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April 20, 2018

Project #
60547247
(Old 60120148) Vol 2017

Dear Sirs:

Subject: Town of Inuvik – Water Licence No. G17L3-001
Year End Summary Report, 2017

On behalf of Inuvik, we are pleased to provide the Annual Report for 2017.

WATER DEMANDS, STATION 0036-1

The total volume of water used from the East Channel is listed in Table G17L3-001-1 attached. Water use remained well within the License limit throughout the year. It was also at ordinary levels relative to recent times: about 8% more than consumption in 2016, possibly due to changes arising from the new water treatment plant. Overall, Inuvik's water use is now running at 55 to 60% of the levels reached in the late 1980's, in the time before metering and consumption billing.

WASTEWATER VOLUMES

Annually, about 97 percent of the wastewater reaching Inuvik's lagoon is distributed and re-collected by the Town's above ground utilidor system. About three percent is distributed from Inuvik's truck fill point and is then re-collected by wastewater trucks.

There is no extraneous inflow, and rarely much loss to leakage. Inuvik will accept in its lagoon wastewater from a source other than the Town's water supply on a fee for service basis, but volumes being received are negligible. There are a few water uses that do not contribute to sewage (such as firefighting, and, in summer, gardening and vehicle washing) but these are so small a portion of total water use that they too can be neglected. For practical purposes, inflow into the lagoon is essentially equal to the Town's metered production of water, reported in Table G17L3-001-1.

It is Inuvik's practice to obtain assurance from waste hauling contractors and waste generators that discharges to the lagoon from trucks will be restricted to wastewater of domestic origin and character, not contaminated by solvents, petroleum products, glycol, drilling fluids, or any other industrial waste of any sort in concentrations exceeding what would ordinarily be expected from domestic activities such as washing of clothes and hands. Inuvik did not accept wastewater from sources outside the Town's boundaries during the year.

SEWAGE EFFLUENT QUANTITIES

Inuvik's lagoon is normally operated at a constant level, with a dyke freeboard of 1.0 m or slightly more. Therefore, in normal operation, monthly quantities of effluent are about equal to monthly water use. Lagoon level was normal and constant throughout 2017.

SOLID WASTE SITE OPERATIONS AND MAINTENANCE

In 2017 Inuvik's solid waste site was operated routinely. Based on rates from the Municipal Solid Waste Facility O&M Manual, Appendix A, the estimated municipal solid waste generated in 2017 was approximately 5,800 tonnes of Municipal Solid Waste, which used approximately 19,400 m^3 of space at the Municipal Solid Waste Facility. Detailed estimates are presented in Table G17L3-001-2, attached.

No other projects were undertaken, beyond routine covering and compaction of completed cells. Typically Inuvik will accept Municipal Solid Waste from outside sources, though the quantities tend to be very low (i.e., between 3 and 20 loads) and this was the case in 2017.

Household hazardous waste is collected at the Fire Department during an annual collection event, stored in an appropriate storage container, and then hauled out of Town for disposal. No quantity information for hazardous waste was recorded for 2017; quantities are expected to be recorded in 2018.

SEWAGE EFFLUENT QUALITY MONITORING, STATION G17L3-0036-3

Lagoon effluent is sampled monthly at Station 0036-3; the secondary cell outlet. Laboratory test results are listed in Table G17L3-001-3, attached. Generally, results are within typical ranges for the time of year. Running averages of parameters measured in routine monthly samples, and pH measurements (which are not averaged), remained within license limits during the year. An exception is the pH measurement for August, which appears to be an error, since a pH of 1.5 would be slightly more acidic than vinegar, and this value is well below the other pH readings for the year (and previous years), which are all above 7 (no recorded pH has been lower than 6.5 in readily available records dating back to 1996).

It has been observed that effluent pH rises sharply in summer; in some years to levels above the Licence limit of 9.0. The summer spike in pH is believed to be due to "extensive algae growth. Algae consume alkalinity (inorganic carbon) for growth and the pH increases as algae consume the alkalinity species in the order carbon dioxide, bicarbonate and carbonate." (Quotation from a paper entitled Microbiological and Chemical Testing for Troubleshooting Lagoons, by Michael Richard, PhD, of the Sear-Brown Group, Fort Collins, CO: found in lagoonsonline.com.)

BOD_5 monitoring was changed to CBOD monitoring in the licence renewal; the limit for CBOD was set at 135 mg/L, compared to 150 mg/L for BOD_5. There were no concerns with either parameter during the year. It is relevant that the full effluent CBOD load in East Channel is not exerted at or close to Inuvik, in a concentrated way. Rather, it is distributed quite thinly far downstream, due to the slow BOD exertion rate in a northern river environment, especially at winter temperatures.

There were no concerns with Suspended Solids of Fecal Coliforms, as both parameters were within normal ranges and well below the licence limits.

The Town does not have a standard for ammonia, but is required to monitor for it. The ammonia levels all appeared to be within normal ranges.

The treatment performance seen in 2017 was typical for a primary-secondary lagoon system operating normally in a high-latitude setting. In summer a good standard of secondary treatment is achieved; in winter there is just primary treatment. To achieve a secondary-level effluent in winter Inuvik would need a mechanical plant or at minimum lagoon aeration, in either case involving major capital investment and significantly increased operating cost.

Prior to the licence renewal in July, there was no quantitative criterion for oil and grease, with testing for the parameter requiring initiation upon discovery of an oil sheen during the monthly sample collection. Testing for oil and grease was not completed in the third or fourth quarters of 2017, but did commence with the February 2018 sample.

SOLID WASTE SITE RUN-OFF QUALITY MONITORING, STATIONS G06L3-001-4,-5 AND -9

Runoff from the Mt. Baldy solid waste site is sampled monthly during periods of flow. Station 0036-4 monitors flow westward; Station 0036-5 monitors near-shore water quality in a pond to the east; and SNP 0036-9 was added in the latest licence renewal to monitor potential impacts of the Solid Waste Disposal Facilities on surface water at Boot Creek. Sample results are shown in Tables G17L3-001-4, -5, and -9 respectively.

There are no known concerns arising from test results. As described in earlier reports, very little runoff leaves the site owing to topographic advantages.

PONDS AT LAGOON, STATIONS G17L3-001-6 AND -7; CONTROL STATION G17L3-001-8

Sampling of ponds adjacent to the lagoon is done once a year, in September; starting in 2007. The purpose is to monitor for possible evidence of leakage from the lagoon. Samples are tested for the same parameters as lagoon effluent.

“Gate Pond”, Station 6, occupies a former small gravel quarry just outside the lagoon system’s west dike, adjacent to the west sludge cell. "Far Pond”, Station 7, is located just outside the lagoon system's west dike, opposite the middle-north part of the secondary cell, about 800 m northwest of Gate Pond and 250 m direct distance south of the outlet structure. Twin Lake is used as a background benchmark, and its Station 8 is located at the south end of north Twin Lake.

The changes in sampling requirements when the licence renewed in July were not correctly adjusted for when sampling of these cells. As such, CBOD was not sampled, but BOD_5 was. Sampling for Ammonia was overlooked at all three sites, but a number of additional parameters, including metals and oil and grease were completed for the three sites.

The 2017 sample results for these stations’ traditional parameters are shown in Table G17L3-001-6, 7 & 8. They are in line with the patterns of preceding years. Complete data for the stations is presented in the results appendix. Current licence parameters have been reviewed with Exova and the Town’s operations personnel.

SOLID WASTE DISPOSAL FACILITY FENCING PLAN

The Solid Waste Fencing Plan requirement (Part D, Item 15) was added to the licence renewal. There was no documented progress made on the plan in 2017; the plan is expected to be advanced in 2018 and submitted before the due date in 2019.

SURVEILLANCE NETWORK PROGRAM (SNP) LOCATIONS

A map of the SNP Locations is attached. Active SNP location data is presented in the following table.

SNP #	Description	Purpose	Coordinates
0036-1	Raw Water Intake at the Mackenzie River Water Supply Facilities	To monitor monthly and annual quantity of water withdrawn for municipal purposes.	68°21'10.36"N, 133°43'35.53" W
0036-3	Decant Structure at Sewage Disposal Facilities	Site of Compliance. To monitor final effluent quality prior to discharge to the receiving environment and in case of an emergency decant.	68°22'20.58"N, 133°45'38.85" W
0036-4	Run-off below the Solid Waste Disposal Facilities	To monitor potential impacts of the Solid Waste Disposal Facilities on Surface water.	68°21'7"N, 133°41'1.3" W
0036-5	Run-off to two (2) tundra ponds southwest of Solid Waste Disposal Facilities	To monitor potential impacts of the Solid Waste Disposal Facilities on Surface water.	68°20'36.22"N, 133°40'32.41" W
0036-6	"Gate Pond" – near SW corner of Sewage Disposal Facility	To monitor potential impacts of the Sewage Lagoon on Surface Water	68°21'51.45"N, 133°44'1.00" W
0036-7	"Far Pond" – near the NW corner of Sewage Disposal Facility	To monitor potential impacts of the Sewage Lagoon on Surface Water	68°22'15.73"N, 133°45'41.60" W
0036-8	Twin Lakes at Happy Valley	Control for Sewage Lagoon Sampling	68°21'239.14"N, 133°44'28.10" W
0036-9	Boot Creek upstream of Boot Lake	To monitor potential impacts of the Solid Waste Disposal Facilities on Surface water.	68°21'13.35"N, 133°41'51.48" W

SOLIDS REMOVED FROM SEWAGE TREATMENT FACILITY

Sludge that had accumulated in the lagoon's primary cells since their commissioning in 1980 was transferred to the adjacent sludge holding cells in July 1993. A survey done in the fall of 2006 found that that subsequent sludge accumulations were still well below levels requiring the next transfer by dredging. The apparently reduced accumulation rate (relative to 1981-1993) may be due to a lagoon conditioner that Inuvik has been adding to the primary cells since the mid 1990's.

In many years, small amounts of settled and floating solids need to be removed from around ends of pipes passing through primary cell dikes. This is done with a backhoe, the solids being deposited in the sludge holding cells. Routine solids removal as described was done again in 2017.

No sludge measurement was undertaken in 2017; however, Operators have noted that sludge levels in the primary cells have been increasing, and are expecting that sludge removal from the primary cells will be completed in 2018.

INSPECTION OF LAGOON EARTHEN CONTAINMENT STRUCTURES

The 2017 inspection of lagoon dikes (Water Licence Condition D8) report is attached. There are no immediate concerns arising from the 2017 lagoon dike inspection. Routine maintenance work was done on the lagoon's earthwork dikes, and all dikes appear to be at or very near to design shapes and levels. Continued longitudinal cracking does indicate that at some point in the future, a major restoration project will be required.

CONSTRUCTION, MODIFICATIONS AND MAJOR MAINTENANCE WORK

No modifications affecting existing processes or existing process facilities were undertaken in 2017, except as described below. Naturally, routine maintenance work was done as needed.

Inuvik has upgraded the East Channel water supply and treatment system so as to be able to use East Channel as its water source throughout the year. The water plant improvements are also mandated to bring Inuvik's water quality in line with current and foreseen standards for protection of public health and for aesthetics. The upgraded plant started in operation 3 November 2016, though work on the new, year-round intake structure was ultimately completed in March of 2017.

UNAUTHORIZED DISCHARGES

There were no unauthorized discharges in 2017.

SPILL TRAINING AND COMMUNICATIONS EXERCISES

No additional training was completed. Spill kits and spill containment equipment was purchased in 2017 for implementation of actions identified in the Spill Containment Plan (2017), which was updated and submitted with the 2017 Water Licence renewal application.

ABANDONMENT, CLOSURE, AND RECLAMATION

No such projects were undertaken in 2017. The future of the Lake B – Hidden Lake water supply infrastructure needs to be confirmed, but is expected to be abandoned at a future date.

STUDIES

No additional studies were completed nor requested by the Board.

SPILL CONTINGENCY, OPERATIONS AND MAINTENANCE PLANS

The Spill Contingency Plan was updated and submitted February 6, 2017.

An updated Solid Waste Disposal Facility O&M Manual was submitted December 20, 2017 to the Board for Review. Additionally, three of the Town's Operators undertook Solid Waste Management training through MACA in 2017.

Work on Water Supply Facilities and Sewage Disposal Facilities O&M plan updates is underway.

OTHER

The Town had acquired a 1 year renewal on their previous water licence in 2016 to allow the completion of the Water Plant. The current licence became effective July 1, 2017 and expires June 30, 2027.

CLOSURE

We trust that this submission fulfills the reporting requirements for the period referred to.

Sincerely,
AECOM Canada Ltd.

Jordan Hoffart, P.Eng.
Project Manager
Jordan.hoffart@aecom.com

/jh
Encl.
cc: GLWB – AlecSandra MacDonald, Regulatory Officer
Inuvik: Grant Hood, S.A.O.; Rick Campbell; Utilidor Shop
Inuvik Public Works Committee

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The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("AECOM") for the benefit of the Client ("Client") in accordance with the agreement between AECOM and Client, including the scope of work detailed therein (the "Agreement").

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- may be based on information provided to AECOM which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
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- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

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Appendix A

Summary Tables and SNP Map

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Appendix A

Summary Tables and SNP Map

INUVIK SURVEILLANCE NETWORK PROGRAM 2017 Table G17L3-001-1
WATER USE ("SNP")

Station 0036-1, Mackenzie River pumphouse. Measure quantities daily. Report by month.

The total volumes of water used from SNP 0036-1 are listed below.

Month 2017	East Channel m^3
January	46,972
February	45,698
March	53,005
April	48,030
May	43,617
June	32,775
July	39,520
August	36,526
September	34,820
October	37,901
November	41,745
December	39,264
Total	499,873

Notes:

1. Quantities are well within Licence limits. No known concerns.

Solid Waste Generation Table G17L3-001-2

The total estimated solid waste generated is listed below.

Month 2017	Solid Waste Generated tonnes	Solid Waste Deposited m^3
January	495	1,649
February	447	1,490
March	495	1,649
April	479	1,596
May	495	1,649
June	479	1,596
July	495	1,649
August	495	1,649
September	479	1,596
October	495	1,649
November	479	1,596
December	495	1,649
Total	5,825	19,418

Station 0036-3, Sewage Discharge to Receiving Water.

SNP requirements. Sample monthly. Report parameters tabulated below.

Reports previously due quarterly within thirty days, now only for the calendar year by March 31.

SAMPLE RESULTS									AMBIENT CONDITIONS		
Date			pH	BOD/ CBOD mg/L	SS mg/L	NH3-N mg/L	Un-ionized Ammonia mg/L	Fecal Coli CFU/dL	Temp ° C	Wind km/h	OC/ Prcp
2017	01	17	7.4	50	5	21	0.15	144000	-31	N 5	Snow
2017	02	15	7.7	55	4	22	0.28	120000	-26	W 5	Clear
2017	03	15	7.7	72	6	22	0.27	520000	-32	NE 8	Cloudy
2017	04	11	7.6	80	7	23	0.24	200000	-10	E 11	Snow
2017	05	17	7.6	49	5	15	0.16	103000	11	E 14	Clear
2017	06	14	7.5	18	16	13	0.11	400	1	NNE 4	Clear
2017	07	12	8.3	13	71	03	0.15	20	13	NNE 13	Clear
2017	08	16	1.5	7	28	04	0.00	500	14	N 3	Clear
2017	09	13	8.0	5	38	01	0.02	300	8	E 8	Cloudy
2017	10	19	7.4	06	18	26	0.18	1000	-8	N 3	FrzRain
2017	11	16	7.3	04	4	04	0.02	10000	-20	SSE 9	Snow
2017	12	13	7.4	26	9	11	0.08	60000	-14	ENE 10	Snow

Note: pH for August 16 reported as 1.5, which is an obvious error - used average of August pH reading from 2013 to 2016 in subsequent calculations.

RUNNING AVERAGES OF SAMPLE RESULTS								
Item Unit Limit, avg. 4 consec.			pH 6-9	BOD/ CBOD mg/L 150	SS mg/L 70	NH3-N mg/L none	Un-ionized Ammonia mg/L none	Fecal Coli CFU/dL 1,000,000
2017	01	17	7.4	26	8	16.4	0.23	26,135
2017	02	15	7.7	38	8	19.3	0.25	88,810
2017	03	15	7.7	51	6	20.9	0.22	152,379
2017	04	11	7.6	64	6	22.1	0.24	65,109
2017	05	17	7.6	64	6	20.5	0.24	59,877
2017	06	14	7.5	55	9	18.2	0.20	14,387
2017	07	12	8.3	40	25	13.4	0.17	26,355
2017	08	16	7.8	22	30	8.5	0.12	25,980
2017	09	13	8.0	11	38	5.2	0.09	305
2017	10	19	7.4	8	39	8.4	0.10	455
2017	11	16	7.3	6	22	8.5	0.07	2,950
2017	12	13	7.4	10	17	10.3	0.08	17,825

Notes:

1 In the table header above, "avg. 4 con" is shorthand for "average of four consecutive samples". There is no average requirement for pH, only an upper and lower limt. Values presented for pH are monthly sample results.

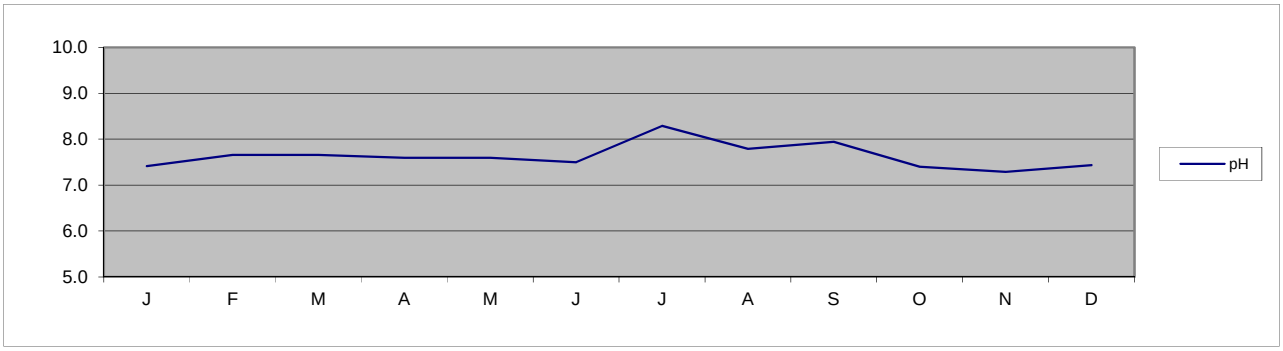
2 In the graphs below, the heavier line (coded with suffix "a" in the key) shows the average of four consecutive samples. The thinner line shows individual monthly readings.

3 NT is not tested in this sample. NR is not reported.

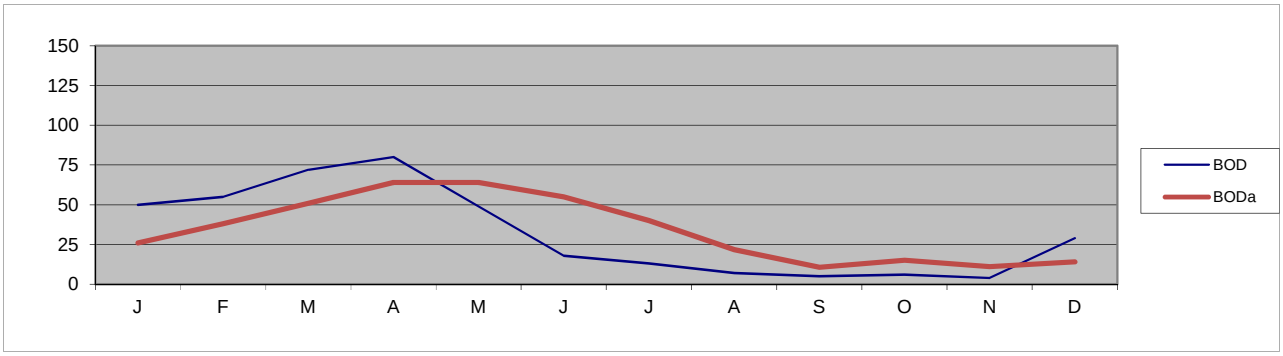
4 Requirements in the new licence took affect July 1, 2017. Average reported for Fecal Coliforms changed from geometric to arithmetic averages at that time. Averages for CBOD were calculated using BOD where CBOD values were unavailable.

GRAPHS OF PARAMETERS MEASURED AT LAGOON OUTLET, STATION 0036-3

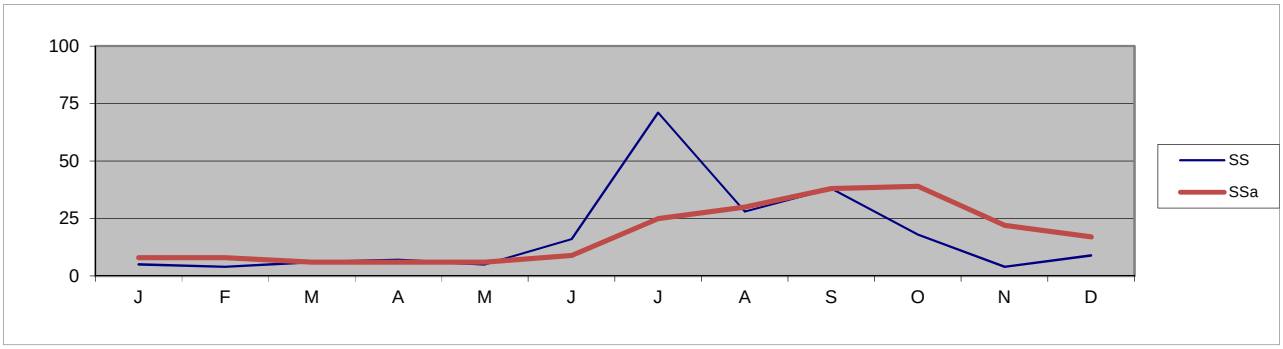
pH, BY MONTH 2017



BOD5 / CBOD (mg/L), BY MONTH 2017

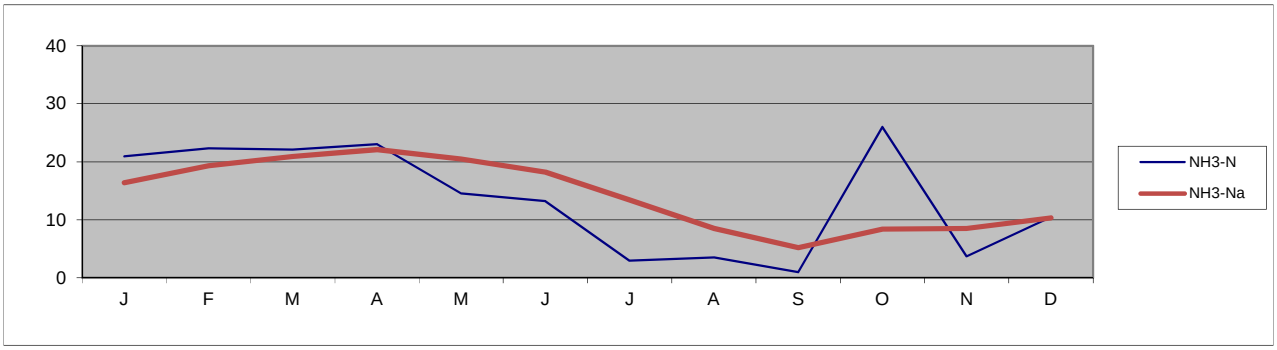


SUSPENDED SOLIDS (mg/L) BY MONTH 2017

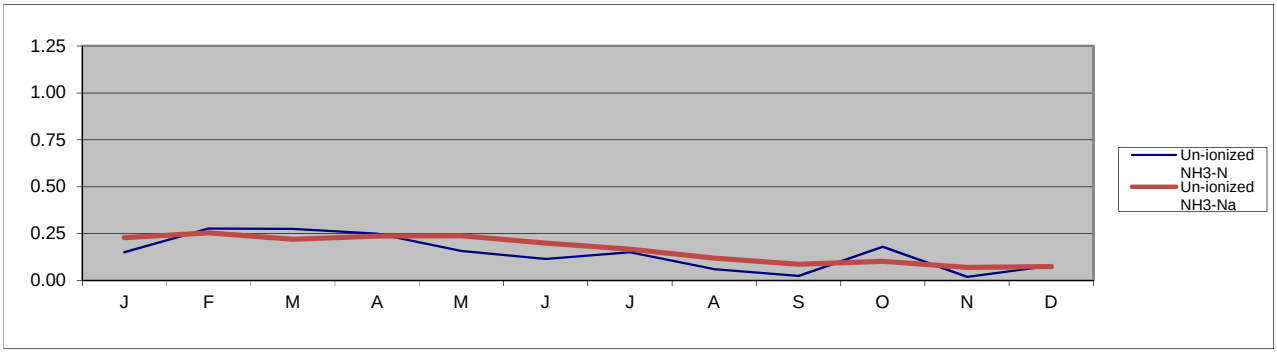


GRAPHS OF PARAMETERS MEASURED AT LAGOON OUTLET, STATION 0036-3

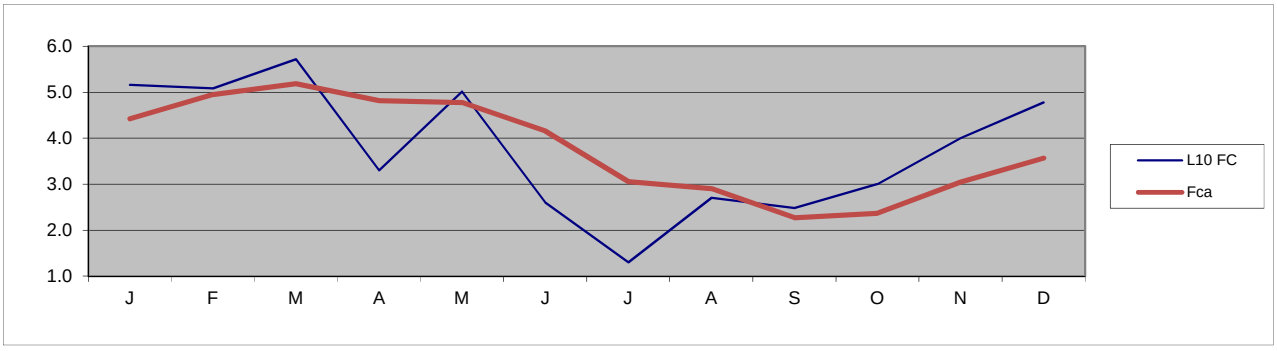
NH3-N (mg/L) BY MONTH 2017



Un-ionized NH3-N (mg/L) BY MONTH 2017



FECAL COLIFORMS (LOG10 CFU/100 mL) BY MONTH 2017



Note: the chart for Fecal Colifirms, above, shows the Log(10) of the measured value.

