Cambridge Bay Soil and Water Treatment Facility

2018 Annual Report

Nunavut Water Board Licence 1BR-CST1723

2018 Annual Report

FINAL

Cambridge Bay SWTF 2018 Annual Report
V. 1
4300

March 31, 2019

Table of Contents

LIST OF FIGURES

TABLES

APPENDICES

ᓇᐃᓴᖅᐸᐃᒪᔪᖅ

ᑕᕐᔪᐊᑦ ᑭᑦ ᓄᓇᔪᑦ ᓄᓇᕐᔪᑕᑦ ᐃᕕᐅᕐᓗ ᔪᖏᕕᕕᐊ ᐊᔪᖅᑎᑎᑕᓯᒪᔪᑦ ᐃᒪᓕᓚᓴᔪᑦ ᑲᑎᒪᔨᐊᒍᑦ, ᐊᔪᖅᑎᔪᑕᑕ ᓴᓴᐅᑕ 1BR-CST1723 ᑕᐃᒪᓗ ᓇᐸᑎᓚᔪᑕᐅᔪᒍᑦ ᐃᓕᕐᔪᑕᐅᒪᑦ ᐅᕙᓂ 2017-ᒥ.

ᑕᒪᓇ ᖃᐅᔨᓴᕕᐅᔪᖅ ᓄᓇᖏᓄᑦᓗ ᐅᕐᓯᔪᑕᓄᑦᓗ ᓇᓗᓇᐃᑐᑎᖃᑕ, ᐊᑕᐅᓯᖅ ᐃᒡᓗᕐᔪᑕᐅᔪᖅ ᐅᓗᓚᐊᓇᑐᓄᑦ ᐊᐅᑎᒥᑦ ᐃᓕᖃᓐᓂ ᐃᒪᖅᒥᑦ ᐊᓯᐊᐅᑦᓗ ᑐᑦᔪᐊᕕᖃᖅᑐᑦ. ᓄᓇᕐᔪᑕᐅᔪᖅ ᖃᐅᔨᓴᖅᑕᐅᔪᖅ ᐊᖏᕐᓂᖃᖅᑐᑦ 35 ᐃᓕᓂᒥᑦ 49 ᐃᓕᓂᒥᑦ. ᐃᒪᕐᒧᑦᓗ ᖃᐅᔨᓴᕕᐅᔪᒧᑦ ᐊᖏᕐᓂᐊᖅᑐᑦ 14 ᐃᓕᓂᒥᑦ 16 ᐃᓕᓂᒥᑦ. ᑕᒪᓇ ᐃᒪᕐᒧᑦ ᖃᐅᔨᓴᖅᑕᐅᔪᒧᑦ ᑐᑦᔪᐊᕕᐊ ᐊᖏᕐᓂᑕᕐᓇᖅᑐᑦ 170 ᐃᓕᓂᐊᔪᓄᑦ. ᐅᕙᓂ 2018-ᒥ ᑲᑎᓗᒋᑦ ᑐᑦᔪᑕᐅᔪᑦ ᐅᓗᓚᐊᓇᕐᓂᓕᑦ ᐊᖏᕐᓂᖃᖅᑐᑦ 180 ᐃᓕᓂᓗᐊᕐᒧᑦ ᑕᐃᒪᓗ ᓴᓇᐅᓂᐊᓕᒫᑲᓪ ᑐᑦᔪᔪᑎᓚᓗᑲᓪ ᑕᒃᙵᓂ ᐊᑭᒍᔪᒪᑦ 2019-ᒥ.

EXECUTIVE SUMMARY

The Kitnuna Environmental (KEL) soil and water treatment facility was licensed in 2017 by the Nunavut Water Board under water licence number 1BR-CST1723 and construction of the facility was completed in October 2017.

The facility consists of one soil treatment cell for the receipt of soil contaminated with petroleum hydrocarbons, one cell for the receipt of contaminated snow and water along with one cell for the storage of containerized hazardous waste material. The soil treatment cell dimension are approximately 35 meters by 49 meters. The water cell and hazardous waste storage cell dimensions are both approximately 14 meters by 16 meters. The water cell is designed with a capacity of 170 cubic meters. In 2018 a total of 180 cubic meters of soil was deposited at the facility and will undergo treatment in 2019.

1.0 INTRODUCTION

Licensee:

Kitnuna Environmental Ltd. (KEL)
PO Box 92, 10 Omilik Road
Cambridge Bay, Nunavut
X0B 0C0

The Cambridge Bay Soil and Water Treatment Facility (SWTF) is operated under Nunavut Water Board (NWB) water licence 1BR-CST1723. This 2018 Annual Report serves to satisfy the requirements outlined in Part B, Item 1 of the licence.

2.0 BACKGROUND

Beginning in 2016, KEL submitted applications with the Nunavut Planning Commission, Nunavut Impact Review Board and the Nunavut Water Board in anticipation of obtaining a water licence for the construction and operation of the Cambridge Bay SWTF. On March 23, 2017 water licence 1BR-CST1723 was issued to KEL for a period of 6 years for the ongoing operation of the soil and water treatment facility. Construction of the SWTF was completed in September 2017. The location of the facility is shown on Figure 1.

