-Total	0.0226		0.0030	mg/L	16-JUL-20	16-JUL-20	R5156998
Total Organic Carbon by Combustion	20.5		0.50			45 1111 00	DE45400:
Total Organic Carbon	33.5		0.50	mg/L		15-JUL-20	R5154334
Total Suspended Solids Total Suspended Solids	26.4		3.0	mg/L		15-JUL-20	R5157074
pH	20.4		3.0	IIIg/L		10-001-20	13137074
рН	7.35		0.10	pH units		16-JUL-20	R5156988
L2472521-3 SET WITHOUT PAH				•			
Sampled By: CLIENT on 07-JUL-20 @ 12:00							
Matrix: Waste Water							
Tracto Tracto							
Nunavut WW Group 1							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	244		1.2	mg/L		16-JUL-20	
Alkalinity, Carbonate Carbonate (CO3)	<0.60		0.60	mg/L		16-JUL-20	
Alkalinity, Hydroxide	\0.00		0.00	ilig/L		10-00L-20	
Hydroxide (OH)	<0.34		0.34	mg/L		16-JUL-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	200		1.0	mg/L		15-JUL-20	R5154480
Ammonia by colour							
Ammonia, Total (as N)	0.58		0.10	mg/L		15-JUL-20	R5154364
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	7.5		2.0	ma/l		17-JUL-20	R5163581
Carbonaceous BOD	7.5		2.0	mg/L		17-JUL-20	רטנטונא
BOD Carbonaceous	5.3		2.0	mg/L		17-JUL-20	R5163581
Chloride in Water by IC	3.5						
Chloride (CI)	69.6		0.50	mg/L		15-JUL-20	R5161876
Conductivity							
Conductivity	672		1.0	umhos/cm		16-JUL-20	R5156988
Fecal coliforms, 1:10 dilution by QT97		DELLE		MDNI/400		45 11 " 66	
Fecal Coliforms	210	PEHR	10	MPN/100mL		15-JUL-20	R5154800
Hardness Calculated Hardness (as CaCO3)	212	нтс	0.20	mg/L		17-JUL-20	
Mercury Total	212	0	0.20	ilig/L		17-00L-20	
Mercury (Hg)-Total	0.0000050		0.0000050	mg/L	16-JUL-20	16-JUL-20	R5156978
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		15-JUL-20	R5161876
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		22-JUL-20	

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

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2472521-3 SET WITHOUT PAH							
Sampled By: CLIENT on 07-JUL-20 @ 12:00							
Matrix: Waste Water							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		15-JUL-20	R5161876
Oil & Grease - Gravimetric				-			
Oil and Grease	<5.0		5.0	mg/L		16-JUL-20	R5154766
Phenol (4AAP)				,,		40 1111 00	
Phenols (4AAP)	0.0036		0.0010	mg/L		16-JUL-20	R5156146
Phosphorus, Total Phosphorus (P)-Total	0.360		0.0030	mg/L		16-JUL-20	R5154645
Sulfate in Water by IC	0.000		0.0000	9/ =		.0022	110101010
Sulfate (SO4)	57.1		0.30	mg/L		15-JUL-20	R5161876
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0446		0.0030	mg/L	16-JUL-20	16-JUL-20	R5156998
Arsenic (As)-Total	0.00271		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998
Cadmium (Cd)-Total	0.0000823		0.0000050	mg/L	16-JUL-20	16-JUL-20	R5156998
Calcium (Ca)-Total Chromium (Cr)-Total	69.6 0.00137		0.050 0.00010	mg/L	16-JUL-20 16-JUL-20	16-JUL-20 16-JUL-20	R5156998 R5156998
				mg/L			
Cobalt (Co)-Total Copper (Cu)-Total	0.00183 0.00735		0.00010 0.00050	mg/L mg/L	16-JUL-20 16-JUL-20	16-JUL-20 16-JUL-20	R5156998 R5156998
Iron (Fe)-Total	3.63		0.00030	mg/L	16-JUL-20	16-JUL-20	R5156998
Lead (Pb)-Total	0.000758		0.000050	mg/L	16-JUL-20	16-JUL-20	R5156998
Magnesium (Mg)-Total	9.36		0.0050	mg/L	16-JUL-20	16-JUL-20	R5156998
Manganese (Mn)-Total	0.455		0.00010	mg/L	16-JUL-20	16-JUL-20	R5156998
Nickel (Ni)-Total	0.00676		0.00050	mg/L	16-JUL-20	16-JUL-20	R5156998
Potassium (K)-Total	10.6		0.050	mg/L	16-JUL-20	16-JUL-20	R5156998
Sodium (Na)-Total	46.6		0.050	mg/L	16-JUL-20	16-JUL-20	R5156998
Zinc (Zn)-Total	0.0402		0.0030	mg/L	16-JUL-20	16-JUL-20	R5156998
Total Organic Carbon by Combustion Total Organic Carbon	18.9		0.50	mg/L		15-JUL-20	R5154334
Total Suspended Solids							
Total Suspended Solids	19.8		3.0	mg/L		15-JUL-20	R5157074
pH						40 1111 00	
pH	7.35		0.10	pH units		16-JUL-20	R5156988

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

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Reference Information

Qualifiers for Individual Samples Listed:

Lab Sample ID	Client Sample ID	Qualifier	Description
L2472521-1	SEWAGE LAGOON RUNOFF	PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
		UIC	Unreliable: Improper Container
L2472521-2	WHA-2 - SET WITH PAH	PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
		UIC	Unreliable: Improper Container
L2472521-3	SET WITHOUT PAH	PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
		UIC	Unreliable: Improper Container

Sample Parameter Qualifier Key:

Qualifier	Description
В	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.

Test Method References:

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

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

ALK-HCO3HCO3-CALC- Water Alkalinity, Bicarbonate CALCULATION

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

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

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

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

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

BOD-CBOD-WP Water Carbonaceous BOD APHA 5210 B

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

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

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

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

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

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

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

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

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

EC-WP Water Conductivity APHA 2510B

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Test Method References:

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

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 CCME CWS-PHC, Pub #1310, Dec 2001-L Water **CCME Total Hydrocarbons**

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.
- 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.

CCME PHC F2-F4 in Water

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.

Fecal coliforms, 1:10 dilution by QT97 APHA 9223B QT97

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

HARDNESS-CALC-WP Hardness Calculated **APHA 2340B** Water

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Reference Information

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Test Method References:

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

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

after persulphate digestion of the sample.

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

PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily

separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.

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.

PHENOI S-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-CALCULATED RESULT Water

Water

Sum of Xylene Isomer Concentrations

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:

WP ALS ENVIRONMENTAL - W	
	INNIPEG, MANITOBA, CANADA
WT ALS ENVIRONMENTAL - W	ATERLOO, 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.



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Client: Hamlet of Whale Cove

PO Box 120

Whale Cove NU X0C 0J0

Contact: JEANI MacKENZIE (SAO)

est M	atrix Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP W	/ater						
Batch R5154480 WG3363682-4 LCS Alkalinity, Total (as CaCO3)		100.7		%		85-115	15-JUL-20
WG3363682-1 MB Alkalinity, Total (as CaCO3)		<1.0		mg/L		1	15-JUL-20
	/ater			J		·	10 002 20
Batch R5163581							
WG3364556-2 LCS BOD Carbonaceous		105.4		%		85-115	17-JUL-20
WG3364556-1 MB BOD Carbonaceous		<2.0		mg/L		2	17-JUL-20
BOD-WP W	ater .						
Batch R5163581 WG3364556-2 LCS Biochemical Oxygen Demai	ad	109.0		%		05.445	47 111 00
WG3364556-1 MB	IU	109.0		70		85-115	17-JUL-20
Biochemical Oxygen Demar	nd	<2.0		mg/L		2	17-JUL-20
BTEXS+F1-HSMS-WP W	/ater						
Batch R5154921							
WG3362937-8 LCS Benzene		102.0		%		70-130	15-JUL-20
Toluene		99.5		%		70-130 70-130	15-JUL-20
Ethyl benzene		102.9		%		70-130	15-JUL-20
o-Xylene		112.1		%		70-130	15-JUL-20
m+p-Xylenes		103.1		%		70-130	15-JUL-20
WG3362937-9 LCS F1 (C6-C10)		102.3		%		70-130	15-JUL-20
WG3362937-7 MB							
Benzene		<0.00050		mg/L		0.0005	15-JUL-20
Toluene		<0.0010		mg/L		0.001	15-JUL-20
Ethyl benzene		<0.00050		mg/L		0.0005	15-JUL-20
o-Xylene		<0.00050		mg/L		0.0005	15-JUL-20
m+p-Xylenes		<0.00040		mg/L		0.0004	15-JUL-20
F1 (C6-C10)		<0.10		mg/L		0.1	15-JUL-20
Surrogate: 4-Bromofluorobe	enzene (SS)	88.0		%		70-130	15-JUL-20
C-TOC-HTC-WP W	ater /						



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Test	Matrix	Reference	Result C	(ualifier	Units	RPD	Limit	Analyzed
C-TOC-HTC-WP	Water							
Batch R5154334								
WG3363582-2 LCS								
Total Organic Carbon			101.9		%		80-120	15-JUL-20
WG3363582-1 MB Total Organic Carbon			<0.50		mg/L		0.5	15-JUL-20
CL-IC-N-WP	Water							
Batch R5161876								
WG3363202-2 LCS Chloride (Cl)			104.4		%		90-110	15-JUL-20
WG3363202-1 MB								
Chloride (CI)			<0.50		mg/L		0.5	15-JUL-20
EC-WP	Water							
Batch R5156988								
WG3364733-3 LCS								
Conductivity			98.4		%		90-110	16-JUL-20
WG3364733-1 MB Conductivity			<1.0		umhos/cm		1	16-JUL-20
F2-F4-FID-WP	Water							
Batch R5156656								
WG3362782-4 LCS								
F2 (C10-C16)			104.7		%		70-130	15-JUL-20
F3 (C16-C34)			96.1		%		70-130	15-JUL-20
F4 (C34-C50)			98.4		%		70-130	15-JUL-20
WG3362782-3 MB			.0.40		,,			
F2 (C10-C16)			<0.10		mg/L		0.1	15-JUL-20
F3 (C16-C34)			<0.25		mg/L		0.25	15-JUL-20
F4 (C34-C50)			<0.25		mg/L		0.25	15-JUL-20
Surrogate: 2-Bromobenz	otrifluoride		104.9		%		60-140	15-JUL-20
FC10-QT97-WP	Water							
Batch R5154800								
WG3363306-1 MB					MDNI/400ml			
Fecal Coliforms			<1		MPN/100mL		1	15-JUL-20
HG-T-CVAA-WP	Water							
Batch R5156978								
WG3364115-3 DUP Mercury (Hg)-Total		L2472521-3 0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	16-JUL-20
WG3364109-2 LCS								



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WP	Water							
Batch R5156978								
WG3364109-2 LCS			440.0		0/			
Mercury (Hg)-Total			113.0		%		80-120	16-JUL-20
WG3364115-2 LCS Mercury (Hg)-Total			112.0		%		80-120	16-JUL-20
WG3364109-1 MB Mercury (Hg)-Total			<0.00000	5C	mg/L		0.000005	16-JUL-20
WG3364115-1 MB Mercury (Hg)-Total			<0.00000	5C	mg/L		0.000005	16-JUL-20
MET-T-CCMS-WP	Water				Ü			.002220
Batch R5156998								
WG3363386-2 LCS								
Aluminum (AI)-Total			102.5		%		80-120	16-JUL-20
Arsenic (As)-Total			98.1		%		80-120	16-JUL-20
Cadmium (Cd)-Total			98.3		%		80-120	16-JUL-20
Calcium (Ca)-Total			98.6		%		80-120	16-JUL-20
Chromium (Cr)-Total			99.6		%		80-120	16-JUL-20
Cobalt (Co)-Total			96.9		%		80-120	16-JUL-20
Copper (Cu)-Total			97.6		%		80-120	16-JUL-20
Iron (Fe)-Total			97.9		%		80-120	16-JUL-20
Lead (Pb)-Total			99.4		%		80-120	16-JUL-20
Magnesium (Mg)-Total			102.5		%		80-120	16-JUL-20
Manganese (Mn)-Total			97.7		%		80-120	16-JUL-20
Nickel (Ni)-Total			96.1		%		80-120	16-JUL-20
Potassium (K)-Total			98.7		%		80-120	16-JUL-20
Sodium (Na)-Total			99.6		%		80-120	16-JUL-20
Zinc (Zn)-Total			99.1		%		80-120	16-JUL-20
WG3363386-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	16-JUL-20
Arsenic (As)-Total			<0.00010		mg/L		0.0001	16-JUL-20
Cadmium (Cd)-Total			<0.00000	5C	mg/L		0.000005	16-JUL-20
Calcium (Ca)-Total			<0.050		mg/L		0.05	16-JUL-20
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	16-JUL-20
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	16-JUL-20
Copper (Cu)-Total			<0.00050		mg/L		0.0005	16-JUL-20
Iron (Fe)-Total			<0.010		mg/L		0.01	16-JUL-20
Lead (Pb)-Total			<0.00005	0	mg/L		0.00005	16-JUL-20



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Гest	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP	Water							
Batch R5156998 WG3363386-1 MB Magnesium (Mg)-Total			<0.0050		ma/l		0.005	40 1111 00
			<0.0050		mg/L		0.005	16-JUL-20
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	16-JUL-20
Nickel (Ni)-Total					mg/L		0.0005	16-JUL-20
Potassium (K)-Total			<0.050		mg/L		0.05	16-JUL-20
Sodium (Na)-Total			<0.050		mg/L		0.05	16-JUL-20
Zinc (Zn)-Total			<0.0030		mg/L		0.003	16-JUL-20
NH3-COL-WP	Water							
Batch R5154364 WG3363605-10 LCS			100.6		%		05.445	45 00
Ammonia, Total (as N)			100.6		/0		85-115	15-JUL-20
WG3363605-9 MB Ammonia, Total (as N)			<0.010		mg/L		0.01	15-JUL-20
NO2-IC-N-WP	Water							
Batch R5161876 WG3363202-2 LCS Nitrite (as N)			104.5		%		90-110	15-JUL-20
WG3363202-1 MB Nitrite (as N)			<0.010		mg/L		0.01	15-JUL-20
NO3-IC-N-WP	Water							
Batch R5161876								
WG3363202-2 LCS Nitrate (as N)			104.6		%		90-110	15-JUL-20
WG3363202-1 MB Nitrate (as N)			<0.020		mg/L		0.02	15-JUL-20
OG-GRAV-WP	Water							
Batch R5154766								
WG3363944-2 LCS Oil and Grease			93.4		%		70-130	16-JUL-20
WG3363944-1 MB Oil and Grease			<5.0		mg/L		5	16-JUL-20
P-T-COL-WP	Water							
Batch R5154645								
WG3363427-10 LCS Phosphorus (P)-Total			97.3		%		80-120	16-JUL-20
WG3363427-9 MB								



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Workorder: L2472521 Report Date: 23-JUL-20

Test Matrix Reference Result Qualifier Units **RPD** Limit Analyzed PAH-CCME-PPM-WT Water **Batch** WG3364045-2 LCS 91.4 1-Methyl Naphthalene % 50-150 20-JUL-20 2-Methyl Naphthalene 91.5 % 50-150 20-JUL-20 Acenaphthene 98.6 % 50-150 20-JUL-20 Acenaphthylene 91.3 % 50-150 20-JUL-20 Anthracene 100.8 % 50-150 20-JUL-20 96.7 Acridine % 50-150 20-JUL-20 Benzo(a)anthracene 102.2 % 50-150 20-JUL-20 Benzo(a)pyrene 99.5 % 50-150 20-JUL-20 Benzo(b&j)fluoranthene 99.3 % 50-150 20-JUL-20 % Benzo(g,h,i)perylene 113.8 50-150 20-JUL-20 Benzo(k)fluoranthene 95.8 % 50-150 20-JUL-20 102.6 Chrysene % 50-150 20-JUL-20 Dibenzo(a,h)anthracene 102.3 % 50-150 20-JUL-20 Fluoranthene 94.9 % 50-150 20-JUL-20 Fluorene 96.4 % 50-150 20-JUL-20 Indeno(1,2,3-cd)pyrene 102.4 % 50-150 20-JUL-20 Naphthalene 93.4 % 50-150 20-JUL-20 Phenanthrene 106.8 % 50-150 20-JUL-20 Pyrene 97.1 % 50-150 20-JUL-20 Quinoline 106.9 % 50-150 20-JUL-20 WG3364045-1 1-Methyl Naphthalene < 0.000020 mg/L 0.00002 20-JUL-20 2-Methyl Naphthalene < 0.000020 mg/L 0.00002 20-JUL-20 Acenaphthene < 0.000020 mg/L 0.00002 20-JUL-20 Acenaphthylene < 0.000020 mg/L 0.00002 20-JUL-20 Anthracene < 0.000010 mg/L 0.00001 20-JUL-20 Acridine < 0.000020 mg/L 0.00002 20-JUL-20 Benzo(a)anthracene < 0.000010 mg/L 0.00001 20-JUL-20 mg/L Benzo(a)pyrene <0.000050 0.000005 20-JUL-20 Benzo(b&j)fluoranthene < 0.000010 mg/L 0.00001 20-JUL-20 Benzo(g,h,i)perylene < 0.000020 mg/L 0.00002 20-JUL-20 Benzo(k)fluoranthene < 0.000010 mg/L 0.00001 20-JUL-20 Chrysene < 0.000020 mg/L 0.00002 20-JUL-20 Dibenzo(a,h)anthracene < 0.0000050 mg/L 0.000005 20-JUL-20