Note: Data charted are monthly measured values and running averages.
Averages are identified by the suffix "a".

Note: in the first three quarters, charts extend to year end at a chosen "typical" value.

INUVIK SURVEILLANCE NETWORK PROGRAM 2017 Table G06L3-001-4
RUNOFF WESTWARD FROM SOLID WASTE SITE

Station 0036-4. Sample monthly when there is flow. Report parameters tabulated below.

SAMPLE DATES & OBSERVATIONS			Temp ° C	Wind km/h	Sky	Prcp
April		2017	Frozen - No Sample Taken			
May	29	2017	15	E 25	Clear	0
June	28	2017	15	E 16	Clear	0
July		2017	Intermittent Flow - No Sample Taken			
August	16	2017	14	N 3	Clear	0
September	13	2017	11	SE	Cloudy	0
October		2017	Frozen - No Sample Taken			

SAMPLE ANALYSIS RESULTS							
Item		Date					
		May 29	Jun 28	July	August	September	October
pH	NA	7.72	7.41		7.97	7.97	
Conductivity	uS/cm	1760	2400		2070	2140	
Sodium	mg/L	71.8	102.0		144.0	151.0	
Potassium	mg/L	4.0	2.5		28.0	30.8	
Magnesium	mg/L	97.6	127.0		91.9	108.0	
Calcium	mg/L	224	324		210	232	
Cadmium	mg/L	0.00004	0.00005		0.00004	0.00001	
Chromium	mg/L	<0.0005	<0.001		0.0019	0.0200	
Copper	mg/L	0.004	0.002		0.003	0.010	
Iron	mg/L	0.027	0.2		3.8	10.8	
Lead	mg/L	<0.0001	<0.0002		0.0010	0.0041	
Mercury	mg/L	0.000066	<0.000005		<0.000005	<0.000005	
Nickel	mg/L	0.0039	0.0035		0.0089	0.0170	
Zinc	mg/L	0.016	0.037		0.010	0.038	
Sulphate	mg/L	935	1310		670	656	
Phosphate	mg/L	0.07	<0.05		0.11	0.30	
Phenols	mg/L	0.001	<0.001		0.011	0.003	
BOD5	mg/L	<4	<4		<4	<4	
Oil & Grease	mg/L	<5	5		<5	<5	
Suspend. Solid	mg/L	2	<5		30	13	
TPH	mg/L				NR	NR	

Notes:

1. Prior to Q3, Oil & Grease is measured only if there is a visible sheen; otherwise reported "ND"; "NR" is Not Reported.

2. "Phosphate" is reported as total P.

3. Requirements for testing TPH became effective July 1, 2017, but were not sampled for in 2017 as Oil & Grease samples, which are no longer required, were continued.

4. Intermittent flow was observed on one or more occasions. However, flow had dried up at times when attempts were made to gather samples.

INUVIK SURVEILLANCE NETWORK PROGRAM 2017 Table G17L3-001-5
RUNOFF EASTWARD FROM SOLID WASTE SITE

Station 0036-5. Sample monthly when there is flow. Report parameters tabulated below.

SAMPLE DATES & OBSERVATIONS			Temp ° C	Wind km/h	Sky	Prcp
April		2017				
May	29	2017	15	E 25	Clear	0
June	28	2017	15	E 16	Clear	0
July	13	2017	16	E 4	Cloudy	0
August	16	2017	14	N 3	Clear	0
September	13	2017	11	SE 12	Cloudy	0
October		2017				

SAMPLE ANALYSIS RESULTS							
Item	Unit	Date					
		May 30	Jun 28	July	August	September	October
pH	NA	7.74	7.64	7.60	7.21	7.34	
Conductivity	uS/cm	292	378	410	407	464	
Sodium	mg/L	12.3	16.5	18.9	18.6	20.2	
Potassium	mg/L	3.4	3.5	2.9	2.4	2.0	
Magnesium	mg/L	11.3	15.0	17.1	16.4	19.6	
Calcium	mg/L	31.8	41.2	46.3	41.8	49.3	
Cadmium	mg/L	0.00006	<0.00001	<0.00001	<0.00001	<0.00001	
Chromium	mg/L	<0.0005	<0.0005	<0.0005	0.0008	0.0029	
Copper	mg/L	0.002	0.001	0.001	<0.001	0.002	
Iron	mg/L	1.23	0.80	0.60	0.73	0.73	
Lead	mg/L	0.0002	0.0001	0.0001	0.0001	0.0002	
Mercury	mg/L	0.000006	<0.000005	0.000006	<0.000005	<0.000005	
Nickel	mg/L	0.0023	0.0027	0.0026	0.0022	0.0026	
Zinc	mg/L	0.017	0.003	0.002	0.002	0.010	
Sulphate	mg/L	68.6	94.9	113.0	108.0	143.0	
Phosphate	mg/L	0.21	0.13	0.10	0.11	<0.3	
Phenols	mg/L	0.001	<0.001	<0.001	0.001	0.001	
BOD5	mg/L	5	<4	NR	<4	<4	
Oil & Grease	mg/L	<5	5	5	<5	5	
Suspend. Solid	mg/L	9	7	8	2	6	
TPH	mg/L			NR	NR	NR	

Notes:

1. Prior to Q3, Oil & Grease is measured only if there is a visible sheen; otherwise reported "ND"; "NR" is Not Reported.

2. "Phosphate" is reported as total P.

3. Requirements for testing TPH became effective July 1, 2017, but were not sampled for in 2017 as Oil & Grease samples, which are no longer required, were continued.

4. No flow or frozen conditions were present for April and October.

INUVIK SURVEILLANCE NETWORK PROGRAM 2017 Table G17L3-001-6, 7 & 8
MONITORING OF PONDS NEAR LAGOON

Station 0036-6, "Gate Pond", W dike, SW, near gate. La N 68 d 21.861 m, Lo W 133 d 44.994 m
Station 0036-7, "Far Pond", W dike, mid-north. La N 68 d 22.230 m, Lo W 133 d 45.599 m
Station 0036-8, control, Twin Lakes at Happy Valley. La N 68 d 21.644 m, Lo W 133 d 44.439 m

SNP requirements. Sample annually. Report parameters tabulated below.
Reports are due annually for the calendar year by March 31.

SAMPLE RESULTS									AMBIENT CONDITIONS		
Item Unit			SNP	pH	BOD_5 mg/L	SS mg/L	NH3-N mg/L	Fecal Coli CFU/dL	Temp ° C	Wind km/h	Prcp
2017	09	13	6	7.8	<4	19	nd	2	11	SE 12	Clear
2017	09	13	7	8.0	<4	<1	nd	2	11	SE 12	Clear
2017	09	13	8	8.0	<4	10	nd	<1	11	SE 12	Clear

Notes:

1. 'nd' is no data

2. Results from recent earlier years are included below for comparison.

Item Unit			SNP	pH	BOD mg/L	SS mg/L	NH3-N mg/L	Fecal Coli CFU/dL	Temp ° C	Wind km/h	Prcp
2016	09	13	6	8.1	<4	2	14.1	<1	0	E 18	Cloudy
2016	09	13	7	8.1	<4	<1	<0.025	<1	0	E 18	Cloudy
2016	09	13	8	8.1	<4	2	3.1	2	0	E 18	Cloudy
2015	09	08	6	7.7	<4	3	12.8	2	1	NW 4	Cloudy
2015	09	08	7	8.4	<4	<7	<0.025	<1	1	NW 4	Cloudy
2015	09	08	8	8.2	<4	8	1.6	1	1	NW 4	Cloudy
2014	10	07	6	7.7	<4	4	12.4	81	-3	NW 30	Snow
2014	10	07	7	8.0	<4	4	<0.05	<1	-3	NW 30	Snow
2014	10	07	8	8.1	<4	47	1.9	1	-3	NW 30	Snow
2013	09	24	6	7.8	<4	<1	14.4	2	0	NE 5	Cloudy
2013	09	24	7	8.1	<4	15	<0.05	24	0	NE 5	Cloudy
2013	09	24	8	8.1	<4	<2	1.9	<1	0	NE 5	Cloudy
2012	09	18	6	8.1	<4	3	10.4	4	7	S 10	Clear
2012	09	18	7	8.3	<4	<1	<0.05	1	7	S 10	Clear
2012	09	18	8	8.2	<4	<2	3.4	2	7	S 10	Clear
2011	09	19	6	8.0	<4	<2	13.6	<1	0	NE 15	Cloudy
2011	09	19	7	8.3	<4	<2	<0.05	<1	0	NE 15	Cloudy
2011	09	19	8	8.1	<4	6	1.6	<1	0	NE 15	Cloudy
2010	09	21	6	7.8	<4	<1	14.3	1	1	NW 15	Cloudy
2010	09	21	7	8.1	<4	<1	<0.05	<1	1	NW 15	Cloudy
2010	09	21	8	8.1	<4	50	2.6	<1	1	NW 15	Cloudy
2009	09	28	6	7.1	<4	3	11.2	<1	-3	NW 4	Snow
2009	09	28	7	8.2	5	6	<0.05	<1	-3	NW 4	Snow
2009	09	28	8	7.8	<4	6	2.8	<1	-3	NW 4	Snow
2008	09	15	6	7.7	<4	5	10.0	1	-3	E 12	Clear
2008	09	15	7	8.6	<4	3	<0.05	<1	-3	E 12	Clear
2008	09	15	8	8.3	<4	6	1.3	<1	-3	E 12	Clear
2007	11	14	6	7.2	<4	13	8.9	<1	-12	SE 07	Snow
2007	11	14	7	7.3	14	303	0.3	1	-12	SE 07	Snow
2007	11	14	8	7.4	5	6	4.3	<1	-12	SE 07	Snow

INUVIK SURVEILLANCE NETWORK PROGRAM 2017 Table G06L3-001-9
RUNOFF EASTWARD FROM SOLID WASTE SITE

Station 0036-9. Sample monthly when there is flow. Report parameters tabulated below.

SAMPLE DATES & OBSERVATIONS			Temp °C	Wind km/h	Sky	Prcp
April		2017		Not Applicable		
May	29	2017	15	E 25	Clear	0
June	28	2017	15	E 16	Clear	0
July	13	2017	16	E 4	Cloudy	0
August	16	2017	14	N 3	Clear	0
September	13	2017	11	SE 12	Cloudy	0
October		2017				

SAMPLE ANALYSIS RESULTS							
Item	Unit	Date					
		May	June	Jul 13	Aug 16	Sep 13	October
pH	NA	7.21	7.41	7.86	7.28	7.44	
Conductivity	uS/cm	159	569	1900	645	570	
Sodium	mg/L	4.7	18.5	93.6	25.3	21.2	
Potassium	mg/L	1.7	1.6	4.6	1.5	1.6	
Magnesium	mg/L	6.2	26.8	85.8	34.4	25.9	
Calcium	mg/L	15.5	56.7	245.0	64.7	60.8	
Cadmium	mg/L	0.00003	0.00006	0.00001	0.00003	0.00002	
Chromium	mg/L	0.0008	0.0008	<0.0005	0.0010	0.0009	
Copper	mg/L	0.003	0.003	<0.001	0.003	0.002	
Iron	mg/L	1.72	1.13	1.11	1.11	0.52	
Lead	mg/L	0.0004	0.0003	<0.0001	0.0001	<0.0001	
Mercury	mg/L	0.000009	<0.000005	<0.000005	<0.000005	<0.000005	
Nickel	mg/L	0.0076	0.0124	0.0037	0.0097	0.0082	
Zinc	mg/L	0.011	0.026	0.009	0.013	0.011	
Sulphate	mg/L	49	233	927	259	224	
Phosphate	mg/L	0.11	0.06	0.05	0.15	0.06	
Phenols	mg/L	0.001	<0.001	<0.001	<0.001	0.001	
BOD / CBOD	mg/L	<4	<4	NR	<4	<4	
Oil & Grease	mg/L	<5	8	<5	<5	<5	
Suspend. Solid	mg/L	19	22	<5	<2	2	
TPH	mg/L	NR	NR	NR	NR	NR	

Notes:

1. "NR" is not recorded.

2. "Phosphate" is reported as total P.

3. SNP Station 9 became active effective July 1, 2017, with the same criteria for SNP Stations 4&5. Like Stations 4&5, sampling for TPH and CBOD was not completed correctly.

AECOM Imagine it. Delivered.

Appendix B

SNP Station Sampling Data

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1183291**
Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
	Box 1160	Name:		Date Received:	Jan 26, 2017
	2 Firth Street	Location:	E.C.W.T.P.	Date Reported:	Feb 3, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2164336
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Richard Feilden Aecom - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Lot Verification] send (COA, COC) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report

Notes To Clients:

- Sample 1183291-1; 5628438 Total organic carbon was less than dissolved organic carbon for sample 1183291-1. The results were verified and are within expected measurement uncertainty.
- Sample 1183291-1; 5628438 Some total metal results were less than dissolved metal results for sample 1183291-1. The results were verified and are within expected measurement uncertainty.

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1183291**
Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
	Box 1160	Name:		Date Received:	Jan 26, 2017
	2 Firth Street	Location:	E.C.W.T.P.	Date Reported:	Feb 3, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2164336
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Reference Number	1183291-1
Sample Date	Jan 25, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-1 / 1.5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Sulfide	Total	mg/L	<0.002			0.002
Organic Carbon	Total Nonpurgeable	mg/L	2.9			0.5
Organic Carbon	Dissolved Nonpurgeable	mg/L	3.1			0.5
Chlorine	Total	mg/L	1.2			0.1
Cyanide	Dissolved	mg/L	<0.002			0.002
Hydrogen Sulfide	Calculated	mg/L	<0.002			
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.04			0.02
Calcium	Total	mg/L	46.7			0.2
Iron	Total	mg/L	<0.05			0.05
Magnesium	Total	mg/L	11.8			0.2
Manganese	Total	mg/L	0.006			0.005
Potassium	Total	mg/L	1.1			0.4
Silicon	Total	mg/L	1.86			0.05
Sodium	Total	mg/L	13.8			0.4
Sulfur	Total	mg/L	18.1			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	<0.0002			0.0002
Barium	Total	mg/L	0.056			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.016			0.002
Cadmium	Total	mg/L	<0.00001			0.00001
Chromium	Total	mg/L	<0.0005			0.0005
Cobalt	Total	mg/L	<0.0001			0.0001
Copper	Total	mg/L	0.025			0.001
Lead	Total	mg/L	<0.0001			0.0001
Lithium	Total	mg/L	0.006			0.001
Molybdenum	Total	mg/L	0.001			0.001
Nickel	Total	mg/L	0.0028			0.0005
Selenium	Total	mg/L	0.0003			0.0002
Silver	Total	mg/L	<0.00001			0.00001
Strontium	Total	mg/L	0.308			0.001

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1183291**
Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
	Box 1160	Name:		Date Received:	Jan 26, 2017
	2 Firth Street	Location:	E.C.W.T.P.	Date Reported:	Feb 3, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2164336
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Reference Number	1183291-1
Sample Date	Jan 25, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-1 / 1.5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	<0.0005			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0002			0.0001
Zinc	Total	mg/L	0.020			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	<1			1
Escherichia coli	Membrane Filtration	CFU/100 mL	<1			1
Physical and Aggregate Properties						
Solids	Total Dissolved	mg/L dried at 180 °C	234			7
Colour	Apparent, Potable	Colour units	<5			5
Turbidity		NTU	0.3			0.1
Solids	Total Suspended	mg/L	<1			2
Routine Water						
pH			7.49			
Temperature of observed pH		°C	20.1			
Electrical Conductivity	at 25 °C	uS/cm	389			1
Calcium	Dissolved	mg/L	48.5			0.2
Magnesium	Dissolved	mg/L	12.2			0.2
Sodium	Dissolved	mg/L	14.1			0.4
Potassium	Dissolved	mg/L	1.2			0.4
Iron	Dissolved	mg/L	<0.01			0.01
Manganese	Dissolved	mg/L	<0.005			0.005
Chloride	Dissolved	mg/L	23.7			0.4
Fluoride		mg/L	0.10			0.05
Nitrate - N		mg/L	0.12			0.01
Nitrite - N		mg/L	<0.005			0.005
Nitrate and Nitrite - N		mg/L	0.12			0.01
Sulfate (SO4)	Dissolved	mg/L	55.3			0.9
Hydroxide		mg/L	<5			
Carbonate		mg/L	<6			
Bicarbonate		mg/L	135			
P-Alkalinity	as CaCO3	mg/L	<5			5
T-Alkalinity	as CaCO3	mg/L	110			5

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Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
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	Inuvik, NT, Canada	LSD:		Report Number:	2164336
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Reference Number	1183291-1
Sample Date	Jan 25, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-1 / 1.5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water - Continued						
Total Dissolved Solids	Calculated	mg/L	221			1
Hardness	Dissolved as CaCO3	mg/L	171			
Ionic Balance	Dissolved	%	101			
Trihalomethanes Screen - Water						
Chloroform		mg/L	0.005			0.001
Bromodichloromethane		mg/L	0.001			0.001
Dibromochloromethane		mg/L	<0.001			0.001
Bromoform		mg/L	<0.001			0.001
Total Trihalomethanes		mg/L	0.006			0.001
Trihalomethanes - Surrogate Recovery						
Dibromofluoromethane	EPA Surrogate	%	90			86-118
Toluene-d8	EPA Surrogate	%	95			85-115
Bromofluorobenzene	EPA Surrogate	%	93			86-115

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project:	
Report To:	Town of Inuvik	ID:	SNP 0036-1
	Box 1160	Name:	
	2 Firth Street	Location:	E.C.W.T.P.
	Inuvik, NT, Canada	LSD:	
	X0E 0T0	P.O.:	100104
Attn:	Rick Campbell	Acct code:	
Sampled By:	Justin Simms		
Company:	Town of Inuvik		

Lot ID:	**1183291**
Control Number:	
Date Received:	Jan 26, 2017
Date Reported:	Feb 3, 2017
Report Number:	2164336

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Alkalinity - Titration Method, 2320 B	27-Jan-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	27-Jan-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	27-Jan-17	Exova Edmonton
Anions (Routine) by Ion Chromatography	APHA	*	Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	27-Jan-17	Exova Edmonton
Approval-Edmonton	APHA		Checking Correctness of Analyses, 1030 E	27-Jan-17	Exova Edmonton
Carbon Organic (Dissolved) in water (DOC)	APHA		High-Temperature Combustion Method, 5310 B	27-Jan-17	Exova Edmonton
Carbon Organic (Total) in water (TOC)	APHA		High-Temperature Combustion Method, 5310 B	26-Jan-17	Exova Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	27-Jan-17	Exova Edmonton
Chlorine (Total) in water	APHA	*	DPD Colorimetric Method, 4500-Cl G	26-Jan-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		E. Coli - MF Partition Procedures, 9222 G	27-Jan-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	27-Jan-17	Exova Calgary
Colour (Apparent) in water	APHA	*	Visual Comparison Method, 2120 B	27-Jan-17	Exova Edmonton
Cyanide (Dissolved) in water	Alta. Env. Method	*	Cyanide, Simple Extractable (Automated Pyridine-Barbituric Acid Colorimetric Method), 06608L	30-Jan-17	Exova Edmonton
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	30-Jan-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	27-Jan-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA		Hardness by Calculation, 2340 B	27-Jan-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	27-Jan-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	27-Jan-17	Exova Edmonton
Solids Dissolved (Total, Fixed and Volatile)	APHA	*	Total Dissolved Solids Dried at 180 C, 2540 C	27-Jan-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	01-Feb-17	Exova Edmonton
Sulfide in water	APHA	*	Gas Dialysis, Automated Methylene Blue Method, 4500-S2- E	03-Feb-17	Exova Edmonton
THM - Water	US EPA	*	US EPA method, 8260B/5035	30-Jan-17	Exova Calgary
Turbidity in Water	APHA	*	Turbidity - Nephelometric Method, 2130 B	27-Jan-17	Exova Edmonton

** Reference Method Modified*

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Methodology and Notes

Bill To:	Town of Inuvik	Project:		Lot ID:	**1183291**
Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
	Box 1160	Name:		Date Received:	Jan 26, 2017
	2 Firth Street	Location:	E.C.W.T.P.	Date Reported:	Feb 3, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2164336
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

References

Alta. Env. Method	Alberta Environment Method
APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1183291-1; 5628438 Total organic carbon was less than dissolved organic carbon for sample 1183291-1. The results were verified and are within expected measurement uncertainty.
- Sample 1183291-1; 5628438 Some total metal results were less than dissolved metal results for sample 1183291-1. The results were verified and are within expected measurement uncertainty.

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1183301**
Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
	Box 1160	Name:		Date Received:	Jan 26, 2017
	2 Firth Street	Location:	E.C.W.T.P.	Date Reported:	Feb 1, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2164348
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Richard Feilden Aecom - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Lot Verification] send (COA, COC) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report

Notes To Clients:

- Sample 1183301-1; 5628474 Some total metal results were less than dissolved metal results for sample 1183301-1. The results were verified and are within expected measurement uncertainty.

