Annual Report -2016

Water Licence: 3BM-CAM 1520

Hamlet of Cambridge Bay, NU

Date: March 22, 2017

Submitted by:
Shah Alam, P. Eng., E.P.
Municipal Planning Engineer,
Community and Government Services
Cambridge Bay, NU

Annual Report-2016

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Cambridge Bay Water Licence: 3BM-CAM 1520 — Annual Report 2016

March 22, 2017

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1L0

Attention: Karen Kharyan, Ph. D., A/Manager of Licensing

RE: 3BM-CAM 1520 - Annual Report 2016, Hamlet of Cambridge Bay

Dear Mr. Karen,

The Hamlet of Cambridge Bay is pleased to submit to Nunavut Water Board the include file of "**Annual Report 2016**" of water uses and sewage solid waste disposal as required and directed under the compliance of Water Licence; 3BM-CAM-1520 as stated above. Copies of required tests reports are included herewith for your reference.

Samples test result shown excellent remediation of contamination parameters within allowable limits comprising BOD, TSS, E-coli and Toxicity components and quality control on sewage and solid waste effluent before discharging out.

We summarized those conditions and requirements outlined in Part B through part H.

We hope that Nunavut Water Board will find this report and enclosed test results valuable to Annual Report in operating the Water Licence for water, sewage and solid waste facilities.

Best Regards,

Shah Alam, P. Eng. E.P.
Municipal Planning Engineer,
Community and Government Services
Kitikmeot Region, Cambridge Bay, Nu
Phone: 867-983-4156, fax: 867-983-4123
Email: salam@gov.nu.ca

Enclosure: Annual Report 2016 NWB Form, effluent water sample results, compliance Part B-H
Cc: Marla Limousin, Senor Administrative Officer, Hamlet of Cambridge Bay, NU
Baba Pedersen, Resource management Officer, AANDC

MUNICIPALITY OF CAMBRIDGE BAY

March 18, 2017

Shah Alam, P. Eng., E. P.
Municipal Planning Engineer
Community and Government Services
Government of Nunavut
Bag 200
Cambridge Bay,Nunavut XOB OCO

Re: Authorization to Act on Behalf of the Hamlet

Dear Shah:
I hereby authorize you to act on behalf of the Municipality of Cambridge Bay in regards to our Water License and the Annual Report 2016 submission to the Nunavut Water Board.

Respectfully,

M. Limousin

Marla Limousin
Senior Administrative Officer
Municipality of Cambridge Bay
☎

EXECUTIVE SUMMARY:

This Annual Report 2016 for the Hamlet of Cambridge Bay (the Licensee) to the Nunavut Water Board (NWB) has been prepared to meet requirements of the Nunavut Water Board Licence 3BM - CAM1520, Part B General Conditions, through part H conditions to the monitoring program. This report covers the period from 01 January to 31 December 2016.

Water intake from Water Lake through twin intake pumps, delivered by 6 inch HDPE buried line to treatment plant where it treats through chlorination, medium filtration and UV system before truck fill from outside by hamlet operated water trucks. One Feed water tank and one treated water tank is used continuous water delivery and truck fill supply. Quantity of water uses about **86,665** m3, within the allowable limit **86,200** annually. The increase in water consumption for this year was due to extra workers in the community, water tests for tanks in water plant, tank farm and water line flow test. It is anticipated that the consumption will be reduced in coming years, and expecting a volume of consumption within 85,000 m3.

Sewage waste collected from household sewage tanks using hamlet operated vacuum trucks, hauled to community sewage lagoon and discharged at designated dropping points. Raw sewage stayed frozen inside the lagoon during the period Sep - June for almost 10 months, where received primary treatment naturally. Annual decanting carried during July and August to reduce quantity inside and make room for new candidate sewage waste. Samples collected from defined designated monitoring stations and tested at Taiga Laboratory Yellowknife for parameters content compliance.

Batteries, waste oil and waste paint drums replaced inside C-cans at metal waste facility, plan for shipping out with certified handler in 3-5 years or earlier as convenient. Non-hazardous waste disposed at the Solid waste facility (land-fill) using hamlet operated trucks and pushed down with grader, and covered with sand-gravels. Loose wastes, papers, boxes, and light woods were burnt onsite with control slow burning process to reduce waste bulks and secured from wind flown away.

Currently the Licensee does not have additional facility for contaminated soil or spills remediation (if needed), but two lined cells at the metal dump site are facilitating temporary storage of those.

New pump house facility replaced the water intake operation from old pump house, which was demolished and all system abandoned. New vault #16 connected the buried line from new PH to the existing last vault #15. Turbidity and hardness were slight concern for long time water uses and specifically for the new CHARS laboratory. To stay with compliance, new Water Treatment Plant is constructed with additional scope of filtration and UV adsorption with regular chlorination.

Changes the normal delivery buried line into **High pressure** line is ready for expected operation in summer 2017. Once the proposed high pressure line comes to operation, current in-town plant and overhead storage tank will be demolished. Water intake program or quantity will not be changed but increase the quality and efficiency of delivery with the new pump house and Treatment Plant. Water samples are testing on a routine monthly basis for E. coli, F.C and whenever necessary. Chemical tests of raw water and treated water were conducted in compliance to the portable Drinking Water Guidelines.

Part B: General Conditions

- Annual water consumptions are noted from daily water supply and sewage disposal from daily recorded volume. No separate arrangement for sewage amount measurement, but quantities were calculated on the basis of 90-95 % of daily water distribution. No device Meter used for volume measurement, however, truck-measurement uses as precise.
- Based on weather effect sewage disposal points are used both the new splash pad and the previous drop-off point at the main cell.
- No unauthorized discharge or disposal to solid waste. Some oil and waste paint drums stored inside the lined berm cell at metal dump area which causes minor leach on ponded water. The visible leachate sheens were absorbed using cotton pad and water pumped out to sewage lagoon using vacuum truck.
- O&M manual of intake Pump house is active and O & M manual for new WTP in progress
- No changes to QA/QC plan for sewage and solid waste facilities, as monitored in summer.
- Signage installed at stations for effluent sampling with direction, awareness languages.
- No changes in Monitoring program as reported in QA/QC plan and Plan for Compliance.

Part C: Water Use:

- Water drawn from the Water Lake using twin intake lines and annual intake is at allowable annual limit of 86,200 m3 (quantity drawn 86,665 m3). Excess water was required for seasonal increase of workers and business people in town, plus water hydrostatic tests for water and fuel storage tanks and line tests. The Licensee is anticipating the volume will be decreased to some 85,000 m3 in coming years.
- No changes to intake screen, intake pipes or any assembly from previous year but the addition to delivery line into high pressure system. The intake The screen composed of 2.54 mm slot, # 60 wedge screen and 62.5% opening area, 406 mm x 452 mm diameter with 3 mm cap plate and weld ring.
- No erosion detected at the intake line, pumphouse or delivery line.
- Water quantity allowable limit (86,200 m3) unchanged and expecting not requires any changes shortly, but is aware of the process and will follow up accordingly if needed.

Part D: Waste Disposal

- Raw sewage waste collected from household tank by hamlet operated vacuum trucks and hauled to the lagoon, 7 days a week on regular business hours and on call after hours.
- Sewage effluent samples taken during July – Sep before and during decanting; tested at Taiga laboratory and confirmed parameters contamination within allowable limits.
- Sampling CAM-6 at Final Discharge point remains unchanged as identified.
- Freeboard at sewage lagoon maintained 1.0 m and discharged to waiting cell by pump with a capacity of not exceeding 1600 L/min.
- Test results shown the effluent from Final Discharge Point CAM-6 within limiting values for BOD, TSS, Coliform, p^H meeting quality standards and guidelines.

Part E-G: Modification, construction, operation, A&R

- As-built drawings for new Treatment plant in progress. Training was conducted to the operators with soft guide and hands on. O&M manual preparation in progress with possible submission to the Board within 90 days of substantial completion.
- The town plant building, buried line, overhead tank and truck fill accessories are abandoned and will be decommissioned or demolished by mod 2017 once the buried line comes in full operation. Currently, water truck-fill from treatment plant with alternate facility at the intake pumphouse.
- Plan for modification and abandonment of in-town treatment plant will be updated when finalized and budget approved.

Annual Report NWB Form

Water Licence: 3BM-CAM 1520

Hamlet of Cambridge Bay, NU

ANNUAL REPORT- 2016

YEAR BEING REPORTED: 2016

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence 3BM- CAM 1520 issued to the Hamlet of Cambridge Bay

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

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

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January	7,070,692.19	Same
February	7,080,857.08	Same
March	7,260,509.73	Same
April	7,152,845.64	Same
May	7,096,416.55	Same
June	7,162,536.41	Same
July	7,407,263.55	Same
August	7,351,043.91	Same
September	7,389,652.01	Same
October	7,621,094.87	Same
November	7,387,913.45	Same
December	6,683,852.96	Same
ANNUAL TOTAL	86,664,651.35	Same

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

Water supply:

Water Treatment Plant building completed & in operation monitoring which included:

- AdEdge filtration system to raw water immediate after chlorination
- UV system followed by AdEdge filtration for turbidity and biological treatment
- Chlorine feed tanks and Ferric Chloride feed (as needed) tank including pumps
- Backwash tank, treated water tank, new truckfill arms, back-up generator
- SCADA monitoring system including control panels and PLC program
- Existing 50 mm recirculation lines removed from buried line within town area to increase the supply flow-rate and to help high pressure system in water delivery
- New 200 mm HDPE buried line with new vaults AV201-AV206 for CHARS
- New 200 mm buried line with new vaults loop return to WTP (drawing attached)

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

AANDC inspection July 05, 2016 (Report Sep 13, 2016) indicates:
Various containers of a variety of oils and lubricants stored inside the lined berm cell & mega bags of contaminated soils and paints are dumped at the metal dump site which leaches into the ponding water throughout the entire area of the berm cell with visible sheens on surface.

- ✓ The licensee has cleaned the noted oil-paint sheen from ponding water by absorption using cotton-pad and then cleared the ponding water to sewage lagoon using vacuum truck. The absorbed cotton-pad then burned inside a trench and buried.

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

The town elevated water tank, town plant building, truckfill facility and buried line portion from old vault ExAV-01 has been abandoned. Some additional buried line works in town are in plan for next summer 2017.

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

The AANDC inspector has noted elevated level of p^H (**9.57**) in sewage effluent before decanting and requested for further sampling as needed to ensure the p^H level to meet requirements. He has authorized the decanting program with the hope of warm weather can improve the effluent quality by the time since samples were taken very early.

- ✓ The licensee has decanted approximately 62,000 m3 of treated sewage water into the wetland during the period Aug 07 - Sep 19 with some interval for slowing the discharge.

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

AANDC Report Sep 13, 2016 (concerns and comments):
Daily, weekly, monthly and annual water consumption data were done electronically which made difficult for staff to show the inspector when asked. Staff must be able to show the inspector any data request on water supply and waste disposal.
The fuel tank outside the water IPH building is only 16 m from High Water Mark, which should be considered in the Design/Build process of the IPH.
Solid waste, sewage and metal dump facilities are well organized and fenced as needed.

- ✓ The licensee uses Fluid Manager Database for water supply quantity and calculates daily, monthly and annual consumption. The responsible staff and the Director of Works have access to the information to provide as requested. Also, record can be print out anytime as needed. There is no other system to measure the quantity but the truck volume and house tank of water supply are close to accurate.

