

From: Crystal Sabel
To: [Erica Janes](#)
Cc: [Susan Christie](#); 175876
Subject: Fort Providence 2016/2016 Annual Water Licence Report
Date: Monday, July 9, 2018 2:45:12 PM
Attachments: [MV2016L3-0001 - Fort Providence - 2016-17 Annual Water Licence Report -June 30th 2018.pdf](#)

Hi Erica,

On behalf of our client, the Hamlet of Fort Providence, please find attached the revised and updated Fort Providence 2016/2016 Annual Water Licence Report (V. 1-1) which addresses all comments made by the Mackenzie Valley Land and Water Board in their letter dated May 10th, 2018.

Please feel free to contact me should you have any questions about this submission.

Cheers,
Crystal

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Crystal Sabel
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**Hamlet of Fort Providence
2016/2017 Annual Water
Licence MV2016L3-0001
Report – V. 1-1 (revised)**

Annual Water Licence Report

Hamlet of Fort Providence

17 5876

Crystal Sabel - Project Manager

Prepared by

Dillon Consulting Limited

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1.0 INTRODUCTION

This report fulfills the requirements of Part B, Section 4 of the Water Licence for the Hamlet of Fort Providence, MV2016L3-0001. It covers the activities from April 1, 2016 to March 31, 2017. Information is tracked on a fiscal year basis as has been the practice since 2006/2007 and as specified in the Water Licence.

Water Licence MV2016L3-0001 came into effect July 7, 2016, replacing the expired licence MV2006L3-0002. The current licence is valid until July 6, 2026. Despite the licence renewal occurring within the reporting period, the current licence (MV2016L3-0001) has been used as reference for reporting requirements.

The current report (V. 1-1) has been revised and updated to address comments made by the Mackenzie Valley Land and Water Board (MVLWB) in their letter dated May 10, 2018. A concordance table has been included below to identify the sections for each required provision as identified in Schedule 1 of the water licence (MV2016L3-0001), see **Table 1**.

Table 1: Concordance Table

Descriptive Summary of Provision	Report Section
Monthly and annual quantities in cubic meters of fresh water obtained from all sources.	2.1
Monthly and annual quantities in cubic meters of discharged to the waste disposal facilities.	2.2
Monthly and annual quantities in cubic meters of removed from the waste disposal facilities.	2.2.1 and 2.2.2
Monthly and annual quantities in cubic meters of all sewage and solid waste deposited into the waste disposal facilities by commercial and industrial operators outside the municipal boundaries of Fort Providence.	
Tabular summaries of all data generated under the surveillance Network Program (SNP).	Table 4
Laboratory report for all samples collected for the SNP.	Appendix D
Geographic coordinates for all SNP and a map showing station locations.	Table 3 and Appendix E
Summary of activities undertaken to install and maintain fencing at the waste disposal facilities.	
Summary of activities undertaken to install and maintain signage at the waste disposal facilities and SNP stations.	
A summary of sludge management activities including results of depth and volume measurements, and sludge removal and treatment.	
A summary of construction activities in accordance with Part F of the water licence.	2.3
A summary of modification activities and major maintenance activities to the water supply and waste disposal facilities, including all associated structures in accordance with Part G of the water licence.	2.3

A list and description of all unauthorized discharges that occurred during the previous year.	2.5
An outline of any spill training and communications exercises carried out during the previous calendar year.	2.6
A summary of closure and reclamation work completed during the year and an outline of work anticipated for the next year.	2.7
A summary of studies requested by the board that relate to waste disposal, water use or reclamation, and future studies planned.	2.8
A summary of actions taken to address concerns, non-conformances, or deficiencies in any reports filed by an Inspector.	2.13
A summary of any updates or revisions to the spill contingency plan, management plans, and operation and maintenance plans.	2.10 and 2.12
Details related to water use, operating procedures, modifications, maintenance work, or other topics, requested by the board on or before November 1 of the year being reported.	2.8

Table 2 below includes a summary of the review comments in the letter dated May 10th, 2018 following the Board's review of the original submission, and indicated the report sections where revisions have been made.