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1183301**
Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
	Box 1160	Name:		Date Received:	Jan 26, 2017
	2 Firth Street	Location:	E.C.W.T.P.	Date Reported:	Feb 1, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2164348
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Reference Number	1183301-1
Sample Date	Jan 25, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-1 / 1.5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Organic Carbon	Total Nonpurgeable	mg/L	4.9			0.5
Organic Carbon	Dissolved Nonpurgeable	mg/L	4.7			0.5
Cyanide	Total	mg/L	<0.002			0.002
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.08			0.02
Calcium	Total	mg/L	48.2			0.2
Iron	Total	mg/L	0.13			0.05
Magnesium	Total	mg/L	12.1			0.2
Manganese	Total	mg/L	0.008			0.005
Potassium	Total	mg/L	1.2			0.4
Silicon	Total	mg/L	2.16			0.05
Sodium	Total	mg/L	12.3			0.4
Sulfur	Total	mg/L	18.0			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	0.0004			0.0002
Barium	Total	mg/L	0.063			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.017			0.002
Cadmium	Total	mg/L	0.00001			0.00001
Chromium	Total	mg/L	<0.0005			0.0005
Cobalt	Total	mg/L	<0.0001			0.0001
Copper	Total	mg/L	0.009			0.001
Lead	Total	mg/L	<0.0001			0.0001
Lithium	Total	mg/L	0.006			0.001
Molybdenum	Total	mg/L	0.001			0.001
Nickel	Total	mg/L	0.0088			0.0005
Selenium	Total	mg/L	0.0004			0.0002
Silver	Total	mg/L	<0.00001			0.00001
Strontium	Total	mg/L	0.326			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0023			0.0005

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1183301**
Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
	Box 1160	Name:		Date Received:	Jan 26, 2017
	2 Firth Street	Location:	E.C.W.T.P.	Date Reported:	Feb 1, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2164348
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Reference Number	1183301-1
Sample Date	Jan 25, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-1 / 1.5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Uranium	Total	mg/L	0.0009			0.0005
Vanadium	Total	mg/L	0.0004			0.0001
Zinc	Total	mg/L	0.004			0.001
Physical and Aggregate Properties						
Solids	Total Dissolved	mg/L dried at 180 °C	266			7
Colour	Apparent, Potable	Colour units	18			5
Turbidity		NTU	2.8			0.1
Solids	Total Suspended	mg/L	<1			2
Routine Water						
pH			7.77			
Temperature of observed pH		°C	19.8			
Electrical Conductivity	at 25 °C	uS/cm	679			1
Calcium	Dissolved	mg/L	47.8			0.2
Magnesium	Dissolved	mg/L	12.2			0.2
Sodium	Dissolved	mg/L	12.3			0.4
Potassium	Dissolved	mg/L	1.2			0.4
Iron	Dissolved	mg/L	<0.01			0.01
Manganese	Dissolved	mg/L	0.005			0.005
Chloride	Dissolved	mg/L	12.8			0.4
Fluoride		mg/L	0.14			0.05
Nitrate - N		mg/L	0.11			0.01
Nitrite - N		mg/L	<0.005			0.005
Nitrate and Nitrite - N		mg/L	0.11			0.01
Sulfate (SO4)	Dissolved	mg/L	54.8			0.9
Hydroxide		mg/L	<5			
Carbonate		mg/L	<6			
Bicarbonate		mg/L	149			
P-Alkalinity	as CaCO3	mg/L	<5			5
T-Alkalinity	as CaCO3	mg/L	122			5
Total Dissolved Solids	Calculated	mg/L	214			1
Hardness	Dissolved as CaCO3	mg/L	170			
Ionic Balance	Dissolved	%	100			

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1183301**
Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
	Box 1160	Name:		Date Received:	Jan 26, 2017
	2 Firth Street	Location:	E.C.W.T.P.	Date Reported:	Feb 1, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2164348
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project:	
Report To:	Town of Inuvik	ID:	SNP 0036-1
	Box 1160	Name:	
	2 Firth Street	Location:	E.C.W.T.P.
	Inuvik, NT, Canada	LSD:	
	X0E 0T0	P.O.:	100104
Attn:	Rick Campbell	Acct code:	
Sampled By:	Justin Simms		
Company:	Town of Inuvik		

Lot ID:	**1183301**
Control Number:	
Date Received:	Jan 26, 2017
Date Reported:	Feb 1, 2017
Report Number:	2164348

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Alkalinity - Titration Method, 2320 B	27-Jan-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	27-Jan-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	27-Jan-17	Exova Edmonton
Anions (Routine) by Ion Chromatography	APHA	*	Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	30-Jan-17	Exova Edmonton
Approval-Edmonton	APHA		Checking Correctness of Analyses, 1030 E	27-Jan-17	Exova Edmonton
Carbon Organic (Dissolved) in water (DOC)	APHA		High-Temperature Combustion Method, 5310 B	27-Jan-17	Exova Edmonton
Carbon Organic (Total) in water (TOC)	APHA		High-Temperature Combustion Method, 5310 B	26-Jan-17	Exova Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	27-Jan-17	Exova Edmonton
Colour (Apparent) in water	APHA	*	Visual Comparison Method, 2120 B	27-Jan-17	Exova Edmonton
Cyanide (Total) in water	US EPA	*	US EPA method, 335.3	30-Jan-17	Exova Edmonton
Filtration of water for dissolved analysis	APHA	*	Filtration for Dissolved and Suspended Metals / Total Organic Carbon, 3030 B / 5310 A	27-Jan-17	Exova Edmonton
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	30-Jan-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	27-Jan-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA		Hardness by Calculation, 2340 B	27-Jan-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	27-Jan-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	27-Jan-17	Exova Edmonton
Solids Dissolved (Total, Fixed and Volatile)	APHA	*	Total Dissolved Solids Dried at 180 C, 2540 C	27-Jan-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	30-Jan-17	Exova Edmonton
Turbidity in Water	APHA	*	Turbidity - Nephelometric Method, 2130 B	27-Jan-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

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Methodology and Notes

Bill To:	Town of Inuvik	Project:		Lot ID:	**1183301**
Report To:	Town of Inuvik	ID:	SNP 0036-1	Control Number:	
	Box 1160	Name:		Date Received:	Jan 26, 2017
	2 Firth Street	Location:	E.C.W.T.P.	Date Reported:	Feb 1, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2164348
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Comments:

- Sample 1183301-1; 5628474 Some total metal results were less than dissolved metal results for sample 1183301-1. The results were verified and are within expected measurement uncertainty.

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215675**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P	Date Received:	Jul 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2207988
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Samples 1215474-1, 1215479-1, and 1215678-1 turbidity may interfere with Apparent Colour analysis. A more accurate measure of sample colour would be obtained from True Colour Analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215675**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P	Date Received:	Jul 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2207988
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1215675-1
Sample Date	July 19, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-1 / Treated Water / 7.5°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4	4		
Inorganic Nonmetallic Parameters						
Sulfide	Total	mg/L	<0.002	0.002	0.05	Below AO
Organic Carbon	Total Nonpurgeable	mg/L	3.1	0.5		
Organic Carbon	Dissolved Nonpurgeable	mg/L	3.0	0.5		
Chlorine	Total	mg/L	1.0	0.1		
Cyanide	Dissolved	mg/L	<0.002	0.002	0.2	Below MAC
Hydrogen Sulfide	Calculated	mg/L	<0.002			
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.18	0.02	0.1	Above OG
Calcium	Total	mg/L	39.7	0.2		
Iron	Total	mg/L	<0.05	0.05	0.3	Below AO
Magnesium	Total	mg/L	9.8	0.2		
Manganese	Total	mg/L	0.006	0.005	0.05	Below AO
Potassium	Total	mg/L	0.9	0.4		
Silicon	Total	mg/L	1.52	0.05		
Sodium	Total	mg/L	7.0	0.4	200	Below AO
Sulfur	Total	mg/L	15.2	0.3		
Mercury	Total	mg/L	<0.000005	0.000005	0.001	Below MAC
Antimony	Total	mg/L	<0.0002	0.0002	0.006	Below MAC
Arsenic	Total	mg/L	<0.0002	0.0002	0.01	Below MAC
Barium	Total	mg/L	0.058	0.001	1.0	Below MAC
Beryllium	Total	mg/L	<0.0001	0.0001		
Bismuth	Total	mg/L	<0.0005	0.0005		
Boron	Total	mg/L	0.015	0.002	5.0	Below MAC
Cadmium	Total	mg/L	0.00002	0.00001	0.005	Below MAC
Chromium	Total	mg/L	<0.0005	0.0005	0.05	Below MAC
Cobalt	Total	mg/L	<0.0001	0.0001		
Copper	Total	mg/L	0.026	0.001	1.0	Below AO
Lead	Total	mg/L	<0.0001	0.0001	0.01	Below MAC
Lithium	Total	mg/L	0.004	0.001		
Molybdenum	Total	mg/L	0.001	0.001		
Nickel	Total	mg/L	0.0041	0.0005		
Selenium	Total	mg/L	0.0003	0.0002	0.05	Below MAC

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215675**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P	Date Received:	Jul 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2207988
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1215675-1
Sample Date	July 19, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-1 / Treated Water / 7.5°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Metals Total - Continued						
Silver	Total	mg/L	<0.00001	0.00001		
Strontium	Total	mg/L	0.240	0.001		
Thallium	Total	mg/L	<0.00005	0.00005		
Tin	Total	mg/L	<0.001	0.001		
Titanium	Total	mg/L	0.0005	0.0005		
Uranium	Total	mg/L	<0.0005	0.0005	0.02	Below MAC
Vanadium	Total	mg/L	0.0003	0.0001		
Zinc	Total	mg/L	0.036	0.001	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	<1	1	0	Absent - Below MAC
Escherichia coli	Membrane Filtration	CFU/100 mL	<1	1	0	Absent - Below MAC
Physical and Aggregate Properties						
Solids	Total Dissolved	mg/L dried at 180 °C	200	7	500	Below AO
Colour	Apparent, Potable	Colour units	<5	5	15	Below AO
Turbidity		NTU	0.5	0.1	0.1	Above OG
Solids	Total Suspended	mg/L	<1	2		
Routine Water						
pH			8.13		7.0-10.5	Within OG Range
Temperature of observed pH		°C	23.2			
Electrical Conductivity	at 25 °C	µS/cm	304	1		
Calcium	Dissolved	mg/L	38.8	0.2		
Magnesium	Dissolved	mg/L	9.6	0.2		
Sodium	Dissolved	mg/L	6.8	0.4	200	Below AO
Potassium	Dissolved	mg/L	0.8	0.4		
Iron	Dissolved	mg/L	<0.01	0.01	0.3	Below AO
Manganese	Dissolved	mg/L	<0.005	0.005	0.05	Below AO
Chloride	Dissolved	mg/L	19.8	0.4	250	Below AO
Fluoride		mg/L	0.09	0.05	1.5	Below MAC
Nitrate - N		mg/L	0.04	0.01	10	Below MAC
Nitrite - N		mg/L	<0.005	0.005	1	Below MAC
Nitrate and Nitrite - N		mg/L	0.04	0.01	10	Below MAC
Sulfate (SO4)	Dissolved	mg/L	42.9	0.9	500	Below AO
Hydroxide		mg/L	<5			
Carbonate		mg/L	<6			
Bicarbonate		mg/L	102			
P-Alkalinity	as CaCO3	mg/L	<5.0	5		

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215675**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P	Date Received:	Jul 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2207988
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1215675-1
Sample Date	July 19, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-1 / Treated Water / 7.5°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Routine Water - Continued						
T-Alkalinity	as CaCO3	mg/L	83.4	5		
Total Dissolved Solids	Calculated	mg/L	169	1	500	Below AO
Hardness	Dissolved as CaCO3	mg/L	137			
Ionic Balance	Dissolved	%	98			
Trihalomethanes Screen - Water						
Chloroform		mg/L	0.028	0.001		
Bromodichloromethane		mg/L	0.002	0.001		
Dibromochloromethane		mg/L	<0.001	0.001		
Bromoform		mg/L	<0.001	0.001		
Total Trihalomethanes		mg/L	0.030	0.001	0.1	Below MAC
Trihalomethanes - Surrogate Recovery						
Dibromofluoromethane	EPA Surrogate	%	81	86-118		
Toluene-d8	EPA Surrogate	%	93	85-115		
Bromofluorobenzene	EPA Surrogate	%	71	86-115		

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215675**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P	Date Received:	Jul 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2207988
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Alkalinity - Titration Method, 2320 B	20-Jul-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	20-Jul-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	20-Jul-17	Exova Edmonton
Anions (Routine) by Ion Chromatography	APHA	*	Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	20-Jul-17	Exova Edmonton
Approval-Edmonton	APHA		Checking Correctness of Analyses, 1030 E	24-Jul-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	21-Jul-17	Exova Edmonton
Carbon Organic (Dissolved) in water (DOC)	APHA		High-Temperature Combustion Method, 5310 B	21-Jul-17	Exova Edmonton
Carbon Organic (Total) in water (TOC)	APHA		High-Temperature Combustion Method, 5310 B	20-Jul-17	Exova Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	20-Jul-17	Exova Edmonton
Chlorine (Total) in water	APHA	*	DPD Colorimetric Method, 4500-Cl G	20-Jul-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		E. Coli - MF Partition Procedures, 9222 G	21-Jul-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	21-Jul-17	Exova Calgary
Colour (Apparent) in water	APHA	*	Visual Comparison Method, 2120 B	21-Jul-17	Exova Edmonton
Cyanide (Dissolved) in water	Alta. Env. Method	*	Cyanide, Simple Extractable (Automated Pyridine-Barbituric Acid Colorimetric Method), 06608L	25-Jul-17	Exova Edmonton
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	21-Jul-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	21-Jul-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA		Hardness by Calculation, 2340 B	21-Jul-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	21-Jul-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	21-Jul-17	Exova Edmonton
Solids Dissolved (Total, Fixed and Volatile)	APHA	*	Total Dissolved Solids Dried at 180 C, 2540 C	21-Jul-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	24-Jul-17	Exova Edmonton
Sulfide in water	APHA	*	Gas Dialysis, Automated Methylene Blue Method, 4500-S2- E	26-Jul-17	Exova Edmonton
THM - Water	US EPA	*	US EPA method, 8260B/5035	21-Jul-17	Exova Calgary
Turbidity in Water	APHA	*	Turbidity - Nephelometric Method, 2130 B	21-Jul-17	Exova Edmonton

** Reference Method Modified*

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215675**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P	Date Received:	Jul 20, 2017
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	X0E 0T0	P.O.:	100104	Report Number:	2207988
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

References

Alta. Env. Method	Alberta Environment Method
APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Guidelines

Guideline Description	Health Canada GCDWQ
Guideline Source	Guidelines for Canadian Drinking Water Quality, Health Canada, February 2017
Guideline Comments	MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guideline for Water Treatment Plants Refer to Health Canada GCDWQ for complete guidelines and additional drinking water information at www.hc-sc.gc.ca

Comments:

- Samples 1215474-1, 1215479-1, and 1215678-1 turbidity may interfere with Apparent Colour analysis. A more accurate measure of sample colour would be obtained from True Colour Analysis.

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Project Information

Project ID	snp-0036-1
Project Name	
Project Location	E.C.W.T.P.
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date.July.19/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp 11 C, precip___, Wind dir___ Vel___km/h

Treated Water

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method
1	B.O.D.	snp-0036-1		July.19/2017		Grab
2	Metals	snp-0036-1		July.19/2017		Grab
3	Nutrients	snp-0036-1		July.19/2017		Grab
4	Routine	snp-0036-1		July.19/2017		Grab
5	Cyanide	snp-0036-1		July.19/2017		Grab
6	Microbiology	snp-0036-1		July.19/2017		Grab
7	T.H.M.s	snp-0036-1		July.19/2017		Grab
8	Sulphides	snp-0036-1		July.19/2017		Grab
9	Mercury	snp-0036-1		July 19/17		Grab
10						
11						
12						
13						
14						
15						

Number of Containers

Apply Canadian Standards for Drinking Water!

This section for Lab use only

Date/Time stamp: JUL 20 PM 12:17

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1215675 COC

Shipping: COD Y/N

Cooler temp: 7.5

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: NC

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215678**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P.	Date Received:	Jul 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2207996
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Sample 1215678-1; 5784093 Some total metal results were less than dissolved metal results for sample 1215678-1. The results were verified and are within expected measurement uncertainty.
- Samples 1215474-1, 1215479-1, and 1215678-1 turbidity may interfere with Apparent Colour analysis. A more accurate measure of sample colour would be obtained from True Colour Analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215678**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P.	Date Received:	Jul 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2207996
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1215678-1
Sample Date	July 19, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-1 / Raw Water / 7.5°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4	4		
Inorganic Nonmetallic Parameters						
Organic Carbon	Total Nonpurgeable	mg/L	6.9	0.5		
Organic Carbon	Dissolved Nonpurgeable	mg/L	5.8	0.5		
Cyanide	Total	mg/L	<0.002	0.002	0.2	Below MAC
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	2.19	0.02	0.1	Above OG
Calcium	Total	mg/L	44.9	0.2		
Iron	Total	mg/L	3.64	0.05	0.3	Above AO
Magnesium	Total	mg/L	11.9	0.2		
Manganese	Total	mg/L	0.075	0.005	0.05	Above AO
Potassium	Total	mg/L	1.4	0.4		
Silicon	Total	mg/L	5.32	0.05		
Sodium	Total	mg/L	7.0	0.4	200	Below AO
Sulfur	Total	mg/L	1960	0.3		
Mercury	Total	mg/L	<0.000005	0.000005	0.001	Below MAC
Antimony	Total	mg/L	<0.0002	0.0002	0.006	Below MAC
Arsenic	Total	mg/L	0.0025	0.0002	0.01	Below MAC
Barium	Total	mg/L	0.069	0.001	1.0	Below MAC
Beryllium	Total	mg/L	0.0001	0.0001		
Bismuth	Total	mg/L	<0.0005	0.0005		
Boron	Total	mg/L	0.015	0.002	5.0	Below MAC
Cadmium	Total	mg/L	0.00009	0.00001	0.005	Below MAC
Chromium	Total	mg/L	0.0034	0.0005	0.05	Below MAC
Cobalt	Total	mg/L	0.0017	0.0001		
Copper	Total	mg/L	0.007	0.001	1.0	Below AO
Lead	Total	mg/L	0.0022	0.0001	0.01	Below MAC
Lithium	Total	mg/L	0.007	0.001		
Molybdenum	Total	mg/L	0.001	0.001		
Nickel	Total	mg/L	0.0063	0.0005		
Selenium	Total	mg/L	0.0007	0.0002	0.05	Below MAC
Silver	Total	mg/L	0.00001	0.00001		
Strontium	Total	mg/L	0.237	0.001		
Thallium	Total	mg/L	<0.00005	0.00005		

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215678**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P.	Date Received:	Jul 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2207996
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1215678-1
Sample Date	July 19, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-1 / Raw Water / 7.5°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Metals Total - Continued						
Tin	Total	mg/L	<0.001	0.001		
Titanium	Total	mg/L	0.0427	0.0005		
Uranium	Total	mg/L	0.0009	0.0005	0.02	Below MAC
Vanadium	Total	mg/L	0.0044	0.0001		
Zinc	Total	mg/L	0.017	0.001	5.0	Below AO
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	4	1	0	Present - Above MAC
Escherichia coli	Membrane Filtration	CFU/100 mL	1	1	0	Present - Above MAC
Physical and Aggregate Properties						
Solids	Total Dissolved	mg/L dried at 180 °C	180	7	500	Below AO
Colour	Apparent, Potable	Colour units	>60	5	15	Above AO
Turbidity		NTU	186	0.1	0.1	Above OG
Solids	Total Suspended	mg/L	142	2		
Routine Water						
pH			8.08		7.0-10.5	Within OG Range
Temperature of observed pH		°C	23.3			
Electrical Conductivity	at 25 °C	µS/cm	274	1		
Calcium	Dissolved	mg/L	36.6	0.2		
Magnesium	Dissolved	mg/L	9.8	0.2		
Sodium	Dissolved	mg/L	7.2	0.4	200	Below AO
Potassium	Dissolved	mg/L	1.0	0.4		
Iron	Dissolved	mg/L	0.02	0.01	0.3	Below AO
Manganese	Dissolved	mg/L	<0.005	0.005	0.05	Below AO
Chloride	Dissolved	mg/L	6.5	0.4	250	Below AO
Fluoride		mg/L	0.12	0.05	1.5	Below MAC
Nitrate - N		mg/L	0.04	0.01	10	Below MAC
Nitrite - N		mg/L	<0.005	0.005	1	Below MAC
Nitrate and Nitrite - N		mg/L	0.04	0.01	10	Below MAC
Sulfate (SO4)	Dissolved	mg/L	44.9	0.9	500	Below AO
Hydroxide		mg/L	<5			
Carbonate		mg/L	<6			
Bicarbonate		mg/L	112			
P-Alkalinity	as CaCO3	mg/L	<5.0	5		
T-Alkalinity	as CaCO3	mg/L	91.6	5		
Total Dissolved Solids	Calculated	mg/L	161	1	500	Below AO
Hardness	Dissolved as CaCO3	mg/L	132			

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215678**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P.	Date Received:	Jul 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2207996
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1215678-1
Sample Date	July 19, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-1 / Raw Water / 7.5°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
Routine Water - Continued						
Ionic Balance	Dissolved	%	101			
Trihalomethanes Screen - Water						
Chloroform		mg/L	<0.001	0.001		
Bromodichloromethane		mg/L	<0.001	0.001		
Dibromochloromethane		mg/L	<0.001	0.001		
Bromoform		mg/L	<0.001	0.001		
Total Trihalomethanes		mg/L	<0.001	0.001	0.1	Below MAC
Trihalomethanes - Surrogate Recovery						
Dibromofluoromethane	EPA Surrogate	%	92	86-118		
Toluene-d8	EPA Surrogate	%	95	85-115		
Bromofluorobenzene	EPA Surrogate	%	69	86-115		

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

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Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Alkalinity - Titration Method, 2320 B	20-Jul-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	20-Jul-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	20-Jul-17	Exova Edmonton
Anions (Routine) by Ion Chromatography	APHA	*	Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	20-Jul-17	Exova Edmonton
Approval-Edmonton	APHA		Checking Correctness of Analyses, 1030 E	24-Jul-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	21-Jul-17	Exova Edmonton
Carbon Organic (Dissolved) in water (DOC)	APHA		High-Temperature Combustion Method, 5310 B	21-Jul-17	Exova Edmonton
Carbon Organic (Total) in water (TOC)	APHA		High-Temperature Combustion Method, 5310 B	20-Jul-17	Exova Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	20-Jul-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		E. Coli - MF Partition Procedures, 9222 G	21-Jul-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	21-Jul-17	Exova Calgary
Colour (Apparent) in water	APHA	*	Visual Comparison Method, 2120 B	21-Jul-17	Exova Edmonton
Cyanide (Total) in water	US EPA	*	US EPA method, 335.3	21-Jul-17	Exova Edmonton
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	21-Jul-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	21-Jul-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA		Hardness by Calculation, 2340 B	21-Jul-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	21-Jul-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	21-Jul-17	Exova Edmonton
Solids Dissolved (Total, Fixed and Volatile)	APHA	*	Total Dissolved Solids Dried at 180 C, 2540 C	21-Jul-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	24-Jul-17	Exova Edmonton
THM - Water	US EPA	*	US EPA method, 8260B/5035	21-Jul-17	Exova Calgary
Turbidity in Water	APHA	*	Turbidity - Nephelometric Method, 2130 B	21-Jul-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1215678**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P.	Date Received:	Jul 20, 2017
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Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Guidelines

Guideline Description	Health Canada GCDWQ
Guideline Source	Guidelines for Canadian Drinking Water Quality, Health Canada, February 2017
Guideline Comments	MAC = Maximum Acceptable Concentration AO = Aesthetic Objective OG = Operational Guideline for Water Treatment Plants Refer to Health Canada GCDWQ for complete guidelines and additional drinking water information at www.hc-sc.gc.ca

Comments:

- Sample 1215678-1; 5784093 Some total metal results were less than dissolved metal results for sample 1215678-1. The results were verified and are within expected measurement uncertainty.
- Samples 1215474-1, 1215479-1, and 1215678-1 turbidity may interfere with Apparent Colour analysis. A more accurate measure of sample colour would be obtained from True Colour Analysis.

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Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	snp-0036-1
Project Name	
Project Location	E.C.W.T.P.
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Report Results

	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp 11 C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

Sample Custody (please print)

Sampled by: Jim Crawford

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date.July.19/2017 Initial: J.S.