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

The O & M manual for new Intake Pumphouse is approved for operation and soft copy was submitted to the Board including the as-build drawings. This new O&M replaced the previous O&M manual of old intake Pumphouse which was demolished.

O&M manual for the new Water treatment plant is in progress and will be available sometime in 90 days from the Final completion. Currently, the WTP is progressing to substantial completion with noted deficiencies components of storage, disposal and delivery system which will be cleared during the summer 2017. No remarkable changes for O&M of solid waste and sewage facilities.

x. ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL**:**

Hamlet of Cambridge Bay does not own a separate facility for contaminated soil and spill materials remediation, but only for storage inside the two liner cells within the metal dump area. The spills and contaminated materials only be stored inside a container, covered and place inside the liner cell confirming no leach, leak or overflow water from the container into the liner cell. The same arrangement for empty drums, paint pails and other type of materials stored temporarily and subjected to transfer or removal in time. The Board has noted that activities allowed under this licence for the Modified Solid Waste Disposal facility does not permit the operation of a landfarm facility for treating hydrocarbon impacted soil. The licensee is suggested for an amendment of the current licence to include the hydrocarbon impacted soil treatment, or a separate licence if plan for a separate facility instead.

Guided by the authority and based on the need, a separate application for the Soil remediation landfarm facility has been submitted by Kitnuna Environment Ltd (dated Oct 19, 2016), in consultation with the Hamlet of Cambridge Bay, which is screened, approved by NIRB and

currently is under Board's review. With the addition of the proposed landfarm facility will be useful for the community, residential, housing, commercial, and institutional organization for spills and contaminated hydrocarbons.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

The licensee has made significant improvements to solid waste, sewage lagoon and metal dumps facilities by:

- Segregating, isolating, and compacting bulk wastes and removing debris.
- Securing waste batteries, waste oil, paints and hazardous materials inside wooden boxes and plastic containers, labelled with types and numbers/quantities,
- Putting those boxes of waste batteries, paint and waste oil inside 20 ft C-can on site.
- Control burning of loose papers, boards, dry-wall components, waste beddings, waste cloths, waste doors-windows components and similar lightweight materials inside a trench and burying them by soil-gravel materials.
- Bundling used tires and crushing empty drums and placing them inside signed cell,
- Pushing down the loose waste into lower end of solid waste facility and covering the compacted waste by soil-gravel materials.
- Picking up the loose papers and debris from perimeter fence of MSW and burning them inside controlled burning pit.
- Picking up the floated debris and dried sludge from the bank of sewage facility and transferring them to waste facility and sludge drying cell.

Recycling program:

The licensee has started collecting recycle materials at household level and transferring the recycled materials into the centralized main facility from where they will be shipping out to the recipient. This is not a revenue generating program yet, but the long term plan would bring a benefit to the community.

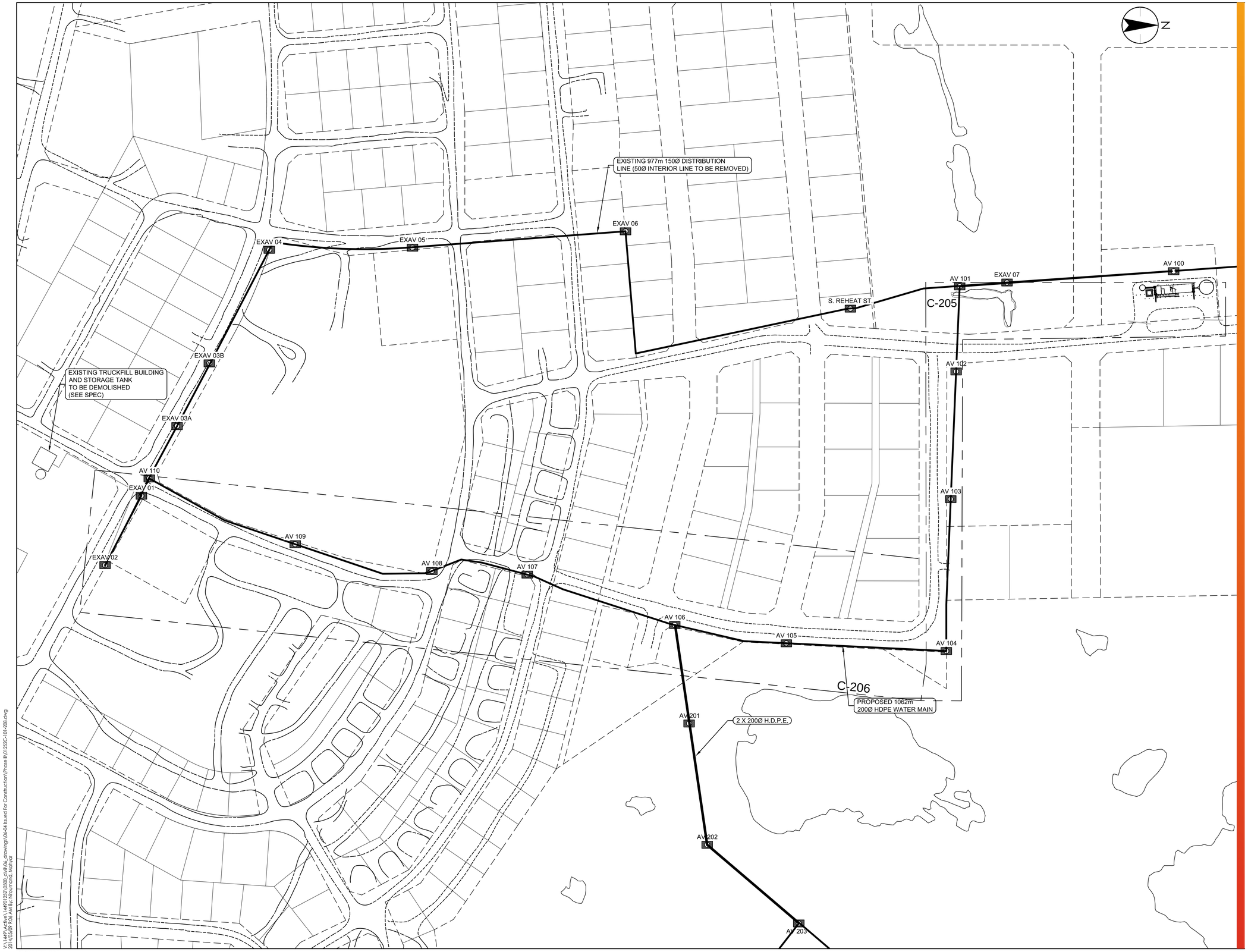
Water Analysis: Cambridge Bay Water Supply

Sample collected: (i) July 14, (ii) Sep 13 and (iii) Nov 23, 2016

Test Type	Parameter	Water Analysis Results					units	MAC New Limits	Comment / IMAC Limits
		July 14 Raw water	July 14 IPH intake	Sep 13, Raw water	Sep 13, WTP, treated	Nov 23, Nurse Res			
Inorganics-Physical	Alkalinity (CaCo3)	96.1	96.6	102	100	127	mg/L		
	Colour	7	11	< 5	5	33	TCU	<=15	NR high
	P^H	8.47	8.46	8.22	8.11	7.76		6-9	RW high
	TDS	201	194	191	186	237	mg/L	500	
	TSS	< 3	< 3	< 3	< 3	<3	mg/L		
	Turbidity	0.86	0.79	0.35	0.38	1.1	NTU	1.0	NR high
Inorganics-Nutrients	Organic C (dissolved)	5	4.9	5.5	5.2	5.1	mg/L	5.5	
	Organic C (Total)	5.8	5.4	5.7	5.4	5.2	mg/L	3.0	
Major Ions	Nitrate as N2	0.09	0.10	0.13	< 0.01	0.16	mg/L	45	
	Fluoride	< 0.1	< 0.1	< 0.1	< 0.1	0.1	mg/L	1.5	
	Chloride	44.4	43.3	47.8	48	58.4	mg/L	250	
	Hardness	136	143	136	135	151	mg/L	200	
	Sodium	23.9	22.6	27.3	28.4	31.2	mg/L	<200	
	Sulphate	15	16	17	16	15	mg/L	<500	
Microbiology	Coliform, Total			< 1.0	< 1.0	<1.0	CFU/100mL	$1x10^6$	
	Escherichia Coli			< 1.0	< 1.0	<1.0	CFU/100mL	$1x10^6$	
Subcontracted Organics	Cyanide	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	mg/L	0.2	
	THM's			0.046	0.081	0.061	mg/L	0.1	
Trace Metals. Total	Aluminium	1.9	0.7	1.5	3.1	1.7	µg/L	100	
	Arsenic	0.3	0.3	0.3	0.3	0.3	µg/L	100	
	Barium	29.7	31.6	31.6	15	26.3	µg/L	100	
	Cadmium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	µg/L	5	
	Chromium	< 0.1	< 0.1	0.1	1.2	< 0.1	µg/L	50	
	Copper	12.6	< 0.2	16.4	8.7	161	µg/L	1000	
	Iron	16	< 5	23	162	163	µg/L	300	
	Lead	0.2	< 0.1	0.7	0.3	0.8	µg/L	10	
	Manganese	2.1	0.2	3.5	2.7	105	µg/L	50	NR high
	Selenium	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	µg/L	10	
	Zinc	1.0	< 0.4	62.3	66.8	303	µg/L	5000	
	Mercury	0.06	0.02	< 0.01	< 0.01	< 0.01	µg/L	1.0	
	Uranium	0.2	0.1	0.2	0.2	0.2	µg/L	20	

Water samples collected: Water Treatment Plant – WTP (treated), Nurse residence-NR (truck supply)

Prepared by: Shah Alam, P. Eng. Municipal Planning Engineer, CGS, Cambridge Bay, NU



Stantec

4910 - 53 Street PO Box 1777
Yellowknife, NT, Canada
Tel. 867.920.2882
www.stantec.com

Consultants

Legend

ROADS

LOT BOUNDARIES

POWER POLES

MAJOR TOPO LINE

MINOR TOPO LINE

EXAV
- EXISTING VAULT REQUIRED MODIFICATION

AV
- NEW VAULT

Notes

- TYPE B - VAULT 02
- TYPE C - VAULT 05
- TYPE D - VAULT 06
- TYPE H - VAULTS 04 & 07
- TYPE K - VAULTS 102, 103, 105, 107, 108 & 109
- TYPE L - VAULT 104
- TYPE M - VAULT 106
- TYPE N - VAULT 110
- TYPE P - VAULT 101
- AV 01 TO BE REMOVED
- FOR 03a & 03b SERVICE CONNECTION SEE DETAIL 4 C-508
- FOR SOUTH REHEAT STATION - SEE DETAIL 3, DRAWING C-508
- TYPE Q - VAULT 100

Revision		By	Appd.	YY.MM.DD
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09

Issued

	Dwn.	Chkd.	Dsgn.	YY.MM.DD
File Name: 144901252	AF	WO	WO	13.12.19

Permit-Seal

PERMIT TO PRACTICE
STANTEC ARCHITECTURE LTD.
Signature
Date 22 MAY 2014
PERMIT NUMBER: P 800
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
NWT/NU