Table 2: MVLWB Comments Summary Table

Descriptive Summary of Comment	Comment
Rationale for any SNP sampling not conducted in accordance with licence requirements.	This has been added to Section 2.4.
Use of correct licence references for the current (MV2016L3-0001) and previous (MV2006L3-0002) issuances.	This has been corrected.
Reference to the two inspections conducted on June 22, 2016 and September 20, 2016.	Section 2.13 has been added
Clarify the wording in Section 2.2 to indicate that wastewater (sewage) is collected and deposited in the lagoon system via truck.	This has been added to Section 2.2.
Revise Table 2 to reference the effluent quality criteria listed in Part D, condition 7 of the licence, and label the columns with the appropriate SNP station numbers.	Table 2 is retitled Table 4. Part D, condition 7 has been referenced in section 2.4. Columns have been labeled with appropriate SNP station numbers.
Provide a discussion on the high oil and grease result and any additional confirmatory sampling planned.	This has been added to Section 2.4.
Complete reporting in accordance with each requirement listed in Schedule 1, condition 1 of the Licence.	Concordance table (Table 1) has been added with each requirement listed in Schedule 1.

2.0 REQUIREMENTS OF ANNUAL REPORT

2.1 Quantity of Fresh Water

During the 2016/2017 fiscal year, a total of 28,693,090.7 L (28,693 m³) of domestic water was delivered to residents and businesses in Fort Providence. This is a 3% decrease in trucked water usage from the 2015/2016 fiscal year. This nominal decrease is not due to any significant changes in the community population or operations. **Appendix A** shows the monthly break down of water use in the community.

2.2 Quantity of Waste Generated

A total of 24,754 m³ (6,539,300 US gallons) of sewage was deposited into the Fort Providence sewage lagoon during the 2016/2017 fiscal year (see **Appendix B**). This volume is for sewage services provided through the Hamlet's service contract with Digaa Enterprises Ltd. To truck sewage to the sewage lagoon, and is a 2% decrease from the 2015/2016 fiscal year. This nominal decrease is consistent with reductions in water use over the same period.

The Hamlet does not currently track the volume of waste being deposited at the Solid Waste Facility. However, total annual deposits are estimated to be between 1,700 – 2,200 m³ of un-compacted municipal solid waste, using an updated and modified version of the solid waste generation formula in Guidelines for the Planning, Design, Operations and Maintenance of Modified Solid Waste Sites in the Northwest Territories (R. Kent, P. Marshall, and L. Hall, 2003), and a community-specific per capita generation rate based on five years of data from the Hamlet of Fort Providence. This per capita generation rate was calculated to be between 0.006 – 0.008 m³/capita/day for the Hamlet, based on area covered at the Solid Waste Disposal Facility by the mounding method, since this method began being used in 2012.

2.2.1 Quantities of Wastewater Removed from Lagoons

Decanting operations for the current reporting period were initiated October 13th, 2016 and were concluded on November 18, 2016, at an estimated flowrate of 120 m³/hour. A total of 31,410 m³ was decanted from Cell 5 of the lagoon (See **Appendix C**).

No sludge was removed from the sewage lagoons during the 2016/2017 fiscal year.

2.2.2 Quantities of Waste Removed from Solid Waste Disposal Facility

In the 2016/2017 fiscal year, KBL Environmental Ltd. Removed a total of 233,890 kg of scrap metal from the Hamlet's Solid Waste Disposal Facility over two collection events in July and October 2016.

2.3 Summary of Modifications

2.3.1 Water Treatment Facility

Regular maintenance and operations of the water treatment plant were carried out by Hamlet personnel during the 2016/2017 fiscal year.

For a number of years the Hamlet has experienced operational problems with the twin intake system installed in 2004, intended to replace the original intake constructed in 1976. The 2004 system has reportedly been abandoned, and the Hamlet is currently relying exclusively on the old gravity fed wet well system for intake service. A Condition Assessment Report (ARKTIS 2014) and subsequent Options Analysis Report (ARKTIS 2015) outline alternatives for Hamlet consideration. The preferred alternative has not yet been determined. The Hamlet is currently working with consultants to complete studies required to confirm the preferred intake design options. In the next 5 years the Hamlet anticipates the following work will be completed: River Engineering Analysis, Geotechnical Investigation, Construction Risk Analysis, Construction Feasibility Report, Design and Tender document preparation.

No inspection of the Water Treatment Plant was completed by regulators this fiscal year. The crack in the floor of the Generator Room noted in previous inspection report remains, and although the Hamlet has attempted to repair the crack they have had problems finding a suitable product.