This section for Lab use only

Date/Time stamp:

JUL 20 PM 12:17

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	B.O.D.	snp-0036-1		July.19/2017		Grab	
2	Metals + Presv	snp-0036-1		July.19/2017		Grab	
3	Nutrients + Presv	snp-0036-1		July.19/2017		Grab	
4	Routine	snp-0036-1		July.19/2017		Grab	
5	Cyanide + Presv	snp-0036-1		July.19/2017		Grab	
6	Microbiology	snp-0036-1		July.19/2017		Grab	
7	T.H.M.s	snp-0036-1		July.19/2017		Grab	
8	Sulphides + Presv	snp-0036-1		July.19/2017		Grab	
9	Mercury	Snp-0036-1		July 19/17		Grab	
10		Apply					
11							
12	Canadian	Standards for					
13							
14	Drinking	Water!					
15							

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1215678 COC

Shipping: COD Y/N

Cooler temp: 7.5

and size of coolers received:

Delivery Method:

Waybill: Courier

Received by: MS

Exova
Bay #5, 2712-37 Avenue N.E.
Calgary, Alberta
T1Y-5L3, Canada

T: +1 (403) 291-2022
F: +1 (403) 291-2021
E: Calgary@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1234056**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P.	Date Received:	Oct 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Oct 30, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2233554
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

Exova
Bay #5, 2712-37 Avenue N.E.
Calgary, Alberta
T1Y-5L3, Canada

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F: +1 (403) 291-2021
E: Calgary@exova.com
W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1234056**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P.	Date Received:	Oct 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Oct 30, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2233554
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Reference Number	1234056-1	1234056-2	
Sample Date	Oct 19, 2017	Oct 19, 2017	
Sample Time	NA	NA	
Sample Location			
Sample Description	snp-0036-1 / Treated / 5.7°C	snp-0036-1 / Raw / 5.7°C	
Matrix	Water	Water	

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Trihalomethanes Screen - Water						
Chloroform		mg/L	0.023	<0.001		0.001
Bromodichloromethane		mg/L	0.002	<0.001		0.001
Dibromochloromethane		mg/L	<0.001	<0.001		0.001
Bromoform		mg/L	<0.001	<0.001		0.001
Total Trihalomethanes		mg/L	0.025	<0.001		0.001
Trihalomethanes - Surrogate Recovery						
Dibromofluoromethane	EPA Surrogate	%	96	93		50-140
Toluene-d8	EPA Surrogate	%	97	98		50-140
Bromofluorobenzene	EPA Surrogate	%	98	99		50-140

Approved by:

Mike Yohemas, BSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Exova
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T1Y-5L3, Canada

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F: +1 (403) 291-2021
E: Calgary@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-1	Lot ID:	**1234056**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	E.C.W.T.P.	Date Received:	Oct 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Oct 30, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2233554
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
THM - Water	US EPA	*	US EPA method, 8260B/5035	Oct 25, 2017	Exova Calgary

** Reference Method Modified*

References

US EPA	US Environmental Protection Agency Test Methods

Please direct any inquiries regarding this report to our Client Services Group or to the Operations Manager at the coordinates indicated at the top left of this page.
Results relate only to samples as submitted.

Exova Testing Advising Assuring

www.exova.com

Project Information

Project ID	S.N.P. 0036-1
Project Name	
Project Location	E.C.W.T.P.
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Justin Simms

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Oct.19/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp_-7__ C, precip_91%__, Wind dir_N__ Vel_2__km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	T.H.M. (Treated)	snp-0036-1		Oct.19/2017		Grab	
2							
3							
4	T.H.M. (Raw)	snp-0036-1		Oct.19/2017		Grab	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:

OCT 20 PM12:22

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Lot: 1234056 COC

Shipping: COD Y/N

Cooler temp: 5.7

and size of coolers received:

Delivery Method: Canadian North

Waybill:

Received by:

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1181890**
Report To:	Town of Inuvik	ID:	SNP 0036-3	Control Number:	
	Box 1160	Name:	Sewage Lagoon	Date Received:	Jan 18, 2017
	2 Firth Street	Location:		Date Reported:	Jan 25, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2162533
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	T.O.I				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Richard Feilden Aecom - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Lot Verification] send (COA, COC) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report

Notes To Clients:

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7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1181890**
Report To:	Town of Inuvik	ID:	SNP 0036-3	Control Number:	
	Box 1160	Name:	Sewage Lagoon	Date Received:	Jan 18, 2017
	2 Firth Street	Location:		Date Reported:	Jan 25, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2162533
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	T.O.I				

Reference Number	1181890-1
Sample Date	Jan 17, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-3 / 1.6°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	50			4
Biochemical Oxygen Demand	Inhibited	mg/L	42			4
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	20.9			0.025
Ammonium/Ammonia Preservation			Yes			
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	630000			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	144000			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	5			2
Routine Water						
pH			7.42			

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Exova
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Edmonton, Alberta
T6B 3J4, Canada

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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
Report To:	Town of Inuvik	ID:	SNP 0036-3
	Box 1160	Name:	Sewage Lagoon
	2 Firth Street	Location:	
	Inuvik, NT, Canada	LSD:	
	X0E 0T0	P.O.:	100104
Attn:	Rick Campbell	Acct code:	
Sampled By:	Justin Simms		
Company:	T.O.I		

Lot ID:	**1181890**
Control Number:	
Date Received:	Jan 18, 2017
Date Reported:	Jan 25, 2017
Report Number:	2162533

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	19-Jan-17	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	19-Jan-17	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	19-Jan-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	19-Jan-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	19-Jan-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	19-Jan-17	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	20-Jan-17	Exova Edmonton

** Reference Method Modified*

References

APHA — Standard Methods for the Examination of Water and Wastewater

Comments:

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted.

Exova Testing Advising Assuring

www.exova.com

Project Information

Project ID	SNP 0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Justin Simms

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date:Jan.17/2017 Initial: J.S.

Report Results								
	E-Mail	x	Online		PDF		QA/QC Report	
	Mail		Fax	x	Excel			

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp_- 28__ C, precip_75%__, Wind dir_nnw__ Vel_8__km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	C.B.O.D.	snp-0036-3		Jan.17/2017		dip	
2	B.O.D.	snp-0036-3				dip	
3	Nutrients + preservatives	snp-0036-3				dip	
4	Routine	snp-0036-3				dip	
5	Microbiology	snp-0036-3				dip	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:

JAN 18 PM12:05

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

In Lot: 1181890 COC

Shipping: COD Y/N

Cooler temp: 1.6

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: JW

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1186780**
Report To:	Town of Inuvik	ID:	SNP 0036-3	Control Number:	
	Box 1160	Name:		Date Received:	Feb 16, 2017
	2 Firth Street	Location:	Sewage Lagoon	Date Reported:	Feb 24, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2169024
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Jim Crawford				
Company:	T.O.I				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Richard Feilden Aecom - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Lot Verification] send (COA, COC) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report

Notes To Clients:

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1186780**
Report To:	Town of Inuvik	ID:	SNP 0036-3	Control Number:	
	Box 1160	Name:		Date Received:	Feb 16, 2017
	2 Firth Street	Location:	Sewage Lagoon	Date Reported:	Feb 24, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2169024
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Jim Crawford				
Company:	T.O.I				

Reference Number	1186780-1
Sample Date	Feb 15, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-3 / 3.6°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	55			4
Biochemical Oxygen Demand	Inhibited	mg/L	58			4
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	22.3			0.025
Ammonium/Ammonia Preservation			Yes			
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	920000			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	120000			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	4			2
Routine Water						
pH			7.66			

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
Report To:	Town of Inuvik	ID:	SNP 0036-3
	Box 1160	Name:	
	2 Firth Street	Location:	Sewage Lagoon
	Inuvik, NT, Canada	LSD:	
	X0E 0T0	P.O.:	100104
Attn:	Rick Campbell	Acct code:	
Sampled By:	Jim Crawford		
Company:	T.O.I		

Lot ID:	**1186780**
Control Number:	
Date Received:	Feb 16, 2017
Date Reported:	Feb 24, 2017
Report Number:	2169024

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	17-Feb-17	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	17-Feb-17	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	17-Feb-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	17-Feb-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	18-Feb-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	17-Feb-17	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	17-Feb-17	Exova Edmonton

** Reference Method Modified*

References

APHA Standard Methods for the Examination of Water and Wastewater

Comments:

Exova Testing Advising Assuring

www.exova.com

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	SNP 0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Report Results

	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp -23 C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

Sample Custody (please print)

Sampled by: Jim Crawford

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Feb.15/2017 Initial: J.C.

This section for Lab use only

Date/Time stamp:

FEB 16 AM 11:08

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	C.B.O.D.	snp-0036-3		Feb.15/2017		dip	
2	B.O.D.	"		"		"	
3	Nutrients + preservatives	"		"		"	
4	Microbiology	"		"		"	
5	Routine	"		"		"	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Lot: 1186780 COC

Shipping: COD Y/N

Cooler temp: 3.6

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by:

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1191592**
Report To:	Town of Inuvik	ID:	SNP 0036-3	Control Number:	
	Box 1160	Name:		Date Received:	Mar 16, 2017
	2 Firth Street	Location:	Sewage Lagoon	Date Reported:	Mar 22, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2175470
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Richard Feilden Aecom - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Lot Verification] send (COA, COC) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report

Notes To Clients:

Exova
7217 Roper Road NW
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T6B 3J4, Canada

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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1191592**
Report To:	Town of Inuvik	ID:	SNP 0036-3	Control Number:	
	Box 1160	Name:		Date Received:	Mar 16, 2017
	2 Firth Street	Location:	Sewage Lagoon	Date Reported:	Mar 22, 2017
	Inuvik, NT, Canada	LSD:		Report Number:	2175470
	X0E 0T0	P.O.:	100104		
Attn:	Rick Campbell	Acct code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Reference Number	1191592-1
Sample Date	Mar 15, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-3 / 1.9C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	72			4
Biochemical Oxygen Demand	Inhibited	mg/L	52			4
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	22.1			0.025
Ammonium/Ammonia Preservation			Yes			
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	540000			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	520000			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	6			2
Routine Water						
pH			7.66			

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
Report To:	Town of Inuvik	ID:	SNP 0036-3
	Box 1160	Name:	
	2 Firth Street	Location:	Sewage Lagoon
	Inuvik, NT, Canada	LSD:	
	X0E 0T0	P.O.:	100104
Attn:	Rick Campbell	Acct code:	
Sampled By:	Justin Simms		
Company:	Town of Inuvik		

Lot ID:	**1191592**
Control Number:	
Date Received:	Mar 16, 2017
Date Reported:	Mar 22, 2017
Report Number:	2175470

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	17-Mar-17	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	16-Mar-17	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	16-Mar-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	16-Mar-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	17-Mar-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	17-Mar-17	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	20-Mar-17	Exova Edmonton

** Reference Method Modified*

References

APHA — Standard Methods for the Examination of Water and Wastewater

Comments:

Exova Testing Advising Assuring

www.exova.com

Project Information

Project ID	SNP 0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Justin Simms

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: March15/2017 Initial: J.S

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp_-28__ C, precip_77%__, Wind dir_E.N.E__ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	C.B.O.D	snp-0036-3		March.15/2017		Dip	
2	B.O.D.	snp-0036-3		March.15/2017		Dip	
3	nutrients + Preservatives	snp-0036-3		March.15/2017		Dip	
4	microbiology	snp-0036-3		March.15/2017		Dip	
5	routine	snp-0036-3		March.15/2017		Dip	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp: MAR 16 PM12:33

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1191592 COC

Shipping: COD Y/N

Cooler temp: 1.9

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by:

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1196238**
	Box 1160	ID:	SNP 0036-3	Control Number:	
	2 Firth Street	Name:		Date Received:	Apr 12, 2017
	Inuvik, NT, Canada	Location:	Sewage lagoon	Date Reported:	Apr 19, 2017
	X0E 0T0	LSD:		Report Number:	2181778
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (Test Report, COC) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Jason Casault AECOM - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com	On [Lot Verification] send (COA, COC) by Email - Merge Reports On [Report Approval] send (Test Report, COC) by Email - Merge Reports

Notes To Clients:

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1196238**
	Box 1160	ID:	SNP 0036-3	Control Number:	
	2 Firth Street	Name:		Date Received:	Apr 12, 2017
	Inuvik, NT, Canada	Location:	Sewage lagoon	Date Reported:	Apr 19, 2017
	X0E 0T0	LSD:		Report Number:	2181778
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Reference Number	1196238-1
Sample Date	Apr 11, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-3 / 1.9°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	80			4
Biochemical Oxygen Demand	Inhibited	mg/L	47			4
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	23.0			0.025
Ammonium/Ammonia Preservation			Yes			
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	800000			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	200000			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	7			2
Routine Water						
pH			7.58			

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Edmonton, Alberta
T6B 3J4, Canada

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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-3
	2 Firth Street	Name:	
	Inuvik, NT, Canada	Location:	Sewage lagoon
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Justin Simms	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1196238**
Control Number:	
Date Received:	Apr 12, 2017
Date Reported:	Apr 19, 2017
Report Number:	2181778

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	13-Apr-17	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	13-Apr-17	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	13-Apr-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	13-Apr-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	13-Apr-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	13-Apr-17	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	17-Apr-17	Exova Edmonton

** Reference Method Modified*

References

APHA — Standard Methods for the Examination of Water and Wastewater

Comments:

Exova — Testing Advising Assuring

www.exova.com

Project Information

Project ID	SNP 0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Justin Simms

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date:April.11/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp_-10__ C, precip__75%_, Wind dir_E__ Vel__11_km/h

Indicate Regulatory Requirements below

This section for Lab use only

Date/Time stamp: APR 12 PM 12:39

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	C.B.O.D	snp-0036-3		April.11/2017		Dip	
2	B.O.D.	snp-0036-3		April.11/2017		Dip	
3	Microbiology	snp-0036-3		April.11/2017		Dip	
4	Routine	snp-0036-3		April.11/2017		Dip	
5	Nutrients ### + Preserv	snp-0036-3		April.11/2017		Dip	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazardous samples

Control #

Page 1 of 1

Lot: 1196238 COC

Shipping: COD Y/N

Cooler temp: 1.9

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: Wayne Vo

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1202943**
	Box 1160	ID:	SNP 0036-3	Control Number:	
	2 Firth Street	Name:	sewage lagoon	Date Received:	May 18, 2017
	Inuvik, NT, Canada	Location:	E.C.W.T.P.	Date Reported:	May 25, 2017
	X0E 0T0	LSD:		Report Number:	2191459
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Richard Feilden AECOM - Edmonton	17203 - 103 Avenue Edmonton, Alberta T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Report Approval] send (COC, Test Report) by Email - Merge Reports

Notes To Clients:

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1202943**
	Box 1160	ID:	SNP 0036-3	Control Number:	
	2 Firth Street	Name:	sewage lagoon	Date Received:	May 18, 2017
	Inuvik, NT, Canada	Location:	E.C.W.T.P.	Date Reported:	May 25, 2017
	X0E 0T0	LSD:		Report Number:	2191459
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Reference Number	1202943-1
Sample Date	May 17, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-3 / 3.5°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Aggregate Organic Constituents				
Biochemical Oxygen Demand	5 Day	mg/L	49	4
Biochemical Oxygen Demand	Inhibited	mg/L	40	4
Inorganic Nonmetallic Parameters				
Ammonium - N		mg/L	14.5	0.025
Ammonium/Ammonia Preservation			Yes	
Microbiological Analysis				
Total Coliforms	Membrane Filtration	CFU/100 mL	178000	1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	103000	1
Physical and Aggregate Properties				
Solids	Total Suspended	mg/L	5	2
Routine Water				
pH			7.62	

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-3
	2 Firth Street	Name:	sewage lagoon
	Inuvik, NT, Canada	Location:	E.C.W.T.P.
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Justin Simms	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1202943**
Control Number:	
Date Received:	May 18, 2017
Date Reported:	May 25, 2017
Report Number:	2191459

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-May-17	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	18-May-17	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	23-May-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	23-May-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	19-May-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	19-May-17	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	24-May-17	Exova Edmonton

** Reference Method Modified*

References

APHA Standard Methods for the Examination of Water and Wastewater

Comments:

Exova Testing Advising Assuring

www.exova.com

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	snp.0036-3
Project Name	sewage lagoon
Project Location	E.C.W.T.P.
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Sample Custody (please print)

Sampled by: Justin Simms

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Initial: J.S

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp 11 C, precip 30% Wind dir E Vel 14 km/h

Indicate Regulatory Requirements below

Number of Containers

This section for Lab use only

Date/Time stamp:

MAY 18 PM 12:23

May 17/2017

Indicate below any deficiencies in the condition of samples:

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method
1	C.B.O.D.	snp-0036-3		May.17/2017		dip
2	Routine	snp-0036-3		May.17/2017		dip
3	Nutrients	snp-0036-3		May.17/2017		dip
4	B.O.D.	snp-0036-3		May.17/2017		dip
5	Microbiology	snp-0036-3		May.17/2017		dip
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Ind

Lot: 1202943 COC

Shipping: COD Y/N

Cooler temp: 3.5

and size of coolers received:

Delivery Method: Hand

Waybill:

Received by: NC

Exova
7217 Roper Road NW
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T6B 3J4, Canada

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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1208473**
	Box 1160	ID:	S.N.P. 0036-3	Control Number:	
	2 Firth Street	Name:	Sewage Lagoon	Date Received:	Jun 15, 2017
	Inuvik, NT, Canada	Location:	E.C.W.T.P.	Date Reported:	Jun 21, 2017
	X0E 0T0	LSD:		Report Number:	2198658
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Jim Crawford	Acct code:			
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Richard Feilden AECOM - Edmonton	17203 - 103 Avenue Edmonton, Alberta T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Report Approval] send (COC, Test Report) by Email - Merge Reports

Notes To Clients:

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7217 Roper Road NW
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T6B 3J4, Canada

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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1208473**
	Box 1160	ID:	S.N.P. 0036-3	Control Number:	
	2 Firth Street	Name:	Sewage Lagoon	Date Received:	Jun 15, 2017
	Inuvik, NT, Canada	Location:	E.C.W.T.P.	Date Reported:	Jun 21, 2017
	X0E 0T0	LSD:		Report Number:	2198658
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Jim Crawford	Acct code:			
Company:	Town of Inuvik				

Reference Number	1208473-1
Sample Date	Jun 14, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-3 / 1.1°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	18			4
Biochemical Oxygen Demand	Inhibited	mg/L	13			4
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	13.2			0.025
Ammonium/Ammonia Preservation			Yes			
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	2600			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	400			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	16			2
Routine Water						
pH			7.50			

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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T6B 3J4, Canada

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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	S.N.P. 0036-3
	2 Firth Street	Name:	Sewage Lagoon
	Inuvik, NT, Canada	Location:	E.C.W.T.P.
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1208473**
Control Number:	
Date Received:	Jun 15, 2017
Date Reported:	Jun 21, 2017
Report Number:	2198658

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	16-Jun-17	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	19-Jun-17	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	16-Jun-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	16-Jun-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	16-Jun-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	16-Jun-17	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	20-Jun-17	Exova Edmonton

** Reference Method Modified*

References

APHA Standard Methods for the Examination of Water and Wastewater

Comments:

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1214231**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	sewage lagoon	Date Received:	Jul 13, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 20, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206060
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

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W: www.exova.com

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1214231**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	sewage lagoon	Date Received:	Jul 13, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 20, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206060
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Reference Number	1214231-1
Sample Date	July 12, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-3 / 5.8°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Aggregate Organic Constituents				
Biochemical Oxygen Demand	5 Day	mg/L	18	4
Biochemical Oxygen Demand	Inhibited	mg/L	13	4
Inorganic Nonmetallic Parameters				
Ammonium - N		mg/L	2.95	0.025
Ammonium/Ammonia Preservation			Yes	
Microbiological Analysis				
Total Coliforms	Membrane Filtration	CFU/100 mL	2000	1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	20	1
Physical and Aggregate Properties				
Solids	Total Suspended	mg/L	71	2
Routine Water				
pH			8.29	

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
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E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1214231**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	sewage lagoon	Date Received:	Jul 13, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 20, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206060
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Justin Simms				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	17-Jul-17	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	14-Jul-17	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	18-Jul-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	18-Jul-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	14-Jul-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	14-Jul-17	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	14-Jul-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater

Comments:

Please direct any inquiries regarding this report to our Client Services Group or to the Operations Manager at the coordinates indicated at the top left of this page.
Results relate only to samples as submitted.

Exova Testing Advising Assuring
www.exova.com

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	snp-0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Report Results

	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp_9__ C, precip_76%__, Wind dir__N_ Vel_4__km/h

Indicate Regulatory Requirements below

Sample Custody (please print)

Sampled by: Justin Simms
Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:
Date: July.12/2017 Initial: J.S

This section for Lab use only

Date/Time stamp:
JUL 13 PM 12:46

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	B.O.D.	snp-0036-3		July.12/2017		Dip	
2	C.B.O.D.	snp-0036-3		July.12/2017		Dip	
3	nutrients + Preservatives	snp-0036-3		July.12/2017		Dip	
4	routine	snp-0036-3		July.12/2017		Dip	
5	Microbiology	snp-0036-3		July.12/2017		Dip	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

- Were Exova supplies used?
- Was there any damage to the shipping container?
- Were the containers packaged well?
- Were the expected number of samples received (document below)?
- Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Lot: 1214231 COC

Shipping:
COD Y/N

Cooler temp:
5.8

and size of coolers received:

Delivery Method:
Waybill: CANADIAN NORTH
Received by: NUNEZ

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

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W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1221094**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215101
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1221094**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215101
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1221094-1
Sample Date	August 16, 2017
Sample Time	NA
Sample Location	
Sample Description	snp 0036-3 / 3.2°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Aggregate Organic Constituents				
Biochemical Oxygen Demand	5 Day	mg/L	16	4
Biochemical Oxygen Demand	Inhibited	mg/L	7	4
Inorganic Nonmetallic Parameters				
Ammonium - N		mg/L	3.50	0.025
Ammonium/Ammonia Preservation			Yes	
Microbiological Analysis				
Total Coliforms	Membrane Filtration	CFU/100 mL	6000	1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	500	1
Physical and Aggregate Properties				
Solids	Total Suspended	mg/L	28	2
Routine Water				
pH			1.45	

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1221094**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215101
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	17-Aug-17	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	21-Aug-17	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	22-Aug-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	22-Aug-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	18-Aug-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	18-Aug-17	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	21-Aug-17	Exova Edmonton

** Reference Method Modified*

References

APHA — Standard Methods for the Examination of Water and Wastewater

Comments:

Please direct any inquiries regarding this report to our Client Services Group or to the Operations Manager at the coordinates indicated at the top left of this page.
Results relate only to samples as submitted.

Exova Testing Advising Assuring

www.exova.com

Project Information

Project ID	snp 0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Aug.16/2017 Initial: J.S

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp 12 C, precip 19%, Wind dir SE Vel 4 km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	C.B.O.D.	snp 0036-3		Aug.16/2017		Dip	
2	B.O.D.	snp 0036-3		Aug.16/2017		Dip	
3	microbiology	snp 0036-3		Aug.16/2017		Dip	
4	nutrients + preservatives	snp 0036-3		Aug.16/2017		Dip	
5	routine	snp 0036-3		Aug.16/2017		Dip	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazardous samples

Control #

Lot: 1221094 COC

Shipping: COD Y/N

Cooler temp: 3.2

and size of coolers received:

Delivery Method: COURIER

Waybill:

Received by: JNUNEZ

Exova
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Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1226599**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222216
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

Exova
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W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1226599**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222216
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226599-1
Sample Date	Sep 13, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-3 / 5.9°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	18			4
Biochemical Oxygen Demand	Inhibited	mg/L	5			4
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	0.969			0.025
Ammonium/Ammonia Preservation			Yes			
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	2800			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	300			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	38			2
Routine Water						
pH			7.95			

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1226599**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222216
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-Sep-17	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	15-Sep-17	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	15-Sep-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	15-Sep-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	15-Sep-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	15-Sep-17	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	15-Sep-17	Exova Edmonton

** Reference Method Modified*

References

APHA — Standard Methods for the Examination of Water and Wastewater

Comments:

Please direct any inquiries regarding this report to our Client Services Group or to the Operations Manager at the coordinates indicated at the top left of this page.
Results relate only to samples as submitted.

