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October 18, 2005

Your file – Votre référence
XXX-XXXX

Our File – Notre référence
G03L3-001

Sent by mail/e-mail

Hamlet of Fort McPherson
P.O. Box 57
Fort McPherson, NT
Canada X0E 0J0

Attention: Troy Jenkins, Senior Administrative Officer

Dear Mr. Jenkins:

**RE: SEPTEMBER 13, 2005 INSPECTION OF WATER LICENCE G03L3-001
HAMLET OF FORT MCPHERSON**

As you may be aware, Kevin Glowa, Water Resources Officer, conducted an inspection at the Hamlet of Fort McPherson (the 'Hamlet') on September 13, 2005. Specifically, the Hamlet's water supply and waste disposal facilities were inspected under Water Licence G03L3-001. Enclosed is a copy of the Inspection Report (4 pages) for your review and records.

Unfortunately, as depicted on page two (2) there were three (3) violations during this inspection period. Please review this violation. Furthermore, there are a few concerns as indicated in the enclosed Inspection Report that are to be reviewed and, if possible, addressed.

It is clear that considerable work has been conducted to resolve many of the violations as depicted in the August 2004 Inspection Report. INAC recognizes and appreciates this effort. However, as indicated above there are still a few unresolved issues that have yet to be resolved.

Pending your review, a copy of this report will be sent to the Gwich'in Land and Water Board on **November 1, 2005** for their review and/or public records. If no response is received by this date we will assume you have no concerns.

If you have any questions/concerns regarding the enclosed, and/or if additional information is required, please do not hesitate to contact Mr. Glowa at (867) 777-3662.

Sincerely,

Rudy Cockney
District Manager
KRG/rc

Enclosure: Municipal Inspection Report (4 pages)



MUNICIPAL WATER LICENCE INSPECTION REPORT

DATE:	September 13, 2005	COMPANY REP:	Ernie Firth (foreman)
LICENSEE:	Hamlet of Ft. McPherson	LICENCE #:	G03L3-001

WATER SUPPLY – Figures 1-4 (page 3)

Source:	Deep Water Lake	Quantity Used:	2003 - ~ 37000 m ³	Meter Rdg:	152802 L (figure 4)
Owner/Operator:	GNWT/DPW				

Indicate:	A - Acceptable	U - Unacceptable	N/A - Not Applicable	N/I - Not Inspected			
Intake Facilities	A	Storage Structures	A	Treatment Systems	A	Chem. Storage	A
Flow Meas. Device	A	Conveyance Lines	A	Pumping Stations	A	Modifications	N/A

Concerns: No Concerns.

Notes:

- As indicated in the 2003 Annual Report the total volume used in 2004 was 37,344 m³ and was < than the Licence limit of 60,000 m³. Water use in 2003 was similar to that in 2004.
- Water Supply Facilities were secure.
- Chemicals located at the Ft. McPherson Water Treatment Facility (figure 1) included liquid chlorine (12%) Sanitizer/Sodium Hypochlorite, Calgon CAT-FLOC and Aluminum Sulphate Liquid (Alum). All MSDS sheets were present on site.
- All water records at the Water treatment Facility were in good order. Daily readings generally include temperature, pH, turbidity, color, manganese, iron and free/total chlorine.
- No “alternate water supply” has been utilized. All water is currently being trucked from Deep Water Lake.
- Ernie Debastien is the DPW maintenance supervisor at the Water Treatment Facility (figure 1).
- All water meters seemed to be functioning (figure 2-4).