144901252

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title

DISTRIBUTION LOOP ACCESS VAULT LOCATIONS & TYPES

Project No.	Scale	
144901252	1:1250	
Drawing No.	Sheet	Revision
C-104	4 of 24	0

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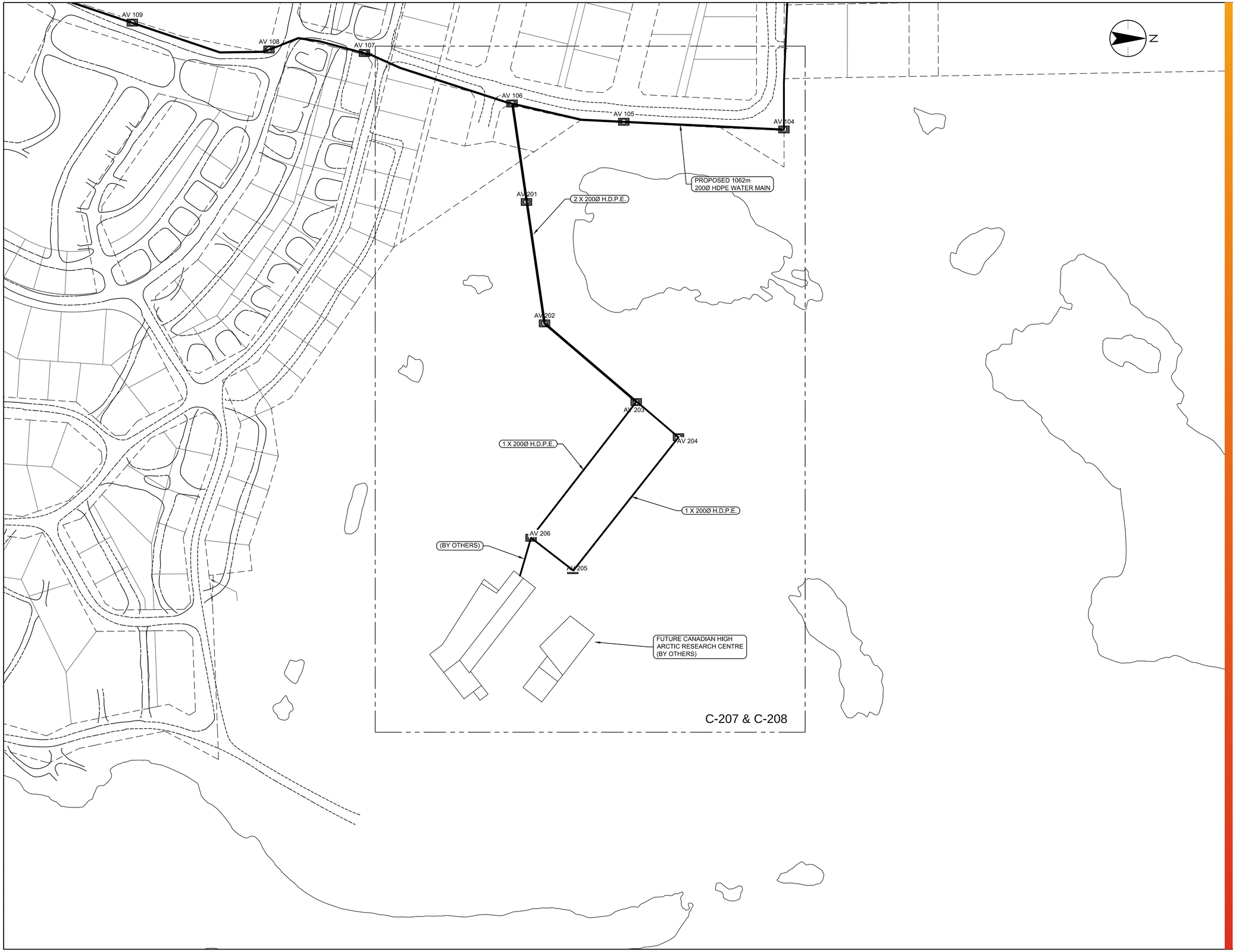

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ROADS

LOT BOUNDARIES

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MAJOR TOPO LINE

MINOR TOPO LINE

EXAV
- EXISTING VAULT REQUIRED MODIFICATION

AV
- NEW VAULT

Notes
- TYPE T - VAULTS 201
- TYPE U - VAULT 202
- TYPE R - VAULT 203
- TYPE L - VAULTS 204, 205,
- TYPE S - VAULT 206

Revision		By	Appd.	YY.MM.DD
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued		By	Appd.	YY.MM.DD
File Name: 144901252		AF Dwn.	WO Chkd.	WO Dsgn.	13.12.19 YY.MM.DD

Permit-Seal

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STANTEC ARCHITECTURE LTD.
Signature
Date 22 May 2014
PERMIT NUMBER: P 800
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
NWT/NU

144901252

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
CHARS LOOP
ACCESS VAULT
LOCATIONS & TYPES

Project No.	Scale	
144901252	1:1250	
Drawing No.	Sheet	Revision
C-106	6 of 24	0

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ORIGINAL SHEET - ANSI D

Appendix: A

AANDC Report 2016

Water Licence: 3BM-CAM 1520

Hamlet of Cambridge Bay, NU

WATER LICENCE INSPECTION FORM

☒ **Original**
☐ **Follow-Up Report**

Licensee	**Licensee Representative**
Hamlet of Cambridge Bay	Wayne Weese
Licence No. / Expiry	**Representative's Title**
3BM-CAM-1520	Director of Municipal Works
Land / Other Authorizations	**Land / Other Authorizations**
Date of Inspection	**Inspector**
5 July 2016	Baba Pedersen

Activities Inspected

☐ Camp ☐ Drilling ☐ Mining ☐ Construction ☐ Reclamation ☐ Fuel Storage
☐ Roads/Hauling ☒ Other:Municipal ☐ Other:

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

Water Use	Condition	Comment	**Site Conditions**	Condition	Comment	**Haz/Mat Management**	Condition	Comment
Intake/Screen	A		Water Management Structures	A		Storage		
Flow Measure. Device	C	6	Culverts / Bridges	NA		Spills		
Source:	A		Drainage	A		Spill Plan	NI	
Water Use:	C	6	Erosion / Sediment					
Recirculation (y /n)			Mitigation Measures			**Administrative**		
			Reclamation Activities			Records	C	6
			Materials Storage	A	4	Reports	A	
Waste Disposal			Signage	A	4	Plans	C	1
Waste Water	C	3				Notifications	A	
Solid Waste	A	2	**Monitoring**			**Other**		
Hazardous Waste	C	5	Sample Collection / Analysis	A				

**The number in the comments field will correspond with specific comments provided below.*

Samples taken by Inspector:	Location(s): The Municipal Staff took Samples during this Inspection and sent them to the Lab
☐ Yes ☒ No	

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

INAC Staff on this Inspection included Baba Pedersen, RMO/WRO, Erik Allain, Manager Field Operations and Jeremy Fraser, Summer Student. Shah Alam, GN Municipal Engineer for the Kitikmeot Region was also in attendance.

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

Field Inspection Sites included the Water Intake Station, Sample Station #1, the In-Town Water Truck Fill Station, the Main Dump, Sample Station #4, the Sewage Lagoon, Sample Station #3, the Decant Site, Sample Station #6, the Metal Dump, the Contaminated Soil/Misc Products Berm and the Hamlet Office for Computerized Water Consumption Documents.

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

1. The Fuel Tank outside the Water Intake Building (photo 1) is only 16 m from the High Water Mark. This should have been noticed and rectified during the Design/Build Process. 2. The Main Dump (photo 2) was well organized and is Fenced and Gated with Staff controlling intake. 3. The Sewage Lagoon (photos 3 and 4) is very large, allowing for ample future expansion when required. It was mentioned that they are still using the old Dumping Station (photo 5) because of Liner Damage (photo 6) at the New Dumping Station. 4. The Metal Dump is very nicely sorted with good Signage directing what items should be placed where. 5. The Lined Berm area within the Metal Dump Site (photos 7, 8 and 9) contains many various containers of a variety of Oils and Lubricants, lots of Mega Bags of Contaminated Soil and Paint and other Containers both Open and Closed. There is approximately 12 inches of water throughout the entire Berm Area, fully or partially submerging everything inside and there are visible Sheens on the surface in a few spots. 6. The Daily, Weekly, Monthly and Annual Water Use Consumption Data is done electronically which made it very difficult for the staff to show me any actual Consumption Amounts (photo 10) as is required in the Water Licence. Staff must be able to show the Inspector Consumption Figures on request.

Licensee or Representative	**Inspector's Name**
	Baba Pedersen
Signature	**Signature**
	Signed Original on File
Date	**Date**
	13 September 2016

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

CC: licensing@nwb-oen.ca, Nunavut Water Board
Erik Allain, Manager Field Operations, INAC
Shah Alam, Municipal Engineer, Gov't of Nunavut

PHOTO LOG

Date	Camera	Inspector	Authorization
5 July 2016		Baba Pedersen	3BM-CAM-1520

Photo Log # 5880	Location
Photo 1	Water Intake

Description: Fuel Tank on right side of Water Intake Building is only 16 m from the High Water Mark

Photo Log # 5891	Location
Photo 2	Main Dump

Description: Main Dump is well kept and organized with Fencing all around and a manned gate.

Photo Log # 5897	Location
Photo 3	Sewage Lagoon

Description: Large Sewage Lagoon with ample area for increased volumes with future community growth (view #1)

Photo Log # 5898	Location
Photo 4	Sewage Lagoon

Description: Large Sewage Lagoon with ample area for increased volumes with future community growth (view #2)

Photo Log # 5905	Location
Photo 5	Sewage Lagoon

Description: Old Dumping Station still being used

Photo Log # 5907	Location
Photo 6	Sewage Lagoon

Description: New Dumping Station not being used due to Liner Damage

Photo Log # 5924	Location
Photo 7	Metal Dump

Description: Lined Berm area within Metal Dump (view #1)