Exova — Testing Advising Assuring

www.exova.com

Project Information

Project ID	snp 0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Sept.13/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-3		Sept.13/2017		Dip	
2	C.B.O.D.	snp-0036-3		Sept.13/2017		Dip	
3	Routine	snp-0036-3		Sept.13/2017		Dip	
4	Nutrients + preservatives	snp-0036-3		Sept.13/2017		Dip	
5	Microbiology	snp-0036-3		Sept.13/2017		Dip	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:
SEP 14 PM 12:43

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1226599 COC

Shipping: COD Y/N

Cooler temp: 5.9

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

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7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1234006**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	sewage lagoon	Date Received:	Oct 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Oct 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2233465
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Josh/ Dale				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

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T6B 3J4, Canada

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F: +1 (780) 434-8586
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W: www.exova.com

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1234006**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	sewage lagoon	Date Received:	Oct 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Oct 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2233465
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Josh/ Dale				
Company:	Town of Inuvik				

Reference Number	1234006-1
Sample Date	Oct 19, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-3 / 8°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	6			4
Biochemical Oxygen Demand	Inhibited	mg/L	6			4
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	26.0			0.025
Ammonium/Ammonia Preservation			Yes			
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	6200			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	1000			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	18			2
Routine Water						
pH			7.40			

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1234006**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	sewage lagoon	Date Received:	Oct 20, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Oct 27, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2233465
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Josh/ Dale				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	Oct 25, 2017	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	Oct 27, 2017	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	Oct 20, 2017	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	Oct 20, 2017	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	Oct 21, 2017	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	Oct 21, 2017	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	Oct 20, 2017	Exova Edmonton

** Reference Method Modified*

References

APHA Standard Methods for the Examination of Water and Wastewater

Exova Testing Advising Assuring

www.exova.com

Project Information

Project ID	snp 0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Josh/Dale

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Oct.19/2017 Initial: J.S

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp_-7__ C, precip__90 %_, Wind dir__N_ Vel__2_km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	C.B.O.D.	snp-0036-3		Oct.19/2017		Dip	
2	B.O.D.	snp-0036-3		Oct.19/2017		Dip	
3	Microbiology	snp-0036-3		Oct.19/2017		Dip	
4	Nutrients + preservatives	snp-0036-3		Oct.19/2017		Dip	
5	Routine	snp-0036-3		Oct.19/2017		Dip	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:

OCT 20 PM12:22

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Lot: 1234006 COC

Shipping:

COD Y/N

Cooler temp: 8

and size of coolers received:

Delivery Method:

Waybill:

Received by:

Exova
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1239965**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Nov 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Nov 23, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2244259
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Josh / Dale				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Nov 17, 2017 - Upon receipt, sample 1 had exceeded recommended temperature for bacterial analysis.

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Edmonton, Alberta
T6B 3J4, Canada

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E: Edmonton@exova.com
W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1239965**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Nov 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Nov 23, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2244259
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Josh / Dale				
Company:	Town of Inuvik				

Reference Number	1239965-1
Sample Date	Nov 16, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-3 / -1.0°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	4			4
Biochemical Oxygen Demand	Inhibited	mg/L	<4			4
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	3.68			0.025
Ammonium/Ammonia Preservation			Yes			
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	10000			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	<10000			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	4			2
Routine Water						
pH			7.29			

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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T6B 3J4, Canada

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E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1239965**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Nov 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Nov 23, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2244259
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Josh / Dale				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	Nov 17, 2017	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	Nov 22, 2017	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	Nov 22, 2017	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	Nov 22, 2017	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	Nov 18, 2017	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	Nov 18, 2017	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	Nov 20, 2017	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater

Comments:

- Nov 17, 2017 - Upon receipt, sample 1 had exceeded recommended temperature for bacterial analysis.

Exova Testing Advising Assuring

www.exova.com

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	snp- 0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Report Results

	x	E-Mail		Online		PDF	
		Mail	x	Fax		Excel	

QA/QC Report

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp_-20__ C, precip_80%__, Wind dir_E_ Vel__12_km/h

Indicate Regulatory Requirements below

Sample Custody (please print)

Sampled by: Josh / Dale

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date:Nov.16/2017 Initial: J.S.

This section for Lab use only

Date/Time stamp:

NOV 17 PM 12:59

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-3		Nov.16/2017		Dip	
2	Routine	snp-0036-3		Nov.16/2017		Dip	
3	Microbiology	snp-0036-3		Nov.16/2017		Dip	
4	C.B.O.D.	snp-0036-3		Nov.16/2017		Dip	
5	Nutrients + preservatives	snp-0036-3		Nov.16/2017		Dip	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

- Were Exova supplies used?
- Was there any damage to the shipping container?
- Were the containers packaged well?
- Were the expected number of samples received (document below)?
- Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

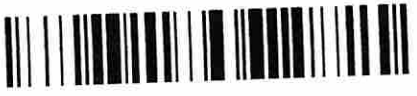
Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1239965 COC



Shipping:

COD Y/N

Cooler temp: -1.0

and size of coolers received:

Delivery Method:

Waybill: Courier

Received by: MC

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W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1245045**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Dec 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Dec 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2251699
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim/Dale				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

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E: Edmonton@exova.com
W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1245045**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Dec 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Dec 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2251699
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim/Dale				
Company:	Town of Inuvik				

Reference Number	1245045-1
Sample Date	Dec 13, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-3 / 2C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	29			4
Biochemical Oxygen Demand	Inhibited	mg/L	26			4
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	10.5			0.025
Ammonium/Ammonia Preservation			Yes			
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	>80000			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	>60000			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	9			2
Routine Water						
pH			7.44			

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-3	Lot ID:	**1245045**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Sewage Lagoon	Date Received:	Dec 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Dec 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2251699
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim/Dale				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	Dec 18, 2017	Exova Edmonton
Ammonium-N in Water	APHA	*	Automated Phenate Method, 4500-NH3 G	Dec 18, 2017	Exova Edmonton
BOD (Carbonaceous) in water	APHA	*	5 Day, 5210 B	Dec 19, 2017	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	Dec 19, 2017	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	Dec 15, 2017	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	Dec 15, 2017	Exova Calgary
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	Dec 20, 2017	Exova Edmonton

** Reference Method Modified*

References

APHA — Standard Methods for the Examination of Water and Wastewater

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www.exova.com

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	snp-0036-3
Project Name	
Project Location	sewage lagoon
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Sample Custody (please print)

Sampled by: Jim / Dale

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Dec.13/2017 Initial: J.S

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp 14 C, precip 82% Wind dir E Vel 11 km/h

Indicate Regulatory Requirements below

This section for Lab use only

Date/Time stamp: DEC 14 PM 12:01

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	C.B.O.D.	snp-0036-3		Dec.13/2017		Dip	
2	B.O.D.	snp-0036-3		Dec.13/2017		Dip	
3	Microbiology	snp-0036-3		Dec.13/2017		Dip	
4	Routine	snp-0036-3		Dec.13/2017		Dip	
5	Nutrients + preservatives	snp-0036-3		Dec.13/2017		Dip	
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

- Were Exova supplies used?
- Was there any damage to the shipping container?
- Were the containers packaged well?
- Were the expected number of samples received (document below)?
- Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Lot: 1245045 COC

Shipping: COD Y/N

Cooler temp: 2

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: M. CA

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E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1204923**
	Box 1160	ID:	SNP 0036-4	Control Number:	
	2 Firth Street	Name:	E.C.W.T.P.	Date Received:	May 30, 2017
	Inuvik, NT, Canada	Location:	Pit NW of dump	Date Reported:	Jun 6, 2017
	X0E 0T0	LSD:		Report Number:	2194070
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Jim Crawford	Acct code:			
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Jason Casault AECOM - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com	On [Lot Verification] send (COA, COC) by Email - Merge Reports On [Report Approval] send (Test Report, COC) by Email - Merge Reports
Richard Feilden AECOM - Edmonton	17203 - 103 Avenue Edmonton, Alberta T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Report Approval] send (COC, Test Report) by Email - Merge Reports

Notes To Clients:

- Sample was received in a plastic container which does not meet the sample requirements for mercury analysis as specified by the reference method.
- Sample 1204923-1; 5729717 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Exova
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Edmonton, Alberta
T6B 3J4, Canada

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1204923**
	Box 1160	ID:	SNP 0036-4	Control Number:	
	2 Firth Street	Name:	E.C.W.T.P.	Date Received:	May 30, 2017
	Inuvik, NT, Canada	Location:	Pit NW of dump	Date Reported:	Jun 6, 2017
	X0E 0T0	LSD:		Report Number:	2194070
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Jim Crawford	Acct code:			
Company:	Town of Inuvik				

Reference Number	1204923-1
Sample Date	May 29, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-4 / 5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4			4
Phenol		mg/L	0.001			0.001
Oil and Grease	Total	mg/L	<5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.07			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.11			0.02
Calcium	Total	mg/L	224			0.2
Iron	Total	mg/L	0.27			0.05
Magnesium	Total	mg/L	97.6			0.2
Manganese	Total	mg/L	0.108			0.005
Potassium	Total	mg/L	4.0			0.4
Silicon	Total	mg/L	2.61			0.05
Sodium	Total	mg/L	71.8			0.4
Sulfur	Total	mg/L	2120			0.3
Mercury	Total	mg/L	0.000066			0.000005
Antimony	Total	mg/L	0.0003			0.0002
Arsenic	Total	mg/L	0.0006			0.0002
Barium	Total	mg/L	0.030			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.088			0.002
Cadmium	Total	mg/L	0.00004			0.00001
Chromium	Total	mg/L	<0.0005			0.0005
Cobalt	Total	mg/L	0.0005			0.0001
Copper	Total	mg/L	0.004			0.001
Lead	Total	mg/L	<0.0001			0.0001
Lithium	Total	mg/L	0.039			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.0039			0.0005
Selenium	Total	mg/L	0.0189			0.0002
Silver	Total	mg/L	<0.00001			0.00001

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E: Edmonton@exova.com
W: www.exova.com

Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1204923**
	Box 1160	ID:	SNP 0036-4	Control Number:	
	2 Firth Street	Name:	E.C.W.T.P.	Date Received:	May 30, 2017
	Inuvik, NT, Canada	Location:	Pit NW of dump	Date Reported:	Jun 6, 2017
	X0E 0T0	LSD:		Report Number:	2194070
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Jim Crawford	Acct code:			
Company:	Town of Inuvik				

Reference Number	1204923-1
Sample Date	May 29, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-4 / 5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Strontium	Total	mg/L	0.618			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0095			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0006			0.0001
Zinc	Total	mg/L	0.016			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	82			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	1			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	2			2
Routine Water						
pH			7.72			
Electrical Conductivity	at 25 °C	µS/cm	1760			1
Calcium	Extractable	mg/L	212			0.2
Magnesium	Extractable	mg/L	93.1			0.2
Sodium	Extractable	mg/L	67.8			0.4
Potassium	Extractable	mg/L	3.7			0.4
Sulfate (SO4)	Dissolved	mg/L	935			0.9

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-4
	2 Firth Street	Name:	E.C.W.T.P.
	Inuvik, NT, Canada	Location:	Pit NW of dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1204923**
Control Number:	
Date Received:	May 30, 2017
Date Reported:	Jun 6, 2017
Report Number:	2194070

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	01-Jun-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	01-Jun-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	31-May-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	31-May-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	31-May-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	31-May-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	01-Jun-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	01-Jun-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	01-Jun-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	01-Jun-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	30-May-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	31-May-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	01-Jun-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	02-Jun-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample was received in a plastic container which does not meet the sample requirements for mercury analysis as specified by the reference method.
- Sample 1204923-1; 5729717 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Exova
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T6B 3J4, Canada

T: +1 (780) 438-5522
F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-4
	2 Firth Street	Name:	E.C.W.T.P.
	Inuvik, NT, Canada	Location:	Pit NW of dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1204923**
Control Number:	
Date Received:	May 30, 2017
Date Reported:	Jun 6, 2017
Report Number:	2194070

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted.

Exova Testing Advising Assuring

www.exova.com

Project Information

Project ID	
Project Name	snp-0036-4
Project Location	E.C.W.T.P.
Legal Location	Pit NW of dump
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	B.O.D.	snp-0036-4		May.29/2017		Dip	
2	Oil & Grease + preservatives	"		"		"	
3	Microbiology	"		"		"	
4	Routine	"		"		"	
5	Nutrients + preservatives	"		"		"	
6	Metals + preservatives	"		"		"	
7	Phenol + preservatives	"		"		"	
8							
9							
10							
11							
12							
13							
14							
15							

Sample Custody (please print)

Sampled by: Jim Crawford

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date. May29/2017 Initial: J.S.

This section for Lab use only

Date/Time stamp:

May 29/17

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1204923 COC

Shipping: COD Y/N

Cooler temp: 5.0

and size of coolers received: MAY 30 PM 12:04

Delivery Method: Courier

Waybill:

Received by: MV

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W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1211379**
	Box 1160	ID:	SNP 0036-4	Control Number:	
	2 Firth Street	Name:		Date Received:	Jun 29, 2017
	Inuvik, NT, Canada	Location:	pit n/w of dump	Date Reported:	Jul 6, 2017
	X0E 0T0	LSD:		Report Number:	2202327
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Jason Casault AECOM - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com	On [Lot Verification] send (COA, COC) by Email - Merge Reports On [Report Approval] send (COC, Test Report) by Email - Merge Reports
Richard Feilden AECOM - Edmonton	17203 - 103 Avenue Edmonton, Alberta T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Report Approval] send (COC, Test Report) by Email - Merge Reports

Notes To Clients:

- Sample 1211379-1; 5762389 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1211379**
	Box 1160	ID:	SNP 0036-4	Control Number:	
	2 Firth Street	Name:		Date Received:	Jun 29, 2017
	Inuvik, NT, Canada	Location:	pit n/w of dump	Date Reported:	Jul 6, 2017
	X0E 0T0	LSD:		Report Number:	2202327
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Reference Number	1211379-1
Sample Date	Jun 28, 2017
Sample Time	NA
Sample Location	
Sample Description	anp-0036-4 / 5.9°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4			4
Phenol		mg/L	<0.001			0.001
Oil and Grease	Total	mg/L	5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	<0.05			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.09			0.02
Calcium	Total	mg/L	324			0.2
Iron	Total	mg/L	0.2			0.05
Magnesium	Total	mg/L	125			0.2
Manganese	Total	mg/L	0.13			0.005
Potassium	Total	mg/L	2.5			0.4
Silicon	Total	mg/L	3.03			0.05
Sodium	Total	mg/L	105			0.4
Sulfur	Total	mg/L	443			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0004			0.0002
Arsenic	Total	mg/L	0.0005			0.0002
Barium	Total	mg/L	0.030			0.001
Beryllium	Total	mg/L	<0.0002			0.0001
Bismuth	Total	mg/L	<0.001			0.0005
Boron	Total	mg/L	0.100			0.002
Cadmium	Total	mg/L	0.00005			0.00001
Chromium	Total	mg/L	<0.001			0.0005
Cobalt	Total	mg/L	0.0005			0.0001
Copper	Total	mg/L	0.002			0.001
Lead	Total	mg/L	<0.0002			0.0001
Lithium	Total	mg/L	0.061			0.001
Molybdenum	Total	mg/L	<0.002			0.001
Nickel	Total	mg/L	0.0035			0.0005
Selenium	Total	mg/L	0.0042			0.0002
Silver	Total	mg/L	<0.00002			0.00001

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W: www.exova.com

Analytical Report

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-4
	2 Firth Street	Name:	
	Inuvik, NT, Canada	Location:	pit n/w of dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Justin Simms	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1211379**
Control Number:	
Date Received:	Jun 29, 2017
Date Reported:	Jul 6, 2017
Report Number:	2202327

Reference Number	1211379-1
Sample Date	Jun 28, 2017
Sample Time	NA
Sample Location	
Sample Description	anp-0036-4 / 5.9°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Strontium	Total	mg/L	0.962			0.001
Thallium	Total	mg/L	<0.0001			0.00005
Tin	Total	mg/L	<0.002			0.001
Titanium	Total	mg/L	0.0064			0.0005
Uranium	Total	mg/L	<0.001			0.0005
Vanadium	Total	mg/L	0.0005			0.0001
Zinc	Total	mg/L	0.037			0.001
Zirconium	Total	mg/L	<0.002			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	1200			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	60			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<5			2
Routine Water						
pH			7.41			
Electrical Conductivity	at 25 °C	µS/cm	2400			1
Calcium	Extractable	mg/L	305			0.2
Magnesium	Extractable	mg/L	127			0.2
Sodium	Extractable	mg/L	102			0.4
Potassium	Extractable	mg/L	2.5			0.4
Sulfate (SO4)	Dissolved	mg/L	1310			0.9

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-4
	2 Firth Street	Name:	
	Inuvik, NT, Canada	Location:	pit n/w of dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Justin Simms	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1211379**
Control Number:	
Date Received:	Jun 29, 2017
Date Reported:	Jul 6, 2017
Report Number:	2202327

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	30-Jun-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	30-Jun-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	04-Jul-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	30-Jun-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	30-Jun-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	30-Jun-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	30-Jun-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	30-Jun-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	30-Jun-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	30-Jun-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	29-Jun-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	05-Jul-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	05-Jul-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	05-Jul-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1211379-1; 5762389 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-4
	2 Firth Street	Name:	
	Inuvik, NT, Canada	Location:	pit n/w of dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Justin Simms	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1211379**
Control Number:	
Date Received:	Jun 29, 2017
Date Reported:	Jul 6, 2017
Report Number:	2202327

Exova Testing Advising Assuring

www.exova.com

Project Information

Project ID	snp-0036-4
Project Name	
Project Location	pit n/w of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Justin Simms

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: June.28/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp 8 C, precip 95 %, Wind dir NNE Vel 8 km/h

Indicate Regulatory Requirements below

	Sample Identification		Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.		snp-0036-4		June.28/2017		Dip	
2	Oil and greece	preservatives	snp-0036-4		June.28/2017		Dip	
3	Microbiology		snp-0036-4		June.28/2017		Dip	
4	Nutrients	preservatives	snp-0036-4		June.28/2017		Dip	
5	Phenol	preservatives	snp-0036-4		June.28/2017		Dip	
6	Mercury		snp-0036-4		June.28/2017		Dip	
7	Routine		snp-0036-4		June.28/2017		Dip	
8	Metals	preservatives	snp-0036-4		June.28/2017		Dip	
9								
10								
11								
12								
13								
14								
15								

This section for Lab use only

Date/Time stamp:

JUN 29 PM 12:04

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazardous samples

Control #

Lot: 1211379 COC

Shipping: COD Y/N

Cooler temp: 5.9

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1221115**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215118
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Sample 1221115-1; 5810373 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1221115**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215118
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1221115-1
Sample Date	August 16, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-4 / 2.9°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Aggregate Organic Constituents				
Biochemical Oxygen Demand	5 Day	mg/L	<4	4
Phenol		mg/L	0.011	0.001
Oil and Grease	Total	mg/L	<5	5
pH adjustment	adjustment required		No	
Inorganic Nonmetallic Parameters				
Phosphorus	Total	mg/L	0.11	0.05
Metals Dissolved				
Subsample	Field Filtered		Lab Filtered	
Metals Total				
Aluminum	Total	mg/L	0.68	0.02
Calcium	Total	mg/L	210	0.2
Iron	Total	mg/L	3.75	0.05
Magnesium	Total	mg/L	91.9	0.2
Manganese	Total	mg/L	0.910	0.005
Potassium	Total	mg/L	28.0	0.4
Silicon	Total	mg/L	4.63	0.05
Sodium	Total	mg/L	144	0.4
Sulfur	Total	mg/L	230	0.3
Mercury	Total	mg/L	<0.000005	0.000005
Antimony	Total	mg/L	<0.0004	0.0002
Arsenic	Total	mg/L	0.0026	0.0002
Barium	Total	mg/L	0.155	0.001
Beryllium	Total	mg/L	<0.0002	0.0001
Bismuth	Total	mg/L	<0.001	0.0005
Boron	Total	mg/L	0.847	0.002
Cadmium	Total	mg/L	0.00004	0.00001
Chromium	Total	mg/L	0.0019	0.0005
Cobalt	Total	mg/L	0.002	0.0001
Copper	Total	mg/L	0.003	0.001
Lead	Total	mg/L	0.001	0.0001
Lithium	Total	mg/L	0.043	0.001
Molybdenum	Total	mg/L	<0.002	0.001
Nickel	Total	mg/L	0.0089	0.0005
Selenium	Total	mg/L	0.001	0.0002
Silver	Total	mg/L	<0.00002	0.00001
Strontium	Total	mg/L	0.666	0.001
Thallium	Total	mg/L	<0.0001	0.00005
Tin	Total	mg/L	<0.002	0.001

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W: www.exova.com

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1221115**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215118
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1221115-1
Sample Date	August 16, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-4 / 2.9°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Metals Total - Continued				
Titanium	Total	mg/L	0.011	0.0005
Uranium	Total	mg/L	0.001	0.0005
Vanadium	Total	mg/L	0.0035	0.0001
Zinc	Total	mg/L	0.010	0.001
Zirconium	Total	mg/L	<0.002	0.001
Microbiological Analysis				
Total Coliforms	Membrane Filtration	CFU/100 mL	900	1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	340	1
Physical and Aggregate Properties				
Solids	Total Suspended	mg/L	30	2
Routine Water				
pH			7.97	
Electrical Conductivity	at 25 °C	µS/cm	2070	1
Calcium	Extractable	mg/L	201	0.2
Magnesium	Extractable	mg/L	91.0	0.2
Sodium	Extractable	mg/L	140	0.4
Potassium	Extractable	mg/L	26.6	0.4
Sulfate (SO4)	Dissolved	mg/L	670	0.9

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1221115**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215118
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	21-Aug-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	21-Aug-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	18-Aug-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	18-Aug-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	18-Aug-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	18-Aug-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	18-Aug-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Aug-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Aug-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Aug-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	17-Aug-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	17-Aug-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	17-Aug-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	21-Aug-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1221115-1; 5810373 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1221115**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215118
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

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Project Information

Project ID	snp-0036-4
Project Name	
Project Location	Pit N/W dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Aug.16/2017 Initial: J.S

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp__ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-4		Aug.16/2017		Dip	
2	nutrients + preservatives	snp-0036-4		Aug.16/2017		Dip	
3	oil & greece + preservatives	snp-0036-4		Aug.16/2017		Dip	
4	metals + preservatives	snp-0036-4		Aug.16/2017		Dip	
5	phenol +preservatives	snp-0036-4		Aug.16/2017		Dip	
6	microbiology	snp-0036-4		Aug.16/2017		Dip	
7	mercury	snp-0036-4		Aug.16/2017		Dip	
8	routine	snp-0036-4		Aug.16/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:

AUG 17 PM12:34

Indicate below any deficiencies in the condition of samples:

- Were Exova supplies used?
- Was there any damage to the shipping container?
- Were the containers packaged well?
- Were the expected number of samples received (document below)?
- Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Lot: 1221115 COC

Shipping: COD Y/N

Cooler temp: 2.9

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: JNUNEZ

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1226595**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222210
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Due to interference, Total Phosphorus for sample 1226595-1 was reported at a dilution.
- Sample 1226595-1; 5838088 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1226595**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222210
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226595-1
Sample Date	Sep 13, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-4 / 4.0°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4			4
Phenol		mg/L	0.003			0.001
Oil and Grease	Total	mg/L	<5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.3			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	2.51			0.02
Calcium	Total	mg/L	232			0.2
Iron	Total	mg/L	10.8			0.05
Magnesium	Total	mg/L	108			0.2
Manganese	Total	mg/L	1.61			0.005
Potassium	Total	mg/L	30.8			0.4
Silicon	Total	mg/L	6.69			0.05
Sodium	Total	mg/L	151			0.4
Sulfur	Total	mg/L	237			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0004			0.0002
Arsenic	Total	mg/L	0.0053			0.0002
Barium	Total	mg/L	0.172			0.001
Beryllium	Total	mg/L	0.0002			0.0001
Bismuth	Total	mg/L	<0.001			0.0005
Boron	Total	mg/L	0.870			0.002
Cadmium	Total	mg/L	0.0001			0.00001
Chromium	Total	mg/L	0.0200			0.0005
Cobalt	Total	mg/L	0.0049			0.0001
Copper	Total	mg/L	0.010			0.001
Lead	Total	mg/L	0.0041			0.0001
Lithium	Total	mg/L	0.053			0.001
Molybdenum	Total	mg/L	<0.002			0.001
Nickel	Total	mg/L	0.017			0.0005
Selenium	Total	mg/L	0.0005			0.0002
Silver	Total	mg/L	0.00004			0.00001
Strontium	Total	mg/L	0.781			0.001
Thallium	Total	mg/L	<0.0001			0.00005

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1226595**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222210
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226595-1
Sample Date	Sep 13, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-4 / 4.0°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Tin	Total	mg/L	<0.002			0.001
Titanium	Total	mg/L	0.0220			0.0005
Uranium	Total	mg/L	0.001			0.0005
Vanadium	Total	mg/L	0.012			0.0001
Zinc	Total	mg/L	0.038			0.001
Zirconium	Total	mg/L	<0.002			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	50			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	6			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	13			2
Routine Water						
pH			7.97			
Electrical Conductivity	at 25 °C	µS/cm	2140			1
Calcium	Extractable	mg/L	215			0.2
Magnesium	Extractable	mg/L	101			0.2
Sodium	Extractable	mg/L	147			0.4
Potassium	Extractable	mg/L	29.3			0.4
Sulfate (SO4)	Dissolved	mg/L	656			0.9

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1226595**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222210
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	18-Sep-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-Sep-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	15-Sep-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	15-Sep-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	15-Sep-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	15-Sep-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	15-Sep-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	15-Sep-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	15-Sep-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	14-Sep-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	15-Sep-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Due to interference, Total Phosphorus for sample 1226595-1 was reported at a dilution.
- Sample 1226595-1; 5838088 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-4	Lot ID:	**1226595**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222210
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

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Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	S.N.P. 0036-4
Project Name	
Project Location	Pit N/W of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Report Results

	x	E-Mail		Online		PDF	
		Mail	x	Fax		Excel	

QA/QC Report

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

Sample Custody (please print)

Sampled by: Jim Crawford

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Sept.13/2017 Initial: J.S.

