



Memorandum

Project Name: Resolute Bay Wastewater

Project #: FRE-00261400-A0

To: Bhabesh Roy, P.Eng.

From: Tony Whalen, P.Eng.

Date: August 29, 2020

Subject: Fecal Coliform Limit Determination

Distribution: Daryl Burke, P.Eng.

This technical memo is to provide the Government of Nunavut with direction regarding the determination of a Fecal Coliform limit for the sewage effluent discharged from the Hamlet of Resolute Bay, Nunavut. The Water Licence (#3BM-RUT 1520) lists two (2) conditions to consider: 1) wastewater flows >600 Lcd; and 2) wastewater flows between 150 Lcd and 600 Lcd.

For flows >600 Lcd	
Parameter	Maximum concentration of any grab
BOD ₅	80 mg/L
Total Suspended Solids	70 mg/L
Oil and Grease	No visible sheen
pH	Between 6 and 9
Fecal Coliform	To be determined in accordance with Part D

For flows between 150 Lcd and 600 Lcd	
Parameter	Maximum concentration of any grab
BOD ₅	120 mg/L
Total Suspended Solids (TSS)	80 mg/L
Oil and Grease	No visible sheen
pH	Between 6 and 9
Fecal Coliform	To be determined in accordance with Part D

The determination of a fecal coliform limit was to be based on eighteen (18) grab samples collected from April 2016 to June 2020. Results were received from eighteen (18) grab samples collected on the following dates:

2016 (2) – April 25 and June 30

2017 (7) – June 25, July 14, July 30, August 17, August 29, October 29 and November 6

2018 (4) – June 4, July 2, August 14 and September 23

2019 (4) – June 2, June 16, July 24 and September 23

2020 (1) – June 10

Based on the results from the eighteen samples, 17 of 18 would have met the BOD₅ requirements for both flow conditions; and 16 of 18 would have met the TSS requirements for both flow conditions. The pH was within the required range for all 18 samples. Fecal coliform counts ranged from 56 to 380,000 cfu (colony forming units)/100 mL. Results for Fecal Coliform, BOD₅, TSS and pH are summarized in the table below. Copies of the analytical reports for each sample collected with all parameters tested are also attached.

Date	Fecal Coliform (cfu/100 mL)	BOD ₅ (mg/L)	TSS (mg/L)	pH
25-Apr-16	56	6	3	7.94
30-Jun-16	1,600	6	<3	7.95
25-Jun-17	210,000	189	34	7.85
14-Jul-17	380,000	71	116	7.74
30-Jul-17	15,000	22	8	7.52
17-Aug-17	31,000	34	40	7.67
29-Aug-17	190	11	14	7.7
29-Oct-17	1,500	57	13	8.22
6-Nov-17	30,000	9	12	7.72
4-Jun-18	45,000	41	84	7.89
2-Jul-18	32,000	28	25	7.56
14-Aug-18	6,000	25	25	7.67
23-Sep-18	4,700	15	15	7.43
2-Jun-19	20,000	14	5	7.68
16-Jun-19	13,000	7	12	7.71
24-Jul-19	5,700	15	35	7.67
23-Sep-19	96,000	18	35	7.64
10-Jun-20	62	6	8	7.87

In general, Fecal Coliform measurements are used to determine the potential for the presence of disease-causing micro-organisms. This is particularly important if the effluent is being discharged to a recreational area (people coming into contact with the water, i.e. swimming, boating, etc.) and/or if the area is used to provide a food source, particularly shellfish.

The Resolute Bay collection system consists of a utilidor (piped) system. Due to the potential for freezing within the collection system, a quantity of “bleed” water is used to prevent the sewer lines from freezing. This is evident in the concentration of BOD₅ and TSS as reported in the sample analysis. The values are lower than expected for municipal wastewater. As a result, and noted above, the results are generally favorable. However, the Fecal Coliform counts are greater than generally allowed for

discharge to a receiving body of water. Effluent Fecal Coliform counts are usually expected to be less than 1,000 cfu/100 mL upon discharge. An Environmental Risk Assessment (ERA) of the receiving body of water is generally undertaken to better define the Fecal Coliform limit.

At Resolute Bay, due to the cold environmental conditions, recreational water activities would be minimal. As well, where the wastewater flows are relatively small compared to the size of the receiving body, the mixing zone at the point of discharge should be small (the limits of the mixing zone would be defined where the measurable concentrations of any of the parameters would equal background concentrations).

The requirement to define a Fecal Coliform limit is essentially to address the question of, what are the negative impacts of the presence of Fecal Coliform and if there is a presence, what is the maximum concentration/quantity that should be allowed. This memo does not address the negative impacts (if any) at Resolute Bay.

However, defining a Fecal Coliform limit can be accomplished through several methods. The most stringent limit to be defined would be to satisfy public safety due to either the recreational use of the water or the ability to harvest food within the discharge zone. This may not be a factor at Resolute Bay.

Keeping in line that the current effluent quality is being achieved without any treatment (most of the samples meet the current BOD₅ and TSS limits), defining a corresponding fecal coliform limit is possible. The presence of coliforms is generally related to the presence/concentration of suspended solids. The lower the concentration of solids, generally the lower the coliform counts. Of the eighteen (18) samples from 2016 to 2020, regression analysis was performed on the TSS versus Fecal Coliform. The calculated Correlation Coefficient (R) was determined to be 0.77 which implies there is a correlation between TSS and FC counts. Using the results from the 2016 to 2020 data, FC limits would be defined as follows:

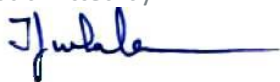
For flows >600 Lcd	
Parameter	Maximum concentration of any grab
BOD ₅	80 mg/L
Total Suspended Solids	70 mg/L
Oil and Grease	No visible sheen
pH	Between 6 and 9
Fecal Coliform	157,929

For flows between 150 Lcd and 600 Lcd	
Parameter	Maximum concentration of any grab
BOD ₅	120 mg/L
Total Suspended Solids (TSS)	80 mg/L
Oil and Grease	No visible sheen
pH	Between 6 and 9
Fecal Coliform	183,167

The calculated Fecal Coliform values were determined based on linear regression of data collected from 2016 to 2020, which included 18 results. For flows greater than 600 Lcd and TSS of 80 mg/L, the calculated Fecal Coliform value was determined to be **157,929** cfu/100mL. For flows between 150 Lcd and 600 Lcd and TSS of 80 mg/L, the calculated Fecal Coliform value was determined to be **183,167** cfu/100mL.

Based on the eighteen (18) results from 2016 to 2020, these values would have to be met 89% of the time. It should also be noted that many northern communities have, as a limit, a value of 1,000,000 cfu/100 mL. If the intent is to have zero exceedances, either a higher limit will have to be considered, or a method of disinfection will be required.

Submitted by:



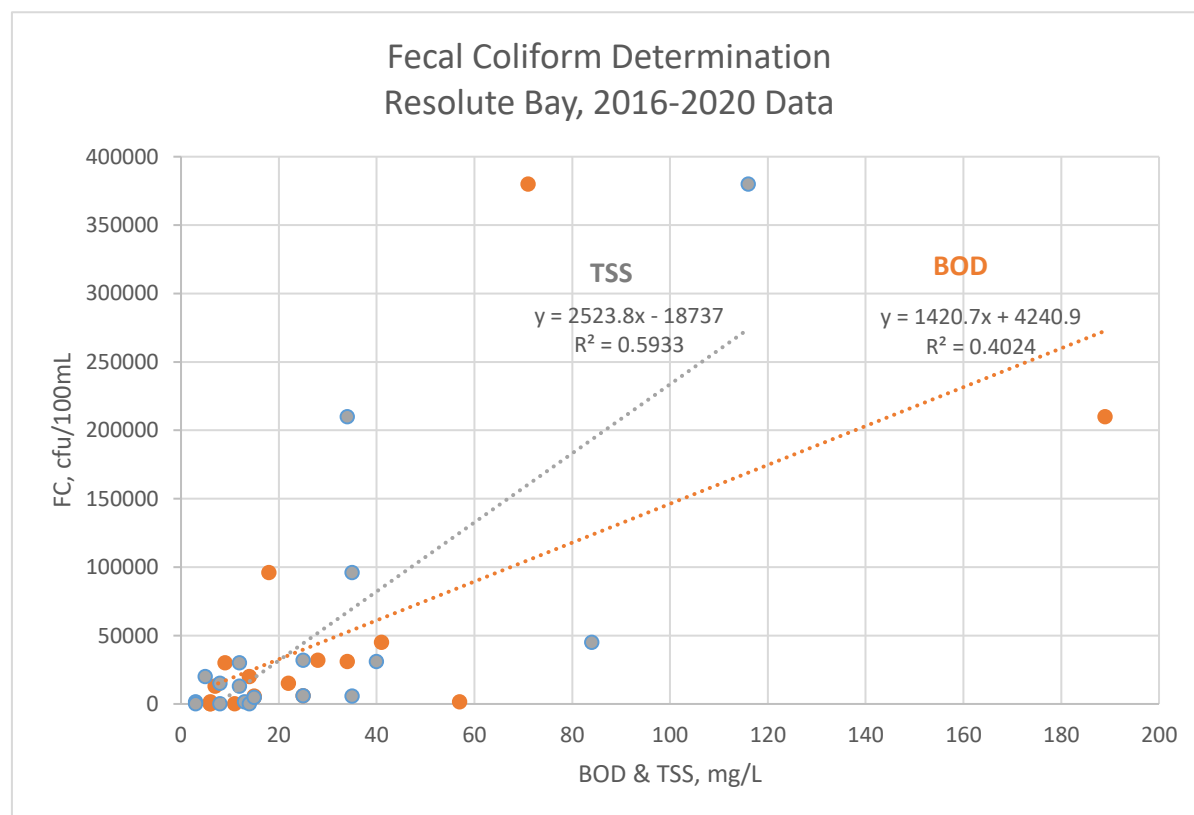
Tony Whalen, P.Eng.
Project Manager and Senior Water & Wastewater Engineer

