October 9, 2013

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: September 2013 Drinking Water Systems Monthly Summary Report

Please find attached the September 2013 Summary Report on the drinking water systems, prepared by Randy White, Senior WTP Operator.

Your Administration recommends that Operations & Facilities Executive Committee accept the September 2013 report as presented.

Respectfully submitted,
Operations & Facilities Division

Doug Brown

Doug Brown, P. Eng.
Manager of Operations & Facilities

Council approval of this report will accept the September 2013 Drinking Water Systems Monthly Summary Report and approve the report prior to it being made available to the general public.

c.c. – Doug Herr, Environmental & Facilities Supt.
Randy White, Senior WTP Operator

09 Council Water ReportSeptember 2013.doc

RECOMMENDED
OCT 23 2013
DIV. MNG. Doug Brown
EXECUTIVE COMM. R. Wiederhoft

September, 2013

Monthly Summary Report
Water Systems

Prepared by: Randy White, ORO
Senior Water Treatment Plant Operator

Dated: October 09, 2013

1) **Introduction -**

This report contains the major maintenance activities and operational events that occurred during the month of September 2013 at the Water Treatment Plant - Water Works # 220000978 and the Airport Groundwater Well Water Works # 26002736. This information report has been prepared for Council to better understand how the water systems they own and operate are maintained on a monthly basis. Also, this report will assist Council as Directors of the Corporation in exercising its obligation to meet a reasonable Standard of Care as outlined in Section 19 of the Safe Drinking Water Act.

2) **Flow Data**

Water Treatment Plant: See attached spreadsheet. No flow data for Airport groundwater well.

3) **Microbiological (Health Related) Water Analysis– Main Water System # 220000978**

Water Treatment Plant (treated): 4 samples taken no adverse results
Water Treatment Plant (raw): 4 samples taken no adverse results
Water Distribution System: 16 samples taken where 25% of samples were tested for heterotrophic plate count HPC no adverse results

We take microbiological samples on a weekly basis, which includes 1 raw sample, 1 treated sample and 4 distribution samples. The 4 distribution samples are taken at different locations throughout the distribution system.

4) **Microbiological (Health Related) Water Analysis– Airport Groundwater Well # 26002736**

No samples taken.

The Airport has signs posted in the men's and women's washroom stating that the water has not been tested or treated for drinking purpose in accordance with the Health Protection and Promotion Act – Section 7 of the Small Drinking Water Systems Regulation, O. Reg. 318/08 (*Amended to Safe Drinking Water Act, 2002 - Section 6 of Ontario Regulation 252/05)*. The operators do a visual inspection of the warning notices at a minimum of once per week to ensure that they are legible and comply with Ontario Regulation 318/08, Section 7(5).

5) **Free Available Chlorine Residual (FAC) – Main Water System – # 220000978**

FAC residuals are taken at a minimum daily at both the Water Treatment Plant and within the Water Distribution System.

6) **Free Available Chlorine residual (FAC) – Airport Groundwater Well System # 26002736**

Signs posted, exempt from testing.

7) **Maintenance Activities at the WTP**

Sept. 03rd - cleaned Turbidity meter # 4.

Sept. 05th - Todd Hahkala did routine maintenance on the diesel fire pump and ran it for 45 minutes to get ready for the 8 hour power outage on September 8, 2013.
- cleaned the four (4) check valves on the poly unit.
- cleaned the top and bottom tank on the poly unit.

Sept 08th - 8 hour power outage hooked up generators here and at water tower.

Sept 09th - took soda ash system apart and cleaned hoses and fittings and pump – put system back on line

Sept 12th - cleaned soda ash auger and elevator.

Sept 17th - rebuilt soda ash pumps.
- flushed poly lines to the clarifiers.

Sept 24th - took grab samples from the filter turbidities.
- recalibrated distribution chlorine analyzer.

Sept 26th - cleaned the four (4) check valves on the poly unit.
- cleaned the top and bottom tank on the poly unit.