This section for Lab use only

Date/Time stamp: SEP 14 PM 12:40

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	Oil and Greece preservative	snp-0036-4		Sept.13/2017		Dip	
2	Routine	snp-0036-4		Sept.13/2017		Dip	
3	Nutrients + preservatives	snp-0036-4		Sept.13/2017		Dip	
4	Microbiology	snp-0036-4		Sept.13/2017		Dip	
5	Phenol + preservatives	snp-0036-4		Sept.13/2017		Dip	
6	Mercury	snp-0036-4		Sept.13/2017		Dip	
7	B.O.D.	snp-0036-4		Sept.13/2017		Dip	
8	Metals + preservatives	snp-0036-4		Sept.13/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

- Were Exova supplies used?
- Was there any damage to the shipping container?
- Were the containers packaged well?
- Were the expected number of samples received (document below)?
- Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Lot: 1226595 COC

Shipping: COD Y/N

Cooler temp: 4.0

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1204927**
	Box 1160	ID:	SNP 0036-5	Control Number:	
	2 Firth Street	Name:	E.C.W.T.P.	Date Received:	May 30, 2017
	Inuvik, NT, Canada	Location:	Pit. S/E dump	Date Reported:	Jun 6, 2017
	X0E 0T0	LSD:		Report Number:	2194077
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Jim Crawford	Acct code:			
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Jason Casault AECOM - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com	On [Lot Verification] send (COA, COC) by Email - Merge Reports On [Report Approval] send (Test Report, COC) by Email - Merge Reports
Richard Feilden AECOM - Edmonton	17203 - 103 Avenue Edmonton, Alberta T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Report Approval] send (COC, Test Report) by Email - Merge Reports

Notes To Clients:

- Sample was received in a plastic container which does not meet the sample requirements for mercury analysis as specified by the reference method.
- Sample 1204927-1; 5729728 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-5
	2 Firth Street	Name:	E.C.W.T.P.
	Inuvik, NT, Canada	Location:	Pit. S/E dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1204927**
Control Number:	
Date Received:	May 30, 2017
Date Reported:	Jun 6, 2017
Report Number:	2194077

Reference Number	1204927-1
Sample Date	May 29, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-5 / 5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	5			4
Phenol		mg/L	0.001			0.001
Oil and Grease	Total	mg/L	<5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.21			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.11			0.02
Calcium	Total	mg/L	31.8			0.2
Iron	Total	mg/L	1.23			0.05
Magnesium	Total	mg/L	11.3			0.2
Manganese	Total	mg/L	0.278			0.005
Potassium	Total	mg/L	3.4			0.4
Silicon	Total	mg/L	1.37			0.05
Sodium	Total	mg/L	12.3			0.4
Sulfur	Total	mg/L	24.6			0.3
Mercury	Total	mg/L	0.000006			0.000005
Antimony	Total	mg/L	0.0002			0.0002
Arsenic	Total	mg/L	0.0016			0.0002
Barium	Total	mg/L	0.043			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.022			0.002
Cadmium	Total	mg/L	0.00006			0.00001
Chromium	Total	mg/L	<0.0005			0.0005
Cobalt	Total	mg/L	0.0005			0.0001
Copper	Total	mg/L	0.002			0.001
Lead	Total	mg/L	0.0002			0.0001
Lithium	Total	mg/L	0.005			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.0023			0.0005
Selenium	Total	mg/L	<0.0002			0.0002
Silver	Total	mg/L	<0.00001			0.00001

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W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-5
	2 Firth Street	Name:	E.C.W.T.P.
	Inuvik, NT, Canada	Location:	Pit. S/E dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1204927**
Control Number:	
Date Received:	May 30, 2017
Date Reported:	Jun 6, 2017
Report Number:	2194077

Reference Number	1204927-1
Sample Date	May 29, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-5 / 5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Strontium	Total	mg/L	0.090			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0015			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0014			0.0001
Zinc	Total	mg/L	0.017			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	78			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	29			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	9			2
Routine Water						
pH			7.74			
Electrical Conductivity	at 25 °C	µS/cm	292			1
Calcium	Extractable	mg/L	30.7			0.2
Magnesium	Extractable	mg/L	10.9			0.2
Sodium	Extractable	mg/L	12.0			0.4
Potassium	Extractable	mg/L	3.2			0.4
Sulfate (SO4)	Dissolved	mg/L	68.6			0.9

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-5
	2 Firth Street	Name:	E.C.W.T.P.
	Inuvik, NT, Canada	Location:	Pit. S/E dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1204927**
Control Number:	
Date Received:	May 30, 2017
Date Reported:	Jun 6, 2017
Report Number:	2194077

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	01-Jun-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	01-Jun-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	31-May-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	31-May-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	31-May-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	31-May-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	01-Jun-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	01-Jun-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	01-Jun-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	01-Jun-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	30-May-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	31-May-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	01-Jun-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	02-Jun-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample was received in a plastic container which does not meet the sample requirements for mercury analysis as specified by the reference method.
- Sample 1204927-1; 5729728 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-5
	2 Firth Street	Name:	E.C.W.T.P.
	Inuvik, NT, Canada	Location:	Pit. S/E dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1204927**
Control Number:	
Date Received:	May 30, 2017
Date Reported:	Jun 6, 2017
Report Number:	2194077

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Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	
Project Name	snp-0036-5
Project Location	E.C.W.T.P.
Legal Location	Pit. S/E dump
PO/AFE#	100104
Proj. Acct.Code	

Report Results

	x	E-Mail		Online		PDF	
		Mail	x	Fax		Excel	

QA/QC Report

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

Sample Custody (please print)

Sampled by: Jim Crawford

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date. May29/2017 Initial: J.S.

This section for Lab use only

Date/Time stamp:

May 29/17

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	B.O.D.	snp-0036-5		May.29/2017		Dip	
2	Oil & Grease + preservatives	"		"		"	
3	Microbiology	"		"		"	
4	Routine	"		"		"	
5	Nutrients + preservatives	"		"		"	
6	Metals + preservatives	"		"		"	
7	Phenol + preservatives	"		"		"	
8							
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1204927 COC

Shipping:

COD Y/N

Cooler temp: 5.0

and size of coolers received:

MAY 30 PM12:05

Delivery Method: Courier

Waybill:

Received by: Wayne Vo

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1211381**
	Box 1160	ID:	SNP 0036-5	Control Number:	
	2 Firth Street	Name:		Date Received:	Jun 29, 2017
	Inuvik, NT, Canada	Location:	pond S/E of dump	Date Reported:	Jul 6, 2017
	X0E 0T0	LSD:		Report Number:	2202329
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Jason Casault AECOM - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com	On [Lot Verification] send (COA, COC) by Email - Merge Reports On [Report Approval] send (COC, Test Report) by Email - Merge Reports
Richard Feilden AECOM - Edmonton	17203 - 103 Avenue Edmonton, Alberta T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Report Approval] send (COC, Test Report) by Email - Merge Reports

Notes To Clients:

- Sample 1211381-1; 5762410 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To: Town of Inuvik
Box 1160
2 Firth Street
Inuvik, NT, Canada
X0E 0T0
Attn: Rick Campbell
Sampled By: Justin Simms
Company: Town of Inuvik

Project:
ID: SNP 0036-5
Name:
Location: pond S/E of dump
LSD:
P.O.: 100104
Acct code:

Lot ID: **1211381**
Control Number:
Date Received: Jun 29, 2017
Date Reported: Jul 6, 2017
Report Number: 2202329

Reference Number	1211381-1
Sample Date	Jun 28, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-5 / 5.9°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4			4
Phenol		mg/L	<0.001			0.001
Oil and Grease	Total	mg/L	5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.13			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.10			0.02
Calcium	Total	mg/L	41.2			0.2
Iron	Total	mg/L	0.80			0.05
Magnesium	Total	mg/L	15.0			0.2
Manganese	Total	mg/L	0.062			0.005
Potassium	Total	mg/L	3.5			0.4
Silicon	Total	mg/L	0.31			0.05
Sodium	Total	mg/L	16.5			0.4
Sulfur	Total	mg/L	32.9			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	0.0017			0.0002
Barium	Total	mg/L	0.057			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.024			0.002
Cadmium	Total	mg/L	<0.00001			0.00001
Chromium	Total	mg/L	<0.0005			0.0005
Cobalt	Total	mg/L	0.0003			0.0001
Copper	Total	mg/L	0.001			0.001
Lead	Total	mg/L	0.0001			0.0001
Lithium	Total	mg/L	0.008			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.0027			0.0005
Selenium	Total	mg/L	<0.0002			0.0002
Silver	Total	mg/L	<0.00001			0.00001

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1211381**
	Box 1160	ID:	SNP 0036-5	Control Number:	
	2 Firth Street	Name:		Date Received:	Jun 29, 2017
	Inuvik, NT, Canada	Location:	pond S/E of dump	Date Reported:	Jul 6, 2017
	X0E 0T0	LSD:		Report Number:	2202329
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Reference Number	1211381-1
Sample Date	Jun 28, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-5 / 5.9°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Strontium	Total	mg/L	0.131			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0013			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0014			0.0001
Zinc	Total	mg/L	0.003			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	100			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	32			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	7			2
Routine Water						
pH			7.64			
Electrical Conductivity	at 25 °C	µS/cm	378			1
Calcium	Extractable	mg/L	40.5			0.2
Magnesium	Extractable	mg/L	14.9			0.2
Sodium	Extractable	mg/L	16.2			0.4
Potassium	Extractable	mg/L	3.4			0.4
Sulfate (SO4)	Dissolved	mg/L	94.9			0.9

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-5
	2 Firth Street	Name:	
	Inuvik, NT, Canada	Location:	pond S/E of dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Justin Simms	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1211381**
Control Number:	
Date Received:	Jun 29, 2017
Date Reported:	Jul 6, 2017
Report Number:	2202329

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	30-Jun-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	30-Jun-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	04-Jul-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	30-Jun-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	30-Jun-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	30-Jun-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	30-Jun-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	30-Jun-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	30-Jun-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	30-Jun-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	29-Jun-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	05-Jul-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	05-Jul-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	05-Jul-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1211381-1; 5762410 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:		Lot ID:	**1211381**
	Box 1160	ID:	SNP 0036-5	Control Number:	
	2 Firth Street	Name:		Date Received:	Jun 29, 2017
	Inuvik, NT, Canada	Location:	pond S/E of dump	Date Reported:	Jul 6, 2017
	X0E 0T0	LSD:		Report Number:	2202329
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

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www.exova.com

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	snp-0036-5
Project Name	
Project Location	pond S/E of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp__8_ C, precip__95%_, Wind dir_NNE__ Vel_8__km/h

Indicate Regulatory Requirements below

Sample Custody (please print)

Sampled by: Justin Simms
Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: June.28/2017 Initial: J.S

This section for Lab use only

Date/Time stamp: JUN 29 PM 12:04

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-5		June.28/2017		Dip	
2	Oil and Greece preservatives	snp-0036-5		June.28/2017		Dip	
3	Microbiology	snp-0036-5		June.28/2017		Dip	
4	Nutrients preservatives	snp-0036-5		June.28/2017		Dip	
5	Phenol preservatives	snp-0036-5		June.28/2017		Dip	
6	Mercury	snp-0036-5		June.28/2017		Dip	
7	Routine	snp-0036-5		June.28/2017		Dip	
8	Metals preservatives	snp-0036-5		June.28/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

In Lot: 1211381 COC

Shipping: COD Y/N

Cooler temp: 5.9

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

Exova
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W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1214561**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206532
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

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W: www.exova.com

Exova

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1214561**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206532
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

Reference Number	1214561-1
Sample Date	Jul 13, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-5 / 6.8°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Phenol		mg/L	<0.001			0.001
Oil and Grease	Total	mg/L	5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.10			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.06			0.02
Calcium	Total	mg/L	46.3			0.2
Iron	Total	mg/L	0.60			0.05
Magnesium	Total	mg/L	17.1			0.2
Manganese	Total	mg/L	0.046			0.005
Potassium	Total	mg/L	2.9			0.4
Silicon	Total	mg/L	0.21			0.05
Sodium	Total	mg/L	18.9			0.4
Sulfur	Total	mg/L	39.4			0.3
Mercury	Total	mg/L	0.000006			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	0.0016			0.0002
Barium	Total	mg/L	0.059			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.020			0.002
Cadmium	Total	mg/L	<0.00001			0.00001
Chromium	Total	mg/L	<0.0005			0.0005
Cobalt	Total	mg/L	0.0003			0.0001
Copper	Total	mg/L	0.001			0.001
Lead	Total	mg/L	0.0001			0.0001
Lithium	Total	mg/L	0.009			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.0026			0.0005
Selenium	Total	mg/L	<0.0002			0.0002
Silver	Total	mg/L	<0.00001			0.00001
Strontium	Total	mg/L	0.143			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0010			0.0005

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1214561**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206532
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

Reference Number	1214561-1
Sample Date	Jul 13, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-5 / 6.8°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0014			0.0001
Zinc	Total	mg/L	0.002			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	80			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	<10			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	8			2
Routine Water						
pH			7.60			
Temperature of observed pH		°C	21.3			
Electrical Conductivity	at 25 °C	µS/cm	410			1
Calcium	Extractable	mg/L	43.7			0.2
Magnesium	Extractable	mg/L	16.7			0.2
Sodium	Extractable	mg/L	18.0			0.4
Potassium	Extractable	mg/L	2.7			0.4
Sulfate (SO4)	Dissolved	mg/L	113			0.9

Approved by:

Randy Neumann, BSc
Vice President

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1214561**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206532
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	18-Jul-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-Jul-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	15-Jul-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	15-Jul-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	17-Jul-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	17-Jul-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	17-Jul-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	17-Jul-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	17-Jul-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	17-Jul-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	19-Jul-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	17-Jul-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	17-Jul-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1214561**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206532
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

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Project Information

Project ID	snp 0036-5
Project Name	
Project Location	Pond S/E of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Dale Hvatum

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: July.13/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp10_ C, precip _71%__, Wind dir NNW___ Vel__3_km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-5		July.13/2017		Dip	
2	Oil and Greece preservatives	snp-0036-5		July.13/2017		Dip	
3	Microbiology	snp-0036-5		July.13/2017		Dip	
4	Nutrients preservatives	snp-0036-5		July.13/2017		Dip	
5	Phenol preservatives	snp-0036-5		July.13/2017		Dip	
6	Mercury	snp-0036-5		July.13/2017		Dip	
7	Routine	snp-0036-5		July.13/2017		Dip	
8	Metals preservatives	snp-0036-5		July.13/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:

JUL 14 PM12:53

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

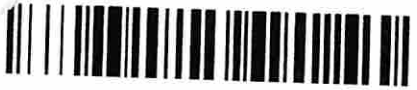
Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Indicate 7214561 COC



Shipping: COD Y/N

Cooler temp: 6.8

and size of coolers received:

Delivery Method:

Waybill:

Received by:

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1221103**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215110
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Sample 1221103-1; 5810353 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1221103**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215110
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1221103-1
Sample Date	August 16, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-5 / 2.9°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Aggregate Organic Constituents				
Biochemical Oxygen Demand	5 Day	mg/L	<4	4
Phenol		mg/L	0.001	0.001
Oil and Grease	Total	mg/L	<5	5
pH adjustment	adjustment required		No	
Inorganic Nonmetallic Parameters				
Phosphorus	Total	mg/L	0.11	0.05
Metals Dissolved				
Subsample	Field Filtered		Lab Filtered	
Metals Total				
Aluminum	Total	mg/L	0.03	0.02
Calcium	Total	mg/L	41.8	0.2
Iron	Total	mg/L	0.73	0.05
Magnesium	Total	mg/L	16.4	0.2
Manganese	Total	mg/L	0.063	0.005
Potassium	Total	mg/L	2.4	0.4
Silicon	Total	mg/L	0.68	0.05
Sodium	Total	mg/L	18.6	0.4
Sulfur	Total	mg/L	1810	0.3
Mercury	Total	mg/L	<0.000005	0.000005
Antimony	Total	mg/L	<0.0002	0.0002
Arsenic	Total	mg/L	0.0020	0.0002
Barium	Total	mg/L	0.054	0.001
Beryllium	Total	mg/L	<0.0001	0.0001
Bismuth	Total	mg/L	<0.0005	0.0005
Boron	Total	mg/L	0.013	0.002
Cadmium	Total	mg/L	<0.00001	0.00001
Chromium	Total	mg/L	0.0008	0.0005
Cobalt	Total	mg/L	0.0003	0.0001
Copper	Total	mg/L	<0.001	0.001
Lead	Total	mg/L	0.0001	0.0001
Lithium	Total	mg/L	0.008	0.001
Molybdenum	Total	mg/L	<0.001	0.001
Nickel	Total	mg/L	0.0022	0.0005
Selenium	Total	mg/L	0.0004	0.0002
Silver	Total	mg/L	<0.00001	0.00001
Strontium	Total	mg/L	0.127	0.001
Thallium	Total	mg/L	<0.00005	0.00005
Tin	Total	mg/L	<0.001	0.001

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1221103**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215110
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1221103-1
Sample Date	August 16, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-5 / 2.9°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Metals Total - Continued				
Titanium	Total	mg/L	0.0223	0.0005
Uranium	Total	mg/L	<0.0005	0.0005
Vanadium	Total	mg/L	0.0014	0.0001
Zinc	Total	mg/L	0.002	0.001
Zirconium	Total	mg/L	<0.001	0.001
Microbiological Analysis				
Total Coliforms	Membrane Filtration	CFU/100 mL	30	1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	16	1
Physical and Aggregate Properties				
Solids	Total Suspended	mg/L	2	2
Routine Water				
pH			7.21	
Electrical Conductivity	at 25 °C	µS/cm	407	1
Calcium	Extractable	mg/L	42.2	0.2
Magnesium	Extractable	mg/L	16.5	0.2
Sodium	Extractable	mg/L	18.2	0.4
Potassium	Extractable	mg/L	2.5	0.4
Sulfate (SO4)	Dissolved	mg/L	108	0.9

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1221103**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215110
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	17-Aug-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	17-Aug-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	18-Aug-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	18-Aug-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	18-Aug-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	18-Aug-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	18-Aug-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Aug-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Aug-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Aug-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	17-Aug-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	17-Aug-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	17-Aug-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	21-Aug-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1221103-1; 5810353 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

Exova
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E: Edmonton@exova.com
W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1221103**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215110
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Exova Testing Advising Assuring

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Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	snp-0036-5
Project Name	
Project Location	Pond S/E of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Report Results

	x	E-Mail		Online		PDF	
		Mail	x	Fax		Excel	

QA/QC Report

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp 11 C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

Sample Custody (please print)

Sampled by: Jim Crawford

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Aug.16/2017 Initial: J.S

This section for Lab use only

Date/Time stamp:

AUG 17 PM12:35

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-5		Aug.16/2017		Dip	
2	nutrients + preservatives	snp-0036-5		Aug.16/2017		Dip	
3	oil & Greece + preservatives	snp-0036-5		Aug.16/2017		Dip	
4	metals + preservatives	snp-0036-5		Aug.16/2017		Dip	
5	phenol + preservatives	snp-0036-5		Aug.16/2017		Dip	
6	microbiology	snp-0036-5		Aug.16/2017		Dip	
7	mercury	snp-0036-5		Aug.16/2017		Dip	
8	routine	snp-0036-5		Aug.16/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

- Were Exova supplies used?
- Was there any damage to the shipping container?
- Were the containers packaged well?
- Were the expected number of samples received (document below)?
- Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazardous samples

Control #

Lot: 1221103 COC

Shipping: COD Y/N

Cooler temp: 2.9

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: JNUNEZ

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1226587**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222202
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Due to interference, Total Phosphorus for sample 1226587-1 was reported at a dilution.
- Sample 1226587-1; 5838063 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1226587**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222202
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226587-1
Sample Date	Sep 13, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-5 / 4.0°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4			4
Phenol		mg/L	0.001			0.001
Oil and Grease	Total	mg/L	5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	<0.3			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.08			0.02
Calcium	Total	mg/L	49.3			0.2
Iron	Total	mg/L	0.73			0.05
Magnesium	Total	mg/L	19.6			0.2
Manganese	Total	mg/L	0.060			0.005
Potassium	Total	mg/L	2.0			0.4
Silicon	Total	mg/L	0.56			0.05
Sodium	Total	mg/L	20.2			0.4
Sulfur	Total	mg/L	1880			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	0.0017			0.0002
Barium	Total	mg/L	0.062			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	0.0007			0.0005
Boron	Total	mg/L	0.017			0.002
Cadmium	Total	mg/L	<0.00001			0.00001
Chromium	Total	mg/L	0.0029			0.0005
Cobalt	Total	mg/L	0.0003			0.0001
Copper	Total	mg/L	0.002			0.001
Lead	Total	mg/L	0.0002			0.0001
Lithium	Total	mg/L	0.010			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.0026			0.0005
Selenium	Total	mg/L	0.0004			0.0002
Silver	Total	mg/L	0.00002			0.00001
Strontium	Total	mg/L	0.149			0.001
Thallium	Total	mg/L	<0.00005			0.00005

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W: www.exova.com

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1226587**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222202
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226587-1
Sample Date	Sep 13, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-5 / 4.0°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0291			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0016			0.0001
Zinc	Total	mg/L	0.010			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	<1			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	<1			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	6			2
Routine Water						
pH			7.34			
Electrical Conductivity	at 25 °C	µS/cm	464			1
Calcium	Extractable	mg/L	47.1			0.2
Magnesium	Extractable	mg/L	18.8			0.2
Sodium	Extractable	mg/L	20.3			0.4
Potassium	Extractable	mg/L	2.0			0.4
Sulfate (SO4)	Dissolved	mg/L	143			0.9