The facility consists of one large soil treatment cell for the receipt of soil contaminated with petroleum hydrocarbons, one cell for the receipt of contaminated snow and water along with one cell for the storage of containerized hazardous waste material. The soil treatment cell dimension are approximately 35 meters by 49 meters. The water cell and hazardous waste storage cell dimensions are both approximately 14 meters by 16 meters. The water cell is designed to contain approximately 170 cubic meters. A site diagram is shown on Figure 2.

Soil will be treated by mechanical means to enhance bioremediation of the soil. Once soil is treated in will be sampled to confirm that it meets the beneficial re-use guidelines for Industrial use that are outlined in the Operations and Maintenance Plans (KEL, 2017). Treated soil may be used for covering garbage at the local landfill of for other uses approved by the inspector.

3.0 LICENCE PART B GENERAL CONDITIONS REPORTING REQUIREMENTS

3.1. Part B Item 1a: Quantity of Waste Deposited

180 cubic meters (m^3) of soil was deposited at the facility in 2018 along with 387 m^3 of snow. Generator name, site and volumes received are tabulated below:

Generator Name	Generator Site	Date Received	Volume
Government of Nunavut PPD	Government Tankfarm	March	Snow 387 m^3
Raytheon	Fuel Lines from Tankfarm	August	64 m^3
Qulliq Energy Corporation	6 Tuktu Cambridge Bay, NU	September 15	100m^3

NSSI	Tankfarm	October	16m^3

3.2. Part B Item 1b: Characterization of Treated Soil

No soil was treated at the facility in 2018 and no confirmatory samples were collected.

3.3. Part B Item 1c: Discharge Quantities

During the spring thaw, snow contained in the water pond and storage area melted and turned to water. Based on the fact that no contaminated material had yet been present in either cell, approval was requested from the inspector to discharge the water. Upon request, approval was obtained from the Indigenous and Northern Affairs (INAC) inspector. Water was discharged from the pond and storage area on June 21-22, 2018 to CST-1 adjacent to the landfarm. The total approximate volume removed was 300 cubic meters. A copy of the inspector approval can be found in Appendix A.

3.4. Part B Item 1d: Waste Backhauled

No waste was backhauled to any community in 2018.

3.5. Part B Item 1e: Waste Coordinates

The coordinates of the facility are 69º 7.718’ North and 105º 2.760 West.

3.6. Part B Item 1f: Construction Work Completed at Facility

The facility was constructed in 2017. A copy of the HDPE liner installation report can be found in Appendix B of the 2017 Annual Report (KEL,2017). As built drawings were submitted to the NWB on December 29, 2017. Only general maintenance was completed at the facility in 2018.

3.7. Part B Item 1g: Tabular Summaries

Meltwater contained in the landfarm was analyzed twice in 2018 to determine if it met the applicable guideline for discharge at CST-1. During the first event, the results exceeded the licence guidelines for discharge. During the second sampling event, the results met the guideline for discharge at CST-1, however inspector approval was obtained too late in the year for discharge to occur. Water was analyzed in the pond prior to discharge approval from the inspector. Tabulated results are shown in Table 1 and laboratory certificates of analysis are found in Appendix B.

3.8. Part B Item 1h: Monitoring Program Data Analysis

Groundwater monitoring wells were installed in 2018 at locations surrounding the facility. The locations of these wells were established in accordance with Part K Item 1 of the water licence. The requirements for the monitoring program were for one well to be installed upgradient of the facility (CST-2) and two wells installed down gradient (CST-3, CST-4). The monitoring wells were installed by KEL on August 17-18, 2018.

As per Part K Item 7 of the licence, a Water Monitoring Plan (WMP) was created and submitted to the NWB

on May 12, 2017. The WMP will be revised once the groundwater monitoring wells have been sampled for the first time in 2019. No data was collected from monitoring program stations in 2018.

3.9. Part B Item 1i: Summary of Studies

No studies were requested by the board in 2018. The Nunavut Water Board Annual Reporting form can be found in Appendix C.

3.10. Part B Item 1j: Unauthorized Discharges

No unauthorized discharges occurred in 2018.

3.11. Part B Item 1k: Trenches or Sumps

No trenches or sumps were excavated in 2018.

3.12. Part B Item 1l: Public Consultation

No public consultations occurred in 2018.

3.13. Part B Item 1m: Summary of Inspector Reports

No inspections or reports were prepared by an inspector in 2018.

4.0 CONCLUSION

Groundwater monitoring wells were installed at the site in 2018 in accordance with the requirements outlined in Part K of the Water Licence. These wells will be monitored and sampled (assuming enough water is present) once in 2019. Changes to the Water Monitoring Plan will be made as necessary based on the results of groundwater sampling.

Prior to any discharge of water to the receiving environment, a representative sample shall be collected and analyzed for the parameters listed for monitoring network station CST-1 and the results presented to the inspector. No discharge of water will occur without prior approval from the inspector.