2.3.2 Sewage Lagoon

Routine maintenance of the sewage lagoon was provided by Hamlet personnel during the fiscal year, including ongoing monitoring and sampling of discharge, routine maintenance of the monarch pump and preparation for retention over the winter months. This latter task involves the pump-out of the lagoon system, to create enough storage space for the winter sewage volumes. No modifications to the sewage lagoon were made in the reporting period. The lagoon was last de-sludge in September 2012.

2.3.3 Solid Waste Facility

The Hamlet provides waste pick-up and delivery and routine maintenance of the Fort Providence Landfill site. This includes regular visits to the area, general clean-up including pushing back domestic refuse and backfilling (by a local contractor) as required.

No modifications were made to the Solid Waste Disposal Facility during the 2016/2017 fiscal year. A condition of the Hamlet's water licence is to produce an Action Plan for improvements to the SWDF, and this plan will incorporate action items from the June 2015 inspection report.

2.4 SNP Data

Table 3 details the SNP stations from the Water Licence:

Table 3: SNP Station Details

Station Number	Geographic Coordinates	Location Description
1412-1	61.33921° N 117.63425° W	Raw water intake line at the Water Supply Facilities
1412-2	61.35571° N 117.6118° W	Sewage effluent from the Sewage Disposal Facilities
1412-3	Discontinued	
2016-1	Exact location(s) to be determined with the Inspector	Sewage effluent flowing through the ponded area of the wetland
2016-2	Exact location(s) to be determined with the Inspector	Ponded water within or adjacent to the domestic waste cells at the Solid Waste Disposal Facilities in June and September
2016-3	Exact location(s) to be determined with the Inspector	Ponded water within or adjacent to the construction waste cell at the Solid Waste Disposal Facilities in June and September

Sampling at station 1412-1 consists of documenting monthly amounts of water withdrawn for municipal purposes.

Samples were collected from SNP Station 1412-2 on September 13, 2016 and October 3rd, 2016 in accordance with Part D, Item 8 of the water licence, and decant operations were approved following the October lab results. **Table 4** summarizes analytical results of samples taken from the lagoons during the open water season in 2016/2017. Full results are located in **Appendix D**.

Concentrations have been compared to the maximum allowable concentrations for effluent from the waste disposal facilities at the surveillance network program station 1412-2 as laid out in Part D, condition 7 of the water licence.

No sampling at stations 2016-1, 2016-2 and 2016-3 was conducted in the 2016/2017 fiscal year as exact locations have yet to be determined. As part of the Solid Waste Disposal Facilities Operations and Maintenance Plan, the Hamlet will work with the Government of the Northwest Territories Inspectors to determine suitable locations for these SNP locations as per Annex A, Part B, condition 2.

Table 4: Summary of Analytical Results Taken from Lagoons

Date				13-Sep-16	3-Oct-16
Sample Location				1412-2	1412-2
Test Parameter	Units	Detection Limits	Water Licence Requirement	Results Sewage	Results Pre-Decant
Inorganics-Nutrients					
Ammonia as Nitrogen	mg/L	0.005	NS	NT	NT
Biochemical Oxygen Demand	mg/L	2	360	39	NT
Chemical Oxygen Demand	mg/L	5	330	NT	NT
Nitrate + Nitrite as Nitrogen	mg/L	0.01	NS	NT	NT
Nitrogen, Dissolved	mg/L	0.06	NS	NT	NT
Nitrogen, Total	mg/L	0.06	NS	NT	NT
Ortho-Phosphate as Phosphorus	mg/L	0.002	NS	NT	NT
Phosphorous, Total	mg/L	0.002	NS	NT	NT
Hexane Extractable Material					
HEM - O&G	mg/L	2	5	8.8	3.2
Organics					
Benzene	mg/L	0.005	NS	NT	<0.005
Ethylbenzene	mg/L	0.005	NS	NT	<0.005
F2: C10-C16	mg/L	0.2	NS	NT	NT
F3: C16-C34	mg/L	0.2	NS	NT	NT
F4: C34-C50	mg/L	0.2	NS	NT	NT
Hydrocarbons, Total Extractable	mg/L	0.2	NS	NT	NT
Hydrocarbons, Total Purgeable	mg/L	0.3	NS	NT	<0.3
Toluene	mg/L	0.005	NS	NT	<0.005
Xylenes	mg/L	0.005	NS	NT	<0.005

Notes: NS – Not Specified
NT – Not Tested
CBOD₅ is new to MV2016L3-0001, and is used as an equivalent to BOD₅.