Workorder: L2472521

Report Date: 23-JUL-20

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PAH-CCME-PPM-WT	Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
WG3364045-1 MB	PAH-CCME-PPM-WT	Water							
Fluorene <0,000020 mg/L 0,00002 20_JUL_20 Fluorene <0,000020 mg/L 0,00002 20_JUL_20 Fluorene <0,000010 mg/L 0,00001 20_JUL_20 Naphthalene <0,000010 mg/L 0,00005 20_JUL_20 Naphthalene <0,000050 mg/L 0,00005 20_JUL_20 Phenanthrene <0,000050 mg/L 0,00005 20_JUL_20 Phenanthrene <0,000050 mg/L 0,00005 20_JUL_20 Pyrene <0,000010 mg/L 0,00001 20_JUL_20 Quinoline <0,000020 mg/L 0,00002 20_JUL_20 Surrogate: d8-Naphthalene 90.5 % 50-150 20_JUL_20 Surrogate: d10-Pnenanthrene 99.5 % 50-150 20_JUL_20 Surrogate: d10-Acenaphthene 99.5 % 50-150 20_JUL_20 Surrogate: d10-Acenaphthene 98.8 % 50-150 20_JUL_2	Batch R5158059)							
Fluorene				<0.00002	0	m a /l		0.00000	00 1111 00
Indeno(1,2,3-cd)pyrene						_			
Naphthalene									
Phenanthrene)							
Pyrene	•					_			
Quinoline <0.000020						_			
Surrogate: d8-Naphthalene 100.5 % 50.150 20.JUL-20 Surrogate: d10-Phenanthrene 99.5 % 50.150 20.JUL-20 Surrogate: d10-Phenanthrene 99.5 % 50.150 20.JUL-20 Surrogate: d10-Acenaphthene 95.8 % 50.150 20.JUL-20 Surrogate: d10-Acenaphthene 95.8 % 50.150 20.JUL-20 Surrogate: d9-Acridine (SS) 87.8 % 50.150 16.JUL-20 Surrogate: d9-Acridine (SS) 87.8 % 50.150 16.JUL-20 Surrogate: d9-Acridine (SS) 87.8 % 50.150 16.JUL-20 Surrogate: d9-Acridine (SS) 87.8 % 50.150 15.JUL-20 Surrogate: d9-Acrid	-								
Surrogate: d10-Phenanthrene 99.5 % 50.150 20.JUL-20 Surrogate: d12-Chrysene 88.4 % 50.150 20.JUL-20 Surrogate: d12-Chrysene 95.8 % 50.150 20.JUL-20 Surrogate: d10-Acenaphthene 95.8 % 50.150 20.JUL-20 Surrogate: d9-Acridine (SS) 87.8 % 50.150 20.JUL-20 PH-WP Water Batch R5156988 WG3364733-2 LCS pH 7.36 pH units 7.3-7.5 16.JUL-20 PHENOLS-4AAP-WT Water Batch R5156146 WG3364233-2 LCS Phenols (4AAP) 97.9 % 85-115 16.JUL-20 WG3364233-1 MB Phenols (4AAP) 40.001 16.JUL-20 WG3364233-1 MB Phenols (4AAP) 40.001 16.JUL-20 S0.4-IC-N-WP Water Batch R5161876 WG3363202-2 LCS Sulfate (SO4) 105.8 % 90.110 15.JUL-20 WG3363202-2 LCS Sulfate (SO4) 40.30 mg/L 0.30 15.JUL-20 S0.50 NG36230-1 MB Sulfate (SO4) 40.90 NG36230-1 MB Sulfate (SO4) 40.90 NG36230-1 MB Sulfate (SO4) 40.90 NG36230-1 NG NG3C900-5 LCS NG36290-1 NG NG36290-					0				
Surrogate: d12-Chrysene 88.4 % 50-150 20-JUL-20 Surrogate: d10-Acenaphthene 95.8 % 50-150 20-JUL-20 Surrogate: d9-Acridine (SS) 87.8 % 50-150 20-JUL-20 PH-WP Water Batch R5156988 WG3364733-2 LCS pH 7.36 pH units 7.3-7.5 16-JUL-20 PHENOLS-4AAP-WT Water Batch R5156146 WG3364232-1 LCS Phenols (4AAP) 97.9 % 85-115 16-JUL-20 WG3364233-1 MB Phenols (4AAP) Water Batch R5161876 WG3363202-1 LCS Sulfate (SO4) 105.8 % 90-110 15-JUL-20 WG3363202-1 MB Sulfate (SO4) 40.30 mg/L 0.3 15-JUL-20 SOLIDS-TOTSUS-WP Water Batch R5157074 WG3362900-5 LCS Total Suspended Solids 99.3 % 85-115 15-JUL-20 WG3362900-4 MB	-							50-150	
Surrogate: d10-Acenaphthene 95.8 % 50-150 20-JUI-20 Surrogate: d9-Acridine (SS) 87.8 % 50-150 20-JUI-20 PH-WP Water Batch R5156988 WG3364733-2 LCS pH 7.36 pH units 7.3-7.5 16-JUI-20 PHENOLS-4AAP-WT Water Batch R5156146 WG3364233-2 LCS Phenols (4AAP) 97.9 % 85-115 16-JUI-20 WG3364233-1 MB Phenols (4AAP) 0.0010 mg/L 0.001 16-JUI-20 S04-IC-N-WP Water Batch R516876 WG3363202-2 LCS Sulfate (SO4) 105.8 % 90-110 15-JUI-20 WG3363202-1 MB Sulfate (SO4) 0.30 mg/L 0.3 15-JUI-20 S0IIDS-TOTSUS-WP Water Batch R5157074 WG3362900-5 LCS Total Suspended Solds 99.3 % 85-115 15-JUI-20 WG3362900-4 MB	Surrogate: d10-Phenar	threne		99.5				50-150	20-JUL-20
Surrogate: d9-Acridine (SS) 87.8 % 50-150 20-JUL-20	Surrogate: d12-Chryse	ne		88.4		%		50-150	20-JUL-20
PH-WP Water Batch R5156988 W33364733-2 LCS PHENOLS-4AAP-WT Water PHENOLS-4AAP-WT Water Batch R5156146 W33364233-1 LCS Phenols (4AAP) 97.9 % 85-115 16-JUL-20 W3364233-1 MB Phenols (4AAP) 97.9 % 85-115 16-JUL-20 S04-IC-N-WP Water Batch R5161876 W33363202-2 LCS Sulfate (SO4) 105.8 % 90-110 15-JUL-20 W33363202-1 MB Sulfate (SO4) A 0.30 mg/L 0.3 15-JUL-20 Batch R5157074 Water Batch R5157074 W35701 Sulfate (SO4) 99.3 % 85-115 15-JUL-20 WG3362900-5 LCS CS TO No. WE COLS									

Workorder: L2472521 Report Date: 23-JUL-20 Page 7 of 8

Legend:

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

Sample Parameter Qualifier Definitions:

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

Page 8 of 8

Workorder: L2472521 Report Date: 23-JUL-20

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifie
Physical Tests							
Total Suspended Solids							
Total Casponasa Conas	1	07-JUL-20 12:00	15-JUL-20 13:00	7	8	days	EHT
	2	07-JUL-20 12:00	15-JUL-20 13:00	7	8	days	EHT
	3	07-JUL-20 12:00	15-JUL-20 13:00	7	8	days	EHT
pН						-	
•	1	07-JUL-20 12:00	16-JUL-20 12:00	0.25	216	hours	EHTR-FI
	2	07-JUL-20 12:00	16-JUL-20 12:00	0.25	216	hours	EHTR-FN
	3	07-JUL-20 12:00	16-JUL-20 12:00	0.25	216	hours	EHTR-FI
Anions and Nutrients							
Nitrate in Water by IC							
	1	07-JUL-20 12:00	15-JUL-20 13:30	3	8	days	EHTL
	2	07-JUL-20 12:00	15-JUL-20 13:30	3	8	days	EHTL
	3	07-JUL-20 12:00	15-JUL-20 13:30	3	8	days	EHTL
Nitrite in Water by IC							
	1	07-JUL-20 12:00	15-JUL-20 13:30	3	8	days	EHTL
	2	07-JUL-20 12:00	15-JUL-20 13:30	3	8	days	EHTL
	3	07-JUL-20 12:00	15-JUL-20 13:30	3	8	days	EHTL
Bacteriological Tests							
Fecal coliforms, 1:10 dilutio	n by QT97						
	1	07-JUL-20 12:00	15-JUL-20 18:40	30	199	hours	EHTR
	2 3	07-JUL-20 12:00	15-JUL-20 18:40	30	199	hours	EHTR
	3	07-JUL-20 12:00	15-JUL-20 18:40	30	199	hours	EHTR
Aggregate Organics							
Biochemical Oxygen Dema	nd (BOD)						
	1	07-JUL-20 12:00	17-JUL-20 07:00	48	235	hours	EHTR
	2	07-JUL-20 12:00	17-JUL-20 07:00	48	235	hours	EHTR
	3	07-JUL-20 12:00	17-JUL-20 07:00	48	235	hours	EHTR
Carbonaceous BOD							
	1	07-JUL-20 12:00	17-JUL-20 07:00	48	235	hours	EHTR
	2 3	07-JUL-20 12:00	17-JUL-20 07:00	48	235	hours	EHTR
	3	07-JUL-20 12:00	17-JUL-20 07:00	48	235	hours	EHTR

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes. Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2472521 were received on 10-JUL-20 11:00.

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

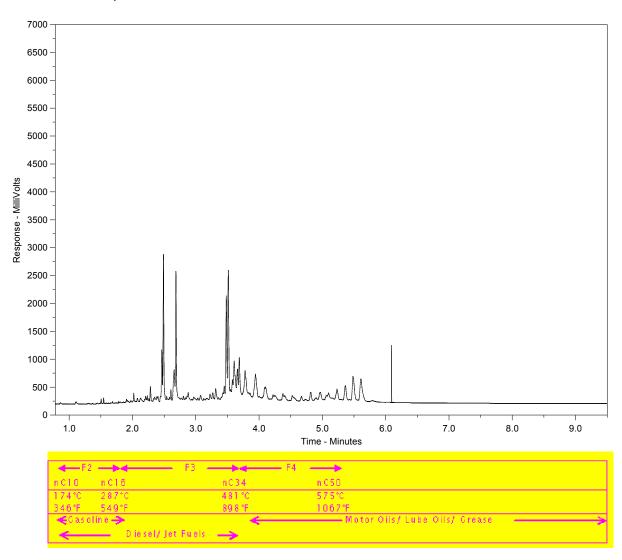
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide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

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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2472521-2 Client Sample ID: SET WITH PAH



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.

Environmental www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form



coc Number: 17 - 781474

Page 1 or 251 Am

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appea	ar on the final report	Report Format / Distribution Select Service Level Below - Contact your AM to confirm all E&P TA			Ts (sur	harges m	av appivi												
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Hamlet of Whale Cove ATTN: PAUL VOISEY

PO Box 120

Whale Cove NU XOC 0J0

Date Received: 17-JUL-20

Report Date: 28-JUL-20 07:37 (MT)

Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L2476022
Project P.O. #: NOT SUBMITTED

Job Reference: C of C Numbers: Legal Site Desc:

Mhe

Hua Wo

Chemistry Laboratory Manager

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

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

ALS CANADA LTD Part of the ALS Group An ALS Limited Company



Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2476022-1 WHA-2							
Sampled By: CF on 16-JUL-20 @ 09:40							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		21-JUL-20	R5161660
Toluene	<0.0010		0.0010	mg/L		21-JUL-20	R5161660
Ethyl benzene	<0.00050		0.00050	mg/L		21-JUL-20	R5161660
o-Xylene	<0.00050		0.00050	mg/L		21-JUL-20	R5161660
m+p-Xylenes	<0.00040		0.00040	mg/L		21-JUL-20	R5161660
F1 (C6-C10)	<0.10		0.10	mg/L		21-JUL-20	R5161660
Surrogate: 4-Bromofluorobenzene (SS)	84.5		70-130	%		21-JUL-20	R5161660
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	22-JUL-20	22-JUL-20	R5163558
F3 (C16-C34)	<0.25		0.25	mg/L	22-JUL-20	22-JUL-20	R5163558
F4 (C34-C50)	<0.25		0.25	mg/L	22-JUL-20	22-JUL-20	R5163558
Surrogate: 2-Bromobenzotrifluoride	92.9		60-140	%	22-JUL-20	22-JUL-20	R5163558
CCME Total Hydrocarbons	_						
F1-BTEX	<0.10		0.10	mg/L		24-JUL-20	
F2-Naphth	<0.10		0.10	mg/L		24-JUL-20	
F3-PAH	<0.25		0.25	mg/L		24-JUL-20	
Total Hydrocarbons (C6-C50)	<0.38		0.38	mg/L		24-JUL-20	
Sum of Xylene Isomer Concentrations Xylenes (Total)	<0.00064		0.00064	mall		23-JUL-20	
Ayleries (Total)	<0.00064		0.00064	mg/L		23-JUL-20	
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	860	MBHT	10	MPN/100mL		17-JUL-20	R5158600
Escherichia Coli	100	MBHT	10	MPN/100mL		17-JUL-20	R5158600
CCME PAHs in mg/L							
1-Methyl Naphthalene	0.000028		0.000020	mg/L	21-JUL-20	24-JUL-20	R5166437
2-Methyl Naphthalene	0.000023		0.000020	mg/L	21-JUL-20	24-JUL-20	R5166437
Acenaphthene	<0.000020		0.000020	mg/L	21-JUL-20	24-JUL-20	R5166437
Acenaphthylene	<0.000020		0.000020	mg/L	21-JUL-20	24-JUL-20	R5166437
Anthracene	<0.000010		0.000010	mg/L	21-JUL-20	24-JUL-20	R5166437
Acridine	<0.000020		0.000020	mg/L	21-JUL-20	24-JUL-20	R5166437
Benzo(a)anthracene	<0.000010		0.000010	mg/L	21-JUL-20	24-JUL-20	R5166437
Benzo(a)pyrene	<0.000050		0.0000050	mg/L	21-JUL-20	24-JUL-20	R5166437
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	21-JUL-20	24-JUL-20	R5166437
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	21-JUL-20	24-JUL-20	R5166437
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	21-JUL-20	24-JUL-20	R5166437
Chrysene	<0.000020		0.000020	mg/L	21-JUL-20	24-JUL-20	R5166437
Dibenzo(a,h)anthracene Fluoranthene	<0.0000050		0.0000050	mg/L	21-JUL-20	24-JUL-20	R5166437
Fluorene	<0.000020		0.000020	mg/L	21-JUL-20 21-JUL-20	24-JUL-20 24-JUL-20	R5166437
Indeno(1,2,3-cd)pyrene	<0.000020 <0.000010		0.000020	mg/L mg/L	21-JUL-20 21-JUL-20	24-JUL-20 24-JUL-20	R5166437
Naphthalene	0.000010		0.000010	mg/L	21-JUL-20	24-JUL-20	R5166437 R5166437
Phenanthrene	<0.000050		0.000050	mg/L	21-JUL-20	24-JUL-20	R5166437
Pyrene	<0.000030		0.000030	mg/L	21-JUL-20	24-JUL-20	R5166437
Quinoline	0.000010		0.000010	mg/L	21-JUL-20	24-JUL-20	R5166437
B(a)P Total Potency Equivalent	<0.000031		0.000020	mg/L	21-JUL-20	24-JUL-20	R5166437
Surrogate: d8-Naphthalene	90.2		50-150	%	21-JUL-20	24-JUL-20	R5166437
Surrogate: d10-Phenanthrene	95.1		50-150	%	21-JUL-20	24-JUL-20	R5166437
Surrogate: d12-Chrysene	92.7		50-150	%	21-JUL-20	24-JUL-20	R5166437
Surrogate: d10-Acenaphthene	92.1		50-150	%	21-JUL-20	24-JUL-20	R5166437
Surrogate: d9-Acridine (SS)	91.6		50-150	%	21-JUL-20	24-JUL-20	R5166437
Nunavut WW Group 1							