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1226587**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222202
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	18-Sep-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-Sep-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	15-Sep-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	15-Sep-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	15-Sep-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	15-Sep-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	15-Sep-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	15-Sep-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	15-Sep-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	14-Sep-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	15-Sep-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Due to interference, Total Phosphorus for sample 1226587-1 was reported at a dilution.
- Sample 1226587-1; 5838063 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-5	Lot ID:	**1226587**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pond S/E of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222202
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Exova Testing Advising Assuring

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Project Information

Project ID	snp-0036-5
Project Name	
Project Location	Pond S/E of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Sept.13/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-5		Sept.13/2017s		Dip	
2	Nutrients + preservatives	snp-0036-5		Sept.13/2017s		Dip	
3	Oil n Greece + preservatives	snp-0036-5		Sept.13/2017s		Dip	
4	Phenol + preservatives	snp-0036-5		Sept.13/2017s		Dip	
5	Metals + preservatives	snp-0036-5		Sept.13/2017s		Dip	
6	Micrbiology	snp-0036-5		Sept.13/2017s		Dip	
7	Mercury	snp-0036-5		Sept.13/2017s		Dip	
8	Routine	snp-0036-5		Sept.13/2017s		Dip	
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:
SEP 14 PM 12:40

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1226587 COC

Shipping: COD Y/N

Cooler temp: 4.0

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

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F: +1 (780) 434-8586
E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-6	Lot ID:	**1226606**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Gate Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222223
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

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Exova

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-6	Lot ID:	**1226606**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Gate Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222223
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226606-1
Sample Date	September 13, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-6 / 4.0°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Aggregate Organic Constituents				
Biochemical Oxygen Demand	5 Day	mg/L	<4	4
Phenol		mg/L	0.001	0.001
Oil and Grease	Total	mg/L	<5	5
pH adjustment	adjustment required		No	
Inorganic Nonmetallic Parameters				
Phosphorus	Total	mg/L	0.07	0.05
Metals Dissolved				
Subsample	Field Filtered		Lab Filtered	
Metals Total				
Aluminum	Total	mg/L	0.36	0.02
Calcium	Total	mg/L	229	0.2
Iron	Total	mg/L	0.78	0.05
Magnesium	Total	mg/L	65.4	0.2
Manganese	Total	mg/L	4.84	0.005
Potassium	Total	mg/L	9.1	0.4
Silicon	Total	mg/L	3.62	0.05
Sodium	Total	mg/L	62.1	0.4
Sulfur	Total	mg/L	206	0.3
Mercury	Total	mg/L	0.000011	0.000005
Antimony	Total	mg/L	<0.0002	0.0002
Arsenic	Total	mg/L	0.0006	0.0002
Barium	Total	mg/L	0.018	0.001
Beryllium	Total	mg/L	<0.0001	0.0001
Bismuth	Total	mg/L	<0.0005	0.0005
Boron	Total	mg/L	0.158	0.002
Cadmium	Total	mg/L	0.00005	0.00001
Chromium	Total	mg/L	0.0023	0.0005
Cobalt	Total	mg/L	0.0011	0.0001
Copper	Total	mg/L	0.001	0.001
Lead	Total	mg/L	0.0004	0.0001
Lithium	Total	mg/L	0.034	0.001
Molybdenum	Total	mg/L	<0.001	0.001
Nickel	Total	mg/L	0.0067	0.0005
Selenium	Total	mg/L	<0.0002	0.0002
Silver	Total	mg/L	<0.00001	0.00001
Strontium	Total	mg/L	0.892	0.001
Thallium	Total	mg/L	0.00007	0.00005
Tin	Total	mg/L	<0.001	0.001

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W: www.exova.com

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-6	Lot ID:	**1226606**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Gate Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222223
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226606-1
Sample Date	September 13, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-6 / 4.0°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Metals Total - Continued				
Titanium	Total	mg/L	0.0080	0.0005
Uranium	Total	mg/L	0.0013	0.0005
Vanadium	Total	mg/L	0.0009	0.0001
Zinc	Total	mg/L	0.005	0.001
Zirconium	Total	mg/L	<0.001	0.001
Microbiological Analysis				
Total Coliforms	Membrane Filtration	CFU/100 mL	16	1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	2	1
Physical and Aggregate Properties				
Solids	Total Suspended	mg/L	19	2
Routine Water				
pH			7.79	
Electrical Conductivity	at 25 °C	µS/cm	1600	1
Calcium	Extractable	mg/L	208	0.2
Magnesium	Extractable	mg/L	58.7	0.2
Sodium	Extractable	mg/L	59.8	0.4
Potassium	Extractable	mg/L	8.4	0.4
Sulfate (SO4)	Dissolved	mg/L	547	0.9

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-6	Lot ID:	**1226606**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Gate Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222223
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	18-Sep-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-Sep-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	15-Sep-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	15-Sep-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	15-Sep-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	15-Sep-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	18-Sep-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Sep-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Sep-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Sep-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	15-Sep-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	15-Sep-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	14-Sep-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	15-Sep-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-6	Lot ID:	**1226606**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Gate Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222223
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

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Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	snp-0036-6
Project Name	
Project Location	Gate Pond
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Report Results

	x	E-Mail		Online		PDF	
		Mail	x	Fax		Excel	

QA/QC Report

Sample Custody (please print)

Sampled by: Jim Crawford

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Sept.13/2017 Initial: J.S.

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

This section for Lab use only

Date/Time stamp:
SEP 14 PM 12:41

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-6		Sept.13/2017		Dip	
2	Nutrients + preservatives	snp-0036-6		Sept.13/2017		Dip	
3	Oil n Greece + preservatives	snp-0036-6		Sept.13/2017		Dip	
4	Phenol + preservatives	snp-0036-6		Sept.13/2017		Dip	
5	Metals + preservatives	snp-0036-6		Sept.13/2017		Dip	
6	Microbiology	snp-0036-6		Sept.13/2017		Dip	
7	Mercury	snp-0036-6		Sept.13/2017		Dip	
8	Routine	snp-0036-6		Sept.13/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

Indicate below any deficiencies in the condition of samples:

- Were Exova supplies used?
- Was there any damage to the shipping container?
- Were the containers packaged well?
- Were the expected number of samples received (document below)?
- Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazardous samples

Control #

Lot: 1226606 COC

Shipping: COD Y/N

Cooler temp: 4.0

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-7	Lot ID:	**1226604**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Far Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222221
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Sample 1226604-1; 5838105 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-7	Lot ID:	**1226604**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Far Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222221
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226604-1
Sample Date	Sep 13, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-7 / 4.0°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4			4
Phenol		mg/L	<0.001			0.001
Oil and Grease	Total	mg/L	<5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	<0.05			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	<0.02			0.02
Calcium	Total	mg/L	93.3			0.2
Iron	Total	mg/L	<0.05			0.05
Magnesium	Total	mg/L	69.3			0.2
Manganese	Total	mg/L	0.007			0.005
Potassium	Total	mg/L	4.1			0.4
Silicon	Total	mg/L	2.58			0.05
Sodium	Total	mg/L	28.6			0.4
Sulfur	Total	mg/L	134			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	0.0015			0.0002
Barium	Total	mg/L	0.060			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.015			0.002
Cadmium	Total	mg/L	<0.00001			0.00001
Chromium	Total	mg/L	0.0009			0.0005
Cobalt	Total	mg/L	<0.0001			0.0001
Copper	Total	mg/L	<0.001			0.001
Lead	Total	mg/L	<0.0001			0.0001
Lithium	Total	mg/L	0.026			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	<0.0005			0.0005
Selenium	Total	mg/L	<0.0002			0.0002
Silver	Total	mg/L	<0.00001			0.00001
Strontium	Total	mg/L	0.455			0.001
Thallium	Total	mg/L	<0.00005			0.00005

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-7	Lot ID:	**1226604**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Far Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222221
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226604-1
Sample Date	Sep 13, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-7 / 4.0°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0022			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0002			0.0001
Zinc	Total	mg/L	<0.001			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	2			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	<1			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<1			2
Routine Water						
pH			8.04			
Electrical Conductivity	at 25 °C	µS/cm	966			1
Calcium	Extractable	mg/L	87.6			0.2
Magnesium	Extractable	mg/L	64.6			0.2
Sodium	Extractable	mg/L	28.3			0.4
Potassium	Extractable	mg/L	3.9			0.4
Sulfate (SO4)	Dissolved	mg/L	373			0.9

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-7	Lot ID:	**1226604**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Far Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222221
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	18-Sep-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-Sep-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	15-Sep-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	15-Sep-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	15-Sep-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	15-Sep-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	15-Sep-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	15-Sep-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	15-Sep-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	14-Sep-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	15-Sep-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1226604-1; 5838105 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-7	Lot ID:	**1226604**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Far Pond	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222221
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

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Project Information

Project ID	snp.-0036-7
Project Name	
Project Location	Far Pond
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Sept.13/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-7		Sept.13/2017		Dip	
2	Nutrients + preservatives	snp-0036-7		Sept.13/2017		Dip	
3	Oil n Greece + preservatives	snp-0036-7		Sept.13/2017		Dip	
4	Phenol + preservatives	snp-0036-7		Sept.13/2017		Dip	
5	Metals + preservatives	snp-0036-7		Sept.13/2017		Dip	
6	Microbiology	snp-0036-7		Sept.13/2017		Dip	
7	Mercury	snp-0036-7		Sept.13/2017		Dip	
8	Routine	snp-0036-7		Sept.13/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:

SEP 14 PM 12:41

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Lot: 1226604 COC

Shipping: COD Y/N

Cooler temp: 4.0

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-8	Lot ID:	**1226610**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Twin Lakes	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222226
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Sample 1226610-1; 5838188 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-8	Lot ID:	**1226610**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Twin Lakes	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222226
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226610-1
Sample Date	September 13, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-8 / 4.0°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Aggregate Organic Constituents				
Biochemical Oxygen Demand	5 Day	mg/L	<4	4
Phenol		mg/L	0.001	0.001
Oil and Grease	Total	mg/L	<5	5
pH adjustment	adjustment required		No	
Inorganic Nonmetallic Parameters				
Phosphorus	Total	mg/L	<0.05	0.05
Metals Dissolved				
Subsample	Field Filtered		Lab Filtered	
Metals Total				
Aluminum	Total	mg/L	0.07	0.02
Calcium	Total	mg/L	214	0.2
Iron	Total	mg/L	0.25	0.05
Magnesium	Total	mg/L	71.5	0.2
Manganese	Total	mg/L	0.856	0.005
Potassium	Total	mg/L	5.0	0.4
Silicon	Total	mg/L	0.84	0.05
Sodium	Total	mg/L	36.1	0.4
Sulfur	Total	mg/L	219	0.3
Mercury	Total	mg/L	<0.000005	0.000005
Antimony	Total	mg/L	<0.0002	0.0002
Arsenic	Total	mg/L	0.0008	0.0002
Barium	Total	mg/L	0.048	0.001
Beryllium	Total	mg/L	<0.0001	0.0001
Bismuth	Total	mg/L	<0.0005	0.0005
Boron	Total	mg/L	0.106	0.002
Cadmium	Total	mg/L	<0.00001	0.00001
Chromium	Total	mg/L	0.0015	0.0005
Cobalt	Total	mg/L	0.0005	0.0001
Copper	Total	mg/L	<0.001	0.001
Lead	Total	mg/L	0.0001	0.0001
Lithium	Total	mg/L	0.030	0.001
Molybdenum	Total	mg/L	0.001	0.001
Nickel	Total	mg/L	0.0035	0.0005
Selenium	Total	mg/L	0.0003	0.0002
Silver	Total	mg/L	<0.00001	0.00001
Strontium	Total	mg/L	0.766	0.001
Thallium	Total	mg/L	<0.00005	0.00005
Tin	Total	mg/L	<0.001	0.001

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-8	Lot ID:	**1226610**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Twin Lakes	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222226
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226610-1
Sample Date	September 13, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-8 / 4.0°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Metals Total - Continued				
Titanium	Total	mg/L	0.0054	0.0005
Uranium	Total	mg/L	0.0013	0.0005
Vanadium	Total	mg/L	0.0005	0.0001
Zinc	Total	mg/L	0.004	0.001
Zirconium	Total	mg/L	<0.001	0.001
Microbiological Analysis				
Total Coliforms	Membrane Filtration	CFU/100 mL	<1	1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	<1	1
Physical and Aggregate Properties				
Solids	Total Suspended	mg/L	10	2
Routine Water				
pH			7.97	
Electrical Conductivity	at 25 °C	µS/cm	1460	1
Calcium	Extractable	mg/L	204	0.2
Magnesium	Extractable	mg/L	67.2	0.2
Sodium	Extractable	mg/L	36.8	0.4
Potassium	Extractable	mg/L	4.9	0.4
Sulfate (SO4)	Dissolved	mg/L	620	0.9

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-8	Lot ID:	**1226610**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Twin Lakes	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222226
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	18-Sep-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-Sep-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	15-Sep-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	15-Sep-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	15-Sep-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	15-Sep-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	18-Sep-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Sep-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Sep-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Sep-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	15-Sep-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	15-Sep-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	14-Sep-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	15-Sep-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1226610-1; 5838188 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-8	Lot ID:	**1226610**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Twin Lakes	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222226
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

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Project Information

Project ID	snp -0036-8
Project Name	
Project Location	Twin Lakes
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date:Sept.13/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-8		Sept.13/2017		Dip	
2	Nutrients + preservatives	snp-0036-8		Sept.13/2017		Dip	
3	Oil n Greece + preservatives	snp-0036-8		Sept.13/2017		Dip	
4	Phenol + preservatives	snp-0036-8		Sept.13/2017		Dip	
5	Metals + preservatives	snp-0036-8		Sept.13/2017		Dip	
6	Microbiology	snp-0036-8		Sept.13/2017		Dip	
7	Mercury	snp-0036-8		Sept.13/2017		Dip	
8	Routine	snp-0036-8		Sept.13/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp:

SEP 14 PM12:41

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazardous samples

Control #

Page 1 of 1

Lot: 1226610 COC

Shipping: COD Y/N

Cooler temp: 4.0

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1204932**
	Box 1160	ID:	SNP 0036-9	Control Number:	
	2 Firth Street	Name:	E.C.W.T.P.	Date Received:	May 30, 2017
	Inuvik, NT, Canada	Location:	Pit 8/E dump	Date Reported:	Jun 6, 2017
	X0E 0T0	LSD:		Report Number:	2194089
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Jim Crawford	Acct code:			
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Jason Casault AECOM - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com	On [Lot Verification] send (COA, COC) by Email - Merge Reports On [Report Approval] send (Test Report, COC) by Email - Merge Reports
Richard Feilden AECOM - Edmonton	17203 - 103 Avenue Edmonton, Alberta T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Report Approval] send (COC, Test Report) by Email - Merge Reports

Notes To Clients:

- Sample was received in a plastic container which does not meet the sample requirements for mercury analysis as specified by the reference method.
- Sample 1204932-1; 5729771 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1204932**
	Box 1160	ID:	SNP 0036-9	Control Number:	
	2 Firth Street	Name:	E.C.W.T.P.	Date Received:	May 30, 2017
	Inuvik, NT, Canada	Location:	Pit 8/E dump	Date Reported:	Jun 6, 2017
	X0E 0T0	LSD:		Report Number:	2194089
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Jim Crawford	Acct code:			
Company:	Town of Inuvik				

Reference Number	1204932-1
Sample Date	May 29, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-9 / 5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4			4
Phenol		mg/L	0.001			0.001
Oil and Grease	Total	mg/L	<5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.11			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.50			0.02
Calcium	Total	mg/L	15.5			0.2
Iron	Total	mg/L	1.72			0.05
Magnesium	Total	mg/L	6.2			0.2
Manganese	Total	mg/L	0.614			0.005
Potassium	Total	mg/L	1.7			0.4
Silicon	Total	mg/L	1.69			0.05
Sodium	Total	mg/L	4.7			0.4
Sulfur	Total	mg/L	1780			0.3
Mercury	Total	mg/L	0.000009			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	0.0012			0.0002
Barium	Total	mg/L	0.025			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.020			0.002
Cadmium	Total	mg/L	0.00003			0.00001
Chromium	Total	mg/L	0.0008			0.0005
Cobalt	Total	mg/L	0.0017			0.0001
Copper	Total	mg/L	0.003			0.001
Lead	Total	mg/L	0.0004			0.0001
Lithium	Total	mg/L	0.006			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.0076			0.0005
Selenium	Total	mg/L	0.0004			0.0002
Silver	Total	mg/L	0.00001			0.00001

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Analytical Report

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-9
	2 Firth Street	Name:	E.C.W.T.P.
	Inuvik, NT, Canada	Location:	Pit 8/E dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1204932**
Control Number:	
Date Received:	May 30, 2017
Date Reported:	Jun 6, 2017
Report Number:	2194089

Reference Number	1204932-1
Sample Date	May 29, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-9 / 5°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Strontium	Total	mg/L	0.047			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0113			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0021			0.0001
Zinc	Total	mg/L	0.011			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	72			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	1			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	19			2
Routine Water						
pH			7.21			
Electrical Conductivity	at 25 °C	µS/cm	159			1
Calcium	Extractable	mg/L	14.9			0.2
Magnesium	Extractable	mg/L	5.9			0.2
Sodium	Extractable	mg/L	4.6			0.4
Potassium	Extractable	mg/L	1.6			0.4
Sulfate (SO4)	Dissolved	mg/L	48.9			0.9

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-9
	2 Firth Street	Name:	E.C.W.T.P.
	Inuvik, NT, Canada	Location:	Pit 8/E dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1204932**
Control Number:	
Date Received:	May 30, 2017
Date Reported:	Jun 6, 2017
Report Number:	2194089

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	01-Jun-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	01-Jun-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	31-May-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	31-May-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	31-May-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	31-May-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	01-Jun-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	01-Jun-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	01-Jun-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	01-Jun-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	30-May-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	31-May-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	01-Jun-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	02-Jun-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample was received in a plastic container which does not meet the sample requirements for mercury analysis as specified by the reference method.
- Sample 1204932-1; 5729771 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-9
	2 Firth Street	Name:	E.C.W.T.P.
	Inuvik, NT, Canada	Location:	Pit 8/E dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Jim Crawford	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1204932**
Control Number:	
Date Received:	May 30, 2017
Date Reported:	Jun 6, 2017
Report Number:	2194089

Exova Testing Advising Assuring

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Project Information

Project ID	
Project Name	snp-0036-9
Project Location	E.C.W.T.P.
Legal Location	Pit S/E dump
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date. May29/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	B.O.D.	snp-0036-9		May.29/2017		Dip	
2	Oil & Grease + preservatives	"		"		"	
3	Microbiology	"		"		"	
4	Routine	"		"		"	
5	Nutrients + preservatives	"		"		"	
6	Metals + preservatives	"		"		"	
7	Phenol + preservatives	"		"		"	
8							
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp: May 29 17

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
MAY 30 PM12:04	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1204932 COC

Shipping: COD Y/N

Cooler temp: 5.0

and size of coolers received: MAY 30 PM12:05

Delivery Method:

Waybill:

Received by: WV

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E: Edmonton@exova.com
W: www.exova.com

Report Transmission Cover Page

Bill To:	Town of Inuvik	Project:		Lot ID:	**1211383**
	Box 1160	ID:	SNP 0036-9	Control Number:	
	2 Firth Street	Name:		Date Received:	Jun 29, 2017
	Inuvik, NT, Canada	Location:	Pit. S/E of dump	Date Reported:	Jul 6, 2017
	X0E 0T0	LSD:		Report Number:	2202332
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Contact & Affiliation	Address	Delivery Commitments
Rick Campbell Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca	On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Utilidor Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Kim Wainman Town of Inuvik	2 Firth Street, Box 1160 Inuvik, Northwest Territories X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Jason Casault AECOM - Edmonton	101, 18817 Stony Plain Road Edmonton, Alberta T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com	On [Lot Verification] send (COA, COC) by Email - Merge Reports On [Report Approval] send (COC, Test Report) by Email - Merge Reports
Richard Feilden AECOM - Edmonton	17203 - 103 Avenue Edmonton, Alberta T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com	On [Report Approval] send (COC, Test Report) by Email - Merge Reports

Notes To Clients:

- Sample 1211383-1; 5762412 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project:		Lot ID:	**1211383**
	Box 1160	ID:	SNP 0036-9	Control Number:	
	2 Firth Street	Name:		Date Received:	Jun 29, 2017
	Inuvik, NT, Canada	Location:	Pit. S/E of dump	Date Reported:	Jul 6, 2017
	X0E 0T0	LSD:		Report Number:	2202332
Attn:	Rick Campbell	P.O.:	100104		
Sampled By:	Justin Simms	Acct code:			
Company:	Town of Inuvik				

Reference Number	1211383-1
Sample Date	Jun 28, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-9 / 5.9°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4			4
Phenol		mg/L	<0.001			0.001
Oil and Grease	Total	mg/L	8			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.06			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.46			0.02
Calcium	Total	mg/L	56.7			0.2
Iron	Total	mg/L	1.13			0.05
Magnesium	Total	mg/L	26.8			0.2
Manganese	Total	mg/L	0.667			0.005
Potassium	Total	mg/L	1.6			0.4
Silicon	Total	mg/L	2.43			0.05
Sodium	Total	mg/L	18.5			0.4
Sulfur	Total	mg/L	77.7			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	0.0008			0.0002
Barium	Total	mg/L	0.035			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.044			0.002
Cadmium	Total	mg/L	0.00006			0.00001
Chromium	Total	mg/L	0.0008			0.0005
Cobalt	Total	mg/L	0.0017			0.0001
Copper	Total	mg/L	0.003			0.001
Lead	Total	mg/L	0.0003			0.0001
Lithium	Total	mg/L	0.016			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.0124			0.0005
Selenium	Total	mg/L	0.0003			0.0002
Silver	Total	mg/L	<0.00001			0.00001

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W: www.exova.com

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Analytical Report

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-9
	2 Firth Street	Name:	
	Inuvik, NT, Canada	Location:	Pit. S/E of dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Justin Simms	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1211383**
Control Number:	
Date Received:	Jun 29, 2017
Date Reported:	Jul 6, 2017
Report Number:	2202332

Reference Number	1211383-1
Sample Date	Jun 28, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-9 / 5.9°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Strontium	Total	mg/L	0.172			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0076			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0013			0.0001
Zinc	Total	mg/L	0.026			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	500			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	200			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	22			2
Routine Water						
pH			7.41			
Electrical Conductivity	at 25 °C	µS/cm	569			1
Calcium	Extractable	mg/L	56.9			0.2
Magnesium	Extractable	mg/L	27.4			0.2
Sodium	Extractable	mg/L	18.3			0.4
Potassium	Extractable	mg/L	1.7			0.4
Sulfate (SO4)	Dissolved	mg/L	233			0.9

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-9
	2 Firth Street	Name:	
	Inuvik, NT, Canada	Location:	Pit. S/E of dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Justin Simms	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1211383**
Control Number:	
Date Received:	Jun 29, 2017
Date Reported:	Jul 6, 2017
Report Number:	2202332

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	30-Jun-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	30-Jun-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	04-Jul-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	30-Jun-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	30-Jun-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	30-Jun-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	30-Jun-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	30-Jun-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	30-Jun-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	30-Jun-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	29-Jun-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	05-Jul-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	05-Jul-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	05-Jul-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1211383-1; 5762412 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project:	
	Box 1160	ID:	SNP 0036-9
	2 Firth Street	Name:	
	Inuvik, NT, Canada	Location:	Pit. S/E of dump
	X0E 0T0	LSD:	
Attn:	Rick Campbell	P.O.:	100104
Sampled By:	Justin Simms	Acct code:	
Company:	Town of Inuvik		

Lot ID:	**1211383**
Control Number:	
Date Received:	Jun 29, 2017
Date Reported:	Jul 6, 2017
Report Number:	2202332

Exova Testing Advising Assuring

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Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required

As Indicated [ ] All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Project Information

Project ID	snp-0036-9
Project Name	
Project Location	Pit. S/E of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Sample Custody (please print)

Sampled by: Justin Simms

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date. June.28/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL

Raw Water

Temp__8_ C, precip_95%__, Wind dir_NNE__ Vel_8__km/h

Indicate Regulatory Requirements below

	Sample Identification		Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D		snp-0036-9		June.28/2017		Dip	
2	Oil and Greece	preservatives	snp-0036-9		June.28/2017		Dip	
3	Microbiology		snp-0036-9		June.28/2017		Dip	
4	Nutrients	preservatives	snp-0036-9		June.28/2017		Dip	
5	Phenol	preservatives	snp-0036-9		June.28/2017		Dip	
6	Mercury		snp-0036-9		June.28/2017		Dip	
7	Routine		snp-0036-9		June.28/2017		Dip	
8	Metals	preservatives	snp-0036-9		June.28/2017		Dip	
9								
10								
11								
12								
13								
14								
15								

This section for Lab use only

Date/Time stamp:

JUN 29 PM 12:04

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1211383 COC

Shipping: COD Y/N

Cooler temp: 5.9

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1214560**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206525
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Sample 1214560-1; 5777882 Some total metal results were less than dissolved metal results for sample 1214560-1. The results were verified and are within expected measurement uncertainty.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1214560**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206525
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

Reference Number	1214560-1
Sample Date	Jul 13, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-9 / 6.8°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Phenol		mg/L	<0.001			0.001
Oil and Grease	Total	mg/L	<5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.05			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.02			0.02
Calcium	Total	mg/L	245			0.2
Iron	Total	mg/L	1.11			0.05
Magnesium	Total	mg/L	85.8			0.2
Manganese	Total	mg/L	0.981			0.005
Potassium	Total	mg/L	4.6			0.4
Silicon	Total	mg/L	2.01			0.05
Sodium	Total	mg/L	93.6			0.4
Sulfur	Total	mg/L	304			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	0.0012			0.0002
Barium	Total	mg/L	0.027			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.167			0.002
Cadmium	Total	mg/L	0.00001			0.00001
Chromium	Total	mg/L	<0.0005			0.0005
Cobalt	Total	mg/L	0.0006			0.0001
Copper	Total	mg/L	<0.001			0.001
Lead	Total	mg/L	<0.0001			0.0001
Lithium	Total	mg/L	0.040			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.0037			0.0005
Selenium	Total	mg/L	<0.0002			0.0002
Silver	Total	mg/L	<0.00001			0.00001
Strontium	Total	mg/L	0.898			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0037			0.0005

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W: www.exova.com

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1214560**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206525
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

Reference Number	1214560-1
Sample Date	Jul 13, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-9 / 6.8°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Uranium	Total	mg/L	0.0021			0.0005
Vanadium	Total	mg/L	0.0002			0.0001
Zinc	Total	mg/L	0.009			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	40			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	10			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<5			2
Routine Water						
pH			7.86			
Temperature of observed pH		°C	21.2			
Electrical Conductivity	at 25 °C	µS/cm	1900			1
Calcium	Extractable	mg/L	244			0.2
Magnesium	Extractable	mg/L	85.4			0.2
Sodium	Extractable	mg/L	93.6			0.4
Potassium	Extractable	mg/L	4.6			0.4
Sulfate (SO4)	Dissolved	mg/L	927			0.9

Approved by:

Randy Neumann, BSc
Vice President

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1214560**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206525
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	18-Jul-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-Jul-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	15-Jul-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	15-Jul-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	17-Jul-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	17-Jul-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	17-Jul-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	17-Jul-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	17-Jul-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	17-Jul-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	19-Jul-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	17-Jul-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	17-Jul-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1214560-1; 5777882 Some total metal results were less than dissolved metal results for sample 1214560-1. The results were verified and are within expected measurement uncertainty.

