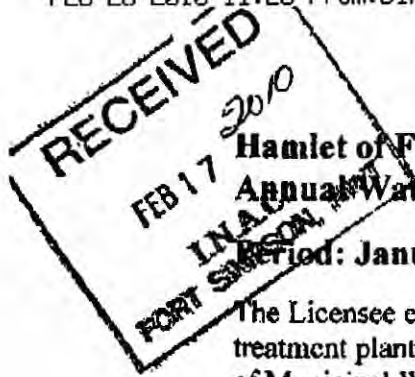


COPY

REC'D	
FEB 10 2010	
February 10, 2010	
N3L3-1478	

**Hamlet of Fort Liard****Annual Water License Report 2009****Water License N3L3-1478****Period: January 1st through December 31st, 2009**

The Licensee ensures that consistency and quality control in daily operations of the water treatment plant is in practice and maintained on a daily basis by Alan Harris our Manager of Municipal Works and Water Treatment Class I certified operator, one plant operator in training Robert Firth, who began in March 2009, and our stand by maintainer/operator Bernie Bonnetrouge, Facility Operations. We are currently working on a renewal of our Water License which expires at the end of February 2010.

New equipment installed within the Water Treatment Plant/System was the replacement of Well Pump #1 due to pump failure. This was completed February 10, 2009. Problems were noted on the 2008 Water license Report of high Manganese levels within our system. Attempts to control high post filter manganese levels led to our bringing in consultant, Waclaw Trebacz with Dillon Consulting to review our system procedures. On March 13 these procedures were changed to our no longer injecting Potassium Permanganate on a constant flow basis to operating with ongoing three month filter recharge with Potassium Permanganate. Mn levels have remained at proper readings since this change. Water Inflow, Outflow and Truck delivery totals are still showing slight differences after their 2008 replacement and Dillon Consulting is currently preparing documents for proposed needed changes including replacement of metering devices, and upgrades to be installed during the 2010 season. All normal regular maintenance work necessary has been completed as required.

Regular water tests of Hamlet water trucks and water plant output is completed with test results submitted to the Environmental Health Officer at the end of each month. Water delivery trucks were cleaned and disinfected once during this report period. Tanya Rarog, Environmental Health Officer with Stanton Territorial Health Authority, performed an environmental health inspection in September, 2009. No problems were noted at that time.

The solid waste site has been operating with no difficulties with ongoing packing and burying of solid waste material. We completed a sorting and relocation of Hazardous and re-usable construction into item specific locations with the hazardous waste being removed and transported for safe disposal with Wide Sky Disposals. With the waste disposal area quickly approaching capacity Dillon Consulting is working on the design of a new solid waste disposal site currently planned to be constructed during the year 2010.

Effluent tests were taken in June (copy of test results attached), and it was confirmed that the effluent contained within Sewage Lagoon #3 met the parameters outlined in our water licence and decants of this cell was completed. Due to heavy end of August and most of September rainfall an Emergency Decant of Cell #3 had to be performed in early October under the direction of Troy Searson, INAC Water Resource Officer. (Copy of test results attached) The continuing rainfall during October and the heavy snowfall we received at the end of October forced a second Emergency decant of both Cell #2 and #3 at the beginning of November. Cell to cell transfers were performed in March, April, May, and June. Cell to cell transfers were also completed again in October and November following decant operations. No modifications were made to the active sewage lagoons during the year of 2009. Maintenance consisted of ongoing stabilization of the dyke structures and general lagoon and dyke edge clean-up.

Attachments:

- Monthly Water Consumption Volume in litres 2009
 - Municipal Water Deliverics Volume 2009
 - Bulk Water Volume 2009
 - Backwash system totals 2009
- Sewage Disposal Volumes 2008
- Alpha Laboratory Technical Report (June, 2009)
- Alpha Laboratory Technical Report (October 2009)

Copy of this report to:

John McKee, Senior Administration Officer, Hamlet of Fort Liard
Ed Hornby, South Mackenzie District, DLAND, Yellowknife
Troy Searson, Water Resource Officer, INAC, Ft. Simpson

Monthly Water Consumption 2009**INFLOW Totals**

January	4,004,583.1
February	3,738,329.8
March	3,717,333
April	3,352,077
May	3,733,644
June	3,585,559
July	3,242,087
August	2,404,978
September	2,173,820
October	2,376,914.2
November	2,413,144.8
December	<u>2,486,594.0</u>

Yearly total 2009**38,229,063.90 litres****38,229 m3**

Municipal Water Delivered 2009 (Lock 3)