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

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2476022-1 WHA-2							
Sampled By: CF on 16-JUL-20 @ 09:40							
Matrix: WW							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	269		1.2	mg/L		21-JUL-20	
Alkalinity, Carbonate	.0.00		0.00			04 1111 00	
Carbonate (CO3)	<0.60		0.60	mg/L		21-JUL-20	
Alkalinity, Hydroxide Hydroxide (OH)	<0.34		0.34	mg/L		21-JUL-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	221		1.0	mg/L		20-JUL-20	R5159610
Ammonia by colour Ammonia, Total (as N)	1.11		0.10	mg/L		23-JUL-20	R5166435
Biochemical Oxygen Demand (BOD)	1.11		0.10	IIIg/L		25-30L-20	K3100433
Biochemical Oxygen Demand	10.9		2.0	mg/L		17-JUL-20	R5163581
Carbonaceous BOD	2.4			w D		47 "" 00	DE400501
BOD Carbonaceous Chloride in Water by IC	8.4		2.0	mg/L		17-JUL-20	R5163581
Chloride (Cl)	69.6		0.50	mg/L		17-JUL-20	R5159043
Conductivity							
Conductivity	698		1.0	umhos/cm		20-JUL-20	R5159610
Fecal coliforms, 1:10 dilution by QT97 Fecal Coliforms	190	MBHT	10	MPN/100mL		17-JUL-20	R5158597
Hardness Calculated	100					002 20	110100001
Hardness (as CaCO3)	238	HTC	0.20	mg/L		22-JUL-20	
Mercury Total	40 00000F0		0.0000050	ma/l	27-JUL-20	27-JUL-20	DE407004
Mercury (Hg)-Total Nitrate in Water by IC	<0.0000050		0.0000050	mg/L	21-JUL-20	27-JUL-20	R5167891
Nitrate (as N)	0.032		0.020	mg/L		17-JUL-20	R5159043
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.070		0.070	mg/L		20-JUL-20	
Nitrite in Water by IC Nitrite (as N)	<0.010		0.010	mg/L		17-JUL-20	R5159043
Oil & Grease - Gravimetric							
Oil and Grease	<5.0		5.0	mg/L		22-JUL-20	R5166335
Phenol (4AAP) Phenols (4AAP)	0.0022		0.0010	mg/L		21-JUL-20	R5161377
Phosphorus, Total	0.0022		0.0010	IIIg/L		21-00L-20	10101017
Phosphorus (P)-Total	0.245		0.0030	mg/L		22-JUL-20	R5161476
Sulfate in Water by IC	50.0		0.00	ma m //		17 !!!! 00	DE450040
Sulfate (SO4) Total Metals in Water by CRC ICPMS	58.0		0.30	mg/L		17-JUL-20	R5159043
Aluminum (Al)-Total	0.0170		0.0030	mg/L	21-JUL-20	21-JUL-20	R5160938
Arsenic (As)-Total	0.00242		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Cadmium (Cd)-Total	0.0000564		0.0000050	mg/L	21-JUL-20	21-JUL-20	R5160938
Calcium (Ca)-Total	77.9		0.050	mg/L	21-JUL-20	21-JUL-20	R5160938
Chromium (Cr)-Total Cobalt (Co)-Total	0.00106 0.00181		0.00010 0.00010	mg/L	21-JUL-20 21-JUL-20	21-JUL-20 21-JUL-20	R5160938
Copper (Cu)-Total	0.00181		0.00010	mg/L mg/L	21-JUL-20 21-JUL-20	21-JUL-20 21-JUL-20	R5160938 R5160938
Iron (Fe)-Total	2.15		0.00030	mg/L	21-JUL-20	21-JUL-20	R5160938
Lead (Pb)-Total	0.000536		0.000050	mg/L	21-JUL-20	21-JUL-20	R5160938
Magnesium (Mg)-Total	10.6		0.0050	mg/L	21-JUL-20	21-JUL-20	R5160938
Manganese (Mn)-Total	0.355		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Nickel (Ni)-Total	0.00651		0.00050	mg/L	21-JUL-20	21-JUL-20	R5160938
Potassium (K)-Total	10.8		0.050	mg/L	21-JUL-20	21-JUL-20	R5160938
Sodium (Na)-Total	48.6		0.050	mg/L	21-JUL-20	21-JUL-20	R5160938

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

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2476022-1 WHA-2							
Sampled By: CF on 16-JUL-20 @ 09:40							
Matrix: WW							
Total Metals in Water by CRC ICPMS							
Zinc (Zn)-Total	0.0279		0.0030	mg/L	21-JUL-20	21-JUL-20	R5160938
Total Organic Carbon by Combustion						04 11 11 00	
Total Organic Carbon	15.5		0.50	mg/L		24-JUL-20	R5167423
Total Suspended Solids Total Suspended Solids	10.9		3.0	mg/L		22-JUL-20	R5166810
pH							
pH	8.12		0.10	pH units		20-JUL-20	R5159610
L2476022-2 WHA-3							
Sampled By: CF on 16-JUL-20 @ 09:40							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS Benzene	<0.00050	VOCHS	0.00050	mg/L		21-JUL-20	R5161660
Toluene	<0.0010	VOCHS	0.0010	mg/L		21-JUL-20	R5161660
Ethyl benzene	<0.00050	VOCHS	0.00050	mg/L		21-JUL-20	R5161660
o-Xylene	<0.00050	VOCHS	0.00050	mg/L		21-JUL-20	R5161660
m+p-Xylenes	<0.00040	VOCHS VOCHS	0.00040	mg/L		21-JUL-20	R5161660
F1 (C6-C10) Surrogate: 4-Bromofluorobenzene (SS)	<0.10 82.8	VOCITO	0.10 70-130	mg/L %		21-JUL-20 21-JUL-20	R5161660 R5161660
CCME PHC F2-F4 in Water	02.0		70-130	/0		Z1-00L-20	13101000
F2 (C10-C16)	<0.10		0.10	mg/L	22-JUL-20	22-JUL-20	R5163558
F3 (C16-C34)	1.01		0.25	mg/L	22-JUL-20	22-JUL-20	R5163558
F4 (C34-C50)	0.48		0.25	mg/L	22-JUL-20	22-JUL-20	R5163558
Surrogate: 2-Bromobenzotrifluoride	95.7		60-140	%	22-JUL-20	22-JUL-20	R5163558
CCME Total Hydrocarbons F1-BTEX	<0.10		0.10	mg/L		23-JUL-20	
Total Hydrocarbons (C6-C50)	1.50		0.38	mg/L		23-JUL-20	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.00064		0.00064	mg/L		23-JUL-20	
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200	MBHT	10	MPN/100mL		17-JUL-20	R5158600
Escherichia Coli	9210	MBHT	10	MPN/100mL		17-JUL-20	R5158600
Nunavut WW Group 1 Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	248		1.2	mg/L		21-JUL-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		21-JUL-20	
Alkalinity, Hydroxide	-0.04		0.24	ma//		24 11 11 20	
Hydroxide (OH) Alkalinity, Total (as CaCO3)	<0.34		0.34	mg/L		21-JUL-20	
Alkalinity, Total (as CaCO3)	203		1.0	mg/L		20-JUL-20	R5159610
Ammonia by colour							
Ammonia, Total (as N)	23.4		2.0	mg/L		23-JUL-20	R5166435
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	27.9		6.0	mall		17-JUL-20	D5162504
Carbonaceous BOD	27.9		6.0	mg/L		17-JUL-20	R5163581
BOD Carbonaceous	20.9		6.0	mg/L		17-JUL-20	R5163581
Chloride in Water by IC							
Chloride (Cl)	77.0		0.50	mg/L		17-JUL-20	R5159043
Conductivity Conductivity	685		1.0	umhos/cm		20-JUL-20	R5159610
Conductivity	000		1.0	ummos/CIII		20-00L-20	170109010

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

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2476022-2 WHA-3							
Sampled By: CF on 16-JUL-20 @ 09:40							
Matrix: WW							
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	14100	MBHT	10	MPN/100mL		17-JUL-20	R5158597
Hardness Calculated	400	HTC	0.00			00 1111 00	
Hardness (as CaCO3)	103	піс	0.20	mg/L		22-JUL-20	
Mercury Total Mercury (Hg)-Total	0.0000060		0.0000050	mg/L	27-JUL-20	27-JUL-20	R5167891
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		17-JUL-20	R5159043
Nitrate+Nitrite Nitrate and Nitrite as N	<0.070		0.070	mg/L		20-JUL-20	
Nitrite in Water by IC	~U.U/U		0.070	illy/L		20-JUL-20	
Nitrite (as N)	<0.010		0.010	mg/L		17-JUL-20	R5159043
Oil & Grease - Gravimetric Oil and Grease	<5.0		5.0	mg/L		22-JUL-20	R5166335
Phenol (4AAP)	~ 5.0		3.0	1119/2		22 00L-20	1.0100000
Phenols (4AAP)	0.0011		0.0010	mg/L		21-JUL-20	R5161377
Phosphorus, Total						00 ""	
Phosphorus (P)-Total Sulfate in Water by IC	5.79		0.030	mg/L		22-JUL-20	R5161476
Sulfate (SO4)	15.5		0.30	mg/L		17-JUL-20	R5159043
Total Metals in Water by CRC ICPMS							
Aluminum (AI)-Total	0.0296		0.0030	mg/L	21-JUL-20	21-JUL-20	R5160938
Arsenic (As)-Total	0.00083		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Cadmium (Cd)-Total	0.0000185		0.0000050	mg/L	21-JUL-20	21-JUL-20	R5160938
Calcium (Ca)-Total	30.0		0.050	mg/L	21-JUL-20	21-JUL-20	R5160938
Chromium (Cr)-Total	0.00027		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Cobalt (Co)-Total	0.00062		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Copper (Cu)-Total	0.0303		0.00050	mg/L	21-JUL-20	21-JUL-20	R5160938
Iron (Fe)-Total	0.145		0.010	mg/L	21-JUL-20	21-JUL-20	R5160938
Lead (Pb)-Total	0.000272		0.000050	mg/L	21-JUL-20	21-JUL-20	R5160938
Magnesium (Mg)-Total	6.90		0.0050	mg/L	21-JUL-20	21-JUL-20	R5160938
Manganese (Mn)-Total	0.0908		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Nickel (Ni)-Total	0.00216		0.00050	mg/L	21-JUL-20	21-JUL-20	R5160938
Potassium (K)-Total	16.9		0.050	mg/L	21-JUL-20	21-JUL-20	R5160938
Sodium (Na)-Total	55.9		0.050	mg/L	21-JUL-20	21-JUL-20	R5160938
Zinc (Zn)-Total	0.0205		0.0030	mg/L	21-JUL-20	21-JUL-20	R5160938
Total Organic Carbon by Combustion Total Organic Carbon	24.2		0.50	mg/L		24-JUL-20	R5167423
Total Suspended Solids	∠→.∠		0.50	mg/L		24-00L-20	13107423
Total Suspended Solids	33.1		3.0	mg/L		22-JUL-20	R5166810
pH pH	8.01		0.10	pH units		20-JUL-20	R5159610
L2476022-3 WHA-4	0.01		3.10	p. 1 d. 110			. 10 1000 10
Sampled By: CF on 16-JUL-20 @ 09:40							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS	40 00050	1/00/10	0.000=0	ma m //		04 !!!! 00	DE404000
Benzene	<0.00050	VOCHS	0.00050	mg/L		21-JUL-20	R5161660
Toluene	<0.0010	VOCHS	0.0010	mg/L		21-JUL-20	R5161660
Ethyl benzene o-Xylene	<0.00050	VOCHS	0.00050	mg/L		21-JUL-20	R5161660
m+p-Xylenes	<0.00050 <0.00040	VOCHS	0.00050 0.00040	mg/L		21-JUL-20 21-JUL-20	R5161660
F1 (C6-C10)	<0.00040 <0.10	VOCHS	0.00040	mg/L mg/L		21-JUL-20 21-JUL-20	R5161660 R5161660
1 1 (00 0 10)	~ 0.10	1 000110	0.10	iiig/∟		21-00L-20	110101000

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

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2476022-3 WHA-4							
Sampled By: CF on 16-JUL-20 @ 09:40							
Matrix: WW							
BTX plus F1 by GCMS Surrogate: 4-Bromofluorobenzene (SS)	80.8		70-130	%		21-JUL-20	R5161660
CCME PHC F2-F4 in Water	-0.40		0.40		00 1111 00	20 11 11 20	D5400550
F2 (C10-C16) F3 (C16-C34)	<0.10 <0.25		0.10 0.25	mg/L mg/L	22-JUL-20 22-JUL-20	22-JUL-20 22-JUL-20	R5163558 R5163558
F4 (C34-C50)	<0.25		0.25	mg/L	22-JUL-20	22-JUL-20	R5163558
Surrogate: 2-Bromobenzotrifluoride	90.2		60-140	%	22-JUL-20	22-JUL-20	R5163558
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		23-JUL-20	
Total Hydrocarbons (C6-C50) Sum of Xylene Isomer Concentrations	<0.38		0.38	mg/L		23-JUL-20	
Xylenes (Total)	<0.00064		0.00064	mg/L		23-JUL-20	
Total and E. coli, 1:10 dilution by QT97 Total Coliforms	1660	MBHT	10	MPN/100mL		17-JUL-20	R5158600
Escherichia Coli	<10	MBHT	10	MPN/100mL		17-JUL-20	R5158600
Nunavut WW Group 1						_	
Alkalinity, Bicarbonate Bicarbonate (HCO3)	307		1.2	mg/L		21-JUL-20	
Alkalinity, Carbonate Carbonate (CO3)	<0.60		0.60	mg/L		21-JUL-20	
Alkalinity, Hydroxide Hydroxide (OH)	<0.34		0.34	mg/L		21-JUL-20	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	252		1.0	mg/L		20-JUL-20	R5159610
Ammonia by colour Ammonia, Total (as N)	0.110		0.010	mg/L		23-JUL-20	R5166435
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	4.6		2.0	mg/L		17-JUL-20	R5163581
Carbonaceous BOD BOD Carbonaceous	4.3		2.0	mg/L		17-JUL-20	R5163581
Chloride in Water by IC Chloride (CI) Conductivity	67.2		0.50	mg/L		17-JUL-20	R5159043
Conductivity Conductivity Fecal coliforms, 1:10 dilution by QT97	632		1.0	umhos/cm		20-JUL-20	R5159610
Fecal Colliforms Hardness Calculated	20	MBHT	10	MPN/100mL		17-JUL-20	R5158597
Hardness (as CaCO3) Mercury Total	192	нтс	0.20	mg/L		22-JUL-20	
Mercury (Hg)-Total Nitrate in Water by IC	<0.0000050		0.0000050	mg/L	27-JUL-20	27-JUL-20	R5167891
Nitrate (as N) Nitrate+Nitrite	<0.020		0.020	mg/L		17-JUL-20	R5159043
Nitrate and Nitrite as N	<0.070		0.070	mg/L		20-JUL-20	
Nitrite in Water by IC Nitrite (as N)	<0.010		0.010	mg/L		17-JUL-20	R5159043
Oil & Grease - Gravimetric Oil and Grease	<5.0		5.0	mg/L		22-JUL-20	R5166335
Phenol (4AAP) Phenols (4AAP)	<0.0010		0.0010	mg/L		21-JUL-20	R5161377
Phosphorus, Total Phosphorus (P)-Total	4.51		0.030	mg/L		22-JUL-20	R5161476

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

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2476022-3 WHA-4							
Sampled By: CF on 16-JUL-20 @ 09:40							
Matrix: WW							
Sulfate in Water by IC							
Sulfate (SO4)	4.96		0.30	mg/L		17-JUL-20	R5159043
Total Metals in Water by CRC ICPMS Aluminum (Al)-Total	0.0444		0.0000	m a/l	21-JUL-20	24 1111 20	DE400000
Arsenic (As)-Total	0.0144 0.00375		0.0030 0.00010	mg/L mg/L	21-JUL-20 21-JUL-20	21-JUL-20 21-JUL-20	R5160938 R5160938
Cadmium (Cd)-Total	0.000089		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Calcium (Ca)-Total	57.9		0.050	mg/L	21-JUL-20	21-JUL-20	R5160938
Chromium (Cr)-Total	0.00019		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Cobalt (Co)-Total	0.00050		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Copper (Cu)-Total	0.00148		0.00050	mg/L	21-JUL-20	21-JUL-20	R5160938
Iron (Fe)-Total	1.30		0.010	mg/L	21-JUL-20	21-JUL-20	R5160938
Lead (Pb)-Total	0.000097		0.000050	mg/L	21-JUL-20	21-JUL-20	R5160938
Magnesium (Mg)-Total	11.5		0.0050	mg/L	21-JUL-20	21-JUL-20	R5160938
Manganese (Mn)-Total	0.271		0.00010	mg/L	21-JUL-20	21-JUL-20	R5160938
Nickel (Ni)-Total	0.00292		0.00050	mg/L	21-JUL-20	21-JUL-20	R5160938
Potassium (K)-Total	13.8		0.050	mg/L	21-JUL-20	21-JUL-20	R5160938
Sodium (Na)-Total	61.2		0.050	mg/L	21-JUL-20	21-JUL-20	R5160938
Zinc (Zn)-Total	0.0072		0.0030	mg/L	21-JUL-20	21-JUL-20	R5160938
Total Organic Carbon by Combustion Total Organic Carbon	20.8		0.50	mg/L		24-JUL-20	R5167423
Total Suspended Solids	20.0		0.50	IIIg/L		24-30L-20	K5107425
Total Suspended Solids	24.1		3.0	mg/L		22-JUL-20	R5166810
рН рН	8.18		0.10	pH units		20-JUL-20	R5159610

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

Reference Information

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Qualifiers for Individual Samples Listed:

Lab Sample ID	Client Sample ID	Qualifier	Description	
L2476022-2	WHA-3	UIC	Unreliable: Improper Container	
L2476022-3	WHA-4	UIC	Unreliable: Improper Container	
Sample Parameter Qualifier Key:				

Qualifier	Description
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MBHT	The APHA 30 hour hold time was exceeded for microbiological testing. Samples processed within 48 hours from time of sampling may be valid in some cases (refer to Health Canada guidance).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
VOCHS	VOC analysis was conducted for a water sample that contained > 5% headspace. Results may be biased low.