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W: www.exova.com

Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1214560**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Pit S/E of dump	Date Received:	Jul 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Jul 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2206525
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Dale Hvatum				
Company:	Town of Inuvik				

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Project Information

Project ID	snp-0036-9
Project Name	
Project Location	Pit S/E of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Dale Hvatum

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: July.13/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp__10_ C, precip_71%__, Wind dir_NNW__ Vel_3__km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers ↓
1	B.O.D.	snp-0036-9		July.13/2017		Dip	
2	Oil and Greece preservatives	snp-0036-9		July.13/2017		Dip	
3	Microbiology	snp-0036-9		July.13/2017		Dip	
4	Nutrients preservatives	snp-0036-9		July.13/2017		Dip	
5	Phenol preservatives	snp-0036-9		July.13/2017		Dip	
6	Mercury	snp-0036-9		July.13/2017		Dip	
7	Routine	snp-0036-9		July.13/2017		Dip	
8	Metals preservatives	snp-0036-9		July.13/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp: JUL 14 PM12:53

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1214560 COC

Shipping: COD Y/N

Cooler temp: 6.8

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WJ

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1221110**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215114
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Sample 1221110-1; 5810369 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1221110**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215114
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1221110-1
Sample Date	August 16, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-9 / 2.9°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Aggregate Organic Constituents				
Biochemical Oxygen Demand	5 Day	mg/L	<4	4
Phenol		mg/L	<0.001	0.001
Oil and Grease	Total	mg/L	<5	5
pH adjustment	adjustment required		No	
Inorganic Nonmetallic Parameters				
Phosphorus	Total	mg/L	0.15	0.05
Metals Dissolved				
Subsample	Field Filtered		Lab Filtered	
Metals Total				
Aluminum	Total	mg/L	0.20	0.02
Calcium	Total	mg/L	64.7	0.2
Iron	Total	mg/L	1.11	0.05
Magnesium	Total	mg/L	34.4	0.2
Manganese	Total	mg/L	0.528	0.005
Potassium	Total	mg/L	1.5	0.4
Silicon	Total	mg/L	2.50	0.05
Sodium	Total	mg/L	25.3	0.4
Sulfur	Total	mg/L	92.4	0.3
Mercury	Total	mg/L	<0.000005	0.000005
Antimony	Total	mg/L	<0.0002	0.0002
Arsenic	Total	mg/L	0.0008	0.0002
Barium	Total	mg/L	0.020	0.001
Beryllium	Total	mg/L	<0.0001	0.0001
Bismuth	Total	mg/L	<0.0005	0.0005
Boron	Total	mg/L	0.042	0.002
Cadmium	Total	mg/L	0.00003	0.00001
Chromium	Total	mg/L	0.0010	0.0005
Cobalt	Total	mg/L	0.0009	0.0001
Copper	Total	mg/L	0.003	0.001
Lead	Total	mg/L	0.0001	0.0001
Lithium	Total	mg/L	0.015	0.001
Molybdenum	Total	mg/L	<0.001	0.001
Nickel	Total	mg/L	0.0097	0.0005
Selenium	Total	mg/L	0.0004	0.0002
Silver	Total	mg/L	<0.00001	0.00001
Strontium	Total	mg/L	0.196	0.001
Thallium	Total	mg/L	<0.00005	0.00005
Tin	Total	mg/L	<0.001	0.001

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1221110**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215114
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1221110-1
Sample Date	August 16, 2017
Sample Time	NA
Sample Location	
Sample Description	snp-0036-9 / 2.9°C
Sample Matrix	Water

Analyte		Units	Result	Nominal Detection Limit
Metals Total - Continued				
Titanium	Total	mg/L	0.0045	0.0005
Uranium	Total	mg/L	<0.0005	0.0005
Vanadium	Total	mg/L	0.0007	0.0001
Zinc	Total	mg/L	0.013	0.001
Zirconium	Total	mg/L	<0.001	0.001
Microbiological Analysis				
Total Coliforms	Membrane Filtration	CFU/100 mL	150	1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	100	1
Physical and Aggregate Properties				
Solids	Total Suspended	mg/L	<2	2
Routine Water				
pH			7.28	
Electrical Conductivity	at 25 °C	µS/cm	645	1
Calcium	Extractable	mg/L	61.6	0.2
Magnesium	Extractable	mg/L	32.8	0.2
Sodium	Extractable	mg/L	23.4	0.4
Potassium	Extractable	mg/L	1.5	0.4
Sulfate (SO4)	Dissolved	mg/L	259	0.9

Approved by:

Darlene Lintott, MSc
Consulting Scientist

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1221110**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215114
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	21-Aug-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	21-Aug-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	18-Aug-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	18-Aug-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	18-Aug-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	18-Aug-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	18-Aug-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Aug-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Aug-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	18-Aug-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	17-Aug-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	17-Aug-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	17-Aug-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	21-Aug-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1221110-1; 5810369 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1221110**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Aug 17, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Aug 24, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2215114
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

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Project Information

Project ID	snp-0036-9
Project Name	
Project Location	Creek N/W of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date: Aug.16/2017 Initial: J.S

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:

SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E

SNP6 GatePond - SNP7 FarPond - SNP8 TwinL SNP9-Creek N/W of dump

Raw Water

Temp 14 C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	B.O.D.	snp-0036-9		Aug.16/2017		Dip	
2	nutrients + preservatives	snp-0036-9		Aug.16/2017		Dip	
3	oil & Greece + preservatives	snp-0036-9		Aug.16/2017		Dip	
4	metals + preservatives	snp-0036-9		Aug.16/2017		Dip	
5	phenol + preservatives	snp-0036-9		Aug.16/2017		Dip	
6	microbiology	snp-0036-9		Aug.16/2017		Dip	
7	mercury	snp-0036-9		Aug.16/2017		Dip	
8	routine	snp-0036-9		Aug.16/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp: AUG 17 PM 12:35

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazardous samples

Control #

Page 1 of 1

Lot: 1221110 COC

Shipping: COD Y/N

Cooler temp: 2.9

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: J NUNEZ

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Report Transmission Cover Page

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1226584**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222196
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Contact	Company	Address
Jason Casault	**AECOM - Edmonton**	101, 18817 Stony Plain Road Edmonton, AB T5S 0C2 Phone: (780) 486-7050 Fax: (780) 486-7070 Email: Jason.Casault@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / COA
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Kim Wainman	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: kwainman@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Contact	Company	Address
Richard Feilden	**AECOM - Edmonton**	17203 - 103 Avenue Edmonton, AB T5S 1J4 Phone: (780) 488-6800 Fax: (780) 488-2121 Email: richard.feilden@aecom.com

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report

Contact	Company	Address
Rick Campbell	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-8615 Fax: (867) 777-8601 Email: rcampbell@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Merge Reports	PDF	COC / Test Report
Email - Single Report	PDF	Invoice

Contact	Company	Address
Utilidor	**Town of Inuvik**	Box 1160, 2 Firth Street Inuvik, NT X0E 0T0 Phone: (867) 777-2607 Fax: (867) 777-2071 Email: utilidor@town.inuvik.nt.ca

Delivery	Format	Deliverables
Email - Single Report	PDF	Invoice

Notes To Clients:

- Sample 1226584-1; 5838059 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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W: www.exova.com

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Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1226584**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222196
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226584-1
Sample Date	Sep 13, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-9 / 4.0°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Aggregate Organic Constituents						
Biochemical Oxygen Demand	5 Day	mg/L	<4			4
Phenol		mg/L	0.001			0.001
Oil and Grease	Total	mg/L	<5			5
pH adjustment	adjustment required		No			
Inorganic Nonmetallic Parameters						
Phosphorus	Total	mg/L	0.06			0.05
Metals Dissolved						
Subsample	Field Filtered		Lab Filtered			
Metals Total						
Aluminum	Total	mg/L	0.08			0.02
Calcium	Total	mg/L	60.8			0.2
Iron	Total	mg/L	0.52			0.05
Magnesium	Total	mg/L	25.9			0.2
Manganese	Total	mg/L	0.312			0.005
Potassium	Total	mg/L	1.6			0.4
Silicon	Total	mg/L	1.73			0.05
Sodium	Total	mg/L	21.2			0.4
Sulfur	Total	mg/L	77.2			0.3
Mercury	Total	mg/L	<0.000005			0.000005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	0.0005			0.0002
Barium	Total	mg/L	0.018			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.046			0.002
Cadmium	Total	mg/L	0.00002			0.00001
Chromium	Total	mg/L	0.0009			0.0005
Cobalt	Total	mg/L	0.0004			0.0001
Copper	Total	mg/L	0.002			0.001
Lead	Total	mg/L	<0.0001			0.0001
Lithium	Total	mg/L	0.016			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	0.0082			0.0005
Selenium	Total	mg/L	<0.0002			0.0002
Silver	Total	mg/L	<0.00001			0.00001
Strontium	Total	mg/L	0.187			0.001
Thallium	Total	mg/L	<0.00005			0.00005

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W: www.exova.com

Analytical Report

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1226584**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222196
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Reference Number	1226584-1
Sample Date	Sep 13, 2017
Sample Time	NA
Sample Location	
Sample Description	SNP-0036-9 / 4.0°C
Matrix	Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total - Continued						
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0019			0.0005
Uranium	Total	mg/L	<0.0005			0.0005
Vanadium	Total	mg/L	0.0004			0.0001
Zinc	Total	mg/L	0.011			0.001
Zirconium	Total	mg/L	<0.001			0.001
Microbiological Analysis						
Total Coliforms	Membrane Filtration	CFU/100 mL	3			1
Fecal Coliforms	Membrane Filtration	CFU/100 mL	1			1
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	2			2
Routine Water						
pH			7.44			
Electrical Conductivity	at 25 °C	µS/cm	570			1
Calcium	Extractable	mg/L	58.4			0.2
Magnesium	Extractable	mg/L	25.0			0.2
Sodium	Extractable	mg/L	21.1			0.4
Potassium	Extractable	mg/L	1.5			0.4
Sulfate (SO4)	Dissolved	mg/L	224			0.9

Approved by:

Anthony Neumann, MSc
Laboratory Operations Manager

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1226584**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222196
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Method of Analysis

Method Name	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity, 2510 B	18-Sep-17	Exova Edmonton
Alkalinity, pH, and EC in water	APHA	*	pH - Electrometric Method, 4500-H+ B	18-Sep-17	Exova Edmonton
BOD in water	APHA	*	5 Day, 5210 B	15-Sep-17	Exova Edmonton
Coliforms - Membrane Filtration	APHA		Fecal Coliform Membrane Filter Procedure, 9222 D	15-Sep-17	Exova Calgary
Coliforms - Membrane Filtration	APHA		Standard Total Coliform Membrane Filter Procedure, 9222 B	15-Sep-17	Exova Calgary
Mercury (Total) in water	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	15-Sep-17	Exova Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	15-Sep-17	Exova Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Metals Trace (Extractable) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	15-Sep-17	Exova Edmonton
Oil and Grease in water	US EPA	*	n-Hexane Extractable Material and Silica Gel Treated n-Hexane Extractable Material by Extraction and Gravimetry, 1664	15-Sep-17	Exova Edmonton
Phenol in water	APHA	*	Direct Photometric Method, 5530 D	15-Sep-17	Exova Edmonton
Phosphorus - Total in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	14-Sep-17	Exova Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	15-Sep-17	Exova Edmonton

** Reference Method Modified*

References

APHA	Standard Methods for the Examination of Water and Wastewater
APHA/USEPA	Standard Methods For Water/ Environmental Protection Agency
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Sample 1226584-1; 5838059 Sample formed an emulsion during oil and grease extraction. Centrifugation was required in order to complete analysis.

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Methodology and Notes

Bill To:	Town of Inuvik	Project ID:	SNP 0036-9	Lot ID:	**1226584**
	Box 1160	Project Name:		Control Number:	
	2 Firth Street	Project Location:	Creek N/W of dump	Date Received:	Sep 14, 2017
	Inuvik, NT, Canada	LSD:		Date Reported:	Sep 21, 2017
	X0E 0T0	P.O.:	100104	Report Number:	2222196
Attn:	Rick Campbell	Proj. Acct. code:			
Sampled By:	Jim Crawford				
Company:	Town of Inuvik				

Exova Testing Advising Assuring

www.exova.com

Project Information

Project ID	snp- 0036-9
Project Name	
Project Location	Creek N/W of dump
Legal Location	
PO/AFE#	100104
Proj. Acct.Code	

Billing Information:

Company	Town of Inuvik
Address	Box 1160 2 Firth Street
	Inuvik, NT X0E 0T0
Attention	Rick Campbell
Phone	(867) 777-8615
Cell	(867) 678-5388
Fax	(867) 777-8601
E-mail	rcampbell@town.inuvik.nt.ca
Agreement ID	2909
Copy of Report	

Copy of Report To:

Company	Aecom - Edmonton
Address	17203-103rd Avenue
	Edmonton, AB T5S 1J4
Attention	Richard Feilden
Phone	(780) 488-6800
Cell	
Fax	(780) 488-2121
E-mail	richard.feilden@aecom.com
Copy of invoice	

RUSH Priority

Upon filling out this section, client accepts that surcharges will be applied to the analysis

Date Required | As Indicated [ ] | All Analysis

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples

Signature

Sample Custody (please print)

Sampled by: Jim Crawford

Company: Town of Inuvik

I authorize Exova to proceed with the work indicated on this form:

Date:Sept. 13/2017 Initial: J.S.

Report Results								
	x	E-Mail		Online		PDF		QA/QC Report
		Mail	x	Fax		Excel		

Special Instructions/Comments (please include contact information including ph. # if different from above).

Sampler: Circle Project ID Below and note weather:
SNP3 Lagoon - SNP4 Mt.B W - SNP5 Mt.B E
SNP6 GatePond - SNP7 FarPond - SNP8 TwinL
Raw Water
Temp___ C, precip___, Wind dir___ Vel___km/h

Indicate Regulatory Requirements below

	Sample Identification	Location	Depth in cm m	Date/Time sampled	Matrix	Sampling method	Number of Containers
1	B.O.D.	snp- 0036-9		Sept.13/2017		Dip	
2	Nutrients + preservatives	snp- 0036-9		Sept.13/2017		Dip	
3	Oil n Greece + preservatives	snp- 0036-9		Sept.13/2017		Dip	
4	Phenol + preservatives	snp- 0036-9		Sept.13/2017		Dip	
5	Metals + preservatives	snp- 0036-9		Sept.13/2017		Dip	
6	Microbiology	snp- 0036-9		Sept.13/2017		Dip	
7	Mercury	snp- 0036-9		Sept.13/2017		Dip	
8	Routine	snp- 0036-9		Sept.13/2017		Dip	
9							
10							
11							
12							
13							
14							
15							

This section for Lab use only

Date/Time stamp: SEP 14 '17 12:40

Indicate below any deficiencies in the condition of samples:

	Were Exova supplies used?
	Was there any damage to the shipping container?
	Were the containers packaged well?
	Were the expected number of samples received (document below)?
	Are samples within recommended holding times/temp?

Environmental Sample Information Sheet

Note: Proper completion of this form is required in order to proceed with analysis

Please indicate any potentially hazordous samples

Control #

Page 1 of 1

Lot: 1226584 COC

Shipping: COD Y/N

Cooler temp: 4.0

and size of coolers received:

Delivery Method: Courier

Waybill:

Received by: WV

Appendix C

Lagoon Berm Inspection Report

AECOM
4916 47th Street, Floor 3
GoGa Cho Building (PO Box 1259)
Yellowknife, NT, Canada X1A 2N9
www.aecom.com

867 873 6316 tel
867 873 6407 fax

March 27, 2018.

Mr. Leonard DeBastien
Executive Director
Gwich'in Land and Water Board
Box 2018
Inuvik, N.W.T.
X0E 0T0

Mr. Rolland Malegana
Regional Environmental Assessment Coordinator
Energy and Natural Resources
Box 2749
Inuvik, N.T.
X0E 0T0

Dear Sir:

Project No: 60555250

Regarding: Town of Inuvik - Water Licence No. G17L3-001
Licence Condition D8, Lagoon Earthen Water Retaining Structures

On behalf of Inuvik, we wish to respond to Water License Condition D8 for year 2017.

Water Licence Condition D8 states, "The dams, dykes and other engineered earth structures designed to contain waste within the Sewage Disposal facilities shall be inspected annually by a professional engineer to determine the stability of the structures". In Water Licence A2, Definitions, "Professional Engineer – a person registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientist, and whose principal field of specialization is appropriate to address the components of the undertaking at hand".

The lagoon's west dyke was built on native permafrost soils in the late 1950's. The interior dykes forming the sludge cells and primary lagoon cells were added in 1981. The west dyke was rebuilt at the same time. In 1987-88, initial settlement of the new interior dikes and further erosion of the west dike were restored in a major re-grading project. In 2003, subsidence and erosion of the inner face of the west dike was again repaired, and the inner face was armored with geotextile and blast rock. In 2006, subsidence of the interior dikes was repaired by raising the dike crests back to designed level. In 2015, subsidence of the dike along the north end of the lagoon was repaired by raising the dike crests back to designed level.

Inuvik has the dikes inspected by its engineers, AECOM, at least annually.

Gradual uneven settlement of the dikes has been ongoing since they were first built. Settlement is believed to be due primarily to thawing of the permafrost under the dykes, and subsequent consolidation of the soils. Historically, slow subsidence has not threatened the integrity or water tightness of the dikes and it is not expected to do so as long as it is countered by periodic restoration.

In some years significant thaw-subsidence occurs in the portion of the lagoon system's west dike that runs between the west sludge cell and "Gate Pond" (as named in the SNP program). Gate Pond was formed early in Inuvik's history by gravel borrowing, and is thought to have been deepened (and probably enlarged) by subsequent thaw-subsidence. Gate pond probably is the main heat source

causing the recurrent dike thaw-subsidence in the vicinity. Routinely, the dike is restored to designed levels and lines whenever significant thaw-subsidence has occurred.

Undercutting and sloughing of inner faces has also been ongoing since the dikes were first built, caused by soft subsoils and the flat slopes that the dike soils trend toward under water. Permafrost thaw subsidence and seasonal freeze-thaw may contribute locally. Sloughing narrows the crest. From time to time, dikes need to be restored to designed width in order to maintain water tightness, stability, and safe vehicle access along the crests. Sloughing affects all dikes, and major restoration projects have been needed roughly every ten to fifteen years. The 2003 armoring work was intended to reduce sloughing of the inner face of the west dike. Dikes around the smaller cells have not been armored.

Over the years the two karst ponds just outside the west dike, toward its downstream end, have shown a tendency to grow. There has been some undercutting and sloughing of the outer face of the west dike along the pond shorelines. Fill was added to slope toes in the fall of 2006 and again in 2007 and 2009. It is reasonably certain similar restoration work will be needed in future at these locations, probably in most years.

In late 2010 the dykes separating the inner ponds were rebuilt and the west dyke was graded to fill all the cracks. During summer 2015, the north dyke was raised about 0.5 metre to restore grade, and the surface of all other dykes was graded.

During spring of 2016, the Town of Inuvik hired a local contractor to drill test holes along the lagoon dykes and obtain soils samples at various depths. The samples were sent to AECOM for laboratory testing. According to the results the soil beneath the dykes generally consists of ice rich clays, silts and sands.

The 2017 annual inspection was carried out on September 30, 2017. All dykes were found to be in satisfactory condition. No unusual longitudinal cracks or fissures were noted. Maintenance activities carried out in 2017 included restoring grade around the inner ponds and grading of all the dykes to fill longitudinal cracks.

The longitudinal cracking that occurs on an annual basis confirms that subsidence and undercutting continue to occur at a slow rate, and in some future year major restoration work will be required. This underscores the need for continued maintenance. Nevertheless all dikes appear to remain at or very near to designed shapes and levels, and on that basis we believe that all of the dikes in Inuvik's lagoon at this time are safe and adequate water retaining structures.

We trust that this submission fulfills the requirements of the Town of Inuvik water license Condition D8 for year 2017.

Sincerely,
AECOM Canada Ltd.

Michel Lanteigne, P.Eng.
Manager, Northwest Territories
Michel.lanteigne@aecom.com

Reviewed by

Jordan Hoffart, P.Eng.
Project Engineer, Municipal Infrastructure
jordan.hoffart@aecom.com

ML:sw

cc: Mr. Rick Campbell, Town of Inuvik
Mr. Grant Hood, S.A.O., Town of Inuvik
Inuvik Utilidor Crew Foreman
Inuvik Public Works Committee

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- represents Consultant's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to Consultant which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

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AECOM: 2012-01-06