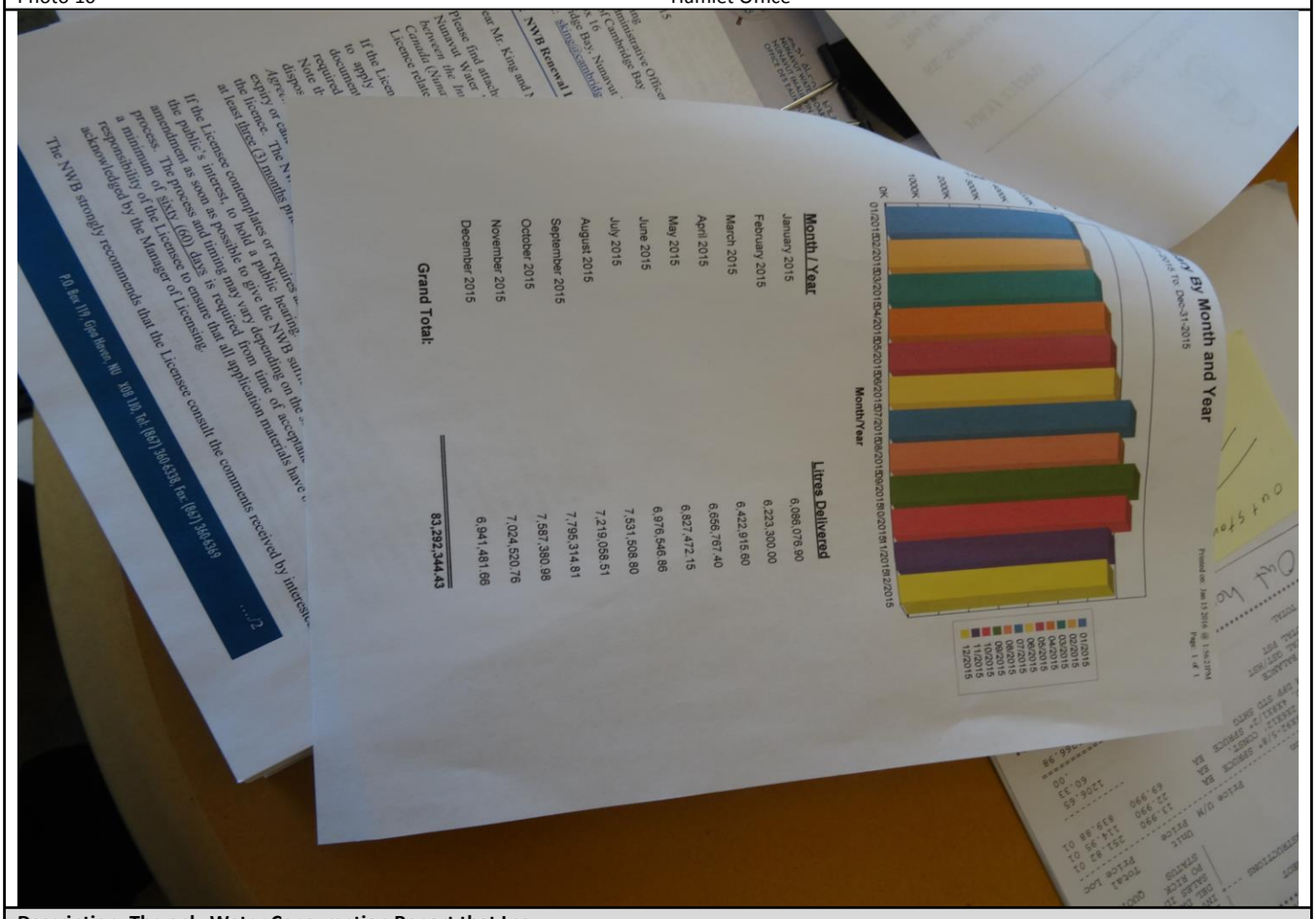
Photo Log # 5933	Location
Photo 8	Metal Dump

Description: Lined Berm area within Metal Dump (view #2)

Photo Log # 5935	Location
Photo 9	Metal Dump

Description: Lined Berm area within metal Dump (view #3)

Photo Log # 5936	Location
Photo 10	Hamlet Office



Description: The only Water Consumption Report that I saw

Appendix: B

Effluent Results 2016

Water Licence: 3BM-CAM 1520

Hamlet of Cambridge Bay, NU

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.:
160599

- FINAL REPORT -

Prepared For: Hamlet of Cambridge Bay

Address: P.O. Box 16
Cambridge Bay,NU
X0B 0C0

Attn: **Wayne Weese** **Facsimile: (867) 983-2186**

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Thursday, August 04, 2016
Print Date: ***Thursday, August 04, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 001

Client Project:
Sample Type: Water
Received Date: 15-Jul-16
Sampling Date: 14-Jul-16
Sampling Time: 10:03
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	4.77	0.005	mg/L	27-Jul-16	SM4500-NH3:G	
Biochemical Oxygen Demand	39	2	mg/L	15-Jul-16	SM5210:B	
Organic Carbon, Total	44.4	0.5	mg/L	18-Jul-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	226	0.4	mg/L	18-Jul-16	SM2320:B	
Conductivity, Specific (@25C)	788	0.4	µS/cm	18-Jul-16	SM2510:B	
pH	8.85		pH units	18-Jul-16	SM4500-H:B	
Solids, Total Suspended	46	3	mg/L	27-Jul-16	SM2540:D	
Major Ions						
Calcium	43.9	0.1	mg/L	23-Jul-16	SM4110:B	
Chloride	112	0.7	mg/L	23-Jul-16	SM4110:B	
Hardness	251	0.7	mg/L	23-Jul-16	SM4110:B	
Magnesium	34.2	0.1	mg/L	23-Jul-16	SM4110:B	
Nitrate as Nitrogen	1.68	0.01	mg/L	23-Jul-16	SM4110:B	

ReportDate: Thursday, August 04, 2016
Print Date: ***Thursday, August 04, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 001

Nitrite as Nitrogen	1.94	0.01	mg/L	23-Jul-16	SM4110:B	
Potassium	19.0	0.1	mg/L	23-Jul-16	SM4110:B	
Sodium	74.3	0.1	mg/L	23-Jul-16	SM4110:B	
Sulphate	17	1	mg/L	23-Jul-16	SM4110:B	
Microbiology						
Coliforms, Fecal	< 100	100	CFU/100mL	15-Jul-16	SM9222:D	88
Organics						
Oil and Grease, visible	Non-visible			20-Jul-16	Visual Exam	
Trace Metals, Total						
Aluminum	32.5	5	µg/L	03-Aug-16	EPA200.8	
Antimony	0.5	0.1	µg/L	03-Aug-16	EPA200.8	
Arsenic	1.3	0.2	µg/L	03-Aug-16	EPA200.8	
Barium	14.4	0.1	µg/L	03-Aug-16	EPA200.8	
Beryllium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Bismuth	< 0.2	0.2	µg/L	03-Aug-16	EPA200.8	
Boron	174	0.9	µg/L	03-Aug-16	EPA200.8	
Cadmium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Cesium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Chromium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Cobalt	0.4	0.1	µg/L	03-Aug-16	EPA200.8	
Copper	9.5	0.2	µg/L	03-Aug-16	EPA200.8	
Iron	318	5	µg/L	03-Aug-16	EPA200.8	
Lead	0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Lithium	5.7	0.2	µg/L	03-Aug-16	EPA200.8	
Manganese	60.4	0.1	µg/L	03-Aug-16	EPA200.8	

ReportDate: Thursday, August 04, 2016
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Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 001

Mercury	0.01	0.01	µg/L	03-Aug-16	EPA200.8
Molybdenum	0.7	0.1	µg/L	03-Aug-16	EPA200.8
Nickel	1.7	0.1	µg/L	03-Aug-16	EPA200.8
Rubidium	11.9	0.1	µg/L	03-Aug-16	EPA200.8
Selenium	< 0.5	0.5	µg/L	03-Aug-16	EPA200.8
Silver	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Strontium	62.0	0.1	µg/L	03-Aug-16	EPA200.8
Thallium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Tin	0.1	0.1	µg/L	03-Aug-16	EPA200.8
Titanium	0.5	0.1	µg/L	03-Aug-16	EPA200.8
Uranium	0.4	0.1	µg/L	03-Aug-16	EPA200.8
Vanadium	0.3	0.1	µg/L	03-Aug-16	EPA200.8
Zinc	6.9	5	µg/L	03-Aug-16	EPA200.8

ReportDate: Thursday, August 04, 2016
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Taiga Environmental Laboratory
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Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-4 **Taiga Sample ID:** 002

Client Project:
Sample Type: Water
Received Date: 15-Jul-16
Sampling Date: 14-Jul-16
Sampling Time: 10:23
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	7.86	0.005	mg/L	27-Jul-16	SM4500-NH3:G	
Biochemical Oxygen Demand	130	2	mg/L	15-Jul-16	SM5210:B	
Organic Carbon, Total	147	0.5	mg/L	18-Jul-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	616	0.4	mg/L	18-Jul-16	SM2320:B	
Conductivity, Specific (@25C)	4050	0.4	µS/cm	18-Jul-16	SM2510:B	
pH	7.51		pH units	18-Jul-16	SM4500-H:B	
Solids, Total Suspended	127	3	mg/L	27-Jul-16	SM2540:D	
Major Ions						
Calcium	577	0.1	mg/L	23-Jul-16	SM4110:B	
Chloride	376	0.7	mg/L	23-Jul-16	SM4110:B	
Hardness	1740	0.7	mg/L	23-Jul-16	SM4110:B	
Magnesium	72.9	0.1	mg/L	23-Jul-16	SM4110:B	
Nitrate as Nitrogen	0.13	0.01	mg/L	23-Jul-16	SM4110:B	
Nitrite as Nitrogen	0.19	0.01	mg/L	23-Jul-16	SM4110:B	
Potassium	108	0.1	mg/L	23-Jul-16	SM4110:B	

ReportDate: Thursday, August 04, 2016
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Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-4 **Taiga Sample ID:** 002

Sodium	255	0.1	mg/L	23-Jul-16	SM4110:B	
Sulphate	1280	1	mg/L	23-Jul-16	SM4110:B	
Microbiology						
Coliforms, Fecal	10000	10000	CFU/100mL	15-Jul-16	SM9222:D	88
Organics						
Oil and Grease, visible	Non-visible			20-Jul-16	Visual Exam	
Trace Metals, Total						
Aluminum	171	5	µg/L	03-Aug-16	EPA200.8	
Antimony	50.6	0.1	µg/L	03-Aug-16	EPA200.8	
Arsenic	7.0	0.2	µg/L	03-Aug-16	EPA200.8	
Barium	63.7	0.1	µg/L	03-Aug-16	EPA200.8	
Beryllium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Bismuth	< 0.2	0.2	µg/L	03-Aug-16	EPA200.8	
Boron	2100	0.9	µg/L	03-Aug-16	EPA200.8	
Cadmium	0.2	0.1	µg/L	03-Aug-16	EPA200.8	
Cesium	2.2	0.1	µg/L	03-Aug-16	EPA200.8	
Chromium	5.4	0.1	µg/L	03-Aug-16	EPA200.8	
Cobalt	2.2	0.1	µg/L	03-Aug-16	EPA200.8	
Copper	37.4	0.2	µg/L	03-Aug-16	EPA200.8	
Iron	24500	5	µg/L	03-Aug-16	EPA200.8	
Lead	8.1	0.1	µg/L	03-Aug-16	EPA200.8	
Lithium	104	0.2	µg/L	03-Aug-16	EPA200.8	
Manganese	694	0.1	µg/L	03-Aug-16	EPA200.8	
Mercury	0.07	0.01	µg/L	03-Aug-16	EPA200.8	
Molybdenum	8.2	0.1	µg/L	03-Aug-16	EPA200.8	

ReportDate: Thursday, August 04, 2016
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Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-4 **Taiga Sample ID:** 002

Nickel	18.6	0.1	µg/L	03-Aug-16	EPA200.8
Rubidium	62.4	0.1	µg/L	03-Aug-16	EPA200.8
Selenium	0.6	0.5	µg/L	03-Aug-16	EPA200.8
Silver	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Strontium	1820	0.1	µg/L	03-Aug-16	EPA200.8
Thallium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Tin	0.6	0.1	µg/L	03-Aug-16	EPA200.8
Titanium	4.4	0.1	µg/L	03-Aug-16	EPA200.8
Uranium	1.5	0.1	µg/L	03-Aug-16	EPA200.8
Vanadium	3.1	0.1	µg/L	03-Aug-16	EPA200.8
Zinc	337	5	µg/L	03-Aug-16	EPA200.8

ReportDate: Thursday, August 04, 2016
Print Date: *Thursday, August 04, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 003