Sept 30th - changed west chlorine tank.

8) **Water Complaints –**

- Poor Pressure – 0 complaint.
- Water quality – 0 complaints.

9) **Other Miscellaneous Information:**

Sept. 03rd - took weekly routine bacteria samples

Sept. 04th - took quarterly samples at Water Treatment Plant and Tower.
- took total suspended solids (TSS) samples at Water Treatment plant.
- took bacteria samples at Sunny Cove.
- took quarterly samples at Sunny Cove.

Sept. 09th - took weekly routine bacteria samples.

Sept. 10th - new water main samples – 1st set.

Sept. 12th - new water main samples – 2nd set.
- water service repair samples; 413 First St. E. – 1st set.

Sept. 16th - took weekly routine bacteria samples
- water service repair samples; 413 First St. E. – 2nd set.
- water service repair samples; 611 Victoria Ave. – 1st set.

Sept. 17th - service repair samples; 611 Victoria Ave. – 2nd set.

Sept. 23rd - took weekly routine bacteria samples.

Sept. 26th - Q.M.S. meeting.

Sept. 27th - Tailgate meeting at Public Works.

Sept. 30th - water service repair samples; 712 Nelson St. – 1st set.

10) In order to acknowledge that all levels of responsibility within the Corporation of the Town of Fort Frances have received and reviewed this monthly report, it is necessary to sign-off in the appropriate location below:

- Randy White, ORO, Senior WTP Operator: _____
- Doug Herr, Environmental & Facilities Supt.: _____
- Doug Brown, Manager of Operations & Facilities: _____
- Mark McCaig, CAO: _____
- Rick Wiedenhoeft, Chair O& F Exec Committee: _____
- Roy Avis, Mayor: _____
- Paul Ryan, Councillor: _____
- John Albanese, Councillor: _____
- Andrew Hallikas, Councillor: _____
- Doug Kitowski, Councillor: _____
- Ken Perry, Councillor: _____

Note: Once all signatures have been obtained, the report will be distributed and made available to the public. If you have any questions, please feel free to contact myself or Randy White, Senior WTP Operator at 274-2325.

Town of Fort Frances - WTP - 220000978
September 2011/2012vs September 2013
Flow and Operating Data

Flow Data SEPTEMBER	Units	2011		2012		2013	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		190980		180550		151120
Raw Maximum Day	m^3	Sunday 11th	7550	Tuesday 04th	7240	Saturday 07th	6390
Raw Minimum Day	m^3	Friday 30th	5500	Sunday 30th	5070	Saturday 21st	4370
Raw Avgerage Daily Consumption	m^3		6370		6020		5040
Total Treated Water	m^3		130060		129620		117050
Treated Water Maximim Day Consumption	m^3	Saturday 10th	5520	Tuesday 04th	5640	Sunday 08th	4390
Treated Water Minimim Day Consumption	m^3	Friday 23rd	3470	Saturday 22nd	3600	Saturday 21st	3310
Treated Water Average Day Consumption	m^3		4340		4320		3900
Daily Average Per Household Consumption Rate	m^3		1.15		1.14		1.03
* Daily Average Per Person Consumption Rate	m^3		0.54		0.54		0.49
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		1.87		1.73		1.81
Total Chlorine Residual - Treated Water	mg/L		2.22		2.06		2.18
Aluminum Sulphate - Raw Water	mg/L		34.5		33.9		34.0
Aluminum Sulphate - Treated Water Residual	mg/L		0.06		0.05		0.06
Fluoride - Treated Water	mg/L		0.63		0.62		0.58
Soda Ash - Raw Water	mg/L		34		34		34
PH - Adjusted	mg/L		7.22		7.38		7.15
Temperature	C		17.7		17.5		19.3
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		6588.8		6133.1		5138.1
Polyelectrolyte	kg		50		75		62.5
Chlorine Gas	kg		774		717		475
Soda Ash - Used for PH Adjustment	kg		6493.3		6138.7		5138.1
Fluoride	kg		693		570		578