Treatment of soil currently contained at the STF will be completed in 2019 along with confirmatory sampling. All results will be tabulated and shared with the Inspector.

Signage will be installed at the site indicating the site name and advising the public to not enter the facility.

Data from any monitoring network program location will be collected and tabulated and reported the 2019 Annual Report.

Sincerely,

Prepared by:

Josh Foster
Project Manager

5.0 NOTICE TO READERS/CLOSURE

This report has been prepared and the work referred to in this report has been undertaken by KEL for the exclusive use of the Nunavut Water Board who has been party to the development of the scope of work and understands its limitations. The methodology, findings, conclusions and recommendations in this report are based solely upon the scope of work and subject to the time and budgetary considerations derived in the documents which constitute the proposal and/or contract pursuant to which this report was issued.

The findings, conclusions and recommendations in this report have been developed in a manner consistent with the level of skill normally exercised by professionals currently practicing under similar conditions in the area, and reflect KEL's best judgement based on information available at the time of preparation of this report. No other warranties, either expressed or implied are made as to the professional services included in this report.

The findings and conclusions contained in this report are valid only as of the date of this report and may be based, in part, upon information provided by others. If any of the information is inaccurate, new information is discovered, the conditions of the Site or intended use of the Site change, or applicable standards are amended, modifications to this report may be necessary. KEL cannot be responsible for the use of this report or portions thereof unless KEL is requested to review and, if necessary, update the report. The results of the work herein should in no way be construed as a warranty that the subject Site is free from any and all contamination.

If referenced, groundwater, vapour or other subsurface conditions refer only to those observed at the location and time of observation noted in this report. This report must be read in whole, as sections taken out of context may be misleading. KEL cannot be responsible for the use of portions of the report without reference to the entire report. If discrepancies occur between the preliminary (draft) and final versions of this report, it is the final version that takes precedence. Nothing in this report is intended to constitute or provide a legal opinion.

Any use, reliance on, or decision made by a third party based on this report is the sole responsibility of such third party. KEL accepts no liability or responsibility for any damages that may be suffered or incurred by any third party as a result of the use of, reliance on, or any decision made based on this report.

6.0 SITE PHOTOS

Photo 1: View from above landfarm

Photo 2: Newly arrived soil at landfarm

7.0 REFERENCES

Canadian Council of Ministers of the Environment (CCME). 2008. *Canada Wide Standards for Petroleum Hydrocarbons (PHC) in Soil*

Canadian Council of Ministers of the Environment (CCME). 1998-2014. *Canadian Environmental Quality Guidelines*

Kitnuna Environmental *(KEL). 2017 Annual Report*

Kitnuna Environmental (KEL). 2017 *Operations and Maintenance Plan*

Kitnuna Environmental (KEL). 2017 *Water Monitoring Plan*

Nunavut Water Board (NWB). 2017. Water Licence No. 1BR-CST1723 Cambridge Bay Soil and Water Treatment Facility

FIGURES

File: 16-025_16STF.dwg Date: March-15-18 2:21:01 PM

MAP SOURCE: TOPORAMA 77D/01, 02

NOTES:

LOCATIONS ARE APPROXIMATE.

LEGEND

LINEAR FLOW LINES

0 500 1000 2000m

Scale 1 : 50 000

TOPOGRAPHIC MAP SHOWING SITE LOCATION

KEL

Date: 15-MAR-18	Drawn: LH	CAMBRIDGE BAY SOIL AND WATER TREATMENT FACILITY	Figure: 1
File name: 16-025_16STF-A.dwg	Approved: DRAFT		

File: 16-025_18STF.dwg Date: March-15-18 4:09:15 PM

JUNE 2017 SATELLITE PHOTO SOURCE: GOOGLE EARTH

NOTES:

LOCATIONS ARE APPROXIMATE.

0 10 20 40m

Scale 1 : 1000

SITE OVERVIEW SHOWING FACILITY DESIGN

KEL

Date: 20-MAR-18	Drawn: DT	CAMBRIDGE BAY SOIL AND WATER TREATMENT FACILITY	Figure: 2
File name: 16-025_18STF-B.dwg	Approved: DRAFT		

TABLES

Table 1: Surface Water Characterization Data
Client: KEL
Project: Remediation
KEL File #: 4300

Sampling Information			Volatile Organic Compounds				Petroleum Hydrocarbons		Misc. Organic	Misc. Inorganics		Metals
Sample ID	Lab ID	Date	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	F1-BTEX (C6-C10)	F2 (C10-C16)	Extractable Oil and Grease	pH	Total Suspended Solids	Total Lead (Pb)
-	-	dd-mmm-yy	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-	mg/L	mg/L
CCME Water Quality Guidelines			0.37	0.002	0.09	-	-	-	-	6.5-9.0	-	0.007
Surface Water Monitoring Locations												
POND-062218	L2118160-1	22-Jun-18	<0.0005	<0.0005	<0.0005	0.00225	<0.1	0.87	<2.0	7.67	18.3	0.0013
STF-062218	L2118160-2	22-Jun-18	<0.0005	0.0051	0.00073	0.00392	<0.1	1.51	<2.0	7.76	53.2	0.00395
POND	L2149691-1	18-Aug-18	<0.00050	<0.00045	<0.00050	<0.00075	-	-	<5.0	7.95	<3.0	0.000062