Client Project:
Sample Type: Water
Received Date: 15-Jul-16
Sampling Date: 14-Jul-16
Sampling Time: 10:38
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	0.217	0.005	mg/L	27-Jul-16	SM4500-NH3:G	
Biochemical Oxygen Demand	22	2	mg/L	15-Jul-16	SM5210:B	
Organic Carbon, Total	39.9	0.5	mg/L	18-Jul-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	224	0.4	mg/L	18-Jul-16	SM2320:B	
Conductivity, Specific (@25C)	850	0.4	µS/cm	18-Jul-16	SM2510:B	
pH	9.57		pH units	18-Jul-16	SM4500-H:B	
Solids, Total Suspended	32	3	mg/L	27-Jul-16	SM2540:D	
Major Ions						
Calcium	46.9	0.1	mg/L	23-Jul-16	SM4110:B	
Chloride	128	0.7	mg/L	23-Jul-16	SM4110:B	
Hardness	243	0.7	mg/L	23-Jul-16	SM4110:B	
Magnesium	30.6	0.1	mg/L	23-Jul-16	SM4110:B	
Nitrate as Nitrogen	0.08	0.01	mg/L	23-Jul-16	SM4110:B	
Nitrite as Nitrogen	0.01	0.01	mg/L	23-Jul-16	SM4110:B	
Potassium	15.8	0.1	mg/L	23-Jul-16	SM4110:B	

ReportDate: Thursday, August 04, 2016
Print Date: ***Thursday, August 04, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 003

Sodium	80.4	0.1	mg/L	23-Jul-16	SM4110:B	
Sulphate	32	1	mg/L	23-Jul-16	SM4110:B	
Microbiology						
Coliforms, Fecal	< 10	10	CFU/100mL	15-Jul-16	SM9222:D	88
Organics						
Oil and Grease, visible	Non-visible			20-Jul-16	Visual Exam	
Trace Metals, Total						
Aluminum	24.4	5	µg/L	03-Aug-16	EPA200.8	
Antimony	2.8	0.1	µg/L	03-Aug-16	EPA200.8	
Arsenic	3.8	0.2	µg/L	03-Aug-16	EPA200.8	
Barium	39.0	0.1	µg/L	03-Aug-16	EPA200.8	
Beryllium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Bismuth	< 0.2	0.2	µg/L	03-Aug-16	EPA200.8	
Boron	260	0.9	µg/L	03-Aug-16	EPA200.8	
Cadmium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Cesium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Chromium	0.1	0.1	µg/L	03-Aug-16	EPA200.8	
Cobalt	0.5	0.1	µg/L	03-Aug-16	EPA200.8	
Copper	2.7	0.2	µg/L	03-Aug-16	EPA200.8	
Iron	339	5	µg/L	03-Aug-16	EPA200.8	
Lead	0.8	0.1	µg/L	03-Aug-16	EPA200.8	
Lithium	7.7	0.2	µg/L	03-Aug-16	EPA200.8	
Manganese	33.7	0.1	µg/L	03-Aug-16	EPA200.8	
Mercury	0.01	0.01	µg/L	03-Aug-16	EPA200.8	
Molybdenum	4.0	0.1	µg/L	03-Aug-16	EPA200.8	

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Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 003

Nickel	3.4	0.1	µg/L	03-Aug-16	EPA200.8
Rubidium	9.2	0.1	µg/L	03-Aug-16	EPA200.8
Selenium	< 0.5	0.5	µg/L	03-Aug-16	EPA200.8
Silver	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Strontium	114	0.1	µg/L	03-Aug-16	EPA200.8
Thallium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Tin	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Titanium	0.9	0.1	µg/L	03-Aug-16	EPA200.8
Uranium	1.1	0.1	µg/L	03-Aug-16	EPA200.8
Vanadium	1.4	0.1	µg/L	03-Aug-16	EPA200.8
Zinc	7.7	5	µg/L	03-Aug-16	EPA200.8

ReportDate: Thursday, August 04, 2016
Print Date: *Thursday, August 04, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160599

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 003

- DATA QUALIFERS -

Data Qualifier Descriptions:

88 *Samples analysed past holding time, as per client request.*

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160730

- FINAL REPORT -

Prepared For: Hamlet of Cambridge Bay

Address: P.O. Box 16
Cambridge Bay,NU
X0B 0C0

Attn: **Wayne Weese** **Facsimile: (867) 983-2186**

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Wednesday, August 31, 2016
Print Date: ***Wednesday, August 31, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 001

Client Project:
Sample Type: Water
Received Date: 09-Aug-16
Sampling Date: 08-Aug-16
Sampling Time: 11:04
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	0.065	0.005	mg/L	10-Aug-16	SM4500-NH3:G	
Biochemical Oxygen Demand	18	2	mg/L	09-Aug-16	SM5210:B	
Organic Carbon, Total	39.6	0.5	mg/L	10-Aug-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	232	0.4	mg/L	19-Aug-16	SM2320:B	
Conductivity, Specific (@25C)	801	0.4	µS/cm	19-Aug-16	SM2510:B	
pH	10.0		pH units	19-Aug-16	SM4500-H:B	
Solids, Total Suspended	73	3	mg/L	15-Aug-16	SM2540:D	
Major Ions						
Calcium	40.3	0.1	mg/L	09-Aug-16	SM4110:B	
Chloride	128	0.7	mg/L	09-Aug-16	SM4110:B	
Hardness	259	0.7	mg/L	09-Aug-16	SM4110:B	
Magnesium	38.6	0.1	mg/L	09-Aug-16	SM4110:B	
Nitrate as Nitrogen	0.52	0.01	mg/L	09-Aug-16	SM4110:B	

ReportDate: Wednesday, August 31, 2016
Print Date: ***Wednesday, August 31, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 001

Nitrite as Nitrogen	0.14	0.01	mg/L	09-Aug-16	SM4110:B
Potassium	17.1	0.1	mg/L	09-Aug-16	SM4110:B
Sodium	77.1	0.1	mg/L	09-Aug-16	SM4110:B
Sulphate	17	1	mg/L	09-Aug-16	SM4110:B
Microbiology					
Coliforms, Fecal	< 10	10	CFU/100mL	09-Aug-16	SM9222:D
Organics					
Hexane Extractable Material	< 2.0	2.0	mg/L	10-Aug-16	EPA1664A
Oil and Grease, visible	Non-visible			09-Aug-16	Visual Exam
Trace Metals, Total					
Aluminum	73.5	5	µg/L	30-Aug-16	EPA200.8
Arsenic	2.4	0.2	µg/L	30-Aug-16	EPA200.8
Cadmium	< 0.1	0.1	µg/L	30-Aug-16	EPA200.8
Chromium	0.3	0.1	µg/L	30-Aug-16	EPA200.8
Cobalt	0.5	0.1	µg/L	30-Aug-16	EPA200.8
Copper	8.0	0.2	µg/L	30-Aug-16	EPA200.8
Iron	431	5	µg/L	30-Aug-16	EPA200.8
Lead	0.7	0.1	µg/L	30-Aug-16	EPA200.8
Manganese	52.1	0.1	µg/L	30-Aug-16	EPA200.8
Mercury	0.02	0.01	µg/L	30-Aug-16	EPA200.8
Nickel	2.8	0.1	µg/L	30-Aug-16	EPA200.8
Zinc	11.3	5	µg/L	30-Aug-16	EPA200.8

ReportDate: Wednesday, August 31, 2016
Print Date: *Wednesday, August 31, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-6 **Taiga Sample ID:** 002

Client Project:
Sample Type: Water
Received Date: 09-Aug-16
Sampling Date: 08-Aug-16
Sampling Time: 10:56
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	0.040	0.005	mg/L	10-Aug-16	SM4500-NH3:G	
Biochemical Oxygen Demand	20	2	mg/L	09-Aug-16	SM5210:B	
Organic Carbon, Total	46.1	0.5	mg/L	10-Aug-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	239	0.4	mg/L	19-Aug-16	SM2320:B	
Conductivity, Specific (@25C)	915	0.4	µS/cm	19-Aug-16	SM2510:B	
pH	9.70		pH units	19-Aug-16	SM4500-H:B	
Solids, Total Suspended	61	3	mg/L	15-Aug-16	SM2540:D	
Major Ions						
Calcium	45.4	0.1	mg/L	09-Aug-16	SM4110:B	
Chloride	152	0.7	mg/L	09-Aug-16	SM4110:B	
Hardness	294	0.7	mg/L	09-Aug-16	SM4110:B	
Magnesium	43.8	0.1	mg/L	09-Aug-16	SM4110:B	
Nitrate as Nitrogen	0.38	0.01	mg/L	09-Aug-16	SM4110:B	
Nitrite as Nitrogen	0.10	0.01	mg/L	09-Aug-16	SM4110:B	
Potassium	16.9	0.1	mg/L	09-Aug-16	SM4110:B	

ReportDate: Wednesday, August 31, 2016
Print Date: ***Wednesday, August 31, 2016***

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Taiga Batch No.: 160730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-6 **Taiga Sample ID:** 002

Sodium	87.4	0.1	mg/L	09-Aug-16	SM4110:B
Sulphate	28	1	mg/L	09-Aug-16	SM4110:B
Microbiology					
Coliforms, Fecal	70	10	CFU/100mL	09-Aug-16	SM9222:D
Organics					
Hexane Extractable Material	< 2.0	2.0	mg/L	10-Aug-16	EPA1664A
Oil and Grease, visible	Non-visible			09-Aug-16	Visual Exam
Trace Metals, Total					
Aluminum	84.4	5	µg/L	30-Aug-16	EPA200.8
Arsenic	3.4	0.2	µg/L	30-Aug-16	EPA200.8
Cadmium	< 0.1	0.1	µg/L	30-Aug-16	EPA200.8
Chromium	0.3	0.1	µg/L	30-Aug-16	EPA200.8
Cobalt	0.5	0.1	µg/L	30-Aug-16	EPA200.8
Copper	5.8	0.2	µg/L	30-Aug-16	EPA200.8
Iron	522	5	µg/L	30-Aug-16	EPA200.8
Lead	1.3	0.1	µg/L	30-Aug-16	EPA200.8
Manganese	54.1	0.1	µg/L	30-Aug-16	EPA200.8
Mercury	< 0.01	0.01	µg/L	30-Aug-16	EPA200.8
Nickel	3.3	0.1	µg/L	30-Aug-16	EPA200.8
Zinc	11.5	5	µg/L	30-Aug-16	EPA200.8

ReportDate: Wednesday, August 31, 2016
Print Date: *Wednesday, August 31, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 003

Client Project:
Sample Type: Water
Received Date: 09-Aug-16
Sampling Date: 08-Aug-16
Sampling Time: 10:40
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	1.08	0.005	mg/L	10-Aug-16	SM4500-NH3:G	
Biochemical Oxygen Demand	23	2	mg/L	09-Aug-16	SM5210:B	
Organic Carbon, Total	61.3	0.5	mg/L	10-Aug-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	234	0.4	mg/L	19-Aug-16	SM2320:B	
Conductivity, Specific (@25C)	772	0.4	µS/cm	19-Aug-16	SM2510:B	
pH	9.83		pH units	19-Aug-16	SM4500-H:B	
Solids, Total Suspended	65	3	mg/L	15-Aug-16	SM2540:D	
Major Ions						
Calcium	40.2	0.1	mg/L	09-Aug-16	SM4110:B	
Chloride	118	0.7	mg/L	09-Aug-16	SM4110:B	
Hardness	255	0.7	mg/L	09-Aug-16	SM4110:B	
Magnesium	37.5	0.1	mg/L	09-Aug-16	SM4110:B	
Nitrate as Nitrogen	0.84	0.01	mg/L	09-Aug-16	SM4110:B	
Nitrite as Nitrogen	0.16	0.01	mg/L	09-Aug-16	SM4110:B	
Potassium	17.1	0.1	mg/L	09-Aug-16	SM4110:B	

ReportDate: Wednesday, August 31, 2016
Print Date: ***Wednesday, August 31, 2016***