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- Water Alkalinity, Bicarbonate **CALCULATION** WP

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 **CALCULATION** Water Alkalinity, Hydroxide

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 Alkalinity, Total (as CaCO3) **APHA 2320B** Water

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 Total Organic Carbon by Combustion **APHA 5310 B-WP** Water

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 Chloride in Water by IC EPA 300.1 (mod)

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

EC-WP **APHA 2510B** Water Conductivity

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.

Version: FINAL

Reference Information

Test Method References:

ALS Test Code Matrix Test Description Method Reference**

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(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 351

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

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

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

HARDNESS-CALC-WP Water Hardness Calculated APHA 2340B

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

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

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

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

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

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

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

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

NO2+NO3-CALC-WP Water Nitrate+Nitrite CALCULATION

NO2-IC-N-WP Water Nitrite in Water by IC EPA 300.1 (mod)

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

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

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

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

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

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

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

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

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

PH-WP Water pH APHA 4500H

L2476022 CONTD....

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Reference Information

Test Method References:

ALS Test Code Matrix Test Description Method Reference**

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

reference electrode.

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

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

red complex which is measured colorimetrically.

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

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

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

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105 C.

TC,EC10-QT97-WP Water Total and E. coli, 1:10 dilution by QT97 APHA 9223B QT97

Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Susbtrate Coliform Test". Total coliforms and Eschericia coli bacteria are simultaneously determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 35.0 +/- 0.5 degrees C for 18 or 24 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.

XYLENES-SUM-CALC- Water Sum of Xylene Isomer Concentrations CALCULATED RESULT

WP

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.



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Client: Hamlet of Whale Cove

PO Box 120

Whale Cove NU X0C 0J0

Contact: PAUL VOISEY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP	Water							
Batch R5159	9610							
WG3366724-15 D Alkalinity, Total (as		L2476022-3 252	234		mg/L	7.5	20	20-JUL-20
WG3366724-14 L Alkalinity, Total (as			103.5		%		85-115	20-JUL-20
WG3366724-11 M Alkalinity, Total (as			<1.0		mg/L		1	20-JUL-20
BOD-CBOD-WP	Water							
Batch R5163	3581							
WG3364556-12 L BOD Carbonaceou			96.0		%		85-115	17-JUL-20
WG3364556-11 M BOD Carbonaceou			<2.0		mg/L		2	17-JUL-20
BOD-WP	Water							
Batch R5163	3581							
WG3364556-12 L Biochemical Oxyge			98.8		%		85-115	17-JUL-20
WG3364556-11 M Biochemical Oxyge			<2.0		mg/L		2	17-JUL-20
BTEXS+F1-HSMS-WP	Water							
Batch R5161	1660							
WG3366450-4 D Benzene	UP	L2476022-1 < 0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUL-20
Toluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	21-JUL-20
Ethyl benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUL-20
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	21-JUL-20
m+p-Xylenes		<0.00040	<0.00040	RPD-NA	mg/L	N/A	30	21-JUL-20
F1 (C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	21-JUL-20
WG3366450-2 L Benzene	cs		119.9		%		70-130	21-JUL-20
Toluene			114.1		%		70-130	21-JUL-20
Ethyl benzene			115.3		%		70-130	21-JUL-20
o-Xylene			124.9		%		70-130	21-JUL-20
m+p-Xylenes			115.9		%		70-130	21-JUL-20
	cs		86.6		%		70-130	21-JUL-20
	В		<0.00050		mg/L		0.0005	21-JUL-20



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Test		Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTEXS+F1-HSMS-	-WP	Water					_		
Batch R5	161660								
WG3366450-1 Toluene	MB			<0.0010		mg/L		0.001	21-JUL-20
Ethyl benzene				<0.00050		mg/L		0.0005	21-JUL-20
o-Xylene				<0.00050		mg/L		0.0005	21-JUL-20
m+p-Xylenes				<0.00040		mg/L		0.0004	21-JUL-20
F1 (C6-C10)				<0.10		mg/L		0.1	21-JUL-20
Surrogate: 4-Br	omofluor	obenzene (SS)		82.6		%		70-130	21-JUL-20
WG3366450-5 Benzene	MS		L2476022-2	95.0		%		50-150	21-JUL-20
Toluene				90.7		%		50-150	21-JUL-20
Ethyl benzene				91.8		%		50-150	21-JUL-20
o-Xylene				102.5		%		50-150	21-JUL-20
m+p-Xylenes				95.0		%		50-150	21-JUL-20
WG3366450-6 F1 (C6-C10)	MS		L2476022-3	80.4		%		50-150	21-JUL-20
C-TOC-HTC-WP		Water							
Batch R5	5167423								
WG3370903-2 Total Organic C	LCS Carbon			102.2		%		80-120	24-JUL-20
WG3370903-1 Total Organic C	MB Carbon			<0.50		mg/L		0.5	24-JUL-20
		M. I.				9. =		0.0	24 002 20
CL-IC-N-WP		Water							
Batch R5 WG3364995-19	5159043		L2476022-1						
Chloride (CI)			69.6	69.5		mg/L	0.1	20	17-JUL-20
WG3364995-18 Chloride (CI)	LCS			96.3		%		90-110	17-JUL-20
WG3364995-17 Chloride (CI)	MB			<0.50		mg/L		0.5	17-JUL-20
WG3364995-20 Chloride (CI)	MS		L2476022-1	107.4		%		75-125	17-JUL-20
EC-WP		Water							
	5159610								
WG3366724-15 Conductivity			L2476022-3 632	631		umhos/cm	0.2	10	20-JUL-20
WG3366724-13 Conductivity	LCS			98.2		%	Ų. <u>L</u>	90-110	20-JUL-20
2020011119						,•		30-110	20-00L-20



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Test	Matrix	Reference	Result Qualifier	Units	RPD Limit	Analyzed
EC-WP	Water					
Batch R5159610 WG3366724-11 MB Conductivity			<1.0	umhos/cm	1	20-JUL-20
F2-F4-FID-WP	Water					
Batch R5163558 WG3367931-2 LCS F2 (C10-C16)			97.6	%	70-130	22-JUL-20
F3 (C16-C34)			95.2	%	70-130	22-JUL-20
F4 (C34-C50)			103.1	%	70-130	22-JUL-20
WG3367931-1 MB					70 100	22 002 20
F2 (C10-C16)			<0.10	mg/L	0.1	22-JUL-20
F3 (C16-C34)			<0.25	mg/L	0.25	22-JUL-20
F4 (C34-C50)			<0.25	mg/L	0.25	22-JUL-20
Surrogate: 2-Bromoben:	zotrifluoride		87.8	%	60-140	22-JUL-20
FC10-QT97-WP	Water					
Batch R5158597 WG3365164-1 MB Fecal Coliforms			<1	MPN/100mL	1	17-JUL-20
HG-T-CVAA-WP	Water					
Batch R5167891 WG3371325-2 LCS Mercury (Hg)-Total			95.0	%	80-120	27-JUL-20
WG3371325-1 MB Mercury (Hg)-Total			<0.0000050	mg/L	0.000005	27-JUL-20
MET-T-CCMS-WP	Water					
Batch R5160938						
WG3365261-2 LCS Aluminum (Al)-Total			101.5	%	80-120	21-JUL-20
Arsenic (As)-Total			98.8	%	80-120	21-JUL-20
Cadmium (Cd)-Total			97.2	%	80-120	21-JUL-20
Calcium (Ca)-Total			97.9	%	80-120	21-JUL-20
Chromium (Cr)-Total			98.7	%	80-120	21-JUL-20
Cobalt (Co)-Total			97.9	%	80-120	21-JUL-20
Copper (Cu)-Total			102.4	%	80-120	21-JUL-20
11 ()						



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP	Water							
Batch R5160938								
WG3365261-2 LCS Lead (Pb)-Total			99.3		%		80-120	21-JUL-20
Magnesium (Mg)-Total			107.6		%		80-120	21-JUL-20
Manganese (Mn)-Total			100.5		%		80-120	21-JUL-20
Nickel (Ni)-Total			98.1		%		80-120	21-JUL-20
Potassium (K)-Total			100.7		%		80-120	21-JUL-20
Sodium (Na)-Total			99.2		%		80-120	21-JUL-20
Zinc (Zn)-Total			99.2		%		80-120	21-JUL-20
WG3365261-1 MB Aluminum (Al)-Total			<0.0030		mg/L		0.003	21-JUL-20
Arsenic (As)-Total			<0.00010		mg/L		0.0001	21-JUL-20
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	21-JUL-20
Calcium (Ca)-Total			<0.050		mg/L		0.05	21-JUL-20
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	21-JUL-20
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	21-JUL-20
Copper (Cu)-Total			<0.00050		mg/L		0.0005	21-JUL-20
Iron (Fe)-Total			<0.010		mg/L		0.01	21-JUL-20
Lead (Pb)-Total			<0.000050		mg/L		0.00005	21-JUL-20
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	21-JUL-20
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	21-JUL-20
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	21-JUL-20
Potassium (K)-Total			<0.050		mg/L		0.05	21-JUL-20
Sodium (Na)-Total			< 0.050		mg/L		0.05	21-JUL-20
Zinc (Zn)-Total			<0.0030		mg/L		0.003	21-JUL-20
NH3-COL-WP	Water							
Batch R5166435								
WG3369699-6 LCS Ammonia, Total (as N)			101.4		%		85-115	23-JUL-20
WG3369699-5 MB Ammonia, Total (as N)			<0.010		mg/L		0.01	23-JUL-20
NO2-IC-N-WP	Water							
Batch R5159043								
WG3364995-19 DUP Nitrite (as N)		L2476022-1 < 0.010	<0.010	RPD-	NA mg/L	N/A	20	17-JUL-20
WG3364995-18 LCS Nitrite (as N)			98.3		%		90-110	17-JUL-20



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est		Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO2-IC-N-WP		Water							
Batch R5 ² WG3364995-17 Nitrite (as N)	159043 MB			<0.010		mg/L		0.01	17-JUL-20
WG3364995-20 Nitrite (as N)	MS		L2476022-1	104.8		%		75-125	17-JUL-20
NO3-IC-N-WP		Water							
Batch R5	159043								
WG3364995-19 Nitrate (as N)	DUP		L2476022-1 0.032	0.032		mg/L	1.9	20	17-JUL-20
WG3364995-18 Nitrate (as N)	LCS			96.8		%		90-110	17-JUL-20
WG3364995-17 Nitrate (as N)	МВ			<0.020		mg/L		0.02	17-JUL-20
WG3364995-20 Nitrate (as N)	MS		L2476022-1	107.5		%		75-125	17-JUL-20
OG-GRAV-WP		Water							
Batch R57 WG3367987-2 Oil and Grease	166335 LCS			95.8		%		70-130	22-JUL-20
WG3367987-1 Oil and Grease	МВ			<5.0		mg/L		5	22-JUL-20
P-T-COL-WP		Water							
Batch R5	161476								
WG3367581-18 Phosphorus (P)-				99.1		%		80-120	22-JUL-20
WG3367581-22 Phosphorus (P)-				96.5		%		80-120	22-JUL-20
WG3367581-17 Phosphorus (P)-				<0.0030		mg/L		0.003	22-JUL-20
WG3367581-21 Phosphorus (P)-				<0.0030		mg/L		0.003	22-JUL-20
PAH-CCME-PPM-W	/ T	Water							
Batch R5	166437								
WG3367109-2 1-Methyl Naphth	LCS lalene			98.6		%		50-150	24-JUL-20
2-Methyl Naphth				98.1		%		50-150	24-JUL-20
Acenaphthene				108.0		%		50-150	24-JUL-20
				102.3		%		30-130	27-00L-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-PPM-WT	Water							
Batch R5166437								
WG3367109-2 LCS								
Anthracene			102.5		%		50-150	24-JUL-20
Acridine			92.1		%		50-150	24-JUL-20
Benzo(a)anthracene			97.7		%		50-150	24-JUL-20
Benzo(a)pyrene			84.4		%		50-150	24-JUL-20
Benzo(b&j)fluoranthene			82.8		%		50-150	24-JUL-20
Benzo(g,h,i)perylene			82.3		%		50-150	24-JUL-20
Benzo(k)fluoranthene			82.2		%		50-150	24-JUL-20
Chrysene			101.0		%		50-150	24-JUL-20
Dibenzo(a,h)anthracene	!		81.5		%		50-150	24-JUL-20
Fluoranthene			104.9		%		50-150	24-JUL-20
Fluorene			104.3		%		50-150	24-JUL-20
Indeno(1,2,3-cd)pyrene			87.3		%		50-150	24-JUL-20
Naphthalene			99.3		%		50-150	24-JUL-20
Phenanthrene			108.9		%		50-150	24-JUL-20
Pyrene			106.1		%		50-150	24-JUL-20
Quinoline			106.3		%		50-150	24-JUL-20
WG3367109-1 MB				_				
1-Methyl Naphthalene			<0.00002		mg/L		0.00002	24-JUL-20
2-Methyl Naphthalene			<0.00002		mg/L		0.00002	24-JUL-20
Acenaphthene			<0.00002		mg/L		0.00002	24-JUL-20
Acenaphthylene			<0.00002		mg/L		0.00002	24-JUL-20
Anthracene			<0.00001	0	mg/L		0.00001	24-JUL-20
Acridine			<0.00002	0	mg/L		0.00002	24-JUL-20
Benzo(a)anthracene			<0.00001	0	mg/L		0.00001	24-JUL-20
Benzo(a)pyrene			<0.00000	50	mg/L		0.000005	24-JUL-20
Benzo(b&j)fluoranthene			<0.00001	0	mg/L		0.00001	24-JUL-20
Benzo(g,h,i)perylene			<0.00002		mg/L		0.00002	24-JUL-20
Benzo(k)fluoranthene			<0.00001	0	mg/L		0.00001	24-JUL-20
Chrysene			<0.00002	0	mg/L		0.00002	24-JUL-20
Dibenzo(a,h)anthracene	:		<0.00000	50	mg/L		0.000005	24-JUL-20
Fluoranthene			<0.00002	0	mg/L		0.00002	24-JUL-20
Fluorene			<0.00002	0	mg/L		0.00002	24-JUL-20
Indeno(1,2,3-cd)pyrene			<0.00001	0	mg/L		0.00001	24-JUL-20
Naphthalene			<0.00005	0	mg/L		0.00005	24-JUL-20



Workorder: L2476022

Report Date: 28-JUL-20

Page 7 of 10

est	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-PPM-WT	Water							
Batch R5166437								
WG3367109-1 MB			2 202250					
Phenanthrene			<0.000050		mg/L		0.00005	24-JUL-20
Pyrene			<0.000010		mg/L		0.00001	24-JUL-20
Quinoline			<0.000020		mg/L		0.00002	24-JUL-20
Surrogate: d8-Naphthal			93.9		%		50-150	24-JUL-20
Surrogate: d10-Phenan			95.6		%		50-150	24-JUL-20
Surrogate: d12-Chryser			92.4		%		50-150	24-JUL-20
Surrogate: d10-Acenap	hthene		95.8		%		50-150	24-JUL-20
Surrogate: d9-Acridine	(SS)		86.7		%		50-150	24-JUL-20
PH-WP	Water							
Batch R5159610								
WG3366724-15 DUP		L2476022-3						
рН		8.18	8.19	J	pH units	0.01	0.2	20-JUL-20
WG3366724-12 LCS pH			7.31		pH units		7.3-7.5	20-JUL-20
PHENOLS-4AAP-WT	Water							
Batch R5161377								
WG3366944-2 LCS								
Phenols (4AAP)			94.0		%		85-115	21-JUL-20
WG3366944-1 MB					_			
Phenols (4AAP)			<0.0010		mg/L		0.001	21-JUL-20
SO4-IC-N-WP	Water							
Batch R5159043								
WG3364995-19 DUP		L2476022-1						
Sulfate (SO4)		58.0	58.0		mg/L	0.1	20	17-JUL-20
WG3364995-18 LCS			00.0		0/			
Sulfate (SO4)			96.9		%		90-110	17-JUL-20
WG3364995-17 MB Sulfate (SO4)			<0.30		mg/L		0.3	17-JUL-20
WG3364995-20 MS		1 2476022 4	-0.00		111g/ L		0.5	17-JUL-20
Sulfate (SO4)		L2476022-1	106.4		%		75-125	17-JUL-20
SOLIDS-TOTSUS-WP	Water							
Batch R5166810								
WG3367855-5 LCS								
Total Suspended Solids	3		91.8		%		85-115	22-JUL-20
WG3367855-4 MB								
Total Suspended Solids	3		<3.0		mg/L		3	22-JUL-20



Workorder: L2476022

Report Date: 28-JUL-20

Page 8 of 10

Гest	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC10-QT97-WP	Water							
Batch R5158600 WG3365167-2 DUP Total Coliforms		L2476022-1 860	570		MPN/100mL	40	65	17-JUL-20
Escherichia Coli		100	90		MPN/100mL	13	65	17-JUL-20
WG3365167-1 MB Total Coliforms			<1		MPN/100mL		1	17-JUL-20
Escherichia Coli			<1		MPN/100mL		1	17-JUL-20

Workorder: L2476022 Report Date: 28-JUL-20 Page 9 of 10

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Workorder: L2476022 Report Date: 28-JUL-20 Page 10 of 10

Hold Time Exceedances:

	Sample						
ALS Product Description	ID [.]	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
рН							
	1	16-JUL-20 09:40	20-JUL-20 12:00	0.25	98	hours	EHTR-FM
	2	16-JUL-20 09:40	20-JUL-20 12:00	0.25	98	hours	EHTR-FM
	3	16-JUL-20 09:40	20-JUL-20 12:00	0.25	98	hours	EHTR-FM
Bacteriological Tests							
Fecal coliforms, 1:10 dilution	n by QT97						
	1	16-JUL-20 09:40	17-JUL-20 17:00	30	31	hours	EHTL
	2	16-JUL-20 09:40	17-JUL-20 17:00	30	31	hours	EHTL
	3	16-JUL-20 09:40	17-JUL-20 17:00	30	31	hours	EHTL
Total and E. coli, 1:10 diluti	on by QT97						
	1	16-JUL-20 09:40	17-JUL-20 17:00	30	31	hours	EHTL
	2	16-JUL-20 09:40	17-JUL-20 17:00	30	31	hours	EHTL
	3	16-JUL-20 09:40	17-JUL-20 17:00	30	31	hours	EHTL

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes. Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2476022 were received on 17-JUL-20 12:00.