Attachment: Fecal Coliform Determination Graph
Certificates of Analysis

EXP Services Inc.

Hamlet of Resolute Bay 2016 to 2020 Wastewater Testing Sewer Outfall

Date	BOD	TSS	Fecal Coliform
30-Jun-16	6	3	1,600
25-Apr-16	6	3	56
6-Nov-17	9	12	30,000
29-Oct-17	57	13	1,500
29-Aug-17	11	14	190
17-Aug-17	34	40	31,000
30-Jul-17	22	8	15,000
14-Jul-17	71	116	380,000
25-Jul-17	189	34	210,000
23-Sep-18	15	15	4,700
14-Aug-18	25	25	6,000
2-Jul-18	28	25	32,000
4-Jun-18	41	84	45,000
23-Sep-19	18	35	96,000
24-Jul-19	15	35	5,700
16-Jun-19	7	12	13,000
2-Jun-19	14	5	20,000
10-Jun-20	6	8	62



**Certificate of Analysis
Final Report**

REPORT No. B16-10695

Report To:

ATCO Structure & Logistics

PO Box 88, Hamlet of Resolute Bay

NU X0A 0V0 Canada

Attention:

Rick Gaulton

DATE SUBMITTED:

27/Apr/16

DATE REPORTED:

3/May/16

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Resolute Bay Waste Water

Client ID:	Sewer Outfall
Sample ID:	B16-10695-1
Date Collected:	25-Apr-16

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
BOD	mg/L	3	SM 5210B	28-Apr-16/O	6
Total Suspended Solids	mg/L	3	SM 2540D	29-Apr-16/O	3
Hardness (as CaCO3)	mg/L	1	SM 3120	28-Apr-16/O	173
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	27-Apr-16/O	114
Conductivity @25°C	µmho/cm	1	SM 2510B	28-Apr-16/O	566
pH @25°C	pH Units		SM 4500H	27-Apr-16/O	7.94
Nitrite (N)	mg/L	0.1	SM4110C	28-Apr-16/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	28-Apr-16/O	0.2
Chloride	mg/L	0.5	SM4110C	28-Apr-16/O	62.5
Sulphate	mg/L	1	SM4110C	28-Apr-16/O	75
Total Organic Carbon	mg/L	0.2	EPA 415.1	02-May-16/O	1.3
Ammonia (N)-Total	mg/L	0.01	MOEE 3364	03-May-16/O	0.07
Phenolics	mg/L	0.001	MOEE 3179	03-May-16/O	< 0.001
Aluminum	mg/L	0.01	SM 3120	28-Apr-16/O	0.03
Arsenic	mg/L	0.0005	EPA 200.8	28-Apr-16/O	0.0008
Calcium	mg/L	0.02	SM 3120	28-Apr-16/O	49
Cadmium	mg/L	0.005	SM 3120	28-Apr-16/O	< 0.005
Cobalt	mg/L	0.005	SM 3120	28-Apr-16/O	< 0.005
Copper	mg/L	0.002	SM 3120	28-Apr-16/O	0.013
Chromium	mg/L	0.002	SM 3120	28-Apr-16/O	< 0.002
Iron	mg/L	0.005	SM 3120	28-Apr-16/O	0.024
Lead	mg/L	0.02	SM 3120	28-Apr-16/O	< 0.02
Magnesium	mg/L	0.01	SM 3120	28-Apr-16/O	12.2
Manganese	mg/L	0.001	SM 3120	28-Apr-16/O	0.006
Mercury	mg/L	0.00002	SM 3112 B	29-Apr-16/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	28-Apr-16/O	< 0.01
Potassium	mg/L	0.1	SM 3120	28-Apr-16/O	3.8
Sodium	mg/L	0.2	SM 3120	28-Apr-16/O	40.6
Zinc	mg/L	0.005	SM 3120	28-Apr-16/O	0.023
Oil & Grease-Total	mg/L	1	SM 5520	02-May-16/K	2
Fecal Coliform	cfu/100mL	1	MOE E3371	27-Apr-16/O	56

**Certificate of Analysis
Final Report**

REPORT No. B16-18741

Report To:

ATCO Structure & Logistics

PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention:

Rick Gaulton

DATE SUBMITTED:

4/Jul/16

DATE REPORTED:

12/Jul/16

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Resolute Bay Waste Water

			Client ID:	Sewer Outfall	
			Sample ID:	Res. Bay	
			Date Collected:	B16-18741-1	
				30-Jun-16	
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
BOD	mg/L	3	SM 5210B	04-Jul-16/O	6
Total Suspended Solids	mg/L	3	SM 2540D	07-Jul-16/O	< 3
Hardness (as CaCO3)	mg/L	1	SM 3120	05-Jul-16/O	144
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	04-Jul-16/O	103
Conductivity @25°C	µmho/cm	1	SM 2510B	04-Jul-16/O	405
pH @25°C	pH Units		SM 4500H	04-Jul-16/O	7.95
Nitrite (N)	mg/L	0.1	SM4110C	05-Jul-16/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	05-Jul-16/O	0.3
Chloride	mg/L	0.5	SM4110C	05-Jul-16/O	36.8
Sulphate	mg/L	1	SM4110C	05-Jul-16/O	51
Total Organic Carbon	mg/L	0.2	EPA 415.1	07-Jul-16/O	0.9
Ammonia (N)-Total	mg/L	0.01	MOEE 3364	04-Jul-16/O	0.26
Phenolics	mg/L	0.001	MOEE 3179	07-Jul-16/O	< 0.001
Aluminum	mg/L	0.01	SM 3120	05-Jul-16/O	0.05
Arsenic	mg/L	0.0005	EPA 200.8	05-Jul-16/O	< 0.0005
Calcium	mg/L	0.02	SM 3120	05-Jul-16/O	42.2
Cadmium	mg/L	0.005	SM 3120	05-Jul-16/O	< 0.005
Cobalt	mg/L	0.005	SM 3120	05-Jul-16/O	< 0.005
Copper	mg/L	0.002	SM 3120	05-Jul-16/O	0.01
Chromium	mg/L	0.002	SM 3120	05-Jul-16/O	< 0.002
Iron	mg/L	0.005	SM 3120	05-Jul-16/O	0.051
Lead	mg/L	0.02	SM 3120	05-Jul-16/O	< 0.02
Magnesium	mg/L	0.01	SM 3120	05-Jul-16/O	9.46
Manganese	mg/L	0.001	SM 3120	05-Jul-16/O	0.003
Mercury	mg/L	0.00002	SM 3112 B	05-Jul-16/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	05-Jul-16/O	< 0.01
Potassium	mg/L	0.1	SM 3120	12-Jul-16/O	2.5
Sodium	mg/L	0.2	SM 3120	05-Jul-16/O	26.7
Zinc	mg/L	0.005	SM 3120	05-Jul-16/O	0.021
Oil & Grease-Total	mg/L	1	SM 5520	11-Jul-16/K	< 1.0
Fecal Coliform	cfu/100mL	1	MOE E3371	04-Jul-16/O	1600