Legend
mg/L milligrams per litre

Applicable Guidelines
- *Canadian Environmental Quality Guidelines* (CCME Water Quality Guidelines; CCME, 1998-2014) for the protection of freshwater aquatic life
-POND was named CST-1 on COC

Notes
- Parameters not measured and absence of applicable guideline indicated by "-"
- Analytical data reported by Maxxam Analytics (Work Order #: B766031) and ALS (Work Order #: L2149691, L2118160)
- Exceedance of applicable guidelines or background conditions indicated by shading; where multiple guidelines apply, the most stringent guideline was used

KEL

APPENDIX A

Inspector Approval to Discharge

From: Pedersen, Baba (AADNC/AANDC)
To: Joshua Foster
Subject: RE: Cambridge Bay SWTF -1BR-CST1723-Water Discharge Request
Date: July 9, 2018 11:12:56 AM
Attachments: image001.png
image002.jpg

Hi Josh,

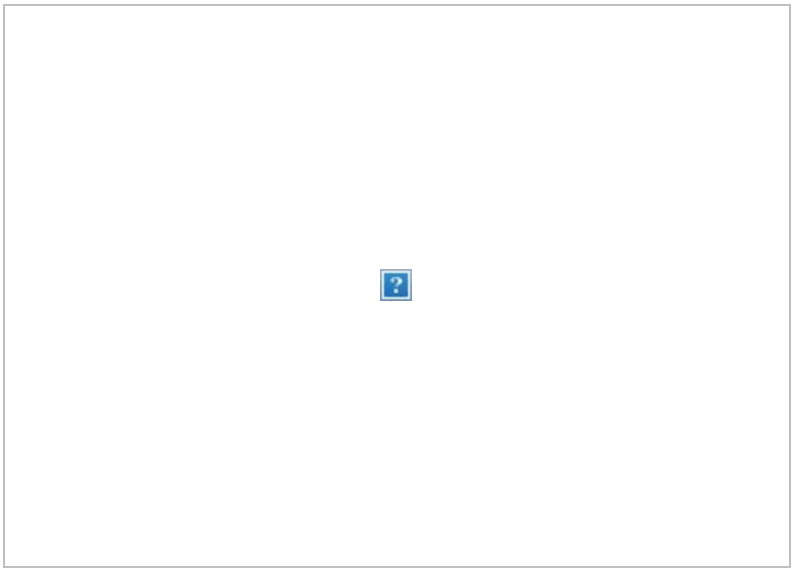
Thanks for the info. I agree with your request. You can go ahead with the Pond Discharge anytime. Keep me informed on the landfarm issue.

Koana,
Baba

From: Joshua Foster [mailto:jfoster@kblenv.com]
Sent: Monday, July 09, 2018 10:27 AM
To: Pedersen, Baba (AADNC/AANDC)
Subject: RE: Cambridge Bay SWTF -1BR-CST1723-Water Discharge Request

Hi Baba,

The test water results from the landfarm in Cambridge Bay are now available. I have put them into a table below and attached the laboratory certificate as well for you review.



You'll notice that the water sitting in the landfarm (STF) does exceed the TSS and Lead guidelines. We will not pump this water off, but will instead wait for some of the sediment to settle out and then sample it again. The water from the ponds however, does meet the guidelines. The Total Lead Value is only higher based on the fact that a different number of significant digits are used by the lab. Based on these results, I would request that we discharge the pond waters and then pump the landfarm into the ponds where we can then wait for the sediment to settle and re-sample again at a later date. Please let me know your thoughts, and if you would like to discuss.

Many thanks,

Josh

From: Pedersen, Baba (AADNC/AANDC) [mailto:baba.pedersen@canada.ca]
Sent: June 19, 2018 2:55 PM
To: Joshua Foster <jfoster@kblenv.com>
Subject: RE: Cambridge Bay SWTF -1BR-CST1723-Water Discharge Request

Hello Josh,

Yes, I approve your request to discharge. As promised please send Test Results when available.

Koana,
Baba

From: Joshua Foster [mailto:jfoster@kblenv.com]
Sent: Tuesday, June 19, 2018 1:58 PM
To: Pedersen, Baba (AADNC/AANDC)
Subject: Cambridge Bay SWTF -1BR-CST1723-Water Discharge Request

Hi Baba,

I am requesting that we can discharge the water contained at the Soil Treatment Facility in Cambridge Bay. Currently the drum storage area and water retention pond are full of melted snow. Neither of these locations have ever contained contaminated material and we are requesting to discharge as per last year.

Melted snow in the landfarm may have come into contact with contaminated material, and I will collect a water sample and send you the results from that location for approval prior to pumping off. Could you kindly confirm approval to pump off the 2 cells that have not contained any contaminated material?