* The Canadian Average is 450 Litres (0.45 m^3) per day.
* Population is 7986
* Number of Households is 3783

Town of Fort Frances - Water treatment Plant - Water Works # 220000978
Monitoring Record
September 2013

Operating Data	Units	*MAC or Range	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total	Average
Flow rates																																		
Raw Water	10^3 M^3	17	4.94	5.18	4.91	5.24	5.26	6.12	6.39	6.00	4.82	6.03	6.03	4.92	4.78	4.90	4.77	4.58	4.79	4.75	4.75	4.74	4.37	4.97	4.88	4.73	4.67	4.78	4.66	4.77	4.63	4.76	151.12	5.04
Peak Instantaneous -Raw Water	L/s	n/a	59.96	59.76	59.4	59.1	61.9	71.33	78.2	81.6		114.7	70.6	70.51	70.31	55.9	55.8	55.8	55.8	55.68	55.7	55.8	55.7	55.6	55.5	55.4	55.4	55.3	55.4	55.3	55.2	55.31	1801.78	62.13
Treated Water	10^3 M^3	17	3.66	3.34	3.98	4.21	3.78	4.29	4.16	4.39	3.65	4.21	4.19	3.75	4.19	3.42	3.89	3.80	3.68	3.69	4.14	4.09	3.31	3.96	4.26	4.18	3.68	4.16	3.61	3.71	3.76	3.91	117.05	3.90
Peak Instantaneous - Treated Water	L/s	n/a	64.96	61.23	61.14	63.58	63.56	82.82	64.31	63.14		**105.20**	67.11	63.91	63.97	62.77	61.82	62.53	63.84	62.69	64.03	67.11	68.17	62.78	64.43	65.21	65.06	65.62	66.32	63.00	62.53	61.84	1914.68	66.02
BackWash Water	10^3 M^3	n/a	0.218	0.219	0.444	0.219	0.215	0.215	0.218	0.217			0.699	0.227	0.226	0.244	0.225	0.232	0.241	0.211	0.212	0.234	0.206	0.219	0.236	0.211	0.218	0.233	0.206	0.230	0.202	0.215	6.892	0.246
Fluoride Information																																		
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.54	0.55	0.58	0.60	0.61	0.60	0.60	0.61	0.61	0.60	0.59	0.51	0.50	0.52	0.60	0.61	0.59	0.61	0.52	0.51	0.53	0.52	0.51	0.56	0.58	0.60	0.63	0.64	0.68	0.68	17.39	0.58
Turbidity Information																																		
Raw Water	NTU	n/a	0.85	0.84	0.88	0.81	0.78	0.84	0.80	0.76	0.78	0.75	0.77	0.71	0.92	0.97	0.95	0.92	1.02	1.01	1.07	1.08	1.13	1.07	1.10	1.16	1.09	1.14	1.20	1.00	0.98	1.06	28.44	0.95
Settled Water	NTU	n/a	0.09	0.08	0.09	0.08	0.09	0.09	0.08	0.09	0.08	0.09	0.09	0.08	0.09	0.09	0.09	0.08	0.09	0.09	0.09	0.11	0.09	0.09	0.09	0.09	0.08	0.08	0.07	0.08	0.08	0.06	2.57	0.09
Treated Water	NTU	1	0.06	0.06	0.06	0.04	0.05	0.04	0.05	0.05	0.04	0.06	0.07	0.04	0.06	0.05	0.06	0.04	0.08	0.07	0.08	0.07	0.08	0.08	0.07	0.05	0.06	0.05	0.04	0.04	0.04	0.05	1.69	0.06
Other Operating Parameters																																		
pH - Treated Water	no units	6.5 to 8.5	7.21	7.24	7.20	7.24	7.28	7.10	7.07	7.22	7.20	7.17	7.10	7.15	7.01	7.10	7.15	7.12	7.12	7.17	7.17	7.15	7.22	7.14	7.18	7.22	7.13	7.16	7.11	7.09	7.07	7.07	214.56	7.15