**Certificate of Analysis
Final Report**

REPORT No. B17-17943

Report To:

ATCO Structure & Logistics
PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention: Rick Gaulton
DATE SUBMITTED: 28/Jun/17
DATE REPORTED: 12/Jul/17
SAMPLE MATRIX: Waste Water

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244
P.O. NUMBER:
WATERWORKS NO.:

Sewage Outfall

Client ID:	Sewage Out
Sample ID:	Fall
Date Collected:	B17-17943-1
	25-Jun-17

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
BOD	mg/L	3	SM 5210B	29-Jun-17/O	189
Total Suspended Solids	mg/L	3	SM 2540D	04-Jul-17/O	34
Hardness (as CaCO ₃)	mg/L	1	SM 3120	04-Jul-17/O	134
Conductivity @25°C	µmho/cm	1	SM 2510B	28-Jun-17/O	479
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	28-Jun-17/O	142
pH @25°C	pH Units		SM 4500H	28-Jun-17/O	7.85
Nitrite (N)	mg/L	0.1	SM4110C	28-Jun-17/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	28-Jun-17/O	< 0.1
Chloride	mg/L	0.5	SM4110C	28-Jun-17/O	21.2
Sulphate	mg/L	1	SM4110C	28-Jun-17/O	29
Total Organic Carbon	mg/L	0.2	EPA 415.1	29-Jun-17/O	12
Ammonia (N)-Total	mg/L	0.01	MOEE 3364	06-Jul-17/O	17.4
Phenolics	mg/L	0.001	MOEE 3179	29-Jun-17/O	0.009
Aluminum	mg/L	0.01	SM 3120	04-Jul-17/O	0.08
Arsenic	mg/L	0.0005	EPA 200.8	30-Jun-17/O	< 0.0005
Calcium	mg/L	0.02	SM 3120	04-Jul-17/O	39.3
Cadmium	mg/L	0.005	SM 3120	04-Jul-17/O	< 0.005
Cobalt	mg/L	0.005	SM 3120	04-Jul-17/O	< 0.005
Copper	mg/L	0.002	SM 3120	04-Jul-17/O	0.046
Chromium	mg/L	0.002	SM 3120	04-Jul-17/O	0.009
Iron	mg/L	0.005	SM 3120	04-Jul-17/O	0.166
Lead	mg/L	0.02	SM 3120	04-Jul-17/O	< 0.02
Magnesium	mg/L	0.01	SM 3120	04-Jul-17/O	8.73
Manganese	mg/L	0.001	SM 3120	04-Jul-17/O	0.01
Mercury	mg/L	0.00002	SM 3112B	05-Jul-17/R	< 0.00002
Nickel	mg/L	0.01	SM 3120	04-Jul-17/O	< 0.01
Potassium	mg/L	0.1	SM 3120	04-Jul-17/O	5.2
Sodium	mg/L	0.2	SM 3120	04-Jul-17/O	24.6
Zinc	mg/L	0.005	SM 3120	04-Jul-17/O	0.071
Benzene	µg/L	0.5	EPA 8260	04-Jul-17/O	< 0.5
Toluene	µg/L	0.5	EPA 8260	04-Jul-17/O	< 0.5
Ethylbenzene	µg/L	0.5	EPA 8260	04-Jul-17/O	< 0.5
Xylene, m,p-	µg/L	0.4	EPA 8260	04-Jul-17/O	< 0.4
Styrene	µg/L	0.5	EPA 8260	04-Jul-17/O	< 0.5
Xylene, o-	µg/L	0.1	EPA 8260	04-Jul-17/O	< 0.1
Dichloroethane-d4,1,2-(SS)	%		EPA 8260	04-Jul-17/O	102
Toluene-d8 (SS)	%		EPA 8260	04-Jul-17/O	98
Bromofluorobenzene,4(SS)	%		EPA 8260	04-Jul-17/O	98
Acenaphthene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Acenaphthylene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Anthracene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Benzo(a)anthracene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Benzo(a)pyrene	µg/L	0.01	EPA 8270	06-Jul-17/K	< 0.01
Benzo(b)fluoranthene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Benzo(b+k)fluoranthene	µg/L	0.1	EPA 8270	06-Jul-17/K	< 0.1
Benzo(g,h,i)perylene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Benzo(k)fluoranthene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Chrysene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Dibenzo(a,h)anthracene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Fluoranthene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Fluorene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Indeno(1,2,3-cd)pyrene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Methylnaphthalene,1-	µg/L	0.05	EPA 8270	06-Jul-17/K	0.11
Methylnaphthalene,2-	µg/L	0.05	EPA 8270	06-Jul-17/K	0.1
Methylnaphthalene 2-(1-)	µg/L	0.07	EPA 8270	06-Jul-17/K	0.21
Naphthalene	µg/L	0.05	EPA 8270	06-Jul-17/K	0.12
Phenanthrene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
Pyrene	µg/L	0.05	EPA 8270	06-Jul-17/K	< 0.05
2-Fluorobiphenyl (SS)	% rec.	10	EPA 8270	06-Jul-17/K	80
Terphenyl-d14 (SS)	% rec.	10	EPA 8270	06-Jul-17/K	99
Phosphorus-Total	mg/L	0.01	MOEE 3367	06-Jul-17/O	2.47
PHC F1 (C6-C10)	µg/L	20	MOE E3421	04-Jul-17/O	< 20
PHC F2 (>C10-C16)	µg/L	50	MOE E3421	04-Jul-17/K	< 50
PHC F3 (>C16-C34)	µg/L	400	MOE E3421	04-Jul-17/K	< 400
PHC F4 (>C34-C50)	µg/L	400	MOE E3421	04-Jul-17/K	< 400
Comment-purgeable	-	-	-	04-Jul-17/O	-
Comment-extractable	-	-	-	4-Jul-17	-
Oil & Grease-Total	mg/L	1	SM 5520	06-Jul-17/K	19.4
Fecal Coliform	cfu/100mL	1	MOE E3371	28-Jun-17/O	210000

**Certificate of Analysis
Final Report**

REPORT No. B17-20153

Report To:

ATCO Structure & Logistics

PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

18/Jul/17

DATE REPORTED:

24/Jul/17

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Sewage Outfall

Client ID:

Sewage Outfall

Sample ID:

B17-20153-1

Date Collected:

14-Jul-17

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Hardness (as CaCO ₃)	mg/L	1	SM 3120	20-Jul-17/O	166
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	18-Jul-17/O	131
pH @25°C	pH Units		SM 4500H	18-Jul-17/O	7.74
Conductivity @25°C	µmho/cm	1	SM 2510B	18-Jul-17/O	465
Total Suspended Solids	mg/L	3	SM 2540D	21-Jul-17/O	116
Chloride	mg/L	0.5	SM4110C	18-Jul-17/O	21.6
Nitrite (N)	mg/L	0.1	SM4110C	18-Jul-17/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	18-Jul-17/O	< 0.1
Sulphate	mg/L	1	SM4110C	18-Jul-17/O	38
Calcium	mg/L	0.02	SM 3120	20-Jul-17/O	49.7
Magnesium	mg/L	0.01	SM 3120	20-Jul-17/O	10.3
Sodium	mg/L	0.2	SM 3120	20-Jul-17/O	23.9
Potassium	mg/L	0.1	SM 3120	20-Jul-17/O	5.6
Aluminum	mg/L	0.01	SM 3120	20-Jul-17/O	0.07
Arsenic	mg/L	0.0005	EPA 200.8	18-Jul-17/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	20-Jul-17/O	< 0.005
Chromium	mg/L	0.002	SM 3120	20-Jul-17/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	20-Jul-17/O	< 0.005
Copper	mg/L	0.002	SM 3120	20-Jul-17/O	0.064
Iron	mg/L	0.005	SM 3120	20-Jul-17/O	0.102
Lead	mg/L	0.02	SM 3120	20-Jul-17/O	< 0.02
Manganese	mg/L	0.001	SM 3120	20-Jul-17/O	0.014
Mercury	mg/L	0.00002	SM 3112B	24-Jul-17/R	< 0.00002
Nickel	mg/L	0.01	SM 3120	20-Jul-17/O	< 0.01
Zinc	mg/L	0.005	SM 3120	20-Jul-17/O	0.13
Ammonia (N)-Total	mg/L	0.01	MOEE 3364	19-Jul-17/O	8.24
Phenolics	mg/L	0.001	MOEE 3179	24-Jul-17/O	0.004
BOD	mg/L	3	SM 5210B	19-Jul-17/O	71
Total Organic Carbon	mg/L	0.2	EPA 415.1	19-Jul-17/O	8.2
Oil & Grease-Total	mg/L	1	SM 5520	20-Jul-17/K	7.9
Fecal Coliform	cfu/100mL	1	MOE E3371	18-Jul-17/O	380000