The cause of oil and grease results in excess of the 5 mg/L in September 13, 2016 is not known; however, the effluent at this station was resampled in October 3, 2016 prior to decant and was within the maximum allowable concentrations for effluent.

2.5 Unauthorized Discharges

No unauthorized discharges were reported for the Hamlet facilities in the Hazardous Materials Spill Database for the 2016/2017 fiscal year.

2.6 Spill Training and Communication Exercises

No spill training and communication exercises were carried out for Hamlet personnel in the 2016/2017 fiscal year.

2.7 Summary of Closure and Reclamation Work and Outline of Planned Work

No closure and reclamation work was carried out in 2016/2017. Part I of the water licence stipulates that the Hamlet should engage in progressive reclamation at the sewage and solid waste facilities whenever practical. As indicated in the Water Licence, Part I, Item 2, the Hamlet will submit to the Board for approval an A&R plan at least six months prior to abandoning any sewage or solid waste facilities.

2.8 Summary of Studies Requested by Water Board

No studies were requested by the Water Board. In addition, details related to water use, operating procedures, modifications, and maintenance work were not requested by the MVLWB prior to November 1 of the reporting year.

2.9 Other Details Requested by Water Board

Plans to be prepared/revised within one year of issuance (by July 7, 2017) as conditions of MV2016L3-0001 are listed in **Table 5** below. Details related to water use, operating procedures, modifications, and maintenance work were not requested by the MVLWB prior to November 1 of the reporting year.

Table 5: Details Requested by the Land and Water Board

Study or Plan	Applicable Water Licence Section
Solid Waste Disposal Facilities Operation and Maintenance Plan	Part E, Item 2 Schedule 2, Item 1
Sewage Disposal Facilities Operation and Maintenance Plan (including sludge management plan)	Part E, Item 3 Schedule 2, Item 2
Spill Contingency Plan [revision]	Part H, Item 2
Water Treatment Plan Operation and Maintenance Plan	Part E, Item 4 Schedule 2, Item 3
Solid Waste Disposal Facilities Action Plan	Part D, Item 22

2.10 Revisions to Contingency Plan

No revisions to the Spill Contingency Plan were made during the 2016/2017 fiscal year.

2.11 Revisions to A&R Plan

The Hamlet does not currently have a Closure and Reclamation Plan (also known as an Abandonment and Restoration or A&R Plan).

2.12 Update/Revisions to O&M Plan

No revisions to the Sewage or Solid Waste Disposal Facilities Operation and Maintenance Plans were made during the 2016/2017 fiscal year.

2.13 Site Inspections

On June 22, 2016 and September 20, 2016 an inspector from the Government of the Northwest Territories visited the Hamlet of Fort Providence. Records of the inspection were not available at the time this report was prepared. It is unknown if potential concerns, non-conformances, or deficiencies in these reports filed by an Inspector were addressed.

3.0 SUMMARY

The Hamlet of Fort Providence was issued a new Water Licence, MV2016L3-0001 on July 7, 2016, replacing the expired MV2006L3-0002. The current Water Licence is valid for ten years, to July 6, 2026.

No major changes were made to the water treatment facility in the 2016/2017 reporting period. Studies are ongoing to determine alternatives for the water intake.

No major changes were made to the sewage lagoon in the 2016/17 reporting period. SNP samples taken in October at Station 1412-2 indicated that Cell #5 of the lagoon was acceptable to decant, and permission was granted by the Board to initiate a decant. A new SNP station was established in MW2016L3-0001 to monitor the quality of effluent discharged from the sewage lagoon and to help determine the effectiveness of the wetland treatment.

No major changes were made to the solid waste disposal facility in the 2016/17 reporting period but over 200,000 kg of scrap metal was removed and processed by KBL Environmental Ltd. in July and October 2016. Two new SNP station were established in MW2016L3-0001 to sample ponded water at the solid waste facilities site. Regular SNP sampling was not conducted in the 2016/2017 fiscal year.