Thanks,

Josh Foster
Project Manager

Cell 780.289.9090
Office 867.873.5263
Fax 877.316.7991

Cambridge Bay Office

PO Box 92, 10 Omilik Road
Cambridge Bay, Nunavut
X0B 0C0
kblenv.com

APPENDIX B

Laboratory Certificates of Analysis

KBL Environmental Ltd.
ATTN: Joshua Foster
PO Box 1895
17 Cameron Road
Yellowknife NT X1A 2P4

Date Received: 25-JUN-18
Report Date: 27-JUN-18 16:06 (MT)
Version: FINAL

Client Phone: 780-289-9090

Certificate of Analysis

Lab Work Order #: L2118160

Project P.O. #: NOT SUBMITTED
Job Reference: 16-025
C of C Numbers: 15-584459
Legal Site Desc:

Taryn Symborski
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2118160-3				
	Description	SOIL				
	Sampled Date	22-JUN-18				
	Sampled Time	11:00				
	Client ID	SS-1-062218				
Grouping	**Analyte**					
SOIL						
Physical Tests	% Moisture (%)	15.6				
Volatile Organic Compounds	Benzene (mg/kg)	<0.0050				
	Ethylbenzene (mg/kg)	<0.010				
	Styrene (mg/kg)	<0.050				
	Toluene (mg/kg)	<0.050				
	o-Xylene (mg/kg)	<0.050				
	m+p-Xylene (mg/kg)	<0.050				
	Xylenes (mg/kg)	<0.10				
	Surrogate: 4-Bromofluorobenzene (SS) (%)	94.2				
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	90.4				
	Surrogate: 1,4-Difluorobenzene (SS) (%)	91.5				
Hydrocarbons	F1 (C6-C10) (mg/kg)	<10				
	F1-BTEX (mg/kg)	<10				
	F2 (C10-C16) (mg/kg)	<20				
	F3 (C16-C34) (mg/kg)	32				
	F4 (C34-C50) (mg/kg)	<20				
	Chrom. to baseline at nC50	YES				
	Surrogate: 2-Bromobenzotrifluoride (%)	96.0				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2118160-1	L2118160-2			
	Description	WATER	WATER			
	Sampled Date	22-JUN-18	22-JUN-18			
	Sampled Time	10:30	10:45			
	Client ID	POND-062218	STF-062218			
Grouping	**Analyte**					
WATER						
Physical Tests	pH (pH)	7.67	7.76			
	Total Suspended Solids (mg/L)	18.3	53.2 DLHC			
Total Metals	Lead (Pb)-Total (mg/L)	0.00130	0.00395			
Aggregate Organics	Oil and Grease (mg/L)	<2.0 DLIS	<2.0 DLIS			
Volatile Organic Compounds	Benzene (mg/L)	<0.00050	<0.00050			
	EthylBenzene (mg/L)	<0.00050	0.00073			
	Styrene (mg/L)	<0.0010	<0.0010			
	Toluene (mg/L)	<0.00050	0.00051			
	o-Xylene (mg/L)	0.00093	0.00193			
	m+p-Xylene (mg/L)	0.00132	0.00199			
	Xylenes (mg/L)	0.00225	0.00392			
	F1(C6-C10) (mg/L)	<0.10	<0.10			
	F1-BTEX (mg/L)	<0.10	<0.10			
	Surrogate: 4-Bromofluorobenzene (SS) (%)	97.5	101.4			
	Surrogate: 3,4-Dichlorotoluene (SS) (%)	93.8	93.8			
	Surrogate: 1,4-Difluorobenzene (SS) (%)	101.9	102.4			
Hydrocarbons	F2 (>C10-C16) (mg/L)	0.87	1.51			
	F3 (C16-C34) (mg/L)	0.88	0.64			
	F4 (C34-C50) (mg/L)	<0.25	<0.25			
	Surrogate: 2-Bromobenzotrifluoride (%)	78.5	97.9			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Individual Samples Listed:

Sample Number	Client Sample ID	Qualifier	Description
L2118160-3	SS-1-062218	VOCC	Soil jar was submitted as VOC sample container. VOC results may be biased low, and do not meet federal (CCME) or provincial requirements (for BC, AB-Tier1, MB, ON, SK). - BTXS,F1-MEOH-ED

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLIS	Detection Limit Adjusted: Insufficient Sample

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTXS,F1-ED	Water	BTEX, Styrene and F1 (C6-C10)	EPA 5021/8015&8260 GC-MS & FID
BTXS,F1-MEOH-ED	Soil	BTEX and F1	EPA 8260C/5021A and CWS PHC Tier 1

This analysis involves the extraction of a subsample of the sediment/soil with methanol added in the field at the time of subsampling. The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. BTX Target compound concentrations are measured using mass spectrometry detection. The instrumental portion of F1 analysis is carried out in accordance with the Canada Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method (2001).