**Certificate of Analysis
Final Report**

REPORT No. B17-22114

Report To:

ATCO Structure & Logistics Services Ltd

PO Box 88, Hamlet of Resolute Bay

NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

3/Aug/17

DATE REPORTED:

10/Aug/17

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Resolute Bay (Sewage Outfall)

Client ID:	Sewage Outfall
Sample ID:	B17-22114-1
Date Collected:	30-Jul-17

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
BOD	mg/L	3	SM 5210B	09-Aug-17/O	22
Hardness (as CaCO ₃)	mg/L	1	SM 3120	09-Aug-17/O	145
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	03-Aug-17/O	103
pH @25°C	pH Units		SM 4500H	03-Aug-17/O	7.52
Conductivity @25°C	µmho/cm	1	SM 2510B	03-Aug-17/O	362
Total Suspended Solids	mg/L	3	SM 2540D	09-Aug-17/O	8
Chloride	mg/L	0.5	SM4110C	03-Aug-17/O	16.3
Nitrite (N)	mg/L	0.1	SM4110C	03-Aug-17/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	03-Aug-17/O	< 0.1
Sulphate	mg/L	1	SM4110C	03-Aug-17/O	31
Ammonia (N)-Total	mg/L	0.01	MOEE 3364	04-Aug-17/O	1.67
Phenolics	mg/L	0.001	MOEE 3179	03-Aug-17/O	0.005
Potassium	mg/L	0.1	SM 3120	09-Aug-17/O	3.5
Aluminum	mg/L	0.01	SM 3120	09-Aug-17/O	0.06
Arsenic	mg/L	0.0005	EPA 200.8	04-Aug-17/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	09-Aug-17/O	< 0.005
Calcium	mg/L	0.02	SM 3120	09-Aug-17/O	42.2
Chromium	mg/L	0.002	SM 3120	09-Aug-17/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	09-Aug-17/O	< 0.005
Copper	mg/L	0.002	SM 3120	09-Aug-17/O	0.046
Iron	mg/L	0.005	SM 3120	09-Aug-17/O	0.118
Lead	mg/L	0.02	SM 3120	09-Aug-17/O	< 0.02
Magnesium	mg/L	0.01	SM 3120	09-Aug-17/O	9.67
Manganese	mg/L	0.001	SM 3120	09-Aug-17/O	0.012
Mercury	mg/L	0.00002	SM 3112 B	04-Aug-17/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	09-Aug-17/O	< 0.01
Sodium	mg/L	0.2	SM 3120	09-Aug-17/O	18.4
Zinc	mg/L	0.005	SM 3120	09-Aug-17/O	0.062
Total Organic Carbon	mg/L	0.2	EPA 415.1	03-Aug-17/O	5.2
Oil & Grease-Total	mg/L	1	SM 5520	08-Aug-17/K	12.6
Fecal Coliform	cfu/100mL	1	MOE E3371	03-Aug-17/O	15000

**Certificate of Analysis
Final Report**

REPORT No. B17-24658

Rev. 1

Report To:

ATCO Structure & Logistics Services Ltd

PO Box 88, Hamlet of Resolute Bay

NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

24/Aug/17

DATE REPORTED:

3/Oct/17

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Waste Water

Client ID:	Sewer Outfall
Sample ID:	B17-24658-1
Date Collected:	17-Aug-17

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Hardness (as CaCO ₃)	mg/L	1	SM 3120	25-Aug-17/O	145
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	25-Aug-17/O	108
pH @25°C	pH Units		SM 4500H	25-Aug-17/O	7.67
Conductivity @25°C	µmho/cm	1	SM 2510B	24-Aug-17/O	383
Total Suspended Solids	mg/L	3	SM 2540D	30-Aug-17/O	40
Chloride	mg/L	0.5	SM4110C	25-Aug-17/O	15.6
Nitrite (N)	mg/L	0.1	SM4110C	25-Aug-17/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	25-Aug-17/O	< 0.1
Sulphate	mg/L	1	SM4110C	25-Aug-17/O	32
Aluminum	mg/L	0.01	SM 3120	25-Aug-17/O	0.13
Arsenic	mg/L	0.0005	EPA 200.8	28-Aug-17/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	25-Aug-17/O	< 0.005
Calcium	mg/L	0.02	SM 3120	25-Aug-17/O	42.4
Chromium	mg/L	0.002	SM 3120	25-Aug-17/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	25-Aug-17/O	< 0.005
Copper	mg/L	0.002	SM 3120	25-Aug-17/O	0.058
Iron	mg/L	0.005	SM 3120	25-Aug-17/O	0.211
Lead	mg/L	0.02	SM 3120	25-Aug-17/O	< 0.02
Magnesium	mg/L	0.01	SM 3120	25-Aug-17/O	9.6
Manganese	mg/L	0.001	SM 3120	25-Aug-17/O	0.016
Mercury	mg/L	0.00002	SM 3112 B	25-Aug-17/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	25-Aug-17/O	0.01
Potassium	mg/L	0.1	SM 3120	03-Oct-17/O	3
Sodium	mg/L	0.2	SM 3120	25-Aug-17/O	19.3
Zinc	mg/L	0.005	SM 3120	25-Aug-17/O	0.16
Ammonia (N)-Total	mg/L	0.01	MOEE 3364	24-Aug-17/O	1.7
Phenolics	mg/L	0.001	MOEE 3179	25-Aug-17/O	0.002
BOD	mg/L	3	SM 5210B	25-Aug-17/O	34
Total Organic Carbon	mg/L	0.2	EPA 415.1	25-Aug-17/O	7.9
Oil & Grease-Total	mg/L	1	SM 5520	28-Aug-17/K	20.1
Fecal Coliform	cfu/100mL	1	MOE E3371	24-Aug-17/O	31000

**Certificate of Analysis
Final Report**

REPORT No. B17-31263

Report To:

ATCO Structure & Logistics Services Ltd

PO Box 88, Hamlet of Resolute Bay

NU X0A 0V0 Canada

Attention:

Rick Gaulton

DATE SUBMITTED: 17/Oct/17

DATE REPORTED: 25/Oct/17

SAMPLE MATRIX: Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Waste Water

Client ID:	Sewer Outfall
Sample ID:	B17-31263-1
Date Collected:	29-Aug-17

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
BOD	mg/L	3	SM 5210B	19-Oct-17/O	11
Total Suspended Solids	mg/L	3	SM 2540D	20-Oct-17/O	14
Hardness (as CaCO3)	mg/L	1	SM 3120	18-Oct-17/O	134
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	18-Oct-17/O	109
Conductivity @25°C	µmho/cm	1	SM 2510B	18-Oct-17/O	352
pH @25°C	pH Units		SM 4500H	18-Oct-17/O	7.7
Nitrite (N)	mg/L	0.1	SM4110C	23-Oct-17/O	0.3
Nitrate (N)	mg/L	0.1	SM4110C	23-Oct-17/O	0.4
Chloride	mg/L	0.5	SM4110C	23-Oct-17/O	15.2
Sulphate	mg/L	1	SM4110C	23-Oct-17/O	29
Total Organic Carbon	mg/L	0.2	EPA 415.1	18-Oct-17/O	4.1
Ammonia (N)-Total	mg/L	0.01	MOEE 3364	18-Oct-17/O	4.83
Phenolics	mg/L	0.001	MOEE 3179	19-Oct-17/O	0.002
Aluminum	mg/L	0.01	SM 3120	18-Oct-17/O	0.1
Arsenic	mg/L	0.0005	EPA 200.8	18-Oct-17/O	< 0.0005
Calcium	mg/L	0.02	SM 3120	18-Oct-17/O	40.1
Cadmium	mg/L	0.005	SM 3120	18-Oct-17/O	< 0.005
Cobalt	mg/L	0.005	SM 3120	18-Oct-17/O	< 0.005
Copper	mg/L	0.002	SM 3120	18-Oct-17/O	0.034
Chromium	mg/L	0.002	SM 3120	18-Oct-17/O	< 0.002
Iron	mg/L	0.005	SM 3120	18-Oct-17/O	0.064
Lead	mg/L	0.02	SM 3120	18-Oct-17/O	< 0.02
Magnesium	mg/L	0.02	SM 3120	18-Oct-17/O	8.32
Manganese	mg/L	0.001	SM 3120	18-Oct-17/O	0.018
Mercury	mg/L	0.00002	SM 3112 B	19-Oct-17/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	18-Oct-17/O	< 0.01
Potassium	mg/L	0.1	SM 3120	18-Oct-17/O	2.7
Sodium	mg/L	0.2	SM 3120	18-Oct-17/O	16.2
Zinc	mg/L	0.005	SM 3120	18-Oct-17/O	0.081
Oil & Grease-Total	mg/L	1	SM 5520	24-Oct-17/K	6.3
Fecal Coliform	cfu/100mL	1	MOE E3371	18-Oct-17/O	190