Appendix A

2016/2017 Fort Providence Water Data

Month	Residential T1	Commercial T2	Government T3	Bulk Water Z1	Hamlet	Total Water (L):
Apr.	1,313,310.6	228,305.0	754,551.7	3,500.0	62,917.5	2,362,584.8
May	1,432,588.8	253,292.4	823,169.5	3,500.0	56,058.8	2,568,609.5
Jun.	1,364,904.6	313,166.4	763,331.6	4,500.0	138,407.1	2,584,309.7
Jul.	1,272,233.8	271,440.7	703,062.2	3,600.0	57,729.5	2,308,066.2
Aug.	1,372,143.8	282,677.1	809,611.6	3,500.0	65,896.3	2,533,828.8
Sep.	1,293,557.6	236,224.7	643,557.4	4,500.0	12,707.2	2,190,546.9
Oct.	1,305,565.7	240,259.1	697,847.0	600.0	11,869.0	2,256,140.8
Nov.	1,379,195.3	205,382.7	735,562.5	5,000.0	31,883.5	2,357,024.0
Dec.	1,367,642.0	198,767.0	691,535.6	2,000.0	72,600.9	2,332,545.5
Jan.	1,421,405.1	209,481.2	771,362.5	15,100.0	31,334.1	2,448,682.9
Feb.	1,314,935.6	212,327.7	676,229.4	38,500.0	30,811.4	2,272,804.1
Mar.	1,391,409.9	263,759.6	743,324.7	62,000.0	17,453.3	2,477,947.5
Total:	16,228,892.8	2,915,083.6	8,813,145.7	146,300.0	589,668.6	28,693,090.7

Appendix B

2016/2017 Fort Providence Sewage Disposal Data

2016/2017

Month	Volume (US Gallon)	Volume (m³)
Apr.	554,800	2,100
May	610,000	2,309
Jun.	615,700	2,331
Jul.	512,500	1,940
Aug.	577,700	2,187
Sep.	558,600	2,115
Oct.	518,600	1,963
Nov.	529,600	2,005
Dec.	509,800	1,930
Jan.	533,100	2,018
Feb.	492,100	1,863
Mar.	526,800	1,994
Total:	6,539,300	24,754

Appendix C

2016/2017 Sewage Lagoon Decant Log

Date	Start	Finish	Total Hours	Litres	Cell
Thursday, October 13, 2016	10:30 AM	4:30 PM	12	1,440,000	5
Friday, October 14, 2016	8:30 AM	3:00 PM	6.5	780,000	5
Monday, October 17, 2016	8:00 AM	4:30 PM	4.25	510,000	5
Tuesday, October 18, 2016	11:00 AM	4:30 PM	11	1,320,000	5
Wednesday, October 19, 2016	9:00 AM	4:30 PM	15	1,800,000	5
Thursday, October 20, 2016	9:00 AM	4:30 PM	15	1,800,000	5
Friday, October 21, 2016	8:30 AM	4:30 PM	16	1,920,000	5
Monday, October 24, 2016	8:30 AM	4:30 PM	16	1,920,000	5
Tuesday, October 25, 2016	8:30 AM	4:30 PM	16	1,920,000	5
Wednesday, October 26, 2016	8:30 AM	4:30 PM	16	1,920,000	5
Thursday, October 27, 2016	8:30 AM	4:30 PM	16	1,920,000	5
Friday, October 28, 2016	8:30 AM	4:30 PM	16	1,920,000	5
Monday, October 31, 2016	9:00 AM	4:30 PM	15	1,800,000	5
Tuesday, November 01, 2016	9:00 AM	4:30 PM	15	1,800,000	5
Subtotal			22,770,000		
Thursday, November 03, 2016	11:00 AM	4:30 PM	5.5	660,000	5
Friday, November 04, 2016	9:00 AM	3:30 PM	6.5	780,000	5
Tuesday, November 08, 2016	9:00 AM	4:30 PM	7.5	900,000	5
Wednesday, November 09, 2016	9:00 AM	4:30 PM	7.5	900,000	5
Thursday, November 10, 2016	9:00 AM	4:30 PM	7.5	900,000	5
Monday, November 14, 2016	9:00 AM	4:30 PM	7.5	900,000	5
Tuesday, November 15, 2016	9:00 AM	4:30 PM	7.5	900,000	5
Wednesday, November 16, 2016	9:00 AM	4:30 PM	7.5	900,000	5
Thursday, November 17, 2016	9:00 AM	4:30 PM	7.5	900,000	5
Friday, November 18, 2016	9:00 AM	4:30 PM	7.5	900,000	5
Subtotal			8,640,000		
TOTAL			31,410,000		