pH - Settled water	no units	n/a	6.22	6.28	6.20	6.16	6.21	6.19	6.16	6.21	6.24	6.2	6.15	6.12	6.36	6.30	6.21	6.15	6.27	6.36	6.33	6.37	6.51	6.35	6.52	6.21	6.29	6.34	6.36	6.34	6.36	6.32	188.29	6.28
pH - Raw Water	no units	n/a	7.15	7.16	7.12	7.08	7.11	7.07	7.04	7.07	7.09	7.05	7.00	7.03	6.99	7.00	7.03	7.10	7.13	7.07	7.05	6.81	7.09	6.83	7.04	7.08	7.03	7.06	7.03	7.00	7.03	7.01	211.35	7.05
FAC - Treated Water	mg/l	0.2 to 4	1.64	1.60	1.57	1.61	1.78	1.88	1.91	1.9	1.98	1.96	1.94	1.96	1.90	1.96	1.89	1.73	1.79	1.76	1.86	1.78	1.69	1.70	1.65	1.80	1.85	1.84	1.86	1.91	1.88	1.81	54.37	1.81
Total Chlorine Residual Treated	mg/l	0.3 to 7	1.99	1.96	1.99	1.97	2.14	2.18	2.22	2.19	2.29	2.21	2.17	2.19	2.15	2.19	2.14	2.12	2.22	2.28	2.34	2.30	2.16	2.14	2.00	2.16	2.35	2.26	2.29	2.27	2.24	2.24	65.35	2.18
Temperature	C	15	23.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	20.0	20.0	21.0	20.0	20.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	578.0	19.3
Fluoride used (Total Daily Consumption)	kg	n/a	13.0	13.0	16.0	16.0	18.0	19.0	19.0	19.0	17.0	18.0	19.0	15.0	13.0	15.0	14.0	15.0	14.0	14.0	14.0	15.0	14.0	18.0	17.0	17.0	14.0	17.0	15.0	15.0	14.0	18.0	475.0	15.8
Chlorine used (Total Daily Consumption)	kg	n/a	22.0	24.0	21.0	24.0	25.0	31.0	35.0	32.0	25.0	31.0	32.0	23.0	22.0	22.0	22.0	22.0	22.0	21.0	22.0	22.0	20.0	23.0	22.0	22.0	21.0	22.0	21.0	22.0	21.0	22.0	716.0	23.9
Soda ash (Total Daily Consumption)	kg	n/a	168.0	176.1	166.9	178.2	178.8	208.1	217.3	204.0	163.9	205.0	205.0	167.3	162.5	166.6	155.7	162.9	161.5	161.5	161.2	148.6	169.0	165.9	160.8	158.8	162.5	158.4	162.2	157.4	161.8	5138.1	5138.1	337.1
Soda Ash - Dosage	mg/l	n/a	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	1020.0	34.0
Alum residual - (Total Daily Consumption	kg	n/a	168.0	176.1	166.9	178.2	178.8	208.1	217.3	204.0	163.9	205.0	205.0	167.3	162.5	166.6	155.7	162.9	161.5	161.5	161.2	148.6	169.0	165.9	160.8	158.8	162.5	158.4	162.2	157.4	161.8	5138.1	5138.1	337.1
Alum residual - Dosage	mg/l	n/a	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	1020.0	34.0
Alum residual - Treated Water	mg/l	0.1	0.09	0.08	0.06	0.06	0.07	0.08	0.07	0.06	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.09	0.06	0.09	0.09	0.08	0.03	0.04	0.06	0.04	0.03	0.04	0.06	0.07	0.06	0.02	1.72	0.06
Poly bags added (25 kg bags)	kg						0.5						0.5						0.5		0.5					0.5							62.5	