**Certificate of Analysis
Final Report**

REPORT No. B17-34252

Report To:

ATCO Structure & Logistics Services Ltd

PO Box 88, Hamlet of Resolute Bay

NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

10/Nov/17

DATE REPORTED:

23/Nov/17

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

Resolute Bay

P.O. NUMBER:

WATERWORKS NO.:

Client ID:	Sewer Outfall
Sample ID:	B17-34252-1
Date Collected:	29-Oct-17

Parameter	Units	M.D.L	Reference Method	Date/Site Analyzed	
Hardness (as CaCO ₃)	mg/L	1	SM 3120	20-Nov-17/O	139
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	17-Nov-17/O	134
pH @25°C	pH Units		SM 4500H	17-Nov-17/O	8.22
Conductivity @25°C	µmho/cm	1	SM 2510B	22-Nov-17/O	425
Total Suspended Solids	mg/L	3	SM 2540D	14-Nov-17/O	13
Chloride	mg/L	0.5	SM4110C	22-Nov-17/O	18.8
Nitrite (N)	mg/L	0.1	SM4110C	22-Nov-17/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	22-Nov-17/O	< 0.1
Sulphate	mg/L	1	SM4110C	22-Nov-17/O	29
Aluminum	mg/L	0.01	SM 3120	20-Nov-17/O	0.06
Arsenic	mg/L	0.0005	EPA 200.8	17-Nov-17/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	20-Nov-17/O	< 0.005
Calcium	mg/L	0.02	SM 3120	20-Nov-17/O	41.3
Chromium	mg/L	0.002	SM 3120	20-Nov-17/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	20-Nov-17/O	< 0.005
Copper	mg/L	0.002	SM 3120	20-Nov-17/O	0.043
Iron	mg/L	0.005	SM 3120	20-Nov-17/O	0.057
Lead	mg/L	0.02	SM 3120	20-Nov-17/O	< 0.02
Magnesium	mg/L	0.02	SM 3120	20-Nov-17/O	8.67
Manganese	mg/L	0.001	SM 3120	20-Nov-17/O	0.01
Mercury	mg/L	0.00002	SM 3112 B	15-Nov-17/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	20-Nov-17/O	< 0.01
Potassium	mg/L	0.1	SM 3120	20-Nov-17/O	3.5
Sodium	mg/L	0.2	SM 3120	20-Nov-17/O	18.5
Zinc	mg/L	0.005	SM 3120	20-Nov-17/O	0.073
Ammonia (N)-Total	mg/L	0.01	MOEE 3364	13-Nov-17/O	14.8
Phenolics	mg/L	0.001	MOEE 3179	15-Nov-17/O	0.005
BOD	mg/L	3	SM 5210B	10-Nov-17/O	57
Total Organic Carbon	mg/L	0.2	EPA 415.1	15-Nov-17/O	4.9
Oil & Grease-Total	mg/L	1	SM 5520	14-Nov-17/K	5.9
Fecal Coliform	cfu/100mL	1	MOE E3371	10-Nov-17/O	1500

**Certificate of Analysis
Final Report**

REPORT No. B17-34253

Report To:

ATCO Structure & Logistics Services Ltd

PO Box 88, Hamlet of Resolute Bay

NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

10/Nov/17

DATE REPORTED:

23/Nov/17

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

Resolute Bay

P.O. NUMBER:

WATERWORKS NO.:

			Client ID:	Sewer Outfall	
			Sample ID:	B17-34253-1	
			Date Collected:	06-Nov-17	
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Hardness (as CaCO3)	mg/L	1	SM 3120	20-Nov-17/O	2100
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	20-Nov-17/O	100
pH @25°C	pH Units		SM 4500H	20-Nov-17/O	7.72
Conductivity @25°C	µmho/cm	1	SM 2510B	21-Nov-17/O	10400
Total Suspended Solids	mg/L	3	SM 2540D	14-Nov-17/O	12
Chloride	mg/L	0.5	SM4110C	22-Nov-17/O	2580
Nitrite (N)	mg/L	0.1	SM4110C	22-Nov-17/O	< 3
Nitrate (N)	mg/L	0.1	SM4110C	22-Nov-17/O	< 3
Sulphate	mg/L	1	SM4110C	22-Nov-17/O	338
Aluminum	mg/L	0.01	SM 3120	20-Nov-17/O	0.1
Arsenic	mg/L	0.0005	EPA 200.8	17-Nov-17/O	0.0241
Cadmium	mg/L	0.005	SM 3120	20-Nov-17/O	< 0.005
Calcium	mg/L	0.02	SM 3120	20-Nov-17/O	164
Chromium	mg/L	0.002	SM 3120	20-Nov-17/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	20-Nov-17/O	< 0.005
Copper	mg/L	0.002	SM 3120	20-Nov-17/O	0.018
Iron	mg/L	0.005	SM 3120	20-Nov-17/O	0.066
Lead	mg/L	0.02	SM 3120	20-Nov-17/O	< 0.02
Magnesium	mg/L	0.02	SM 3120	20-Nov-17/O	412
Manganese	mg/L	0.001	SM 3120	20-Nov-17/O	0.01
Mercury	mg/L	0.00002	SM 3112 B	15-Nov-17/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	20-Nov-17/O	< 0.01
Potassium	mg/L	0.1	SM 3120	20-Nov-17/O	135
Sodium	mg/L	0.2	SM 3120	21-Nov-17/O	3730
Zinc	mg/L	0.005	SM 3120	20-Nov-17/O	0.065
Ammonia (N)-Total	mg/L	0.01	MOEE 3364	13-Nov-17/O	0.91
Phenolics	mg/L	0.001	MOEE 3179	15-Nov-17/O	< 0.001
BOD	mg/L	3	SM 5210B	10-Nov-17/O	9
Total Organic Carbon	mg/L	0.2	EPA 415.1	15-Nov-17/O	0.6
Oil & Grease-Total	mg/L	1	SM 5520	14-Nov-17/K	< 1.0
Fecal Coliform	cfu/100mL	1	MOE E3371	10-Nov-17/O	30000

**Certificate of Analysis
Final Report**

REPORT No. B18-16037

Report To:

ATCO Structure & Logistics Services Ltd
PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

7/Jun/18

DATE REPORTED:

14/Jun/18

SAMPLE MATRIX:

Waste Water

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

JOB/PROJECT NO.:

Resolute Bay (Sewage Outfall)

P.O. NUMBER:

WATERWORKS NO.:

			Client ID:	Sewer Outfall	
			Sample ID:	B18-16037-1	
			Date Collected:	04-Jun-18	
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Hardness (as CaCO3)	mg/L	1	SM 3120	14-Jun-18/O	164
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	08-Jun-18/O	121
pH @25°C	pH Units		SM 4500H	08-Jun-18/O	7.89
Conductivity @25°C	µmho/cm	1	SM 2510B	08-Jun-18/O	396
Total Suspended Solids	mg/L	3	SM 2540D	08-Jun-18/O	84
Chloride	mg/L	0.5	SM4110C	07-Jun-18/O	24.6
Nitrite (N)	mg/L	0.1	SM4110C	07-Jun-18/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	07-Jun-18/O	0.2
Sulphate	mg/L	1	SM4110C	07-Jun-18/O	42
Aluminum	mg/L	0.01	SM 3120	14-Jun-18/O	0.13
Arsenic	mg/L	0.0005	EPA 200.8	07-Jun-18/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	14-Jun-18/O	< 0.005
Calcium	mg/L	0.02	SM 3120	14-Jun-18/O	49.2
Chromium	mg/L	0.002	SM 3120	14-Jun-18/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	14-Jun-18/O	< 0.005
Copper	mg/L	0.002	SM 3120	14-Jun-18/O	0.066
Iron	mg/L	0.005	SM 3120	14-Jun-18/O	0.173
Lead	mg/L	0.02	SM 3120	14-Jun-18/O	< 0.02
Magnesium	mg/L	0.02	SM 3120	14-Jun-18/O	9.94
Manganese	mg/L	0.001	SM 3120	14-Jun-18/O	0.011
Mercury	mg/L	0.00002	SM 3112 B	14-Jun-18/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	14-Jun-18/O	< 0.01
Potassium	mg/L	0.1	SM 3120	14-Jun-18/O	3.3
Sodium	mg/L	0.2	SM 3120	14-Jun-18/O	17.4
Zinc	mg/L	0.005	SM 3120	14-Jun-18/O	0.069
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	12-Jun-18/K	1.13
Phenolics	mg/L	0.001	MOEE 3179	08-Jun-18/O	0.004
BOD	mg/L	3	SM 5210B	07-Jun-18/O	41
Total Organic Carbon	mg/L	0.2	EPA 415.1	11-Jun-18/O	7.2
Oil & Grease-Total	mg/L	1	SM 5520	12-Jun-18/K	16.7
Fecal Coliform	cfu/100mL	1	MOE E3371	07-Jun-18/O	45000