F1-4-CALC-ED	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

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

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

F2,F3,F4-ED	Water	F2, F3, F4	EPA 3510/CCME PHC CWS-GC-FID

Water samples are spiked with 2-BBTF surrogate, and extracted by reciprocal action shaker for 30 minutes using a single micro-extraction with 2 mL hexane. After extraction, hexane extracts are dispensed into GC vials for GC-FID analysis.

F2-4-TMB-ED	Soil	CCME Total Extractable Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

This analysis is carried out in accordance with the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment" For C10 to C50 hydrocarbons (F2, F3, F4) and gravimetric heavy hydrocarbons (F4G-sg), a subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extractor. The extract undergoes a silica-gel clean-up to remove polar compounds. F2, F3 & F4 are analyzed by on-column GC/FID, and F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where F4 (C34-C50) and F4G-sg results are reported for a sample, the larger of the reported values is used for comparison against the relevant CCME standard for F4.
7. The gravimetric heavy hydrocarbon results (F4G-sg), cannot be added to the C6 to C50 hydrocarbon results.
8. This method is validated for use.
9. Data from analysis of quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram.

Reference Information

MET-T-CCMS-ED	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

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

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

OGG-LLE-GRAV-ED	Water	O&G by Hex/MTBE extraction, gravimetric	APHA 5520 B HEXANE MTBE EXT. GRAVIME

This technique employs a hexane/methyl-tert-butyl ether extraction of water, followed by filtration of the solvent into an evaporation container. The solvent is evaporated in a pre-weighed dish and the oil and grease content is calculated from the weight of material remaining.

PH-ED	Water	pH	APHA 4500 H-Electrode

All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed)

PREP-MOISTURE-ED	Soil	% Moisture	Oven dry 105C-Gravimetric

The weighed portion of soil is placed in a 105°C oven to dry to a constant weight; the drying time will vary based on the moisture content of the soil. The dried soil weight is then used to calculate % moisture.

Reference: ASTM D2974-00.

SOLIDS-TOTSUS-ED	Water	Total Suspended Solids	APHA 2540 D-Gravimetric

Gravimetric determination of solids in waters by filtration and drying filter at 104 degrees Celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA

Chain of Custody Numbers:

15-584459

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2118160-COFC

COC Number: 15 - 584459

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply
Company:	KBL Environmental	Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Josh Foster	Quality Control (QC) Report with Report ☒ YES ☐ NO	PRIORITY (Business Days): 4 day [P4] ☐ / 3 day [P3] ☒ / 2 day [P2] ☐
Phone:	780.289.9090	☐ Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E1] ☐ / Same Day, Weekend or Statutory holiday [E0] ☐
	Company address below will appear on the final report	Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Street:	17 Cawdron Rd.	Email 1 or Fax: jfoster@kblenv.com	Date and Time Required for all E&P TATs:
City/Province:	Fellowcliffe, NT	Email 2: awheeler@kblenv.com	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:		Email 3	Analysis Request

Invoice To		Invoice Distribution	
	Same as Report To ☒ YES ☐ NO	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	
	Copy of Invoice with Report ☒ YES ☐ NO		
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#:
Job #:	16-025	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2118160	ALS Contact:	Sampler: JF

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	pH	BTEX	Oil+Grease	Total Lead.	TSS	BTEX F1-F4	Number of Containers
	POND-062218	22-Jun-18	10:30	SW	X	X	X	X	X	X	6
	STF-062218	↓	10:45	SW	X	X	X	X	X	X	6
	SS-1-062218	22-Jun-18	11:00	Soil						X	2

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

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
9.7°C					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
J. FOSTER	Jun 22 18	11:25	S	Jun 25, 2018	12:43			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

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

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

KBL Environmental Ltd.
ATTN: ANDY WHEELER
17 Cameron Road
Yellowknife NT X1A 2P4

Date Received: 20-AUG-18
Report Date: 29-AUG-18 15:56 (MT)
Version: FINAL

Client Phone: 867-873-5263

Certificate of Analysis

Lab Work Order #: L2149691

Project P.O. #: NOT SUBMITTED
Job Reference: KEL DEPT. 4300
C of C Numbers: 10-366352
Legal Site Desc:

Rick Zolkiewski
General Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2149691-1				
	Description	WATER				
	Sampled Date	18-AUG-18				
	Sampled Time					
	Client ID	CST-1-081818				
Grouping	**Analyte**					
WATER						
Physical Tests	pH (pH)	7.95				
	Total Suspended Solids (mg/L)	<3.0				
Total Metals	Lead (Pb)-Total (mg/L)	0.000062				
Aggregate Organics	Oil and Grease (mg/L)	<5.0				
Volatile Organic Compounds	Benzene (mg/L)	<0.00050				
	Ethylbenzene (mg/L)	<0.00050				
	Methyl t-butyl ether (MTBE) (mg/L)	<0.00050				
	Styrene (mg/L)	<0.00050				
	Toluene (mg/L)	<0.00045				
	ortho-Xylene (mg/L)	<0.00050				
	meta- & para-Xylene (mg/L)	<0.00050				
	Xylenes (mg/L)	<0.00075				
	Surrogate: 4-Bromofluorobenzene (SS) (%)	78.5				
	Surrogate: 1,4-Difluorobenzene (SS) (%)	83.5				