Appendix D

Certificates of Analysis



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

Taiga Batch No.:
160888

- FINAL REPORT -

Prepared For: Hamlet of Fort Providence

Address: General Delivery
Fort Providence, NT
X0E 0L0

Attn: Robert Tanche

Facsimile: (867) 699-4624

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*

Page 1 of 3



Taiga Environmental Laboratory
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Tel: (867)-767-9235 Fax: (867)-920-8740

Taiga Batch No.:
160888

- CERTIFICATE OF ANALYSIS -

Client Sample ID:

Taiga Sample ID: 001

Client Project:

Sample Type: Sewage

Received Date: 14-Sep-16

Sampling Date: 13-Sep-16

Sampling Time: 13:30

Location: Sewage Lagoon

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Inorganics - Nutrients</u>						
Biochemical Oxygen Demand	39	2	mg/L	14-Sep-16	SM5210:B	
<u>Organics</u>						
Hexane Extractable Material	8.8	2.0	mg/L	15-Sep-16	EPA1664A	

ReportDate: Tuesday, September 27, 2016

Print Date: *Tuesday, September 27, 2016*

Page 2 of 3



Taiga Environmental Laboratory

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

Taiga Batch No.:

160888

- CERTIFICATE OF ANALYSIS -

Client Sample ID:

Taiga Sample ID: 001

*** 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*

Page 3 of 3

From: Wendy Bidwell
To: sao@fortprovidence.ca
Cc: [Robert](#); [Erica Janes](#)
Subject: Inspector Approval to Decant Cell #5 of Sewage Lagoon System_Hamlet of Fort Providence_Water Licence MV2016L3-0001
Date: Thursday, October 13, 2016 9:47:44 AM
Importance: High

Good morning,

All parameters of the additional pre-decant samples collected by the Hamlet meet licence effluent quality criteria, thus I approve decant of Cell #5 of the Sewage Lagoon System. Please proceed with decant operations and keep me posted on progress. Thanks for your cooperation and compliance with the new requirements of your water licence. If you have any questions or concerns with regard to the above authorization, or decant operations, please don't hesitate to contact me.

Regards,

Wendy

Wendy Bidwell

Water Resource Officer

South Slave Region

Department of Environment & Natural Resources

Government of the Northwest Territories

P.O. Box 900 | Fort Smith, NT | X0E 0P0

Tel: 1-867-872-6421 | Cell: 1-867-446-3775 | Fax: 1-867-872-4250

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From: Wendy Bidwell
To: [Heather Scott](#)
Cc: [Erica Janes](#)
Subject: RE: Emailing: 160992 - 1617 - FINAL REPORT, 160992 - 1617 - FINAL REPORT
Date: Thursday, October 13, 2016 9:28:13 AM

Hi Heather/Erica

Thanks for the follow up. I will be sending out approval to decant to the Hamlet directly.

Thanks,

Wendy

Wendy Bidwell
Water Resource Officer
South Slave Region
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Email: wendy_bidwell@gov.nt.ca
Web: <http://www.enr.gov.nt.ca>

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please delete it immediately and notify us by telephone. Thank you.

-----Original Message-----

From: Heather Scott [<mailto:heather.scott@mvlwb.com>]
Sent: Wednesday, October 12, 2016 2:26 PM
To: Wendy Bidwell
Cc: Erica Janes
Subject: RE: Emailing: 160992 - 1617 - FINAL REPORT, 160992 - 1617 - FINAL REPORT

Wendy/Erica-

I do not see any concern with the commencement of decant. BTEX concentrations are low/undetectable and Extractable Hydrocarbons are at a concentration lower than 5mg/L - the concentration that is often used as discharge criteria for this parameter in Water Licences issued by the Board.

Heather Scott, M.A.Sc., P.Chem.
Technical Advisor
Mackenzie Valley Land and Water Board
7th Floor, 4922 48th St, PO Box 2130 | Yellowknife, NT | X1A 2P6 ph 867.766.7463 | fax 867.873.6610
heather.scott@mvlwb.com | www.mvlwb.com Please note: All correspondence to the Board, including emails, letters, faxes and attachments are public documents and may be posted to the public registry.