**Certificate of Analysis
Final Report**

REPORT No. B18-19495

Report To:

ATCO Structure & Logistics Services Ltd
PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

5/Jul/18

DATE REPORTED:

12/Jul/18

SAMPLE MATRIX:

Waste Water

Caduceon Environmental Laboratories

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

JOB/PROJECT NO.:

Resolute Bay (Sewage Outfall)

P.O. NUMBER:

WATERWORKS NO.:

Client ID:	Sewer Outfall
Sample ID:	B18-19495-1
Date Collected:	02-Jul-18

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Hardness (as CaCO ₃)	mg/L	1	SM 3120	06-Jul-18/O	136
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	06-Jul-18/O	100
pH @25°C	pH Units		SM 4500H	06-Jul-18/O	7.56
Conductivity @25°C	µmho/cm	1	SM 2510B	06-Jul-18/O	322
Total Suspended Solids	mg/L	3	SM 2540D	06-Jul-18/O	25
Chloride	mg/L	0.5	SM4110C	11-Jul-18/O	22.6
Nitrite (N)	mg/L	0.1	SM4110C	11-Jul-18/O	0.2
Nitrate (N)	mg/L	0.1	SM4110C	11-Jul-18/O	< 0.1
Sulphate	mg/L	1	SM4110C	11-Jul-18/O	33
Aluminum	mg/L	0.01	SM 3120	06-Jul-18/O	0.04
Arsenic	mg/L	0.0001	EPA 200.8	06-Jul-18/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	06-Jul-18/O	< 0.005
Calcium	mg/L	0.02	SM 3120	06-Jul-18/O	40.6
Chromium	mg/L	0.002	SM 3120	06-Jul-18/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	06-Jul-18/O	< 0.005
Copper	mg/L	0.002	SM 3120	06-Jul-18/O	0.026
Iron	mg/L	0.005	SM 3120	06-Jul-18/O	0.063
Lead	mg/L	0.02	SM 3120	06-Jul-18/O	< 0.02
Magnesium	mg/L	0.02	SM 3120	06-Jul-18/O	8.36
Manganese	mg/L	0.001	SM 3120	06-Jul-18/O	0.024
Mercury	mg/L	0.00002	SM 3112 B	09-Jul-18/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	06-Jul-18/O	< 0.01
Potassium	mg/L	0.1	SM 3120	06-Jul-18/O	2.8
Sodium	mg/L	0.2	SM 3120	06-Jul-18/O	20
Zinc	mg/L	0.005	SM 3120	06-Jul-18/O	0.092
Ammonia (N)-Total	mg/L	0.01	SM4500-NH ₃ -H	09-Jul-18/K	1.67
Phenolics	mg/L	0.001	MOEE 3179	06-Jul-18/O	< 0.001
BOD	mg/L	3	SM 5210B	05-Jul-18/O	28
Total Organic Carbon	mg/L	0.2	EPA 415.1	09-Jul-18/O	4.3
Oil & Grease-Total	mg/L	1	SM 5520	09-Jul-18/K	4.9
Fecal Coliform	cfu/100mL	1	MOE E3371	05-Jul-18/O	32000

**Certificate of Analysis
Final Report**

REPORT No. B18-25321

Report To:

ATCO Structure & Logistics Services Ltd
PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

23/Aug/18

DATE REPORTED:

30/Aug/18

SAMPLE MATRIX:

Waste Water

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244
JOB/PROJECT NO.:
P.O. NUMBER:
WATERWORKS NO.:

Resolute Bay (Sewage Outfall)

Client ID:	Sewer Outfall
Sample ID:	B18-25321-1
Date Collected:	14-Aug-18

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Total Suspended Solids	mg/L	3	SM 2540D	24-Aug-18/O	25
BOD	mg/L	3	SM 5210B	24-Aug-18/O	25
Nitrite (N)	mg/L	0.1	SM4110C	23-Aug-18/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	23-Aug-18/O	< 0.1
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	28-Aug-18/K	2.18
Chloride	mg/L	0.5	SM4110C	23-Aug-18/O	24.6
Conductivity @25°C	µmho/cm	1	SM 2510B	23-Aug-18/O	399
Sulphate	mg/L	1	SM4110C	23-Aug-18/O	34
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	23-Aug-18/O	123
Aluminum	mg/L	0.01	SM 3120	28-Aug-18/O	0.06
Arsenic	mg/L	0.0005	EPA 200.8	23-Aug-18/O	< 0.0005
Calcium	mg/L	0.02	SM 3120	28-Aug-18/O	33.9
Cadmium	mg/L	0.005	SM 3120	28-Aug-18/O	< 0.005
Cobalt	mg/L	0.005	SM 3120	28-Aug-18/O	0.009
Copper	mg/L	0.002	SM 3120	28-Aug-18/O	0.04
Chromium	mg/L	0.002	SM 3120	28-Aug-18/O	< 0.002
Iron	mg/L	0.005	SM 3120	28-Aug-18/O	0.088
Lead	mg/L	0.02	SM 3120	28-Aug-18/O	< 0.02
Potassium	mg/L	0.1	SM 3120	28-Aug-18/O	4.7
Magnesium	mg/L	0.02	SM 3120	28-Aug-18/O	7.42
Manganese	mg/L	0.001	SM 3120	28-Aug-18/O	0.006
Mercury	mg/L	0.00002	SM 3112 B	30-Aug-18/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	28-Aug-18/O	< 0.01
Sodium	mg/L	0.2	SM 3120	28-Aug-18/O	15.6
Zinc	mg/L	0.005	SM 3120	28-Aug-18/O	0.068
Hardness (as CaCO3)	mg/L	1	SM 3120	28-Aug-18/O	115
Total Organic Carbon	mg/L	0.2	EPA 415.1	23-Aug-18/O	2.5
pH @25°C	pH Units		SM 4500H	23-Aug-18/O	7.67
Oil & Grease-Total	mg/L	1	SM 5520	27-Aug-18/K	3.6
Phenolics	mg/L	0.002	MOEE 3179	27-Aug-18/K	0.019
Fecal Coliform	cfu/100mL	1	MOE E3371	23-Aug-18/O	6000

**Certificate of Analysis
Final Report**

REPORT No. B18-30656

Report To:

ATCO Structure & Logistics Services Ltd
PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

4/Oct/18

DATE REPORTED:

18/Oct/18

SAMPLE MATRIX:

Waste Water

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244
JOB/PROJECT NO.:
P.O. NUMBER:
WATERWORKS NO.:

Resolute Bay (Sewage Outfall)