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
EC-SCREEN-VA	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.			
MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
OGG-SF-VA	Water	Oil & Grease by Gravimetric	BCMOE (2010), EPA1664A
The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease.			
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H pH Value
This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode			
It is recommended that this analysis be conducted in the field.			
TSS-VA	Water	Total Suspended Solids by Gravimetric	APHA 2540 D - GRAVIMETRIC
This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.			
VOC7-HSMS-VA	Water	BTEX/MTBE/Styrene by Headspace GCMS	EPA 5021A/8260C
The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transfered into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.			
VOC7/VOC-SURR-MS-VA	Water	VOC7 and/or VOC Surrogates for Waters	EPA 5035A/5021A/8260C
XYLENES-CALC-VA	Water	Sum of Xylene Isomer Concentrations	CALCULATION
Calculation of Total Xylenes			
Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

10-366352

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

ALS Environmental

Chain of Custody / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

10-366352

Page 1 of

Report To

Company: KBL Environmental

Contact: Andy Wheeler

Address: 17 Cameron Rd Yellowknife, NT

Phone: 867-873-5263 Fax:

Invoice To Same as Report ? (circle) Yes or No (if No, provide details)

Copy of Invoice with Report? (circle) Yes or No

Company:

Contact:

Address:

Phone: Fax:

Report Format / Distribution

Standard: Other (specify):

Select: PDF ✓ Excel ✓ Digital Fax

Email 1: awheeler@kblenv.com

Email 2:

Client / Project Information

Job #: KEL Dept. 4300

PO / AFE:

LSD:

Quote #:

Service Request: (Rush subject to availability - Contact ALS to confirm TAT)

- ✓ Regular (Standard Turnaround Times - Business Days)
- Priority (2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT
- Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
- Same Day or Weekend Emergency - Contact ALS to confirm TAT

Analysis Request

(Indicate Filtered or Preserved, F/P)

Lab Work Order # (lab use only): L2149691

ALS Contact:

Sampler:

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	pH	TSS	Oil + Grease	Total Lead	BTEX	Number of Containers
	CST-1-081818	18-Aug-18	-	Water	✓	✓	✓	✓	✓	4

L2149691-COFC

Special Instructions / Regulation with water or land use (CCME- Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			Tianli Liu	Aug 20/18	11:55	11.8 °C				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

GENF 18.01

GENERAL TERMS AND CONDITIONS:

These terms and conditions are incorporated in and form part of the Agreement between ALS Laboratory Group – Environmental Division ("ALS") and the party named in the Offer (the "Client").