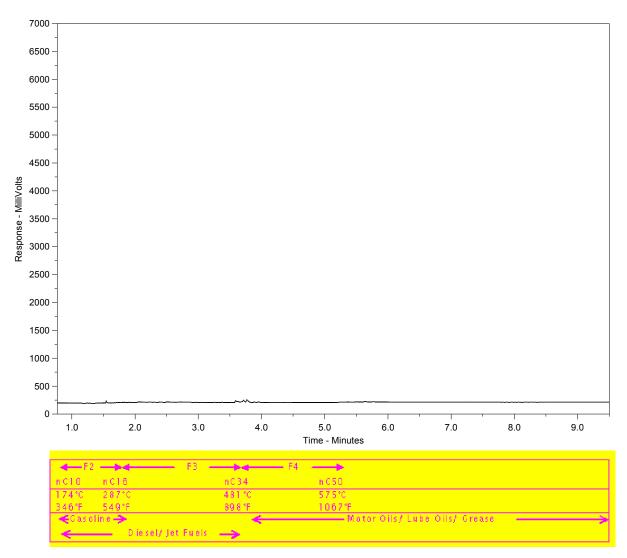
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where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

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

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



ALS Sample ID: L2476022-1 Client Sample ID: WHA-2



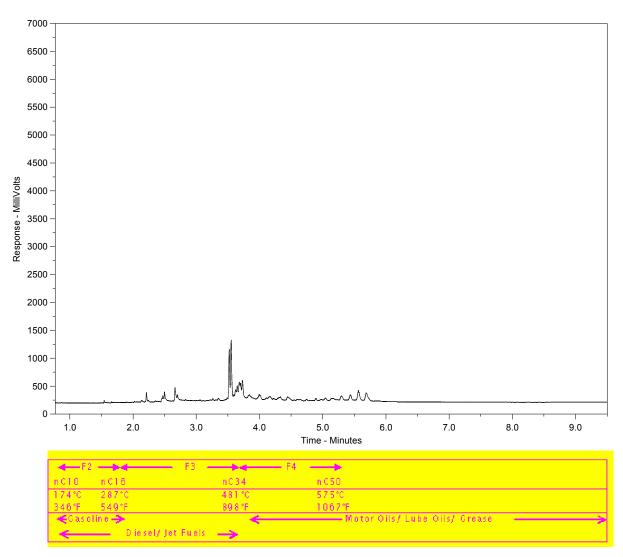
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

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

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



ALS Sample ID: L2476022-2 Client Sample ID: WHA-3



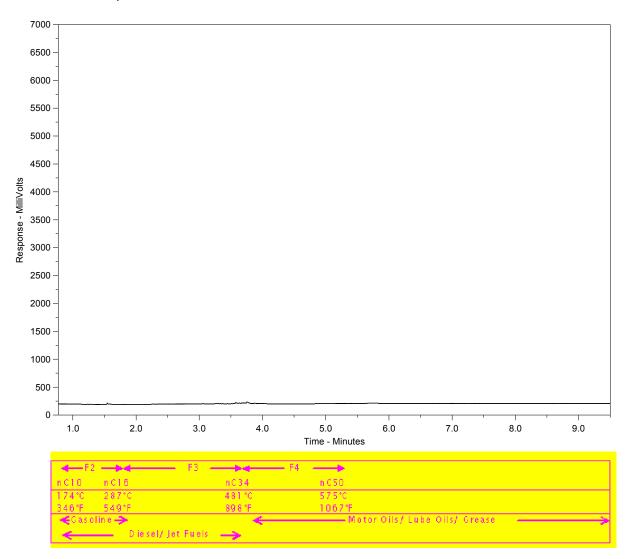
The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

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.



ALS Sample ID: L2476022-3 Client Sample ID: WHA-4



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.

Environmental

Chain of Custody (COC) / Analytical Request Form

Canada Toli Free: 1 800 668 9878

coc Number: 17 - 781473

www.alsglobal.com
 Contact and compan

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Contact:	JERNIE MACKENZIE	Quality Control (QC) Report with Repo	ort [_] YES	NO	<u>} } 4</u>	day [P4-2	20%]		FRCY	1 Bus	iness	day [I	E - 100	1%]				
Phone:	867-456-1561	Compare Resi	Compare Results to Criteria on Report - provide details below if box checked				3 day [P3-25%] Same Day, Weekend or Statutory holiday [E2 -200%							200%	_				
	Company address below will appear on the final report	Select Distribution	Select Distribution: MAJL MAJL FAX				2 day [P2-50%] (Laboratory opening fees may apply)]						니						
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Hamlet of Whale Cove

ATTN: JEANNIE MACKENZIE

PO Box 120

Whale Cove NU XOC 0J0

Date Received: 19-AUG-20

Report Date: 31-AUG-20 14:30 (MT)

Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L2490924
Project P.O. #: NOT SUBMITTED

Job Reference: HAMLET OF WHALE COVE - WASTE WATER

C of C Numbers: Legal Site Desc:

Hua Wo

Chemistry Laboratory Manager

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

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

ALS CANADA LTD Part of the ALS Group An ALS Limited Company



L2490924 CONTD.... PAGE 2 of 9 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2490924-1 WHA-2							
Sampled By: TF on 18-AUG-20 @ 10:40							
Matrix: WW							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		26-AUG-20	R5201533
Toluene	<0.0010		0.0010	mg/L		26-AUG-20	R5201533
Ethyl benzene	<0.00050		0.00050	mg/L		26-AUG-20	R5201533
o-Xylene	<0.00050		0.00050	mg/L		26-AUG-20	R5201533
m+p-Xylenes	<0.00040		0.00040	mg/L		26-AUG-20	R5201533
F1 (C6-C10)	<0.10		0.10	mg/L		26-AUG-20	R5201533
Surrogate: 4-Bromofluorobenzene (SS)	83.9		70-130	%		26-AUG-20	R5201533
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<0.10		0.10	mg/L	25-AUG-20	25-AUG-20	R5200578
F3 (C16-C34)	1.34		0.25	mg/L	25-AUG-20	25-AUG-20	R5200578
F4 (C34-C50)	0.83		0.25	mg/L	25-AUG-20	25-AUG-20	R5200578
Surrogate: 2-Bromobenzotrifluoride	102.6		60-140	%	25-AUG-20	25-AUG-20	R5200578
CCME Total Hydrocarbons	2.15					04 4110 55	
F1-BTEX	<0.10		0.10	mg/L		31-AUG-20	
F2-Naphth	<0.10		0.10	mg/L		31-AUG-20	
F3-PAH Total Undragarhana (C6 CE0)	1.34		0.25	mg/L		31-AUG-20	
Total Hydrocarbons (C6-C50)	2.16		0.38	mg/L		31-AUG-20	
Sum of Xylene Isomer Concentrations Xylenes (Total)	<0.00064		0.00064	mg/L		27-AUG-20	
Ayleries (Total)	<0.00004		0.00004	IIIg/L		27-A00-20	
CCME PAHs in mg/L							
1-Methyl Naphthalene	0.000053		0.000020	mg/L	24-AUG-20	31-AUG-20	R5205237
2-Methyl Naphthalene	0.000049		0.000020	mg/L	24-AUG-20	31-AUG-20	R5205237
Acenaphthene	<0.000020		0.000020	mg/L	24-AUG-20	31-AUG-20	R5205237
Acenaphthylene	0.000022	R	0.000020	mg/L	24-AUG-20	31-AUG-20	R5205237
Anthracene	<0.000010		0.000010	mg/L	24-AUG-20	31-AUG-20	R5205237
Acridine	<0.0000230	DLM	0.000023	mg/L	24-AUG-20	31-AUG-20	R5205237
Benzo(a)anthracene	<0.000010		0.000010	mg/L	24-AUG-20	31-AUG-20	R5205237
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	24-AUG-20	31-AUG-20	R5205237
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	24-AUG-20	31-AUG-20	R5205237
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	24-AUG-20	31-AUG-20	R5205237
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	24-AUG-20	31-AUG-20	R5205237
Chrysene	<0.000020		0.000020	mg/L	24-AUG-20	31-AUG-20	R5205237
Dibenzo(a,h)anthracene	<0.000050		0.0000050	mg/L	24-AUG-20	31-AUG-20	R5205237
Fluoranthene	<0.000020		0.000020	mg/L	24-AUG-20	31-AUG-20	R5205237
Fluorene	0.000034		0.000020	mg/L	24-AUG-20	31-AUG-20	R5205237
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	24-AUG-20	31-AUG-20	R5205237
Naphthalene	0.000156		0.000050	mg/L	24-AUG-20	31-AUG-20	R5205237
Phenanthrene	0.000081		0.000050	mg/L	24-AUG-20	31-AUG-20	R5205237
Pyrene Quinoline	0.000013		0.000010	mg/L	24-AUG-20 24-AUG-20	31-AUG-20 31-AUG-20	R5205237
B(a)P Total Potency Equivalent	0.000316 <0.000030		0.000020 0.000030	mg/L mg/l	24-AUG-20 24-AUG-20	31-AUG-20 31-AUG-20	R5205237 R5205237
Surrogate: d8-Naphthalene	104.7		50-150	mg/L %	24-AUG-20 24-AUG-20	31-AUG-20 31-AUG-20	R5205237
Surrogate: d10-Phenanthrene	104.7		50-150	% %	24-AUG-20 24-AUG-20	31-AUG-20 31-AUG-20	R5205237
Surrogate: d12-Chrysene	102.7		50-150	%	24-AUG-20 24-AUG-20	31-AUG-20 31-AUG-20	R5205237
Surrogate: d10-Acenaphthene	98.4		50-150	%	24-AUG-20 24-AUG-20	31-AUG-20 31-AUG-20	R5205237
Surrogate: d9-Acridine (SS)	102.4		50-150	%	24-AUG-20	31-AUG-20	R5205237
Nunavut WW Group 1	102.7			, •			
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	323		1.2	mg/L		25-AUG-20	
Alkalinity, Carbonate							

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

L2490924 CONTD.... PAGE 3 of 9 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2490924-1 WHA-2							
Sampled By: TF on 18-AUG-20 @ 10:40							
Matrix: WW							
Alkalinity, Carbonate Carbonate (CO3)	7.80		0.60	mg/L		25-AUG-20	
Alkalinity, Hydroxide	7.00		0.00	IIIg/L		25-A00-20	
Hydroxide (OH)	<0.34		0.34	mg/L		25-AUG-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	277		1.0	mg/L		21-AUG-20	R5199696
Ammonia by colour							
Ammonia, Total (as N)	4.50		0.50	mg/L		21-AUG-20	R5195836
Biochemical Oxygen Demand (BOD)	0.0		0.0			20 4110 20	D5400040
Biochemical Oxygen Demand Carbonaceous BOD	3.9		2.0	mg/L		20-AUG-20	R5199912
BOD Carbonaceous	4.8		2.0	mg/L		20-AUG-20	R5199912
Chloride in Water by IC							
Chloride (CI)	83.4		0.50	mg/L		19-AUG-20	R5195778
Conductivity			_				
Conductivity	816		1.0	umhos/cm		21-AUG-20	R5199696
Fecal coliforms, 1:10 dilution by QT97 Fecal Coliforms	170		10	MPN/100mL		19-AUG-20	R5192678
Hardness Calculated	170		10	IVII IN/ IUUIIIL		13-700-20	13192010
Hardness (as CaCO3)	270	HTC	0.20	mg/L		24-AUG-20	
Mercury Total							
Mercury (Hg)-Total	0.0000080		0.0000050	mg/L	24-AUG-20	24-AUG-20	R5199326
Nitrate in Water by IC							
Nitrate (as N)	<0.020		0.020	mg/L		19-AUG-20	R5195778
Nitrate+Nitrite Nitrate and Nitrite as N	<0.070		0.070	mg/L		21-AUG-20	
Nitrite in Water by IC	40.070		0.070	1119/2		217.0020	
Nitrite (as N)	<0.010		0.010	mg/L		19-AUG-20	R5195778
Oil & Grease - Gravimetric							
Oil and Grease	42.6		5.0	mg/L		24-AUG-20	R5199118
Phenol (4AAP)	0.0004		0.0040			04 4110 00	DE405707
Phenols (4AAP) Phosphorus, Total	0.0091		0.0010	mg/L		21-AUG-20	R5195797
Phosphorus (P)-Total	0.242		0.0030	mg/L		21-AUG-20	R5195416
Sulfate in Water by IC							
Sulfate (SO4)	48.3		0.30	mg/L		19-AUG-20	R5195778
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0303		0.0030	mg/L	21-AUG-20	21-AUG-20	R5198196
Arsenic (As)-Total Cadmium (Cd)-Total	0.00410 0.00102		0.00010 0.000050	mg/L mg/l	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196 R5198196
Calcium (Ca)-Total	87.1		0.00000	mg/L mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196
Chromium (Cr)-Total	0.00106		0.00010	mg/L	21-AUG-20	21-AUG-20	R5198196
Cobalt (Co)-Total	0.00195		0.00010	mg/L	21-AUG-20	21-AUG-20	R5198196
Copper (Cu)-Total	0.00932		0.00050	mg/L	21-AUG-20	21-AUG-20	R5198196
Iron (Fe)-Total	3.00		0.010	mg/L	21-AUG-20	21-AUG-20	R5198196
Lead (Pb)-Total	0.00173		0.000050	mg/L	21-AUG-20	21-AUG-20	R5198196
Magnesium (Mg)-Total	12.7		0.0050	mg/L	21-AUG-20	21-AUG-20	R5198196
Manganese (Mn)-Total	0.612		0.00010	mg/L	21-AUG-20	21-AUG-20	R5198196
Nickel (Ni)-Total Potassium (K)-Total	0.00467 11.7		0.00050 0.050	mg/L mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196 R5198196
Sodium (Na)-Total	56.2		0.050	mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196
Zinc (Zn)-Total	0.0424		0.0030	mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196
Total Organic Carbon by Combustion	3.3.21		0.0000				