Client ID:	Sewer Outfall
Sample ID:	B18-30656-1
Date Collected:	23-Sep-18

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Hardness (as CaCO ₃)	mg/L	1	SM 3120	11-Oct-18/O	139
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	09-Oct-18/O	130
pH @25°C	pH Units		SM 4500H	09-Oct-18/O	7.43
Conductivity @25°C	µmho/cm	1	SM 2510B	09-Oct-18/O	432
Total Suspended Solids	mg/L	3	SM2540D	10-Oct-18/K	15
Chloride	mg/L	0.5	SM4110C	10-Oct-18/O	23.1
Nitrite (N)	mg/L	0.1	SM4110C	10-Oct-18/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	10-Oct-18/O	< 0.1
Sulphate	mg/L	1	SM4110C	10-Oct-18/O	34
Calcium	mg/L	0.02	SM 3120	11-Oct-18/O	40.9
Magnesium	mg/L	0.02	SM 3120	11-Oct-18/O	8.83
Sodium	mg/L	0.2	SM 3120	11-Oct-18/O	19.5
Potassium	mg/L	0.1	SM 3120	11-Oct-18/O	5
Aluminum	mg/L	0.01	SM 3120	11-Oct-18/O	0.21
Arsenic	mg/L	0.0005	EPA 200.8	10-Oct-18/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	11-Oct-18/O	< 0.005
Chromium	mg/L	0.002	SM 3120	11-Oct-18/O	0.002
Cobalt	mg/L	0.005	SM 3120	11-Oct-18/O	< 0.005
Copper	mg/L	0.002	SM 3120	11-Oct-18/O	0.051
Iron	mg/L	0.005	SM 3120	11-Oct-18/O	0.318
Lead	mg/L	0.02	SM 3120	11-Oct-18/O	< 0.02
Manganese	mg/L	0.001	SM 3120	11-Oct-18/O	0.012
Mercury	mg/L	0.00002	SM 3112 B	12-Oct-18/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	11-Oct-18/O	< 0.01
Zinc	mg/L	0.005	SM 3120	11-Oct-18/O	0.072
Ammonia (N)-Total	mg/L	0.01	SM4500-NH ₃ -H	10-Oct-18/K	2.48
Phenolics	mg/L	0.002	MOEE 3179	11-Oct-18/K	0.015
BOD	mg/L	3	SM 5210B	10-Oct-18/O	15
Total Organic Carbon	mg/L	0.2	EPA 415.1	09-Oct-18/O	5.7
Oil & Grease-Total	mg/L	1	SM 5520	15-Oct-18/K	6.5
Fecal Coliform	cfu/100mL	1	MOE E3371	05-Oct-18/O	4700

**Certificate of Analysis
Final Report**

REPORT No. B19-16476

Report To:

ATCO Structure & Logistics Services Ltd
PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

6/Jun/19

DATE REPORTED:

20/Jun/19

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Resolute Bay (Sewage Outfall)

Client ID:	Sewer Outfall
Sample ID:	B19-16476-1
Date Collected:	02-Jun-19

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Hardness (as CaCO ₃)	mg/L	1	SM 3120	17-Jun-19/O	136
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	07-Jun-19/O	104
pH @25°C	pH Units		SM 4500H	07-Jun-19/O	7.68
Conductivity @25°C	µmho/cm	1	SM 2510B	07-Jun-19/O	352
Total Suspended Solids	mg/L	3	SM2540D	17-Jun-19/K	5
Chloride	mg/L	0.5	SM4110C	19-Jun-19/O	19.4
Nitrite (N)	mg/L	0.1	SM4110C	19-Jun-19/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	19-Jun-19/O	0.2
Sulphate	mg/L	1	SM4110C	19-Jun-19/O	35
Aluminum	mg/L	0.01	SM 3120	17-Jun-19/O	0.03
Arsenic	mg/L	0.0005	EPA 200.8	12-Jun-19/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	17-Jun-19/O	< 0.005
Calcium	mg/L	0.02	SM 3120	17-Jun-19/O	40.7
Chromium	mg/L	0.002	SM 3120	17-Jun-19/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	17-Jun-19/O	< 0.005
Copper	mg/L	0.002	SM 3120	17-Jun-19/O	0.009
Iron	mg/L	0.005	SM 3120	17-Jun-19/O	0.025
Lead	mg/L	0.02	SM 3120	17-Jun-19/O	< 0.02
Magnesium	mg/L	0.02	SM 3120	17-Jun-19/O	8.29
Manganese	mg/L	0.001	SM 3120	17-Jun-19/O	0.003
Mercury	mg/L	0.00002	SM 3112 B	14-Jun-19/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	17-Jun-19/O	< 0.01
Potassium	mg/L	0.1	SM 3120	17-Jun-19/O	1.8
Sodium	mg/L	0.2	SM 3120	17-Jun-19/O	15.6
Zinc	mg/L	0.005	SM 3120	17-Jun-19/O	0.016
Ammonia (N)-Total	mg/L	0.01	SM4500-NH ₃ -H	14-Jun-19/K	0.54
Phenolics	mg/L	0.002	MOEE 3179	13-Jun-19/K	< 0.002
BOD(5 day)	mg/L	3	SM 5210B	07-Jun-19/K	14
Total Organic Carbon	mg/L	0.2	EPA 415.1	14-Jun-19/O	6.3
Oil & Grease-Total	mg/L	1	SM 5520	11-Jun-19/K	4
Fecal Coliform	cfu/100mL	1	MOE E3371	06-Jun-19/O	20000

**Certificate of Analysis
Final Report**

REPORT No. B19-18319

Report To:

ATCO Structure & Logistics Services Ltd

PO Box 88, Hamlet of Resolute Bay

NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

20/Jun/19

DATE REPORTED:

9/Jul/19

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Resolute Bay (Sewage Outfall)

Client ID:					Sewer Outfall	Sewage
Sample ID:					B19-18319-1	B19-18319-2
Date Collected:					16-Jun-19	16-Jun-19
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed		
Hardness (as CaCO ₃)	mg/L	1	SM 3120	28-Jun-19/O	168	136
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	20-Jun-19/O	105	173
pH @25°C	pH Units		SM 4500H	20-Jun-19/O	7.71	7.44
Conductivity @25°C	µmho/cm	1	SM 2510B	20-Jun-19/O	341	574
Total Suspended Solids	mg/L	3	SM2540D	26-Jun-19/K	12	95
Chloride	mg/L	0.5	SM4110C	06-Jul-19/O	20.8	49.1
Nitrite (N)	mg/L	0.1	SM4110C	06-Jul-19/O	< 0.1	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	06-Jul-19/O	0.3	< 0.1
Sulphate	mg/L	1	SM4110C	06-Jul-19/O	34	21
Aluminum	mg/L	0.01	SM 3120	28-Jun-19/O	0.09	0.39
Arsenic	mg/L	0.0005	EPA 200.8	24-Jun-19/O	< 0.0005	0.0006
Cadmium	mg/L	0.005	SM 3120	28-Jun-19/O	< 0.005	< 0.005
Calcium	mg/L	0.02	SM 3120	28-Jun-19/O	50.6	39.9
Chromium	mg/L	0.002	SM 3120	28-Jun-19/O	0.005	0.006
Cobalt	mg/L	0.005	SM 3120	28-Jun-19/O	< 0.005	< 0.005
Copper	mg/L	0.002	SM 3120	28-Jun-19/O	0.018	0.069
Iron	mg/L	0.005	SM 3120	28-Jun-19/O	0.11	0.947
Lead	mg/L	0.02	SM 3120	28-Jun-19/O	< 0.02	< 0.02
Magnesium	mg/L	0.02	SM 3120	28-Jun-19/O	10.2	8.72
Manganese	mg/L	0.001	SM 3120	28-Jun-19/O	0.016	0.064
Mercury	mg/L	0.00002	SM 3112 B	27-Jun-19/O	< 0.00002	< 0.00002
Nickel	mg/L	0.01	SM 3120	28-Jun-19/O	0.06	0.04
Potassium	mg/L	0.1	SM 3120	28-Jun-19/O	3.2	11.5
Sodium	mg/L	0.2	SM 3120	28-Jun-19/O	16.4	39.5
Zinc	mg/L	0.005	SM 3120	28-Jun-19/O	0.839	0.617
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	27-Jun-19/K	0.75	30.2
Phenolics	mg/L	0.002	MOEE 3179	08-Jul-19/K	< 0.002	0.06
BOD(5 day)	mg/L	3	SM 5210B	21-Jun-19/K	7	130
Total Organic Carbon	mg/L	0.2	EPA 415.1	27-Jun-19/O	16	33.5
Oil & Grease-Total	mg/L	1	SM 5520	24-Jun-19/K	2.1	34.2
Fecal Coliform	cfu/100mL	1	MOE E3371	20-Jun-19/O	13000	1600000

**Certificate of Analysis
Final Report**

REPORT No. B19-23121

Report To:

ATCO Structure & Logistics Services Ltd
PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

29/Jul/19

DATE REPORTED:

6/Aug/19

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Resolute Bay (Sewage Outfall)