1. Definitions. Capitalized Terms not defined in these Terms and Conditions have the definitions set out in the other Agreement documents.
2. The Services. ALS will provide the Services to the Client as described in the Offer and in any change of custody form provided with any sample.
3. Prices. ALS may review and change all prices, fees, surcharges or other charges set out in the Agreement if there are changes to ALS's cost beyond ALS's control, including changes in legislative requirements, Client variations of sample numbers and Client requests for changes to standard reporting requirements. Notwithstanding Condition 3, all quotations are reviewed and updated on a yearly basis.
4. Payment Terms. The Client shall pay ALS within 30 days of the invoice date OAC. ALS may, for reasonable business reasons, require the Client to arrange for payment in advance.
5. Quotation Numbers. The Client shall provide the quotation number to ALS (where applicable) to ensure correct pricing.
6. Taxes. Applicable taxes are not included in prices, surcharges and additional fees and will be added at the time of invoicing.
7. Quality Control. ALS has an extensive QA/QC program and all analytical data reported is analyzed using approved, referenced procedures followed by checks and reviews of senior managers and quality assurance personnel.
8. No Guarantee of Results. Results are obtained from chemical measurements. The Client is responsible for informing itself on the limitation of the results and acknowledges that the results are not guaranteed.
9. Standard of Care. ALS will use reasonable care and diligence as required by the laws of the province or territory where the sample is tested.
10. Storage. Where possible, ALS will store samples for 30 days from the date a final report is issued to the Client, after which ALS may discard the sample.
11. Holds. If the Client requests a sample be placed on hold, ALS will store the sample for 60 days for the quoted price, after which ALS will invoice the Client and discard the sample.
12. Archives. If the Client requests a sample be archived, ALS will store the sample for 6 months for the quoted price, after which ALS will invoice the Client and discard the sample.
13. Handling Protocol. Legal sample handling protocol must be arranged before samples are collected. ALS may charge a 20% surcharge on the fist price plus the hourly technologist or chemist rates for legal sample protocol. Samples processed under legal protocol are stored indefinitely (storage charges may apply).
14. Samples. The quality, condition, content and source of samples stored and tested are not known to ALS except as declared and described on the chain of custody form completed and submitted by the Client and accompanying the sample.
15. Risk of Loss. ALS will use reasonable care to protect samples during storage, however all samples are stored at the Client's risk and the Client is responsible for obtaining appropriate insurance, if desired. The Client acknowledges that during the performance of the Services samples may be altered, lost, damaged or destroyed and the Client releases ALS from any claim the Client may have for any loss or damage to the sample.
16. Environmental. The Client must comply with all applicable environment legislation, including labeling all hazardous samples to comply with WHMIS and TDG regulations, and must provide appropriate material safety data sheets that include the nature of the hazard and a contact name and phone number to call for information. The Client will indemnify ALS for all loss or damages, including any fine or cost of complying with an order of any government authority, resulting from the Client's breach of this paragraph.
17. Hazardous Materials Disposal. ALS may return, at the Client's cost, hazardous material to the Client for disposal.
18. Hazardous Materials Surcharge. ALS may apply an additional surcharge for handling of hazardous samples or samples with Naturally Occuring Radioactive Materials (NORM), H2S, CN, etc.
19. Sample Containers. ALS may ship sample containers to the Client's location by the most cost effective means using ALS preferred courier suppliers, within the specified project timeline.
20. Additional Charges. ALS may charge the Client (a) its cost for emergency bottle shipments and shipments to and from a remote site, and (b) where pick up and delivery services are provided, subject in each instance to a minimum charge of $25.00.
21. Large Bottle Orders. The Client shall provide ALS with 24 hours notice for large bottle orders.
22. Re-Tests. ALS reserves the right to re-test any samples that remains in its possession. Re-tests requested by the Client may be charged.
23. Waiver. The Client is responsible for making any assessment regarding the suitability of the Services and the intended results for the Client's purposes and waives any claims against ALS it may have as a result of the interpretation of the results. The Client shall indemnify ALS for all claims made by any third party against ALS in respect of all losses however arising from the performance of the Services or the use of any report provided in the performance of the Services.
24. Limitation of Liability. In no event shall ALS be liable for any consequential, indirect, incidental, special, exemplary or punitive damages, whether foreseeable of unforeseeable, (including claims for loss of profits or revenue or losses caused by stoppage of other work or impairment of other assets) incurred by the Client arising out of breach or failure of express of implied warranty, breach of contract, breach of warranty, misrepresentation, negligence, strict liability in tort or otherwise. In any event, the liability of ALS to the Client shall be limited to the cost of testing the sample as requested in the chain of custody form under which the sample was originally deposited. For the purposes of this paragraph and paragraphs 8, 15, 16, 23 and 25, as the applicable, "ALS" includes without limitations its directors, officers, employees and affiliates and the "Client" includes without limitation any third party that may have a claim against ALS through the Client.
25. Notice of Liability. Notwithstanding paragraph 24, ALS shall not be liable to the Client unless the Client provides notice in writing to ALS of such loss or damage, together with full particulars thereof, within 30 days of the Client's receipt of the report of the analysis of the sample giving rise to such liability. The provisions of this paragraph allocate the risk under the Agreement between the Client and ALS, and the fees to be paid by the Client to ALS reflect this allocation of risks and the limitations of liability in this Agreement.
26. Entire Agreement. The Agreement is the entire agreement between the parties and supercedes and takes precedence over any terms and conditions contained in any documentation provided by the Client. ALS's execution of any subsequent documentation from the Client only acknowledges receipt and not acceptance of any terms or conditions therein. If there is a conflict between these terms and conditions and any other Agreement document, these terms and conditions prevail.

APPENDIX C

Nunavut Water Board Annual Reporting Form

NWB Annual Report **Year being reported:** 2018

License No: 1BR-CST1723 **Issued Date:** March 23, 2017
Expiry Date: March 22, 2022

Project Name: Cambridge Bay Soil and Water Treatment Facility

Licensee: Kitnuna Environmental

Mailing Address:
PO Box 92, 10 Omilik Road
Cambridge Bay, NU
X0B 0C0

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

General Background Information on the Project (*optional):

Licence Requirements: the licensee must provide the following information in accodance with

Part C | Item 3

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):

Water Quantity:

	Quantity Allowable Domestic (cu.m)
	Actual Quantity Used Domestic (cu.m)
	Quantity Allowable Drilling (cu.m)
	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

- ☐ Solid Waste Disposal
- ☐ Sewage
- ☐ Drill Waste
- ☐ Greywater
- ☐ Hazardous
- ☐ Other:

Additional Details:

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)
Date of Spill:
Date of Notification to an Inspector:
Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Revisions to the Spill Contingency Plan

SCP submitted and approved - no revision required or proposed

Additional Details:

Revisions to the Abandonment and Restoration Plan

AR plan submitted and approved - no revision required or proposed

Additional Details:

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Not Applicable (N/A)

Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Not Applicable (N/A)

Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board

Additional Details: (date of request, analysis of results, data attached, etc)

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board

Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

No inspection and/or compliance report issued by INAC

Additional Details: (Dates of Report, Follow-up by the Licensee)

Any additional comments or information for the Board to consider

Date Submitted:	April 18, 2019	
Submitted/Prepared by:	Josh Foster	
Contact Information:	**Tel:**	867.873.5263
	Fax:	
	email:	jfoster@kblenv.com