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

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2490924-1 WHA-2							
Sampled By: TF on 18-AUG-20 @ 10:40							
Matrix: WW							
Total Organic Carbon by Combustion Total Organic Carbon	17.5		0.50	mg/L		21-AUG-20	R5199232
Total Suspended Solids Total Suspended Solids	7.6		3.0	mg/L		20-AUG-20	R5195123
рН рН	8.41		0.10	pH units		21-AUG-20	R5199696
L2490924-2 WHA-3							
Sampled By: TF on 18-AUG-20 @ 10:40 Matrix: WW							
Nunavut WW Group 1							
Alkalinity, Bicarbonate Bicarbonate (HCO3)	217		1.2	mg/L		25-AUG-20	
Alkalinity, Carbonate							
Carbonate (CO3) Alkalinity, Hydroxide	<0.60		0.60	mg/L		25-AUG-20	
Hydroxide (OH) Alkalinity, Total (as CaCO3)	<0.34		0.34	mg/L		25-AUG-20	
Alkalinity, Total (as CaCO3) Ammonia by colour	178		1.0	mg/L		21-AUG-20	R5199696
Ammonia, Total (as N)	16.0		0.50	mg/L		21-AUG-20	R5195836
Biochemical Oxygen Demand (BOD) Biochemical Oxygen Demand	23.4		6.0	mg/L		20-AUG-20	R5199912
Carbonaceous BOD BOD Carbonaceous	9.3		2.0	mg/L		20-AUG-20	R5199912
Chloride in Water by IC Chloride (CI)	82.4		0.50	mg/L		19-AUG-20	R5195778
Conductivity Conductivity	650		1.0	umhos/cm		21-AUG-20	R5199696
Fecal coliforms, 1:10 dilution by QT97 Fecal Coliforms	15500		10	MPN/100mL		19-AUG-20	R5192678
Hardness Calculated		HTC	-			24-AUG-20	13192070
Hardness (as CaCO3) Mercury Total	109	1110	0.20	mg/L	04 4440 00		D=10000
Mercury (Hg)-Total Nitrate in Water by IC	0.0000060		0.0000050	mg/L	24-AUG-20	24-AUG-20	R5199326
Nitrate (as N) Nitrate+Nitrite	0.322		0.020	mg/L		19-AUG-20	R5195778
Nitrate and Nitrite as N Nitrite in Water by IC	0.907		0.070	mg/L		21-AUG-20	
Nitrite (as N)	0.585		0.010	mg/L		19-AUG-20	R5195778
Oil & Grease - Gravimetric Oil and Grease	38.2		5.0	mg/L		24-AUG-20	R5199118
Phenol (4AAP) Phenols (4AAP)	0.0017		0.0010	mg/L		21-AUG-20	R5195797
Phosphorus, Total Phosphorus (P)-Total	5.69		0.030	mg/L		21-AUG-20	R5195416
Sulfate in Water by IC Sulfate (SO4)	17.9		0.30	mg/L		19-AUG-20	R5195778
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0238 0.00092		0.0030 0.00010	mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196 R5198196
Arsenic (As)-Total Cadmium (Cd)-Total	0.00092		0.00010	mg/L mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196 R5198196

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

L2490924 CONTD.... PAGE 5 of 9 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2490924-2 WHA-3							
Sampled By: TF on 18-AUG-20 @ 10:40							
Matrix: WW							
Total Metals in Water by CRC ICPMS							
Calcium (Ca)-Total	32.5		0.050	mg/L	21-AUG-20	21-AUG-20	R5198196
Chromium (Cr)-Total	0.00021		0.00010	mg/L	21-AUG-20	21-AUG-20	R5198196
Cobalt (Co)-Total Copper (Cu)-Total	0.00061		0.00010	mg/L	21-AUG-20	21-AUG-20	R5198196
Iron (Fe)-Total	0.0169 0.103		0.00050 0.010	mg/L mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196 R5198196
Lead (Pb)-Total	0.000091		0.000050	mg/L	21-AUG-20	21-AUG-20 21-AUG-20	R5198196
Magnesium (Mg)-Total	6.81		0.0050	mg/L	21-AUG-20	21-AUG-20	R5198196
Manganese (Mn)-Total	0.0717		0.00010	mg/L	21-AUG-20	21-AUG-20	R5198196
Nickel (Ni)-Total	0.00223		0.00050	mg/L	21-AUG-20	21-AUG-20	R5198196
Potassium (K)-Total	16.8		0.050	mg/L	21-AUG-20	21-AUG-20	R5198196
Sodium (Na)-Total	57.0		0.050	mg/L	21-AUG-20	21-AUG-20	R5198196
Zinc (Zn)-Total Total Organic Carbon by Combustion	0.0219		0.0030	mg/L	21-AUG-20	21-AUG-20	R5198196
Total Organic Carbon Total Organic Carbon	27.2		0.50	mg/L		21-AUG-20	R5199232
Total Suspended Solids							
Total Suspended Solids	36.6		3.0	mg/L		20-AUG-20	R5195123
pH	0.00		0.40	m I I mita		04 4110 00	DE400000
pH	8.20		0.10	pH units		21-AUG-20	R5199696
L2490924-3 WHA-4 Sampled By: TF on 18-AUG-20 @ 10:40							
Matrix: WW							
Matrix. VVVV							
Nunavut WW Group 1							
Alkalinity, Bicarbonate						00 4110 00	
Bicarbonate (HCO3)	214		1.2	mg/L		26-AUG-20	
Alkalinity, Carbonate Carbonate (CO3)	<0.60		0.60	mg/L		26-AUG-20	
Alkalinity, Hydroxide	0.00		0.00	9. =			
Hydroxide (OH)	<0.34		0.34	mg/L		26-AUG-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	176		1.0	mg/L		20-AUG-20	R5192738
Ammonia by colour Ammonia, Total (as N)	3.62		0.50	mg/L		21-AUG-20	R5195836
Biochemical Oxygen Demand (BOD)	0.02		0.00				
Biochemical Oxygen Demand	19.9		6.0	mg/L		20-AUG-20	R5199912
Carbonaceous BOD							
BOD Carbonaceous	3.5		2.0	mg/L		20-AUG-20	R5199912
Chloride in Water by IC Chloride (CI)	80.2		0.50	mg/L		19-AUG-20	R5195778
Conductivity	00.2		0.50	9/ -		107.30 20	1.0100770
Conductivity	615		1.0	umhos/cm		20-AUG-20	R5192738
Fecal coliforms, 1:10 dilution by QT97							
Fecal Coliforms	4110		10	MPN/100mL		19-AUG-20	R5192678
Hardness Calculated Hardness (as CaCO3)	146	нтс	0.20	mg/L		24-AUG-20	
Mercury Total			0.20				
Mercury (Hg)-Total	0.0000050		0.0000050	mg/L	24-AUG-20	24-AUG-20	R5199326
Nitrate in Water by IC						40.41:5.5	
Nitrate (as N)	3.35		0.020	mg/L		19-AUG-20	R5195778
Nitrate+Nitrite Nitrate and Nitrite as N	3.65		0.070	mg/L		21-AUG-20	
Nitrite in Water by IC	0.00		5.57.0				
	I.		l			L	

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

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2490924-3 WHA-4							
Sampled By: TF on 18-AUG-20 @ 10:40							
Matrix: WW							
Nitrite in Water by IC							
Nitrite (as N)	0.298		0.010	mg/L		19-AUG-20	R5195778
Oil & Grease - Gravimetric							
Oil and Grease	70.6		5.0	mg/L		24-AUG-20	R5199118
Phenol (4AAP)	0.0045		0.0040	/I		24 4110 20	D5405707
Phenols (4AAP)	0.0015		0.0010	mg/L		21-AUG-20	R5195797
Phosphorus, Total Phosphorus (P)-Total	3.38		0.030	mg/L		21-AUG-20	R5195416
Sulfate in Water by IC	0.00		0.000	9. =			1.0.00
Sulfate (SO4)	8.84		0.30	mg/L		19-AUG-20	R5195778
Total Metals in Water by CRC ICPMS					04 41:5 -:		
Aluminum (Al)-Total	0.0302		0.0030	mg/L	21-AUG-20	21-AUG-20	R5198196
Arsenic (As)-Total Cadmium (Cd)-Total	0.00355 0.0000091		0.00010 0.0000050	mg/L mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196 R5198196
Calcium (Ca)-Total	44.8		0.000	mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196 R5198196
Chromium (Cr)-Total	0.00019		0.00010	mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196
Cobalt (Co)-Total	0.00082		0.00010	mg/L	21-AUG-20	21-AUG-20	R5198196
Copper (Cu)-Total	0.00609		0.00050	mg/L	21-AUG-20	21-AUG-20	R5198196
Iron (Fe)-Total	1.29		0.010	mg/L	21-AUG-20	21-AUG-20	R5198196
Lead (Pb)-Total	0.000071		0.000050	mg/L	21-AUG-20	21-AUG-20	R5198196
Magnesium (Mg)-Total	8.26		0.0050	mg/L	21-AUG-20	21-AUG-20	R5198196
Manganese (Mn)-Total Nickel (Ni)-Total	0.226 0.00271		0.00010 0.00050	mg/L mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196 R5198196
Potassium (K)-Total	13.5		0.00030	mg/L	21-AUG-20 21-AUG-20	21-AUG-20 21-AUG-20	R5198196
Sodium (Na)-Total	58.2		0.050	mg/L	21-AUG-20	21-AUG-20	R5198196
Zinc (Zn)-Total	0.0096		0.0030	mg/L	21-AUG-20	21-AUG-20	R5198196
Total Organic Carbon by Combustion Total Organic Carbon	21.3		0.50	mg/L		21-AUG-20	R5199232
Total Suspended Solids							
Total Suspended Solids	20.2		3.0	mg/L		20-AUG-20	R5195123
pH	7.00		0.40	m I I mika		20 4110 20	D5400700
pH	7.90		0.10	pH units		20-AUG-20	R5192738

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

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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.
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.

Test Method References:

••			
Matrix	Test Description	Method Reference**	
Water	Alkalinity Carbonato	CALCUL ATION	
	Matrix	Matrix Test Description	

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- Water Alkalinity, Bicarbonate CALCULATION WP

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.

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Reference Information PAGE 8 of 9
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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 degrees C for 18 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.

HARDNESS-CALC-WP Water Hardness Calculated APHA 2340B

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

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

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

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

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

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

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

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

NO2+NO3-CALC-WP Water Nitrate+Nitrite CALCULATION

NO2-IC-N-WP Water Nitrite in Water by IC EPA 300.1 (mod)

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

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

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

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

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

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

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

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

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

PH-WP Water pH APHA 4500H

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

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

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

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Reference Information

Test Method References:

ALS Test Code Matrix Method Reference** **Test Description** 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-Sum of Xylene Isomer Concentrations CALCULATED RESULT WP

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.



Workorder: L2490924 Report Date: 31-AUG-20 Page 1 of 9

Client: Hamlet of Whale Cove

PO Box 120

Whale Cove NU X0C 0J0

Contact: JEANNIE MACKENZIE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP	Water							
Batch R5192738								
WG3387662-27 LCS Alkalinity, Total (as CaC	O3)		102.6		%		85-115	20-AUG-20
WG3387662-15 MB Alkalinity, Total (as CaC	O3)		<1.0		mg/L		1	20-AUG-20
Batch R5199696								
WG3390538-39 LCS Alkalinity, Total (as CaC	O3)		104.5		%		85-115	21-AUG-20
WG3390538-36 MB Alkalinity, Total (as CaC	O3)		<1.0		mg/L		1	21-AUG-20
BOD-CBOD-WP	Water							
Batch R5199912 WG3387339-2 LCS								
BOD Carbonaceous			95.7		%		85-115	20-AUG-20
WG3387339-1 MB BOD Carbonaceous			<2.0		mg/L		2	20-AUG-20
B O D-W P	Water							
Batch R5199912								
WG3387339-2 LCS Biochemical Oxygen Del	mand		104.7		%		85-115	20-AUG-20
WG3387339-1 MB Biochemical Oxygen De	mand		<2.0		mg/L		2	20-AUG-20
BTEXS+F1-HSMS-WP	Water							
Batch R5201533								
WG3390084-2 LCS			04.0		0/			
Benzene Toluene			81.2		%		70-130	24-AUG-20
			83.3		%		70-130	24-AUG-20
Ethyl benzene			83.6		%		70-130	24-AUG-20
o-Xylene			87.3 85.7		% %		70-130	24-AUG-20
m+p-Xylenes			00.7		70		70-130	24-AUG-20
WG3390084-3 LCS F1 (C6-C10)			103.3		%		70-130	24-AUG-20
WG3390084-1 MB Benzene			<0.00050		mg/L		0.0005	24-AUG-20
Toluene			<0.0010		mg/L		0.001	24-AUG-20
Ethyl benzene			<0.00050		mg/L		0.0005	24-AUG-20
o-Xylene			<0.00050		mg/L		0.0005	24-AUG-20
m+p-Xylenes			<0.00040		mg/L		0.0004	24-AUG-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTEXS+F1-HSMS-WP	Water							
Batch R5201533 WG3390084-1 MB F1 (C6-C10)			<0.10		mg/L		0.1	24-AUG-20
Surrogate: 4-Bromofluoro	benzene (SS)		85.0		%		70-130	24-AUG-20
C-TOC-HTC-WP	Water							
Batch R5199232 WG3389658-2 LCS Total Organic Carbon			107.0		%		80-120	21-AUG-20
WG3389658-1 MB Total Organic Carbon			<0.50		mg/L		0.5	21-AUG-20
CL-IC-N-WP	Water							
Batch R5195778 WG3387096-14 LCS Chloride (Cl)			102.1		%		90-110	19-AUG-20
WG3387096-13 MB Chloride (Cl)			<0.50		mg/L		0.5	19-AUG-20
EC-WP	Water							
Batch R5192738 WG3387662-26 LCS Conductivity			97.7		%		90-110	20-AUG-20
WG3387662-15 MB Conductivity			<1.0		umhos/cm		1	20-AUG-20
Batch R5199696 WG3390538-38 LCS Conductivity			99.0		%		90-110	21-AUG-20
WG3390538-36 MB Conductivity			<1.0		umhos/cm		1	21-AUG-20
F2-F4-FID-WP	Water							
Batch R5200578 WG3390535-2 LCS								
F2 (C10-C16)			109.5		%		70-130	25-AUG-20
F3 (C16-C34)			95.6		%		70-130	25-AUG-20
F4 (C34-C50)			104.5		%		70-130	25-AUG-20
WG3390535-1 MB F2 (C10-C16)			<0.10		mg/L		0.1	25-AUG-20
F3 (C16-C34)			<0.25		mg/L		0.25	25-AUG-20
F4 (C34-C50)			<0.25		mg/L		0.25	25-AUG-20
Surrogate: 2-Bromobenzo	otrifluoride		93.2		%		60-140	25-AUG-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
FC10-QT97-WP	Water							
Batch R5192678 WG3387042-2 DUP		L2490924-1						
Fecal Coliforms		170	150		MPN/100mL	16	65	19-AUG-20
WG3387042-1 MB Fecal Coliforms			<1		MPN/100mL		1	19-AUG-20
HG-T-CVAA-WP	Water							
Batch R5199326 WG3390012-3 DUP Mercury (Hg)-Total		L2490924-3 0.000050	0.0000050)	mg/L	0.0	20	24-AUG-20
WG3390012-2 LCS Mercury (Hg)-Total			101.0		%		80-120	24-AUG-20
WG3390012-1 MB Mercury (Hg)-Total			<0.000005	5C	mg/L		0.000005	24-AUG-20
MET-T-CCMS-WP	Water							
Batch R5198196								
WG3387872-2 LCS								
Aluminum (Al)-Total			97.2		%		80-120	21-AUG-20
Arsenic (As)-Total			95.5		%		80-120	21-AUG-20
Cadmium (Cd)-Total			94.6		%		80-120	21-AUG-20
Calcium (Ca)-Total			99.9		%		80-120	21-AUG-20
Chromium (Cr)-Total			96.4		%		80-120	21-AUG-20
Cobalt (Co)-Total			95.0		%		80-120	21-AUG-20
Copper (Cu)-Total			95.4		%		80-120	21-AUG-20
Iron (Fe)-Total			86.7		%		80-120	21-AUG-20
Lead (Pb)-Total			104.2		%		80-120	21-AUG-20
Magnesium (Mg)-Total			99.0		%		80-120	21-AUG-20
Manganese (Mn)-Total			95.6		%		80-120	21-AUG-20
Nickel (Ni)-Total			94.5		%		80-120	21-AUG-20
Potassium (K)-Total			93.2		%		80-120	21-AUG-20
Sodium (Na)-Total			97.0		%		80-120	21-AUG-20
Zinc (Zn)-Total			94.7		%		80-120	21-AUG-20
WG3387872-1 MB Aluminum (Al)-Total			<0.0030		mg/L		0.003	21-AUG-20
Arsenic (As)-Total			<0.00010		mg/L		0.0001	21-AUG-20
Cadmium (Cd)-Total			<0.000005	5C	mg/L		0.000005	21-AUG-20
Calcium (Ca)-Total			<0.050		mg/L		0.05	21-AUG-20 21-AUG-20
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	21-AUG-20 21-AUG-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP	Water							
Batch R5198196 WG3387872-1 MB Cobalt (Co)-Total			<0.00010		ma/l		0.0004	04 4110 00
			<0.00010		mg/L		0.0001	21-AUG-20
Copper (Cu)-Total					mg/L		0.0005	21-AUG-20
Iron (Fe)-Total			<0.010 <0.000050	.	mg/L		0.01	21-AUG-20
Lead (Pb)-Total			<0.000050)	mg/L		0.00005	21-AUG-20
Magnesium (Mg)-Total					mg/L		0.005	21-AUG-20
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	21-AUG-20
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	21-AUG-20
Potassium (K)-Total			<0.050		mg/L 		0.05	21-AUG-20
Sodium (Na)-Total			<0.050		mg/L		0.05	21-AUG-20
Zinc (Zn)-Total			<0.0030		mg/L		0.003	21-AUG-20
NH3-COL-WP	Water							
Batch R5195836 WG3388702-22 LCS Ammonia, Total (as N)			101.3		%		85-115	21-AUG-20
WG3388702-21 MB Ammonia, Total (as N)			<0.010		mg/L		0.01	21-AUG-20
NO2-IC-N-WP	Water							
Batch R5195778 WG3387096-14 LCS Nitrite (as N)			99.1		%		90-110	19-AUG-20
WG3387096-13 MB Nitrite (as N)			<0.010		mg/L		0.01	19-AUG-20
NO3-IC-N-WP	Water							
Batch R5195778								
WG3387096-14 LCS Nitrate (as N)			102.0		%		90-110	19-AUG-20
WG3387096-13 MB Nitrate (as N)			<0.020		mg/L		0.02	19-AUG-20
O G-G RAV-WP	Water							
Batch R5199118 WG3388662-2 LCS Oil and Grease			91.9		%		70-130	24-AUG-20
WG3388662-1 MB Oil and Grease			<5.0		mg/L		5	24-AUG-20
P-T-COL-WP	Water							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-WP	Water							
Batch R5195416								
WG3387935-10 LCS Phosphorus (P)-Total			97.2		%		80-120	21-AUG-20
WG3387935-9 MB Phosphorus (P)-Total			<0.0030		mg/L		0.003	21-AUG-20
PAH-CCME-PPM-WT	Water							
Batch R5205237								
WG3389897-2 LCS 1-Methyl Naphthalene			95.1		%		50-150	31-AUG-20
2-Methyl Naphthalene			94.7		%		50-150	31-AUG-20
Acenaphthene			103.6		%		50-150	31-AUG-20
Acenaphthylene			100.1		%		50-150	31-AUG-20
Anthracene			96.7		%		50-150	31-AUG-20
Acridine			94.1		%		50-150	31-AUG-20
Benzo(a)anthracene			88.6		%		50-150	31-AUG-20
Benzo(a)pyrene			78.7		%		50-150	31-AUG-20
Benzo(b&j)fluoranthene			71.3		%		50-150	31-AUG-20
Benzo(g,h,i)perylene			77.2		%		50-150	31-AUG-20
Benzo(k)fluoranthene			87.8		%		50-150	31-AUG-20
Chrysene			103.2		%		50-150	31-AUG-20
Dibenzo(a,h)anthracene			82.1		%		50-150	31-AUG-20
Fluoranthene			100.6		%		50-150	31-AUG-20
Fluorene			103.3		%		50-150	31-AUG-20
Indeno(1,2,3-cd)pyrene			91.8		%		50-150	31-AUG-20
Naphthalene			99.4		%		50-150	31-AUG-20
Phenanthrene			109.4		%		50-150	31-AUG-20
Pyrene			99.2		%		50-150	31-AUG-20
Quinoline			109.2		%		50-150	31-AUG-20
WG3389897-1 MB 1-Methyl Naphthalene			<0.00002	0	mg/L		0.00002	31-AUG-20
2-Methyl Naphthalene			<0.00002		mg/L		0.00002	31-AUG-20
Acenaphthene			<0.00002		mg/L		0.00002	31-AUG-20
Acenaphthylene			<0.00002		mg/L		0.00002	31-AUG-20
Anthracene			<0.00001		mg/L		0.00001	31-AUG-20
Acridine			<0.00002		mg/L		0.00002	31-AUG-20
Benzo(a)anthracene			<0.00001		mg/L		0.00001	31-AUG-20
Benzo(a)pyrene			<0.00000		mg/L		0.000005	31-AUG-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-CCME-PPM-WT	Water							
Batch R5205237								
WG3389897-1 MB								
Benzo(b&j)fluoranthene	:		<0.00001		mg/L		0.00001	31-AUG-20
Benzo(g,h,i)perylene			<0.00002		mg/L		0.00002	31-AUG-20
Benzo(k)fluoranthene			<0.00001		mg/L		0.00001	31-AUG-20
Chrysene			<0.00002	20	mg/L		0.00002	31-AUG-20
Dibenzo(a,h)anthracene	Э		<0.00000	050	mg/L		0.000005	31-AUG-20
Fluoranthene			<0.00002	20	mg/L		0.00002	31-AUG-20
Fluorene			<0.00002	20	mg/L		0.00002	31-AUG-20
Indeno(1,2,3-cd)pyrene			<0.00001	0	mg/L		0.00001	31-AUG-20
Naphthalene			<0.00005	50	mg/L		0.00005	31-AUG-20
Phenanthrene			<0.00005	50	mg/L		0.00005	31-AUG-20
Pyrene			<0.00001	0	mg/L		0.00001	31-AUG-20
Quinoline			<0.00002	20	mg/L		0.00002	31-AUG-20
Surrogate: d8-Naphthal	ene		87.9		%		50-150	31-AUG-20
Surrogate: d10-Phenan	threne		93.5		%		50-150	31-AUG-20
Surrogate: d12-Chryser	ne		83.9		%		50-150	31-AUG-20
Surrogate: d10-Acenap	hthene		90.2		%		50-150	31-AUG-20
Surrogate: d9-Acridine	(SS)		87.5		%		50-150	31-AUG-20
PH-WP	Water							
Batch R5192738								
WG3387662-16 LCS								
рН			7.33		pH units		7.3-7.5	20-AUG-20
Batch R5199696								
WG3390538-37 LCS								
рН			7.37		pH units		7.3-7.5	21-AUG-20
PHENOLS-4AAP-WT	Water							
Batch R5195797 WG3387796-2 LCS								
Phenols (4AAP)			108.1		%		85-115	21-AUG-20
WG3387796-1 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	21-AUG-20
SO4-IC-N-WP	Water							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WP	Water							
Batch R5195778 WG3387096-14 LCS Sulfate (SO4)			103.3		%		90-110	19-AUG-20
WG3387096-13 MB Sulfate (SO4)			<0.30		mg/L		0.3	19-AUG-20
SOLIDS-TOTSUS-WP Batch R5195123	Water							
WG3387461-2 LCS Total Suspended Solids			85.3		%		85-115	20-AUG-20
WG3387461-1 MB Total Suspended Solids			<3.0		mg/L		3	20-AUG-20