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Taiga Batch No.: 160730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 003

Sodium	72.5	0.1	mg/L	09-Aug-16	SM4110:B
Sulphate	14	1	mg/L	09-Aug-16	SM4110:B
Microbiology					
Coliforms, Fecal	200	100	CFU/100mL	09-Aug-16	SM9222:D
Organics					
Hexane Extractable Material	< 2.0	2.0	mg/L	10-Aug-16	EPA1664A
Oil and Grease, visible	Non-visible			09-Aug-16	Visual Exam
Trace Metals, Total					
Aluminum	103	5	µg/L	30-Aug-16	EPA200.8
Antimony	0.5	0.1	µg/L	30-Aug-16	EPA200.8
Arsenic	1.6	0.2	µg/L	30-Aug-16	EPA200.8
Barium	18.1	0.1	µg/L	30-Aug-16	EPA200.8
Beryllium	< 0.1	0.1	µg/L	30-Aug-16	EPA200.8
Bismuth	< 0.2	0.2	µg/L	30-Aug-16	EPA200.8
Boron	190	0.9	µg/L	30-Aug-16	EPA200.8
Cadmium	< 0.1	0.1	µg/L	30-Aug-16	EPA200.8
Cesium	< 0.1	0.1	µg/L	30-Aug-16	EPA200.8
Chromium	0.2	0.1	µg/L	30-Aug-16	EPA200.8
Cobalt	0.4	0.1	µg/L	30-Aug-16	EPA200.8
Copper	13.1	0.2	µg/L	30-Aug-16	EPA200.8
Iron	374	5	µg/L	30-Aug-16	EPA200.8
Lead	0.1	0.1	µg/L	30-Aug-16	EPA200.8
Lithium	6.1	0.2	µg/L	30-Aug-16	EPA200.8
Manganese	51.7	0.1	µg/L	30-Aug-16	EPA200.8
Mercury	< 0.01	0.01	µg/L	30-Aug-16	EPA200.8

ReportDate: Wednesday, August 31, 2016
Print Date: *Wednesday, August 31, 2016*

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Taiga Batch No.: 160730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 003

Molybdenum	0.8	0.1	µg/L	30-Aug-16	EPA200.8
Nickel	2.3	0.1	µg/L	30-Aug-16	EPA200.8
Rubidium	12.6	0.1	µg/L	30-Aug-16	EPA200.8
Selenium	< 0.5	0.5	µg/L	30-Aug-16	EPA200.8
Silver	< 0.1	0.1	µg/L	30-Aug-16	EPA200.8
Strontium	65.5	0.1	µg/L	30-Aug-16	EPA200.8
Thallium	< 0.1	0.1	µg/L	30-Aug-16	EPA200.8
Tin	0.2	0.1	µg/L	30-Aug-16	EPA200.8
Titanium	2.4	0.1	µg/L	30-Aug-16	EPA200.8
Uranium	0.5	0.1	µg/L	30-Aug-16	EPA200.8
Vanadium	0.5	0.1	µg/L	30-Aug-16	EPA200.8
Zinc	18.0	5	µg/L	30-Aug-16	EPA200.8

ReportDate: Wednesday, August 31, 2016
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Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160730

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 003

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Wednesday, August 31, 2016

Print Date: *Wednesday, August 31, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160878

- FINAL REPORT -

Prepared For: Hamlet of Cambridge Bay

Address: P.O. Box 16
Cambridge Bay,NU
X0B 0C0

Attn: **Wayne Weese** **Facsimile: (867) 983-2186**

Final report has been reviewed and approved by:

Judy Mah
Client Service Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Wednesday, September 21, 2016
Print Date: ***Wednesday, September 21, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160878

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 001

Client Project:
Sample Type: Water
Received Date: 12-Sep-16
Sampling Date: 09-Sep-16
Sampling Time:
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	0.256	0.005	mg/L	16-Sep-16	SM4500-NH3:G	
Biochemical Oxygen Demand		2	mg/L		SM5210:B	105
Organic Carbon, Total	36.4	0.5	mg/L	16-Sep-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	221	0.4	mg/L	12-Sep-16	SM2320:B	
Conductivity, Specific (@25C)	867	0.4	µS/cm	12-Sep-16	SM2510:B	
pH	9.48		pH units	12-Sep-16	SM4500-H:B	
Solids, Total Suspended	30	3	mg/L		SM2540:D	
Major Ions						
Calcium	34.3	0.1	mg/L	13-Sep-16	SM4110:B	
Chloride	145	0.7	mg/L	13-Sep-16	SM4110:B	
Hardness	260	0.7	mg/L	13-Sep-16	SM4110:B	
Magnesium	42.2	0.1	mg/L	13-Sep-16	SM4110:B	
Nitrate as Nitrogen	0.31	0.01	mg/L	13-Sep-16	SM4110:B	

ReportDate: Wednesday, September 21, 2016
Print Date: ***Wednesday, September 21, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160878

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-5 **Taiga Sample ID:** 001

Nitrate+Nitrite as Nitrogen	0.51	0.01	mg/L	13-Sep-16	SM4110:B	
Nitrite as Nitrogen	0.20	0.01	mg/L	13-Sep-16	SM4110:B	
Potassium	20.4	0.1	mg/L	13-Sep-16	SM4110:B	
Sodium	90.6	0.1	mg/L	13-Sep-16	SM4110:B	
Sulphate	20	1	mg/L	13-Sep-16	SM4110:B	
Microbiology						
Coliforms, Fecal		1	CFU/100mL		SM9222:D	105
Organics						
Hexane Extractable Material	< 2.0	2.0	mg/L	15-Sep-16	EPA1664A	
Oil and Grease, visible	Non-visible			21-Sep-16	Visual Exam	
Trace Metals, Total						
Aluminum	80.2	5	µg/L	19-Sep-16	EPA200.8	
Arsenic	2.2	0.2	µg/L	19-Sep-16	EPA200.8	
Cadmium	< 0.1	0.1	µg/L	19-Sep-16	EPA200.8	
Chromium	0.2	0.1	µg/L	19-Sep-16	EPA200.8	
Cobalt	0.4	0.1	µg/L	19-Sep-16	EPA200.8	
Copper	8.2	0.2	µg/L	19-Sep-16	EPA200.8	
Iron	401	5	µg/L	19-Sep-16	EPA200.8	
Lead	0.6	0.1	µg/L	19-Sep-16	EPA200.8	
Manganese	47.7	0.1	µg/L	19-Sep-16	EPA200.8	
Mercury	< 0.01	0.01	µg/L	19-Sep-16	EPA200.8	
Nickel	2.5	0.1	µg/L	19-Sep-16	EPA200.8	
Zinc	8.4	5	µg/L	19-Sep-16	EPA200.8	

ReportDate: Wednesday, September 21, 2016
Print Date: *Wednesday, September 21, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160878

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-6 **Taiga Sample ID:** 002

Client Project:
Sample Type: Water
Received Date: 12-Sep-16
Sampling Date: 09-Sep-16
Sampling Time:
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	0.289	0.005	mg/L	16-Sep-16	SM4500-NH3:G	
Biochemical Oxygen Demand		2	mg/L		SM5210:B	105
Organic Carbon, Total	33.5	0.5	mg/L	16-Sep-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	235	0.4	mg/L	12-Sep-16	SM2320:B	
Conductivity, Specific (@25C)	1020	0.4	µS/cm	12-Sep-16	SM2510:B	
pH	8.89		pH units	12-Sep-16	SM4500-H:B	
Solids, Total Suspended	23	3	mg/L		SM2540:D	
Major Ions						
Calcium	48.7	0.1	mg/L	13-Sep-16	SM4110:B	
Chloride	152	0.7	mg/L	13-Sep-16	SM4110:B	
Hardness	327	0.7	mg/L	13-Sep-16	SM4110:B	
Magnesium	50.0	0.1	mg/L	13-Sep-16	SM4110:B	
Nitrate as Nitrogen	0.33	0.01	mg/L	13-Sep-16	SM4110:B	
Nitrate+Nitrite as Nitrogen	0.43	0.01	mg/L	13-Sep-16	SM4110:B	
Nitrite as Nitrogen	0.10	0.01	mg/L	13-Sep-16	SM4110:B	

ReportDate: Wednesday, September 21, 2016
Print Date: ***Wednesday, September 21, 2016***

Taiga Environmental Laboratory
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Taiga Batch No.: 160878

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-6 **Taiga Sample ID:** 002

Potassium	19.1	0.1	mg/L	13-Sep-16	SM4110:B	
Sodium	94.7	0.1	mg/L	13-Sep-16	SM4110:B	
Sulphate	67	1	mg/L	13-Sep-16	SM4110:B	
Microbiology						
Coliforms, Fecal		1	CFU/100mL		SM9222:D	105
Organics						
Hexane Extractable Material	< 2.0	2.0	mg/L	15-Sep-16	EPA1664A	
Oil and Grease, visible	Non-visible			21-Sep-16	Visual Exam	
Trace Metals, Total						
Aluminum	59.2	5	µg/L	19-Sep-16	EPA200.8	
Arsenic	2.2	0.2	µg/L	19-Sep-16	EPA200.8	
Cadmium	< 0.1	0.1	µg/L	19-Sep-16	EPA200.8	
Chromium	0.2	0.1	µg/L	19-Sep-16	EPA200.8	
Cobalt	0.7	0.1	µg/L	19-Sep-16	EPA200.8	
Copper	5.6	0.2	µg/L	19-Sep-16	EPA200.8	
Iron	525	5	µg/L	19-Sep-16	EPA200.8	
Lead	0.6	0.1	µg/L	19-Sep-16	EPA200.8	
Manganese	72.8	0.1	µg/L	19-Sep-16	EPA200.8	
Mercury	< 0.01	0.01	µg/L	19-Sep-16	EPA200.8	
Nickel	3.4	0.1	µg/L	19-Sep-16	EPA200.8	
Zinc	5.9	5	µg/L	19-Sep-16	EPA200.8	

ReportDate: Wednesday, September 21, 2016
Print Date: *Wednesday, September 21, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160878

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 003

Client Project:
Sample Type: Water
Received Date: 12-Sep-16
Sampling Date: 09-Sep-16
Sampling Time:
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Ammonia as Nitrogen	0.558	0.005	mg/L	16-Sep-16	SM4500-NH3:G	
Biochemical Oxygen Demand		2	mg/L		SM5210:B	105
Organic Carbon, Total	40.3	0.5	mg/L	16-Sep-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	232	0.4	mg/L	12-Sep-16	SM2320:B	
Conductivity, Specific (@25C)	850	0.4	µS/cm	12-Sep-16	SM2510:B	
pH	9.44		pH units	12-Sep-16	SM4500-H:B	
Solids, Total Suspended	31	3	mg/L		SM2540:D	
Major Ions						
Calcium	38.6	0.1	mg/L	13-Sep-16	SM4110:B	
Chloride	134	0.7	mg/L	13-Sep-16	SM4110:B	
Hardness	261	0.7	mg/L	13-Sep-16	SM4110:B	
Magnesium	39.9	0.1	mg/L	13-Sep-16	SM4110:B	
Nitrate as Nitrogen	0.34	0.01	mg/L	13-Sep-16	SM4110:B	
Nitrate+Nitrite as Nitrogen	0.65	0.01	mg/L	13-Sep-16	SM4110:B	
Nitrite as Nitrogen	0.31	0.01	mg/L	13-Sep-16	SM4110:B	