January	1,671,614
February	1,528,075
March	1,714,856
April	1,701,944
May	1,907,756
June	1,882,719
July	1,660,059
August	1,700,387
September	1,663,567
October	1,620,402
November	1,606,956
December	<u>1,659,744</u>
	20,318,079

Bulk Water (litres) 2009 (Lock 1,2,4,5,6)

January	559,472
February	595,254
March	631,687
April	389,116
May	396,893
June	496,696
July	471,309
August	386,825
September	82,823
October	183,329
November	269,623
December	<u>380,017</u>
<u>Total:</u>	4,843,044

Fort Liard 2009

Water Plant Greensand 2009 Backwash Totals:

Softner System Backwash Totals:

January	286,286.9	186,000.00	
February	232,290.3	174,000.00	
March	40,395.8	186,000.00	
April	25,906.1	180,000.00	
May	36,737.1	186,000.00	
June	45,154.8	180,000.00	
July	61,587.7	186,000.00	
August	68,040.2	186,000.00	
September	75,100.0	180,000.00	
October	58,638.3	186,000.00	
November	6180.0	180,000.00	
December	<u>12,842.20</u>	<u>186,000.00</u>	
Backwash Totals	949,159.4 litres	litres	2,196,000 litres

Fort Liard Water Plant Softener System Backwash Totals:

- Estimate 3000 litres per Model 2900 daily backwash cycle
- 3000 X 2 = 6000 litres daily
- 6000 X 365 days = 2,190,000 litres

	Greensand backwash	
+	2,196,000	Softner backwash total
=	<u>949,159.4</u>	Filter Backwash total
	3,145,159.4	LITRES

Pump out Sewage 2009

January	1,688,330	
February	1,543,356	
March	1,732,005	
April	1,718,963	
May	1,926,834	
June	1,901,546	
July	1,676,660	
August	1,717,391	
September	1,680,203	
October	1,636,606	
November	1,623,026	
December	1,676,341	
	<hr/>	
	20,521,261	litres
Total Sewage =	20,521	m3

Total sewage volumes calculated at total domestic water plus 1%.



ALPHA LABORATORY SERVICES LTD.

Analytical and Consulting Services

17225 - 108 Avenue
 Edmonton, Alberta T5S 1H7
 Phone: (780) 489-9100 Fax: (780) 489-9700

TECHNICAL REPORT

To: Hamlet of Fort Liard
 General Delivery
 Fort Liard NT X0G 0A0

File: 31200
 Date: June 17, 2009
 Client PO: 2925
 Attention: Alan Harris

Project: Sewage Lagoon #3

Parameter	Unit	Sample ID	Cell #	Test Methods	Date Analyzed	Analyst Initials
		Date Sampled:	Jun. 3/09	N/A		
Biochemical Oxygen Demand	mg/L		18	5210 B	Jun. 4/09	N.M.
Total Suspended Solids	mg/L		92	2540 D	Jun 4/09	P.B.R.
Fecal Coliforms	CFU/100 ml.		<1	9222 A, D	Jun. 11/09	C.H.

Ⓞ Based on Standard Methods for the Examination of Water and Wastewater, 21st Edition.



ALPHA LABORATORY SERVICES LTD.

Analytical and Consulting Services

17225 - 109 Avenue
 Edmonton, Alberta T5S 1H7
 Phone: (780) 489-9100 Fax: (780) 489-9700

TECHNICAL REPORT

To: **Hamlet of Fort Liard
 General Delivery
 Fort Liard NT X0G 0A0**

File: **31716**
 Date: **October 1, 2009**
 Attention: **Bernard Bonnetrouge**

Project: **Water Sample**

Parameter	Unit	Sample ID:	Cell #2	Cell #3	Date Analyzed	Analyst Initials
		Date Sampled:	Sept. 22/09	Sept. 22/09		
Total Suspended Solids	mg/L		109	35	Sept. 29/09	L.M.
Fecal Coliforms	mg/L		<1	<1	Sept. 23/09	T.C.
Biochemical Oxygen Demand	mg/L		31	16	Sept. 25/09	C.P.

Parameter	Unit	Sample ID:	Test Methods
		Date Sampled:	ⓐ
Total Suspended Solids	mg/L		2540 F
Fecal Coliforms	mg/L		9222 A, D
Biochemical Oxygen Demand	mg/L		5210 B

ⓐ Based on Standard Methods for the Examination of Water and Wastewater, 21st Edition.