WASTE DISPOSAL – Figures 5-14 (page 3-4)

Sewage	Sewage Treatment System (primary, secondary, or tertiary):		Primary followed by a system of small Waterbodies/wetland areas (secondary) and eventually to the Peel River. See Annual Report			
	Natural Water Body:	✓	Continuous Discharge (land or water):	✓		
	Seasonal Discharge:		Wetlands Treatment:		Trench:	

Solid Waste	Owner/Operator:	Hamlet of Ft. McPherson				
	Landfill:	✓	Burn & Landfill:	No longer permitted	Other:	

Indicate:	A - Acceptable	U - Unacceptable	N/A - Not Applicable	N/I - Not Inspected			
Discharge Quality:	A	Construction:	A	Disch. Meas. Dev.	N/A	Freeboard:	A
Decant Structures:	A	O&M Plan:	U ⁵	Dams, Dykes:	A	Seepages:	A
Dyke Inspections:	A	A&R Plan:	N/A	Erosion:	A	Spills:	N/I

Periods of Discharge:	Spring and Fall	Effluent Discharge Rate:	- Discharge from SNP 1669-2 was approved see notes
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Concerns:

- When discharging from the Sewage Disposal Facilities (SDF) at SNP 1696-2 (figure 16) please discharge as slow as possible and in a regulated manner: i.e. if possible discharge only for eight to ten hours every two days. This will help allow for high dilution as effluent slowly moves through the system. This concern is from high ammonia levels that could affect the immediate discharge area. Please see note four (4) below.
- Incineration of domestic garbage at the Solid Waste Disposal Facility (SWDF) is no longer permitted in the NWT (figure 8).
- Part D9 – Unclear if weather conditions during SNP sampling are recorded.
- Parts F3 – Please ensure an Inspector is notified when the freeboard is exceeded at the Sewage Lagoon.
- Part I1 - Updated O&M Plan for the SWDF and SDF not received. As per the 2004 Annual Report the latest O&M Plan is dated 1997 and submitted to the board in 1999. The revised plan was due February, 2004.
- Even though it is clear that work has started regarding clean up the SWDF hazardous wastes/waste oil disposal area (figure 9-11) considerable work is still required. During this site visit there was obvious evidence of considerable release of materials (figure 10-11) from this area as much of the ground was **still** saturated with oil and/or other materials.
- It is clear that not all hazardous wastes/waste oil is making it to the appropriate location (figure 9) as considerable waste oil spillage was seen at the SWDF metal waste disposal area (figure 6-7).
- In reference to concern 6, 7 above and flagged in previous years Inspection Reports “efforts must be made do dispose of these materials at a certified disposal facility”. Long term and/or permanent storage of these materials is not recommended.
- SNP Part C3 – Using pump flow rate and pump run time the quantities of sewage discharged from SNP station 1696-2 during spring and fall decants is required.

WASTE DISPOSAL (CONT.)

Notes:

- Signage in and around the SWDF and SDF is excellent.
- SWDF waste segregation and signage (figures 12-16) is generally good and well maintained.
- For reference and as indicated in the 2004 Annual Report other studies/reports have been produced and include:
 1. Earthtech. Hamlet of Fort McPherson Waste Study, March 2004.
 2. Earthtech – Performance and Potential Improvements to Anaerobic Lagoon in Fort McPherson, N.W.T. May, 2004; and
 3. Ferguson Simek Clark. Fort McPherson Wetland Study. March 2005. **In contrary to this report please note that there are currently no discharge criteria for ammonia in the Water Licence.**
- Previous concerns of high ammonia being discharged from primary lagoon have been addressed. Please refer to the various aforementioned studies. In conclusion, it seems that the system is working effectively. Upon review of sample results as provided in the 2003 and 2004 Annual Reports from SNP 1696-4 it seems that this is the case as sample results are excellent. In support of this observation the “Fort McPherson Wetland Study” (see above) concluded that the current treatment reduces the ammonia to a fraction of the influent value. It is also suggested that the system be upgraded to facilitate continuous discharge as opposed to bi-annual decants.
- As flagged in the 2004 Annual Report and the aforementioned anaerobic lagoon study it is suggested that “the sewage treatment “system” for the lagoon discharge could be expanded in the future to include the downstream wetland areas”.
- Observations of the soil type in and around the SWDF indicated that the parent geological material contains considerable amounts of clay. This is of particular importance around the hazardous waste/waste oil storage area where considerable amounts of spilled waste oil (figure 9-11) has occurred. The clay will help “contain” the spilled material.