ReportDate: Wednesday, September 21, 2016
Print Date: ***Wednesday, September 21, 2016***

Taiga Environmental Laboratory
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Taiga Batch No.: 160878

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 003

Potassium	19.8	0.1	mg/L	13-Sep-16	SM4110:B	
Sodium	84.6	0.1	mg/L	13-Sep-16	SM4110:B	
Sulphate	17	1	mg/L	13-Sep-16	SM4110:B	
Microbiology						
Coliforms, Fecal		1	CFU/100mL		SM9222:D	105
Organics						
Hexane Extractable Material	< 2.0	2.0	mg/L	15-Sep-16	EPA1664A	
Oil and Grease, visible	Non-visible			21-Sep-16	Visual Exam	
Trace Metals, Total						
Aluminum	59.3	5	µg/L	19-Sep-16	EPA200.8	
Arsenic	1.9	0.2	µg/L	19-Sep-16	EPA200.8	
Cadmium	< 0.1	0.1	µg/L	19-Sep-16	EPA200.8	
Chromium	0.2	0.1	µg/L	19-Sep-16	EPA200.8	
Cobalt	0.4	0.1	µg/L	19-Sep-16	EPA200.8	
Copper	9.8	0.2	µg/L	19-Sep-16	EPA200.8	
Iron	328	5	µg/L	19-Sep-16	EPA200.8	
Lead	0.3	0.1	µg/L	19-Sep-16	EPA200.8	
Manganese	50.3	0.1	µg/L	19-Sep-16	EPA200.8	
Mercury	0.01	0.01	µg/L	19-Sep-16	EPA200.8	
Nickel	2.3	0.1	µg/L	19-Sep-16	EPA200.8	
Zinc	7.5	5	µg/L	19-Sep-16	EPA200.8	

ReportDate: Wednesday, September 21, 2016
Print Date: *Wednesday, September 21, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160878

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-3 **Taiga Sample ID:** 003

- DATA QUALIFERS -

Data Qualifier Descriptions:

105 *Samples received past hold time; analysis not possible.*

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Wednesday, September 21, 2016

Print Date: ***Wednesday, September 21, 2016***

Appendix: C

Water Analysis Results

Water Licence: 3BM-CAM 1520

Hamlet of Cambridge Bay, NU

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.:
160600

- FINAL REPORT -

Prepared For: Hamlet of Cambridge Bay

Address: P.O. Box 16
Cambridge Bay,NU
X0B 0C0

Attn: **Wayne Weese** **Facsimile: (867) 983-2186**

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Friday, August 05, 2016
Print Date: ***Friday, August 05, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160600

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-1 Raw Water **Taiga Sample ID:** 001

Client Project: Annual Drinking Water
Sample Type: Water
Received Date: 15-Jul-16
Sampling Date: 14-Jul-16
Sampling Time:
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Organic Carbon, Dissolved	5.0	0.5	mg/L	18-Jul-16	SM5310:B	
Organic Carbon, Total	5.8	0.5	mg/L	18-Jul-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	96.1	0.4	mg/L	18-Jul-16	SM2320:B	
Colour, Apparent	7	5	CU	16-Jul-16	SM2120:B	
pH	8.47		pH units	18-Jul-16	SM4500-H:B	
Solids, Total Dissolved	201	10	mg/L	27-Jul-16	SM2540:C	
Solids, Total Suspended	< 3	3	mg/L	27-Jul-16	SM2540:D	
Turbidity	0.86	0.05	NTU	15-Jul-16	SM2130:B	
Major Ions						
Chloride	44.4	0.7	mg/L	23-Jul-16	SM4110:B	
Fluoride	< 0.1	0.1	mg/L	23-Jul-16	SM4110:B	
Hardness	136	0.7	mg/L	23-Jul-16	SM4110:B	
Nitrate as Nitrogen	0.09	0.01	mg/L	23-Jul-16	SM4110:B	

ReportDate: Friday, August 05, 2016
Print Date: ***Friday, August 05, 2016***

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Taiga Batch No.: 160600

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-1 Raw Water **Taiga Sample ID:** 001

Sodium	23.9	0.1	mg/L	23-Jul-16	SM4110:B
Sulphate	15	1	mg/L	23-Jul-16	SM4110:B
Subcontracted Organics					
Cyanide, Weak Acid Dissociable	< 0.0010	0.001	mg/L	26-Jul-16	APHA4500-CN
Trace Metals, Total					
Aluminum	1.9	0.6	µg/L	03-Aug-16	EPA200.8
Arsenic	0.3	0.2	µg/L	03-Aug-16	EPA200.8
Barium	29.7	0.1	µg/L	03-Aug-16	EPA200.8
Cadmium	< 0.05	0.05	µg/L	03-Aug-16	EPA200.8
Chromium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Copper	12.6	0.2	µg/L	03-Aug-16	EPA200.8
Iron	16	5	µg/L	03-Aug-16	EPA200.8
Lead	0.2	0.1	µg/L	03-Aug-16	EPA200.8
Manganese	2.1	0.1	µg/L	03-Aug-16	EPA200.8
Mercury	0.06	0.01	µg/L	03-Aug-16	EPA200.8
Selenium	< 0.3	0.3	µg/L	03-Aug-16	EPA200.8
Uranium	0.2	0.1	µg/L	03-Aug-16	EPA200.8
Zinc	1.0	0.4	µg/L	03-Aug-16	EPA200.8

ReportDate: Friday, August 05, 2016
Print Date: *Friday, August 05, 2016*

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Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160600

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-1 Intake **Taiga Sample ID:** 002

Client Project: Annual Drinking Water
Sample Type: Water
Received Date: 15-Jul-16
Sampling Date: 14-Jul-16
Sampling Time:
Location:
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Organic Carbon, Dissolved	4.9	0.5	mg/L	18-Jul-16	SM5310:B	
Organic Carbon, Total	5.4	0.5	mg/L	18-Jul-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	96.6	0.4	mg/L	18-Jul-16	SM2320:B	
Colour, Apparent	11	5	CU	16-Jul-16	SM2120:B	
pH	8.46		pH units	18-Jul-16	SM4500-H:B	
Solids, Total Dissolved	194	10	mg/L	27-Jul-16	SM2540:C	
Solids, Total Suspended	< 3	3	mg/L	27-Jul-16	SM2540:D	
Turbidity	0.79	0.05	NTU	15-Jul-16	SM2130:B	
Major Ions						
Chloride	43.3	0.7	mg/L	23-Jul-16	SM4110:B	
Fluoride	< 0.1	0.1	mg/L	23-Jul-16	SM4110:B	
Hardness	143	0.7	mg/L	23-Jul-16	SM4110:B	
Nitrate as Nitrogen	0.10	0.01	mg/L	23-Jul-16	SM4110:B	
Sodium	22.6	0.1	mg/L	23-Jul-16	SM4110:B	
Sulphate	16	1	mg/L	23-Jul-16	SM4110:B	

ReportDate: Friday, August 05, 2016
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Taiga Batch No.: 160600

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-1 Intake **Taiga Sample ID:** 002

Subcontracted Organics					
Cyanide, Weak Acid Dissociable	< 0.0010	0.001	mg/L	26-Jul-16	APHA4500-CN
Trace Metals, Total					
Aluminum	0.7	0.6	µg/L	03-Aug-16	EPA200.8
Arsenic	0.3	0.2	µg/L	03-Aug-16	EPA200.8
Barium	31.6	0.1	µg/L	03-Aug-16	EPA200.8
Cadmium	< 0.05	0.05	µg/L	03-Aug-16	EPA200.8
Chromium	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Copper	< 0.2	0.2	µg/L	03-Aug-16	EPA200.8
Iron	< 5	5	µg/L	03-Aug-16	EPA200.8
Lead	< 0.1	0.1	µg/L	03-Aug-16	EPA200.8
Manganese	0.2	0.1	µg/L	03-Aug-16	EPA200.8
Mercury	0.02	0.01	µg/L	03-Aug-16	EPA200.8
Selenium	< 0.3	0.3	µg/L	03-Aug-16	EPA200.8
Uranium	0.1	0.1	µg/L	03-Aug-16	EPA200.8
Zinc	< 0.4	0.4	µg/L	03-Aug-16	EPA200.8

ReportDate: Friday, August 05, 2016
Print Date: *Friday, August 05, 2016*

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Taiga Batch No.: 160600

- CERTIFICATE OF ANALYSIS -

Client Sample ID: CAM-1 Intake **Taiga Sample ID:** 002

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Friday, August 05, 2016

Print Date: *Friday, August 05, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160889

- FINAL REPORT -

Prepared For: Government of Nunavut

Address: Community and Government Services
P.O. Box 200
Cambridge Bay,NU
X0B 0C0

Attn: **Wilfred Ntiamoah** **Facsimile:**

Final report has been reviewed and approved by:

Judy Mah
Client Service Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Tuesday, September 27, 2016
Print Date: ***Tuesday, September 27, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160889

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP - Treated **Taiga Sample ID:** 001

Client Project: Annual Drinking Water
Sample Type: Treated Water
Received Date: 14-Sep-16
Sampling Date: 13-Sep-16
Sampling Time: 10:00
Location: Cambridge Bay
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Organic Carbon, Dissolved	5.2	0.5	mg/L	16-Sep-16	SM5310:B	
Organic Carbon, Total	5.4	0.5	mg/L	17-Sep-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	100	0.4	mg/L	14-Sep-16	SM2320:B	
Colour, Apparent	5	5	CU	14-Sep-16	SM2120:B	
pH	8.11		pH units	14-Sep-16	SM4500-H:B	
Solids, Total Dissolved	186	10	mg/L	16-Sep-16	SM2540:C	
Solids, Total Suspended	< 3	3	mg/L	16-Sep-16	SM2540:D	
Turbidity	0.38	0.05	NTU	14-Sep-16	SM2130:B	
Major Ions						
Chloride	48.0	0.7	mg/L	15-Sep-16	SM4110:B	
Fluoride	< 0.1	0.1	mg/L	15-Sep-16	SM4110:B	
Hardness	135	0.7	mg/L	23-Sep-16	SM4110:B	
Nitrate as Nitrogen	< 0.01	0.01	mg/L	15-Sep-16	SM4110:B	
Sodium	28.4	0.1	mg/L	23-Sep-16	SM4110:B	

ReportDate: Tuesday, September 27, 2016
Print Date: ***Tuesday, September 27, 2016***

Taiga Environmental Laboratory
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Taiga Batch No.: 160889

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP - Treated **Taiga Sample ID:** 001

Sulphate	16	1	mg/L	15-Sep-16	SM4110:B
Microbiology					
Coliforms, Total	< 1.0	1.0	MPN/100ml	14-Sep-16	SM9223:B
Escherichia coli	< 1.0	1.0	MPN/100ml	14-Sep-16	SM9223:B
Organics					
Bromodichloromethane	0.030	0.005	mg/L	15-Sep-16	EPA8260B
Bromoform	< 0.005	0.005	mg/L	15-Sep-16	EPA8260B
Chloroform	0.033	0.005	mg/L	15-Sep-16	EPA8260B
Dibromochloromethane	0.016	0.005	mg/L	15-Sep-16	EPA8260B
Trihalomethanes, Total	0.081	0.005	mg/L	15-Sep-16	EPA8260B
Subcontracted Organics					
Cyanide, Weak Acid Dissociable	< 0.0010	0.001	mg/L	20-Sep-16	APHA4500-CN
Trace Metals, Total					
Aluminum	3.1	0.6	µg/L	19-Sep-16	EPA200.8
Arsenic	0.3	0.2	µg/L	19-Sep-16	EPA200.8
Barium	15.0	0.1	µg/L	19-Sep-16	EPA200.8
Cadmium	< 0.05	0.05	µg/L	19-Sep-16	EPA200.8
Chromium	1.2	0.1	µg/L	19-Sep-16	EPA200.8
Copper	8.7	0.2	µg/L	19-Sep-16	EPA200.8
Iron	162	5	µg/L	19-Sep-16	EPA200.8
Lead	0.3	0.1	µg/L	19-Sep-16	EPA200.8
Manganese	2.7	0.1	µg/L	19-Sep-16	EPA200.8
Mercury	< 0.01	0.01	µg/L	19-Sep-16	EPA200.8
Selenium	< 0.3	0.3	µg/L	19-Sep-16	EPA200.8
Uranium	0.2	0.1	µg/L	19-Sep-16	EPA200.8