-----Original Message-----

From: Wendy Bidwell [mailto:Wendy_Bidwell@gov.nt.ca]
Sent: October 11, 2016 1:43 PM

To: Heather Scott <heather.scott@mvlwb.com>
Cc: Erica Janes <ejanes@mvlwb.com>
Subject: FW: Emailing: 160992 - 1617 - FINAL REPORT, 160992 - 1617 - FINAL REPORT

Hello,

Please see attached the results the Hamlet of Fort Providence forwarded to me this morning. These are the results for BTEX and Total Purgeable HC's. Levels look low. TEH came back at 3.2mg/l. Haven't seen results for another O&G sample though. Should we wait on these results prior to me authorizing decant? I know they are anxious to get started given the time it takes to decant-3 weeks and the weather window closing. I will follow up with Hamlet to see if they have collected the O&G sample.

Thanks,

Wendy

Wendy Bidwell
Water Resource Officer
South Slave Region
Department of Environment & Natural Resources Government of the Northwest Territories P.O. Box 900 I Fort Smith, NT I X0E 0P0
Tel: 1-867-872-6421 I Cell: 1-867-446-3775 I Fax: 1-867-872-4250
Email: wendy_bidwell@gov.nt.ca
Web: <http://www.enr.gov.nt.ca>

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-----Original Message-----

From: Robert [<mailto:provwork@ssimicro.com>]
Sent: Tuesday, October 11, 2016 7:58 AM
To: sao@fortprovidence.ca
Cc: Wendy Bidwell
Subject: FW: Emailing: 160992 - 1617 - FINAL REPORT, 160992 - 1617 - FINAL REPORT

-----Original Message-----

From: Glen Hudy [mailto:Glen_Hudy@gov.nt.ca] On Behalf Of taiga
Sent: October 6, 2016 10:21 AM
To: provwork@ssimicro.com
Subject: Emailing: 160992 - 1617 - FINAL REPORT, 160992 - 1617 - FINAL REPORT

Robert,

Please see attached for final report 160992.

Have a good day.

Glen Hudy
Taiga Environmental Laboratory
Environment and Natural Resources

Government of the Northwest Territories

Main Line: 867-767-9235 Ext. 53151 I Fax: 867-920-8740 taiga@gov.nt.ca

Your message is ready to be sent with the following file or link attachments:

160992 - 1617 - FINAL REPORT

160992 - 1617 - FINAL REPORT

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.



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

Taiga Batch No.:
160992

- FINAL REPORT -

Prepared For: Hamlet of Fort Providence

Address: General Delivery
Fort Providence, NT
X0E 0L0

Attn: Robert Tanche

Facsimile: (867) 699-4624

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, October 06, 2016

Print Date: *Thursday, October 06, 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.:
160992

- CERTIFICATE OF ANALYSIS -

Client Sample ID:

Taiga Sample ID: **001**

Client Project:

Sample Type: Sewage

Received Date: 04-Oct-16

Sampling Date: 03-Oct-16

Sampling Time: 11:00

Location: Lagoon

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Organics						
Benzene	< 0.005	0.005	mg/L	04-Oct-16	EPA8260B	
Ethylbenzene	< 0.005	0.005	mg/L	04-Oct-16	EPA8260B	
F2: C10-C16		0.2	mg/L		EPA8015B	16
F3: C16-C34		0.2	mg/L		EPA8015B	16
F4: C34-C50		0.2	mg/L		EPA8015B	16
Hydrocarbons, Total Extractable		0.2	mg/L		EPA8015B	16
Hydrocarbons, Total Purgeable	< 0.3	0.3	mg/L	04-Oct-16	EPA8015	
Toluene	< 0.005	0.005	mg/L	04-Oct-16	EPA8260B	
Xylenes	< 0.005	0.005	mg/L	04-Oct-16	EPA8260B	

ReportDate: Thursday, October 06, 2016

Print Date: *Thursday, October 06, 2016*

Page 2 of 3



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

Taiga Batch No.:
160992

- CERTIFICATE OF ANALYSIS -

Client Sample ID:

Taiga Sample ID: **001**

- DATA QUALIFIERS -

Data Qualifier Descriptions:

16 *Test requested but no sample bottle received*

*** 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, October 06, 2016

Print Date: *Thursday, October 06, 2016*

Page 3 of 3

Appendix E

Location of SNP Sampling Points

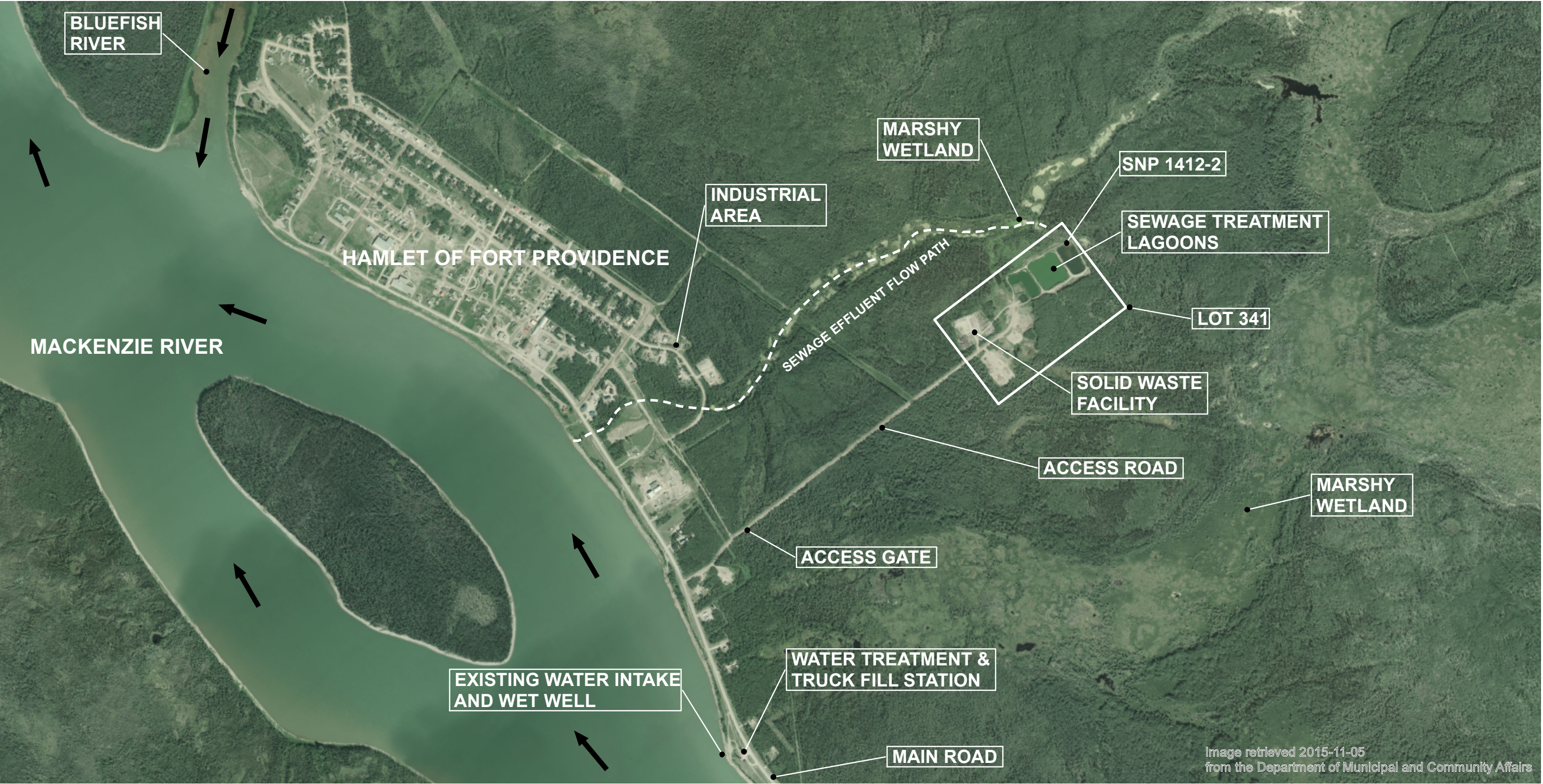


Image retrieved 2015-11-05
from the Department of Municipal and Community Affairs

FORT PROVIDENCE

Water and Waste Facility Locations
FIGURE 1



← FLOW DIRECTION



MAP DRAWING INFORMATION:
DATA PROVIDED BY GNWT

MAP CREATED BY: PMH
MAP CHECKED BY: ALP
MAP PROJECTION: NAD 1983 UTM Zone 11N

SCALE 1:14,000

0 125 250 500 Meters