Client ID:	Sewer Outfall
Sample ID:	B19-23121-1
Date Collected:	24-Jul-19

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Hardness (as CaCO ₃)	mg/L	1	SM 3120	02-Aug-19/O	114
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	29-Jul-19/O	111
pH @25°C	pH Units		SM 4500H	29-Jul-19/O	7.67
Conductivity @25°C	µmho/cm	1	SM 2510B	29-Jul-19/O	352
Total Suspended Solids	mg/L	3	SM2540D	30-Jul-19/K	35
Chloride	mg/L	0.5	SM4110C	30-Jul-19/O	18.3
Nitrite (N)	mg/L	0.1	SM4110C	30-Jul-19/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	30-Jul-19/O	< 0.1
Sulphate	mg/L	1	SM4110C	30-Jul-19/O	31
Aluminum	mg/L	0.01	SM 3120	02-Aug-19/O	0.04
Arsenic	mg/L	0.0005	EPA 200.8	31-Jul-19/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	02-Aug-19/O	< 0.005
Calcium	mg/L	0.02	SM 3120	02-Aug-19/O	34.5
Chromium	mg/L	0.002	SM 3120	02-Aug-19/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	02-Aug-19/O	< 0.005
Copper	mg/L	0.002	SM 3120	02-Aug-19/O	0.037
Iron	mg/L	0.005	SM 3120	02-Aug-19/O	0.058
Lead	mg/L	0.02	SM 3120	02-Aug-19/O	< 0.02
Magnesium	mg/L	0.02	SM 3120	02-Aug-19/O	6.8
Manganese	mg/L	0.001	SM 3120	02-Aug-19/O	0.004
Mercury	mg/L	0.00002	SM 3112 B	02-Aug-19/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	02-Aug-19/O	< 0.01
Potassium	mg/L	0.1	SM 3120	02-Aug-19/O	2.8
Sodium	mg/L	0.2	SM 3120	02-Aug-19/O	13.7
Zinc	mg/L	0.005	SM 3120	02-Aug-19/O	0.05
Ammonia (N)-Total	mg/L	0.01	SM4500-NH ₃ -H	31-Jul-19/K	2.28
Phenolics	mg/L	0.002	MOEE 3179	01-Aug-19/K	0.004
BOD(5 day)	mg/L	3	SM 5210B	29-Jul-19/K	15
Total Organic Carbon	mg/L	0.2	EPA 415.1	30-Jul-19/O	4.6
Oil & Grease-Total	mg/L	1	SM 5520	02-Aug-19/K	5
Fecal Coliform	cfu/100mL	1	MOE E3371	29-Jul-19/O	5700

**Certificate of Analysis
Final Report**

REPORT No. B19-30843

Report To:

ATCO Frontec Ltd

PO Box 88, Hamlet of Resolute Bay

NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

26/Sep/19

DATE REPORTED:

7/Oct/19

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Resolute Bay (Sewage Outfall)

Client ID:	Sewer Outfall
Sample ID:	B19-30843-1
Date Collected:	23-Sep-19

Parameter	Units	M.D.L	Reference Method	Date/Site Analyzed	
Hardness (as CaCO ₃)	mg/L	1	SM 3120	04-Oct-19/O	113
Alkalinity(CaCO ₃) to pH4.5	mg/L	5	SM 2320B	26-Sep-19/O	91
pH @25°C	pH Units		SM 4500H	26-Sep-19/O	7.64
Conductivity @25°C	µmho/cm	1	SM 2510B	26-Sep-19/O	311
Total Suspended Solids	mg/L	3	SM2540D	01-Oct-19/K	35
Chloride	mg/L	0.5	SM4110C	02-Oct-19/O	21.6
Nitrite (N)	mg/L	0.1	SM4110C	02-Oct-19/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	02-Oct-19/O	< 0.1
Sulphate	mg/L	1	SM4110C	02-Oct-19/O	27
Aluminum	mg/L	0.01	SM 3120	04-Oct-19/O	0.02
Arsenic	mg/L	0.0005	EPA 200.8	30-Sep-19/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	04-Oct-19/O	< 0.005
Calcium	mg/L	0.02	SM 3120	04-Oct-19/O	34.5
Chromium	mg/L	0.002	SM 3120	04-Oct-19/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	04-Oct-19/O	< 0.005
Copper	mg/L	0.002	SM 3120	04-Oct-19/O	0.018
Iron	mg/L	0.005	SM 3120	04-Oct-19/O	0.075
Lead	mg/L	0.02	SM 3120	04-Oct-19/O	< 0.02
Magnesium	mg/L	0.02	SM 3120	04-Oct-19/O	6.53
Manganese	mg/L	0.001	SM 3120	04-Oct-19/O	0.003
Mercury	mg/L	0.00002	SM 3112 B	02-Oct-19/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	04-Oct-19/O	< 0.01
Potassium	mg/L	0.1	SM 3120	04-Oct-19/O	1.5
Sodium	mg/L	0.2	SM 3120	04-Oct-19/O	12.1
Zinc	mg/L	0.005	SM 3120	04-Oct-19/O	0.088
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	30-Sep-19/K	0.61
Phenolics	mg/L	0.001	MOEE 3179	30-Sep-19/K	< 0.001
BOD(5 day)	mg/L	3	SM 5210B	27-Sep-19/K	18
Total Organic Carbon	mg/L	0.2	EPA 415.1	02-Oct-19/O	3.2
Oil & Grease-Total	mg/L	1	SM 5520	03-Oct-19/K	2.7
Fecal Coliform	cfu/100mL	1	MOE E3371	26-Sep-19/O	96000

**Certificate of Analysis
Final Report**

REPORT No. B20-16818

Report To:

ATCO Frontec Ltd

PO Box 88, Hamlet of Resolute Bay
NU X0A 0V0 Canada

Attention:

Philip Chubbs

DATE SUBMITTED:

17/Jun/20

DATE REPORTED:

24/Jun/20

SAMPLE MATRIX:

Waste Water

2378 Holly Lane

Ottawa Ontario K1V 7P1

Tel: 613-526-0123

Fax: 613-526-1244

P.O. NUMBER:

WATERWORKS NO.:

Resolute Bay (Sewage Outfall)

Client ID:	Sewer Outfall
Sample ID:	B20-16818-1
Date Collected:	10-Jun-20

Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed	
Hardness (as CaCO3)	mg/L	1	SM 3120	19-Jun-20/O	128
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	17-Jun-20/O	103
pH @25°C	pH Units		SM 4500H	17-Jun-20/O	7.87
Conductivity @25°C	µmho/cm	1	SM 2510B	17-Jun-20/O	340
Total Suspended Solids	mg/L	3	SM2540D	18-Jun-20/K	8
Chloride	mg/L	0.5	SM4110C	19-Jun-20/O	19.7
Nitrite (N)	mg/L	0.1	SM4110C	19-Jun-20/O	< 0.1
Nitrate (N)	mg/L	0.1	SM4110C	19-Jun-20/O	0.2
Sulphate	mg/L	1	SM4110C	19-Jun-20/O	31
Aluminum	mg/L	0.01	SM 3120	19-Jun-20/O	0.02
Arsenic	mg/L	0.0005	EPA 200.8	19-Jun-20/O	< 0.0005
Cadmium	mg/L	0.005	SM 3120	19-Jun-20/O	< 0.005
Calcium	mg/L	0.02	SM 3120	19-Jun-20/O	39.4
Chromium	mg/L	0.002	SM 3120	19-Jun-20/O	< 0.002
Cobalt	mg/L	0.005	SM 3120	19-Jun-20/O	< 0.005
Copper	mg/L	0.002	SM 3120	19-Jun-20/O	0.009
Iron	mg/L	0.005	SM 3120	19-Jun-20/O	0.013
Lead	mg/L	0.02	SM 3120	19-Jun-20/O	< 0.02
Magnesium	mg/L	0.02	SM 3120	19-Jun-20/O	7.28
Manganese	mg/L	0.001	SM 3120	19-Jun-20/O	0.001
Mercury	mg/L	0.00002	SM 3112 B	18-Jun-20/O	< 0.00002
Nickel	mg/L	0.01	SM 3120	19-Jun-20/O	< 0.01
Potassium	mg/L	0.1	SM 3120	19-Jun-20/O	1.5
Sodium	mg/L	0.2	SM 3120	19-Jun-20/O	12
Zinc	mg/L	0.005	SM 3120	19-Jun-20/O	0.01
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	19-Jun-20/K	0.45
Phenolics	mg/L	0.002	MOEE 3179	18-Jun-20/K	< 0.002
BOD(5 day)	mg/L	3	SM 5210B	18-Jun-20/K	6
Total Organic Carbon	mg/L	0.2	EPA 415.2	18-Jun-20/O	2.1
Oil & Grease-Total	mg/L	1	SM 5520	23-Jun-20/K	< 1.0
Fecal Coliform	cfu/100mL	1	MOE E3371	17-Jun-20/O	62