ReportDate: Tuesday, September 27, 2016
Print Date: *Tuesday, September 27, 2016*

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Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160889

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP - Treated **Taiga Sample ID:** 001

Zinc	66.8	0.4	µg/L	19-Sep-16	EPA200.8

ReportDate: Tuesday, September 27, 2016
Print Date: *Tuesday, September 27, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160889

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP - Raw Water **Taiga Sample ID:** 002

Client Project: Annual Drinking Water
Sample Type: Raw Water
Received Date: 14-Sep-16
Sampling Date: 13-Sep-16
Sampling Time: 10:10
Location: Cambridge Bay
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Organic Carbon, Dissolved	5.5	0.5	mg/L	16-Sep-16	SM5310:B	
Organic Carbon, Total	5.7	0.5	mg/L	17-Sep-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	102	0.4	mg/L	14-Sep-16	SM2320:B	
Colour, Apparent	< 5	5	CU	14-Sep-16	SM2120:B	
pH	8.22		pH units	14-Sep-16	SM4500-H:B	
Solids, Total Dissolved	191	10	mg/L	16-Sep-16	SM2540:C	
Solids, Total Suspended	< 3	3	mg/L	16-Sep-16	SM2540:D	
Turbidity	0.35	0.05	NTU	14-Sep-16	SM2130:B	
Major Ions						
Chloride	47.8	0.7	mg/L	15-Sep-16	SM4110:B	
Fluoride	< 0.1	0.1	mg/L	15-Sep-16	SM4110:B	
Hardness	136	0.7	mg/L	23-Sep-16	SM4110:B	
Nitrate as Nitrogen	0.13	0.01	mg/L	15-Sep-16	SM4110:B	
Sodium	27.3	0.1	mg/L	23-Sep-16	SM4110:B	
Sulphate	17	1	mg/L	15-Sep-16	SM4110:B	

ReportDate: Tuesday, September 27, 2016
Print Date: ***Tuesday, September 27, 2016***

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Taiga Batch No.: 160889

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP - Raw Water **Taiga Sample ID:** 002

Microbiology					
Coliforms, Total	< 1.0	1.0	MPN/100ml	14-Sep-16	SM9223:B
Escherichia coli	< 1.0	1.0	MPN/100ml	14-Sep-16	SM9223:B
Organics					
Bromodichloromethane	0.019	0.005	mg/L	15-Sep-16	EPA8260B
Bromoform	< 0.005	0.005	mg/L	15-Sep-16	EPA8260B
Chloroform	0.015	0.005	mg/L	15-Sep-16	EPA8260B
Dibromochloromethane	0.011	0.005	mg/L	15-Sep-16	EPA8260B
Trihalomethanes, Total	0.046	0.005	mg/L	15-Sep-16	EPA8260B
Subcontracted Organics					
Cyanide, Weak Acid Dissociable	< 0.0010	0.001	mg/L	20-Sep-16	APHA4500-CN
Trace Metals, Total					
Aluminum	1.5	0.6	µg/L	19-Sep-16	EPA200.8
Arsenic	0.3	0.2	µg/L	19-Sep-16	EPA200.8
Barium	31.6	0.1	µg/L	19-Sep-16	EPA200.8
Cadmium	< 0.05	0.05	µg/L	19-Sep-16	EPA200.8
Chromium	0.1	0.1	µg/L	19-Sep-16	EPA200.8
Copper	16.4	0.2	µg/L	19-Sep-16	EPA200.8
Iron	23	5	µg/L	19-Sep-16	EPA200.8
Lead	0.7	0.1	µg/L	19-Sep-16	EPA200.8
Manganese	3.5	0.1	µg/L	19-Sep-16	EPA200.8
Mercury	< 0.01	0.01	µg/L	19-Sep-16	EPA200.8
Selenium	< 0.3	0.3	µg/L	19-Sep-16	EPA200.8
Uranium	0.2	0.1	µg/L	19-Sep-16	EPA200.8
Zinc	62.3	0.4	µg/L	19-Sep-16	EPA200.8

ReportDate: Tuesday, September 27, 2016
Print Date: *Tuesday, September 27, 2016*

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Taiga Batch No.: 160889

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP - Raw Water **Taiga Sample ID:** 002

ReportDate: Tuesday, September 27, 2016
Print Date: *Tuesday, September 27, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 160889

- CERTIFICATE OF ANALYSIS -

Client Sample ID: WTP - Raw Water **Taiga Sample ID:** 002

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Tuesday, September 27, 2016

Print Date: *Tuesday, September 27, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 161101

- FINAL REPORT -

Prepared For: Government of Nunavut

Address: Community and Government Services
P.O. Box 200
Cambridge Bay,NU
X0B 0C0

Attn: **Wilfred Ntiamoah** **Facsimile:**

Final report has been reviewed and approved by:

Glen Hudy
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025 as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Thursday, December 01, 2016
Print Date: ***Thursday, December 01, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 161101

- CERTIFICATE OF ANALYSIS -

Client Sample ID: NR1 (Kitchen Tap) **Taiga Sample ID:** 001

Client Project: CamB-11
Sample Type: Potable
Received Date: 24-Nov-16
Sampling Date: 23-Nov-16
Sampling Time: 9:30
Location: Nurses Residence
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Organic Carbon, Dissolved	5.1	0.5	mg/L	28-Nov-16	SM5310:B	
Organic Carbon, Total	5.2	0.5	mg/L	29-Nov-16	SM5310:B	
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	127	0.4	mg/L	24-Nov-16	SM2320:B	
Colour, Apparent	33	5	CU	24-Nov-16	SM2120:B	
pH	7.76		pH units	24-Nov-16	SM4500-H:B	
Solids, Total Dissolved	237	10	mg/L	28-Nov-16	SM2540:C	
Solids, Total Suspended	< 3	3	mg/L	28-Nov-16	SM2540:D	
Turbidity	1.10	0.05	NTU	24-Nov-16	SM2130:B	
Major Ions						
Chloride	58.4	0.7	mg/L	25-Nov-16	SM4110:B	
Fluoride	0.1	0.1	mg/L	25-Nov-16	SM4110:B	
Hardness	151	0.7	mg/L	25-Nov-16	SM4110:B	
Nitrate as Nitrogen	0.16	0.01	mg/L	25-Nov-16	SM4110:B	
Sodium	31.2	0.1	mg/L	25-Nov-16	SM4110:B	

ReportDate: Thursday, December 01, 2016
Print Date: ***Thursday, December 01, 2016***

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 161101

- CERTIFICATE OF ANALYSIS -

Client Sample ID: NR1 (Kitchen Tap) **Taiga Sample ID:** 001

Sulphate	15	1	mg/L	25-Nov-16	SM4110:B
Microbiology					
Coliforms, Total	< 1.0	1.0	MPN/100ml	24-Nov-16	SM9223:B
Escherichia coli	< 1.0	1.0	MPN/100ml	24-Nov-16	SM9223:B
Organics					
Bromodichloromethane	0.024	0.005	mg/L	28-Nov-16	EPA8260B
Bromoform	< 0.005	0.005	mg/L	28-Nov-16	EPA8260B
Chloroform	0.022	0.005	mg/L	28-Nov-16	EPA8260B
Dibromochloromethane	0.014	0.005	mg/L	28-Nov-16	EPA8260B
Trihalomethanes, Total	0.061	0.005	mg/L	28-Nov-16	EPA8260B
Subcontracted Organics					
Cyanide, Weak Acid Dissociable	< 0.0010	0.001	mg/L	28-Nov-16	APHA4500-CN
Trace Metals, Total					
Aluminum	1.7	0.6	µg/L	25-Nov-16	EPA200.8
Arsenic	0.3	0.2	µg/L	25-Nov-16	EPA200.8
Barium	26.3	0.1	µg/L	25-Nov-16	EPA200.8
Cadmium	< 0.05	0.05	µg/L	25-Nov-16	EPA200.8
Chromium	< 0.1	0.1	µg/L	25-Nov-16	EPA200.8
Copper	161	0.2	µg/L	25-Nov-16	EPA200.8
Iron	163	5	µg/L	25-Nov-16	EPA200.8
Lead	0.8	0.1	µg/L	25-Nov-16	EPA200.8
Manganese	105	0.1	µg/L	25-Nov-16	EPA200.8
Mercury	< 0.01	0.01	µg/L	25-Nov-16	EPA200.8
Selenium	< 0.3	0.3	µg/L	25-Nov-16	EPA200.8
Uranium	0.2	0.1	µg/L	25-Nov-16	EPA200.8

ReportDate: Thursday, December 01, 2016
Print Date: *Thursday, December 01, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 161101

- CERTIFICATE OF ANALYSIS -

Client Sample ID: NR1 (Kitchen Tap) **Taiga Sample ID:** 001

Zinc	303	0.4	µg/L	25-Nov-16	EPA200.8

ReportDate: Thursday, December 01, 2016
Print Date: *Thursday, December 01, 2016*

Taiga Environmental Laboratory
4601-52nd Ave., Box 1320, Yellowknife, NT. X1A 2L9
Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.: 161101

- CERTIFICATE OF ANALYSIS -

Client Sample ID: NR1-10 K2 **Taiga Sample ID:** 002

Client Project: CamB-11
Sample Type: Potable
Received Date: 24-Nov-16
Sampling Date: 23-Nov-16
Sampling Time: 9:30
Location: Nurses Residence
Report Status: **Final**

Test Parameter	Result		Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Microbiology							
Coliforms, Total	<	1.0	1.0	MPN/100ml	24-Nov-16	SM9223:B	
Escherichia coli	<	1.0	1.0	MPN/100ml	24-Nov-16	SM9223:B	

ReportDate: Thursday, December 01, 2016
Print Date: ***Thursday, December 01, 2016***

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Taiga Batch No.: 161101

- CERTIFICATE OF ANALYSIS -

Client Sample ID: NR1-11 B2 **Taiga Sample ID:** 003

Client Project: CamB-11
Sample Type: Potable
Received Date: 24-Nov-16
Sampling Date: 23-Nov-16
Sampling Time: 9:30
Location: Nurses Residence
Report Status: **Final**

Test Parameter	Result		Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Microbiology							
Coliforms, Total	<	1.0	1.0	MPN/100ml	24-Nov-16	SM9223:B	
Escherichia coli	<	1.0	1.0	MPN/100ml	24-Nov-16	SM9223:B	

ReportDate: Thursday, December 01, 2016
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- CERTIFICATE OF ANALYSIS -

Client Sample ID: NR1-11 B2 **Taiga Sample ID:** 003

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Thursday, December 01, 2016

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