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Legend:

ALS Control Limit (Data Quality Objectives) Limit DUP Duplicate Relative Percent Difference RPD N/A LCS Not Available

Laboratory Control Sample Standard Reference Material SRM MS Matrix Spike

MSD

Matrix Spike Duplicate
Average Desorption Efficiency ADE

Method Blank MB

Internal Reference Material IRM Certified Reference Material CRM CCV Continuing Calibration Verification Calibration Verification Standard CVS LCSD Laboratory Control Sample Duplicate

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Hold Time Exceedances:

	Sample						
ALS Product Description	ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
рН							
	1	18-AUG-20 10:40	21-AUG-20 12:00	0.25	73	hours	EHTR-FM
	2	18-AUG-20 10:40	21-AUG-20 12:00	0.25	73	hours	EHTR-FM
	3	18-AUG-20 10:40	20-AUG-20 12:00	0.25	49	hours	EHTR-FM

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes. Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2490924 were received on 19-AUG-20 12:30.

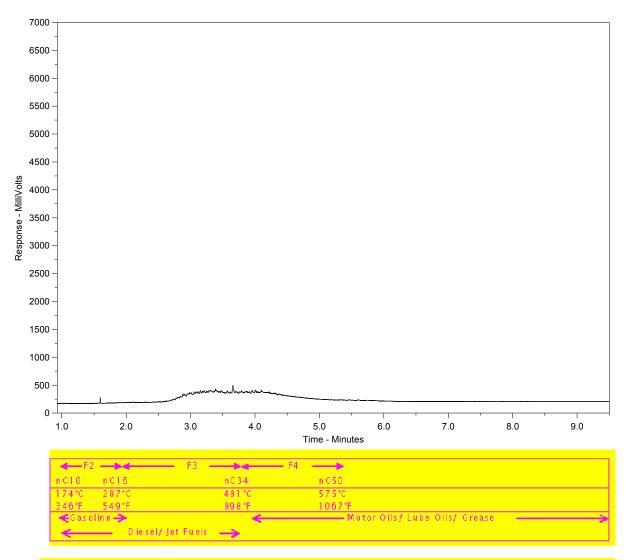
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where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

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

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



ALS Sample ID: L2490924-1 Client Sample ID: WHA-2



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

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

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

Chain of Custody (COC) / Analytical Request Form

COC Number: 17 - 781475

JUNE 2018 FRONT

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Contact:	TEGANIC MELKENZ	Quality Control	(QC) Report with Rep	ort [] YES	ON	Business Days	day [P4	1-20%]			Se 1	Busi	ness (day (E	- 100%	6]			
Phone:	867-816-9461	Compare R	esults to Criteria on Report -			ROS 3	day [P3	-25%]										[E2 -200%	, _
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	n from a Regulated DW System?	Nuggot - Wo	U-GRP1			ice Paci		ice (Cubes		Custod			١	Yes			No	Ī
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Released by:	SHIPMENT RELEASE (client use) Date:	Time: Received byN	INITIAL SHIPMEN			Time:	a Rec	eived I	by:		FINAL		Date:	NEUE	FIION	_เลอ นธ	e only)	Time:	
/	Date: 11 15/19	Time: Received by		1-1	101	Time:	· M. ```					- 1						1	

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

ANNUAL REPORT FOR THE HAMLET OF WHALE COVE

Appendix D: Hazardous Materials Spill Database, Whale Cove 2020

Spills

Occurance Date	Spill Region	Spill Location		
Jan ▼	- Any - ▼	- Any -	▼)	
1 v				
2020 ▼				
Dec ▼				
31 ▼				
2020 ▼				
Spill Location Description	Report Numb	er	Items per page	
whale cove			10	Go
				_
Reset				
No matching spills				
CSV				

ANNUAL REPORT FOR THE HAMLET OF WHALE COVE

Appendix F: Whale Cove 2020 Sampling Summary

Whale Cove WHA-2

WHA-2				2020	
Parameter	Unit	DL	07-Jul-20	16-Jul-20	18-Aug-20
Alkalinity	Offic	DL	07-Jui-20	10-341-20	10-Aug-20
Bicarbonate (HCO3)	mg/L	1.2	259	269	323
Carbonate (CO3)	mg/L	0.60	0.60	0.60	7.80
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	212	221	277
Ammonia by Colour					
Total (as N)	mg/L	0.20	24.3	1.11	4.5
Biochemical Oxygen Demand (BOD)					
Biochemical Oxygen Demand	mg/L	6.0	12.8	10.9	3.9
Carbonaceous BOD					
BOD Carbonaceous	mg/L	6.0	10.6	8.4	4.8
Chloride in Water by IC	/I	10	75	69.6	02.4
Chloride (CI) Conductivity	mg/L	10	75	09.0	83.4
Conductivity	umhos/cm	1.0	681	698	816
Fecal Coliforms	diiiios/ciii	1.0	001	050	010
Fecal Coliforms	MPN/100mL	3	6130	190	170
Hardness Calculated			0200		_, ,
Hardness (as CaCO3)	mg/L	0.30	95.1	238	270
Mercury Total					
Mercury (Hg)	mg/L	0.00020	0.0000090	0.0000050	0.0000080
Nitrate in Water by IC					
Nitrate (as N)	mg/L	0.40	0.020	0.032	0.020
Nitrate + Nitrite					
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.070	0.070
Nitrite in Water by IC					
Nitrite (as N)	mg/L	0.20	0.010	0.010	0.010
Oil & Grease - Gravimetric	4	F.0	6.4	5.0	42.6
Oil and Grease	mg/L	5.0	6.4	5.0	42.6
Phenol	ma/l	0.0010	0.0050	0.0022	0.0091
Phenols Phosphorus, Total	mg/L	0.0010	0.0050	0.0022	0.0091
Phosphorus (P)	mg/L	0.010	5.83	0.245	0.242
Sulfate in Water by IC	IIIg/ L	0.010	5.05	0.243	0.242
Sulfate (SO4)	mg/L	6.0	13.9	58	48.3
Total Metals by ICP-MS	8/ =	0.0			10.0
Aluminium (Al)	mg/L	0.0050	0.0377	0.0170	0.0303
Arsenic (As)	mg/L	0.00020	0.00087	0.00242	0.0041
Cadmium (Cd)	mg/L	0.000010	0.0000187	0.0000564	0.00102
Calcium (Ca)	mg/L	0.10	27.4	77.9	87.1
Chromium (Cr)	mg/L	0.0010	0.00035	0.00106	0.00106
Cobalt (Co)	mg/L	0.00020	0.00061	0.00181	0.00195
Copper (Cu)	mg/L	0.00020	0.0360	0.00627	
Iron (Fe)		0.0			0.00932
1 1	mg/L	0.010	0.173	2.15	3
Lead (Pb)	mg/L	0.000090	0.173 0.000353	2.15 0.000536	3 0.00173
Lead (Pb) Magnesium (Mg)	mg/L mg/L	0.000090 0.010	0.173 0.000353 6.47	2.15 0.000536 10.6	3 0.00173 12.7
Lead (Pb) Magnesium (Mg) Manganese (Mn)	mg/L mg/L mg/L	0.000090 0.010 0.00030	0.173 0.000353 6.47 0.0887	2.15 0.000536 10.6 0.355	3 0.00173 12.7 0.612
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni)	mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020	0.173 0.000353 6.47 0.0887 0.00205	2.15 0.000536 10.6 0.355 0.00651	3 0.00173 12.7 0.612 0.00467
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K)	mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020	0.173 0.000353 6.47 0.0887 0.00205 16.5	2.15 0.000536 10.6 0.355 0.00651 10.8	3 0.00173 12.7 0.612 0.00467 11.7
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020	0.173 0.000353 6.47 0.0887 0.00205	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6	3 0.00173 12.7 0.612 0.00467
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn)	mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0	2.15 0.000536 10.6 0.355 0.00651 10.8	3 0.00173 12.7 0.612 0.00467 11.7 56.2
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6	3 0.00173 12.7 0.612 0.00467 11.7 56.2
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030 0.0020	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030 0.0020	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids pH	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030 0.0020	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids pH pH	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030 0.0020 0.50 13	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5 26.4	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5 10.9	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5 7.6
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Suspended Solids Total Suspended Solids pH pH Benzene	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030 0.0020 0.50 13	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5 26.4 7.35 0.00050	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5 10.9 8.12 0.00050	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5 7.6
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids PH pH Benzene Toluene	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030 0.0020 0.50 13 0.10 0.00050 0.0010	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5 26.4 7.35 0.00050 0.0011	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5 10.9 8.12 0.00050 0.0010	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5 7.6 8.41 0.00050 0.0010
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids PH pH Benzene Toluene Ethyl Benzene	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.030 0.0020 0.50 13 0.10 0.00050 0.0010 0.00050	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5 26.4 7.35 0.00050 0.0011 0.00050	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5 10.9 8.12 0.00050 0.0010 0.00050	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5 7.6 8.41 0.00050 0.0010
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Suspended Solids Total Suspended Solids pH pH Benzene Toluene Ethyl Benzene o-Xylene	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.030 0.0020 0.50 13 0.10 0.00050 0.0010 0.00050 0.00050	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5 26.4 7.35 0.00050 0.0011 0.00050 0.00050	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5 10.9 8.12 0.00050 0.0010 0.00050	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5 7.6 8.41 0.00050 0.0010 0.00050
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Suspended Solids Total Suspended Solids pH pH Benzene Toluene Ethyl Benzene o-Xylene F1 (C6-C10)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.030 0.0020 0.50 13 0.10 0.00050 0.0010 0.00050 0.10	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5 26.4 7.35 0.00050 0.0011 0.00050 0.00050 0.10	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5 10.9 8.12 0.00050 0.0010 0.00050 0.00050 0.10	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5 7.6 8.41 0.00050 0.0010 0.00050 0.00050
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids PH PH Benzene Toluene Ethyl Benzene 0-Xylene F1 (C6-C10) F2 (C10-C16)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030 0.0020 0.50 13 0.10 0.00050 0.0010 0.00050 0.10 0.25	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5 26.4 7.35 0.00050 0.0011 0.00050 0.00050 0.10 0.1	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5 10.9 8.12 0.00050 0.0010 0.00050 0.00050 0.10	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5 7.6 8.41 0.00050 0.0010 0.00050 0.00050 0.10
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids PH PH Benzene Toluene Ethyl Benzene 0-Xylene F1 (C6-C10) F2 (C10-C16) F3 (C16-C34)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030 0.0020 0.50 13 0.10 0.00050 0.0010 0.00050 0.10 0.25 0.25	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5 26.4 7.35 0.00050 0.0011 0.00050 0.10 0.18 2.53	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5 10.9 8.12 0.00050 0.0010 0.00050 0.100 0.10	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5 7.6 8.41 0.00050 0.0010 0.00050 0.00050 0.10 0.1
Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids PH PH Benzene Toluene Ethyl Benzene 0-Xylene F1 (C6-C10) F2 (C10-C16)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.000090 0.010 0.00030 0.0020 0.020 0.030 0.0020 0.50 13 0.10 0.00050 0.0010 0.00050 0.10 0.25	0.173 0.000353 6.47 0.0887 0.00205 16.5 54.0 0.0226 33.5 26.4 7.35 0.00050 0.0011 0.00050 0.00050 0.10 0.1	2.15 0.000536 10.6 0.355 0.00651 10.8 48.6 0.0279 15.5 10.9 8.12 0.00050 0.0010 0.00050 0.00050 0.10	3 0.00173 12.7 0.612 0.00467 11.7 56.2 0.0424 17.5 7.6 8.41 0.00050 0.0010 0.00050 0.00050 0.10