FUEL STORAGE – No Figures

Owner:	GNWT/DPW	Operator:	GNWT/DPW	Condition of Tanks:	Excellent
Berms & Liners	N/A	Water within Berm:	N/A	Evidence of Leaks:	None
Drainage Pipes:	N/A	Pump Station and Catchment Berm:	N/A		
Pipeline Condition:	Excellent				

Notes:

- Northern Steel diesel storage tank was secure and in excellent condition.

SERVELLANCE NETWORK PROGRAM (SNP) – Figures 15-16 (page 3-4)

Samples Collected (Hamlet)	SNP samples were collected from all relevant SNP stations in 2004. Please refer to the Annual Reports. All samples results from SNP 1696-4, collected during spring and fall decants (2004), generally exceeded Part D2 effluent discharge criteria.				
(DIAND)	Samples collected from SNP 1696-2 and from raw water in the Water Treatment building (figure 1).				
Signs Posted: SNP	All SNP signs posted and in good order.			Warning	Yes
Records & Reporting:	2003 Annual Report received from Earth-Tech August 29, 2005. 2004 Annual Report received from Earth-Tech June 6, 2005. All Annual Reports are complete and very thorough. Upon review of our records the 2004 Annual Report was received March 31, 2005 and was on time.				
Geotechnical Inspection	N/A				

Concerns:

1. Please ensure ammonia is tested in every sample collected from SNP station 1696-2 and 4.
2. As per Part B1 please ensure that the Annual Reports are submitted by March 31 every year.

Notes:

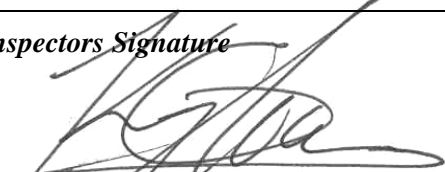
- SNP Part B2 – SNP stations 1696-3, 4, 5 was sampled in March, 2005. As per the SNP all parameters were sampled and analyzed.

<i>Non compliance / Violations of Act or License:</i>	<ol style="list-style-type: none"> 1. Part B7 – Water Supply Sign identifying the “Deep Water Lake Water Supply” absent. 2. Part II- Updated O&M Plan not received.
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General / Additional Inspection Comments:

1. Licence expires August 31, 2007. A new application is due January 1, 2007 (eight months prior to expiry).

Figures Below:	Yes	✓	No	
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<i>Inspectors Name</i> Kevin R. Glowa (M.Sc., R.P. Bio.) Water Resource Officer	<i>Inspectors Signature</i> 
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LIST OF FIGURES FOR INSPECTION REPORT

Figure 1. Water Supply. Water Supply Facilities (WSF) treatment building.



Figure 2. Water Supply. WSF Raw water and truck offload water meters.



Figure 3. Water Supply. WSF water meter and Deep Lake intake building.



Figure 4. Water Supply. WSF Deep Lake raw water meter and entrance signage.



Figure 5. Waste Disposal. Sewage Disposal Facilities (SWD).

Figure 6. Waste Disposal. Solid Waste Disposal Facilities metal waste disposal area.



Figure 7. Waste Disposal. SWDF metal waste disposal area.

Figure 8. Waste Disposal. SWDF domestic garbage disposal area.



LIST OF FIGURES FOR INSPECTION REPORT CONTINUED

Figure 9. Waste Disposal. SWDF hazardous waste/waste oil disposal area.



Figure 10. Waste Disposal. SWDF hazardous waste/waste oil disposal area.



Figure 11. Waste Disposal. SWDF hazardous waste/waste oil disposal area.



Figure 12. Waste Disposal. SDF and SWDF signage.



Figure 13. Fuel Storage. SWDF signage.



Figure 14. Fuel Storage. SWDF signage.



Figure 15. SNP. SNP station 1696-1(b) at Deep Water Lake and SWDF 1696-2 respectively.



Figure 16. SNP. SNP station 1696-2 and 1696-5 respectively.