Whale Cove WHA-3

WHA-3				2020	
Parameter	Unit	DL	07-Jul-20	2020 16-Jul-20	18-Aug-20
Alkalinity	Offic	DL	07-Jui-20	10-341-20	10-Aug-20
Bicarbonate (HCO3)	mg/L	1.2	253	248	217
Carbonate (CO3)	mg/L	0.60	0.60	0.60	0.60
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	208	203	178
Ammonia by Colour					
Total (as N)	mg/L	0.20	0.12	23.4	16
Biochemical Oxygen Demand (BOD)	ma/l	6.0	8.3	27.9	23.4
Biochemical Oxygen Demand Carbonaceous BOD	mg/L	0.0	0.3	27.5	23.4
BOD Carbonaceous	mg/L	6.0	8.8	20.9	9.3
Chloride in Water by IC		0.0	0.0	2015	515
Chloride (CI)	mg/L	10	64.6	77	82.4
Conductivity					
Conductivity	umhos/cm	1.0	589	685	650
Fecal Coliforms					
Fecal Coliforms	MPN/100mL	3	880	14100	15500
Hardness Calculated	l:	0.20	4.64	4.00	400
Hardness (as CaCO3)	mg/L	0.30	161	103	109
Mercury Total Mercury (Hg)	mg/L	0.00020	0.0000050	0.0000060	0.0000060
Nitrate in Water by IC	IIIg/L	0.00020	0.00000050	0.0000000	0.00000000
Nitrate in Water by iC Nitrate (as N)	mg/L	0.40	0.027	0.020	0.322
Nitrate + Nitrite	6/ -	0.40	0.027	0.020	0.022
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.070	0.907
Nitrite in Water by IC	<u> </u>				
Nitrite (as N)	mg/L	0.20	0.010	0.010	0.585
Oil & Grease - Gravimetric					
Oil and Grease	mg/L	5.0	5.0	5.0	38.2
Phenol					
Phenols	mg/L	0.0010	0.0010	0.0011	0.0017
Phosphorus, Total	/I	0.010	2.22	F 70	F C0
Phosphorus (P)	mg/L	0.010	3.32	5.79	5.69
Sulfate in Water by IC	mg/l	6.0	1/1 8	15.5	17.9
Sulfate (SO4)	mg/L	6.0	14.8	15.5	17.9
Sulfate (SO4) Total Metals by ICP-MS		6.0 0.0050	14.8 0.0343	15.5 0.0296	17.9 0.0238
Sulfate (SO4)	mg/L mg/L mg/L				
Sulfate (SO4) Total Metals by ICP-MS Aluminium (Al)	mg/L	0.0050	0.0343	0.0296	0.0238
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As)	mg/L mg/L	0.0050 0.00020	0.0343 0.00382	0.0296 0.00083 0.000185 30	0.0238 0.00092
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd)	mg/L mg/L mg/L	0.0050 0.00020 0.000010	0.0343 0.00382 0.0000077	0.0296 0.00083 0.000185	0.0238 0.00092 0.0000093
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co)	mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020	0.0343 0.00382 0.0000077 48 0.00024 0.00051	0.0296 0.00083 0.000185 30 0.00027 0.00062	0.0238 0.00092 0.000093 32.5 0.00021 0.00061
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303	0.0238 0.00092 0.0000093 32.5 0.00021 0.00061 0.0169
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145	0.0238 0.00092 0.0000093 32.5 0.00021 0.00061 0.0169 0.103
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.000090	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272	0.0238 0.00092 0.0000093 32.5 0.00021 0.00061 0.0169 0.103 0.000091
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.000090 0.010	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90	0.0238 0.00092 0.0000093 32.5 0.00021 0.00061 0.0169 0.103 0.000091 6.81
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.000090 0.010	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908	0.0238 0.00092 0.0000093 32.5 0.00021 0.0061 0.0169 0.103 0.000091 6.81 0.0717
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.000090 0.010 0.00030 0.0020	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187 0.00268	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908	0.0238 0.00092 0.0000093 32.5 0.00021 0.0061 0.0169 0.103 0.000091 6.81 0.0717 0.00223
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.000090 0.010	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908	0.0238 0.00092 0.0000093 32.5 0.00021 0.0061 0.0169 0.103 0.000091 6.81 0.0717
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.000090 0.010 0.00030 0.0020	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187 0.00268 13.8	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216	0.0238 0.00092 0.0000093 32.5 0.00021 0.0069 0.103 0.000091 6.81 0.0717 0.00223 16.8
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00090 0.010 0.00030 0.0020 0.020	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187 0.00268 13.8 56.8	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9	0.0238 0.00092 0.000093 32.5 0.00021 0.0061 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0
Sulfate (SO4) Total Metals by ICP-MS Aluminium (Al) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (Na) Zinc (Zn)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00090 0.010 0.00030 0.0020 0.020	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187 0.00268 13.8 56.8	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9	0.0238 0.00092 0.000093 32.5 0.00021 0.0061 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0
Sulfate (SO4) Total Metals by ICP-MS Aluminium (Al) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (Na) Zinc (Zn) Total Organic Carbon Total Suspended Solids	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.000090 0.010 0.00030 0.0020 0.030 0.0020	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187 0.00268 13.8 56.8 0.0171	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205	0.0238 0.00092 0.0000093 32.5 0.00021 0.00061 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219
Sulfate (SO4) Total Metals by ICP-MS Aluminium (Al) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Suspended Solids Total Suspended Solids	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00090 0.010 0.00030 0.0020 0.020 0.030	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187 0.00268 13.8 56.8 0.0171	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205	0.0238 0.00092 0.0000093 32.5 0.00021 0.0069 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219
Sulfate (SO4) Total Metals by ICP-MS Aluminium (Al) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Suspended Solids Total Suspended Solids PH	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00090 0.00030 0.0020 0.030 0.0020 0.50	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.00086 9.91 0.187 0.00268 13.8 56.8 0.0171	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205	0.0238 0.00092 0.0000093 32.5 0.00021 0.0066 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219
Sulfate (SO4) Total Metals by ICP-MS Aluminium (Al) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Suspended Solids Total Suspended Solids pH pH	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00090 0.010 0.0020 0.0020 0.030 0.0020 13	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.00086 9.91 0.187 0.00268 13.8 56.8 0.0171 20.3	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205 24.2 33.1	0.0238 0.00092 0.000093 32.5 0.00021 0.00061 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219 27.2
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon Total Suspended Solids Total Suspended Solids pH pH Benzene	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00030 0.0020 0.030 0.0020 0.50 13	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.00086 9.91 0.187 0.00268 13.8 56.8 0.0171 20.3 21.4	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205 24.2 33.1	0.0238 0.00092 0.000093 32.5 0.00021 0.00661 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219 27.2 36.6
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon Total Suspended Solids Total Suspended Solids pH pH Benzene Toluene	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00030 0.0020 0.020 0.030 0.0020 13 0.10 0.00050 0.0010	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.00086 9.91 0.187 0.00268 13.8 56.8 0.0171 20.3 21.4 7.65 N/A N/A	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205 24.2 33.1 8.01 0.00050 0.0010	0.0238 0.00092 0.000093 32.5 0.00021 0.0061 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219 27.2 36.6 8.20 N/A N/A
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Suspended Solids Total Suspended Solids pH pH Benzene Toluene Ethyl Benzene	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00030 0.0020 0.020 0.030 0.0020 13 0.10 0.00050 0.0010 0.00050	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.00086 9.91 0.187 0.00268 13.8 56.8 0.0171 20.3 21.4 7.65 N/A N/A	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205 24.2 33.1 8.01 0.00050 0.0010 0.00050	0.0238 0.00092 0.000093 32.5 0.00021 0.0061 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219 27.2 36.6 8.20 N/A N/A
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Suspended Solids Total Suspended Solids pH pH Benzene Toluene Ethyl Benzene o-Xylene	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.00010 0.10 0.0010 0.00020 0.00020 0.010 0.00030 0.0020 0.020 0.030 0.0020 13 0.10 0.00050 0.0010 0.00050 0.0010	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.00086 9.91 0.187 0.00268 13.8 56.8 0.0171 20.3 21.4 7.65 N/A N/A	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205 24.2 33.1 8.01 0.00050 0.0010 0.00050	0.0238 0.00092 0.000093 32.5 0.00021 0.00661 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219 27.2 36.6 8.20 N/A N/A N/A
Sulfate (SO4) Total Metals by ICP-MS Aluminium (AI) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Suspended Solids Total Suspended Solids pH pH Benzene Toluene Ethyl Benzene	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.00010 0.10 0.0010 0.00020 0.00020 0.0010 0.00090 0.010 0.0020 0.020 0.030 0.0020 13 0.10 0.00050 0.0010 0.00050 0.00050 0.10	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.00086 9.91 0.187 0.00268 13.8 56.8 0.0171 20.3 21.4 7.65 N/A N/A N/A	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205 24.2 33.1 8.01 0.00050 0.0010 0.00050 0.00050 0.10	0.0238 0.00092 0.000093 32.5 0.00021 0.00661 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219 27.2 36.6 8.20 N/A N/A N/A
Sulfate (SO4) Total Metals by ICP-MS Aluminium (Al) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon Total Organic Carbon Total Suspended Solids Total Suspended Solids pH pH Benzene Toluene Ethyl Benzene o-Xylene F1 (C6-C10)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.00010 0.10 0.0010 0.00020 0.00020 0.010 0.00030 0.0020 0.020 0.030 0.0020 13 0.10 0.00050 0.0010 0.00050 0.0010	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.00086 9.91 0.187 0.00268 13.8 56.8 0.0171 20.3 21.4 7.65 N/A N/A	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205 24.2 33.1 8.01 0.00050 0.0010 0.00050	0.0238 0.00092 0.000093 32.5 0.00021 0.00661 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219 27.2 36.6 8.20 N/A N/A N/A
Sulfate (SO4) Total Metals by ICP-MS Aluminium (Al) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids pH pH Benzene Toluene Ethyl Benzene O-Xylene F1 (C6-C10) F2 (C10-C16)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00030 0.0020 0.020 0.030 0.0020 13 0.10 0.00050 0.0010 0.00050 0.0010 0.00050 0.10	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187 0.00268 13.8 56.8 0.0171 20.3 21.4 7.65 N/A N/A N/A	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205 24.2 33.1 8.01 0.00050 0.0010 0.00050 0.100	0.0238 0.00092 0.000093 32.5 0.00021 0.00661 0.0169 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219 27.2 36.6 8.20 N/A N/A N/A
Sulfate (SO4) Total Metals by ICP-MS Aluminium (Al) Arsenic (As) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Magnesium (Mg) Manganese (Mn) Nickel (Ni) Potassium (K) Sodium (Na) Zinc (Zn) Total Organic Carbon by Combustion Total Organic Carbon Total Suspended Solids Total Suspended Solids PH pH Benzene Toluene Ethyl Benzene O-Xylene F1 (C6-C10) F2 (C10-C16) F3 (C16-C34)	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.0050 0.00020 0.000010 0.10 0.0010 0.00020 0.00020 0.010 0.00030 0.0020 0.030 0.0020 0.50 13 0.10 0.00050 0.0010 0.00050 0.0010 0.0055 0.010 0.25 0.25	0.0343 0.00382 0.0000077 48 0.00024 0.00051 0.00204 0.877 0.000086 9.91 0.187 0.00268 13.8 56.8 0.0171 20.3 21.4 7.65 N/A N/A N/A N/A	0.0296 0.00083 0.000185 30 0.00027 0.00062 0.0303 0.145 0.000272 6.90 0.0908 0.00216 16.9 55.9 0.0205 24.2 33.1 8.01 0.00050 0.0010 0.00050 0.0010 0.101 1.01	0.0238 0.00092 0.000093 32.5 0.00021 0.0069 0.103 0.000091 6.81 0.0717 0.00223 16.8 57.0 0.0219 27.2 36.6 8.20 N/A N/A N/A N/A

Whale Cove WHA-4

WHA-4					
Parameter	Unit	DL	07-Jul-20	2020 16-Jul-20	18-Aug-20
Parameter Alkalinity	UIIIL	DL	07-Jul-20	10-Jul-20	To-Aug-ZU
Bicarbonate (HCO3)	mg/L	1.2	244	307	214
Carbonate (CO3)	mg/L	0.60	0.60	0.60	0.60
Hydroxide (OH)	mg/L	0.34	0.34	0.34	0.34
Total (as CaCO3)	mg/L	1.0	200	252	176
Ammonia by Colour	3,				
Total (as N)	mg/L	0.20	0.58	0.110	3.62
Biochemical Oxygen Demand (BOD)					
Biochemical Oxygen Demand	mg/L	6.0	7.5	4.6	19.9
Carbonaceous BOD					
BOD Carbonaceous	mg/L	6.0	5.3	4.3	3.5
Chloride in Water by IC					
Chloride (Cl)	mg/L	10	69.6	67.2	80.2
Conductivity					
Conductivity	umhos/cm	1.0	672	632	615
Fecal Coliforms					
Fecal Coliforms	MPN/100mL	3	210	20	4110
Hardness Calculated					
Hardness (as CaCO3)	mg/L	0.30	212	192	146
Mercury Total		0.05555	0.00000	0.000	0.000
Mercury (Hg)	mg/L	0.00020	0.0000050	0.0000050	0.0000050
Nitrate in Water by IC	/	0.40	0.000	0.000	2.25
Nitrate (as N)	mg/L	0.40	0.020	0.020	3.35
Nitrate + Nitrite	/-	0.45	0.070	0.070	2.65
Nitrate and Nitrite as N	mg/L	0.45	0.070	0.070	3.65
Nitrite in Water by IC	/1	0.20	0.040	0.040	0.200
Nitrite (as N)	mg/L	0.20	0.010	0.010	0.298
Oil & Grease - Gravimetric Oil and Grease	mg/L	5.0	5.0	5.0	70.6
Phenol	IIIg/L	3.0	3.0	3.0	70.0
Phenols	mg/L	0.0010	0.0036	0.0010	0.0015
Phosphorus, Total	IIIg/ L	0.0010	0.0030	0.0010	0.0013
Phosphorus (P)	mg/L	0.010	0.360	4.51	3.38
Sulfate in Water by IC	6/ =	0.010	0.000	1132	5.50
Sulfate (SO4)	mg/L	6.0	57.1	4.96	8.84
Total Metals by ICP-MS	8/ =	0.0	0,12		5.6
Aluminium (AI)	mg/L	0.0050	0.0446	0.0144	0.0302
Arsenic (As)	mg/L	0.00020	0.00271	0.00375	0.00355
Cadmium (Cd)	mg/L	0.000010	0.0000823	0.0000089	0.0000091
Calcium (Ca)	mg/L	0.10	696	57.9	44.8
Chromium (Cr)	mg/L	0.0010	0.00137	0.00019	0.00019
Cobalt (Co)	mg/L	0.00020	0.00183	0.00050	0.00082
Copper (Cu)	mg/L	0.00020	0.00735	0.00148	0.00609
Iron (Fe)	mg/L	0.010	3.63	1.30	1.29
Lead (Pb)	mg/L	0.000090	0.000758	0.000097	0.000071
Magnesium (Mg)	mg/L	0.010	9.36	11.5	8.26
Manganese (Mn)	mg/L	0.00030	0.455	0.271	0.226
Nickel (Ni)	mg/L	0.0020	0.00676	0.00292	0.00271
Potassium (K)	mg/L	0.020	10.6	13.8	13.5
Sodium (Na)	mg/L	0.030	46.6	61.2	58.2
Zinc (Zn)	mg/L	0.0020	0.0402	0.0072	0.0096
Total Organic Carbon by Combustion					
Total Organic Carbon	mg/L	0.50	18.9	20.8	21.3
Total Suspended Solids	,	10		24.4	20.5
Total Suspended Solids	mg/L	13	19.8	24.1	20.2
pH	militaria.	0.40	7.25	0.40	7.00
pH	pH Units	0.10	7.35	8.18	7.90
Benzene	mg/L	0.00050	N/A	0.00050	N/A
Toluene Ethyl Bonzono	mg/L	0.0010	N/A	0.0010	N/A
Ethyl Benzene	mg/L	0.00050	N/A	0.00050	N/A
o-Xylene F1 (C6-C10)	mg/L	0.00050 0.10	N/A N/A	0.00050 0.10	N/A N/A
F2 (C10-C16)	mg/L mg/L	0.10	N/A N/A	0.10	N/A N/A
F3 (C16-C34)	mg/L	0.25	N/A N/A	0.10	N/A N/A
F4 (C34-C50)	mg/L	0.25	N/A N/A	0.25	N/A N/A
Total Hydrocarbons (C6-C50)	mg/L	0.23	N/A	0.23	N/A
Total Hydrocalbolis (Co-C50)	IIIg/L	0.44	IV/A	0.30	IV/A

ANNUAL REPORT FOR THE HAMLET OF WHALE COVE

Appendix F: CIRNAC Inspection Report

The CIRNAC inspection report was not received by CGS.