October 19, 2015

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: September 2015 Drinking Water Systems Monthly Summary Report

Please find attached the September 2015 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 2015 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 2015 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

03CouncilwaterreportMarch 2015

September, 2015

Monthly Summary Report
Water Systems

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

Dated: October 14 , 2015

1) **Introduction -**

This report contains the major maintenance activities and operational events that occurred during the month of September 2015 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 the inline mixer.

Sept. 03rd - calibrated alum pump.

Sept. 03rd - cleaned the top and bottom tank on the poly unit.

Sept. 03rd - cleaned the four (4) check valves on the poly unit.

Sept 09th - calibrated dist chlorine analyzer.

Sept 10th - took grab samples of the filters.

Sept 14th - calibrated dist chlorine analyzer.

Sept 11th - greased poly unit.

Sept 15th - repaired compressor # 2.

Sept 15th - changed oil and filters on compressor # 2.

Sept 22nd - M.O.L. visit to plant

Sept 23rd - calibrated dist chlorine analyzer.

Sept 24th - cleaned the four (4) check valves on the poly unit.

Sept 24th - cleaned the top and bottom tank on the poly unit.

8) **Water Complaints –**

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

9) **Other Miscellaneous Information:**

Sept. 01st - Service repair samples at Acklands 2nd set.

Sept. 01st - did quarterly samples at the plant and water tower.

Sept. 02nd - took water samples at landfill site.

Sept. 03rd -Temp main samples on Nelson St.

Sept. 08th - took weekly routine bacteria samples.

Sept. 09th - took bacteria samples at Sunny Cove.

Sept. 14th - took weekly routine bacteria samples.

Sept. 15th -Lakeside here for computer upgrade.

Sept. 16th - Lakeside here for computer upgrade.

Sept. 17th - Lakeside here for computer upgrade.

Sept. 18th - Lakeside here for computer upgrade.

Sept. 21st - took weekly routine bacteria samples.

Sept. 18th - reviewed chlorine S.O.P. (Draft)

Sept. 28th - New main samples at Tim Horton's 1st set.

Sept. 28th - took weekly routine bacteria samples.

Sept. 29th - New main samples at Tim Horton's 2nd set.

Sept. 30th -Service repair at 1228 Emo Road.

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: _____
- Paul Ryan, Chair O& F Exec Committee: _____
- Roy Avis, Mayor: _____
- John Albanese, Councillor: _____
- June Caul, Councillor: _____
- Wendy Brunetta, 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 2013/2014vs September 2015
Flow and Operating Data

Flow Data SEPTEMBER	Units	2013		2014		2015	
	Day of th	Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		151120		142440		166270
Raw Maximum Day	m^3	Saturday 07th	6390	Monday 01st	6270	Monday 14th	5810
Raw Minimum Day	m^3	Saturday 21st	4370	Monday 29th	3290	Sunday 20th	5150
Raw Avgerage Daily Consumption	m^3		5040		4750		5450
Total Treated Water	m^3		117050		106940		121920
Treated Water Maximim Day Consumption	m^3	Sunday 08th	4390	Tuesday 16th	4700	Tuesday 29th	4590
Treated Water Minimim Day Consumption	m^3	Saturday 21st	3310	Monday 22nd	3000	Monday 21st	3450
Treated Water Average Day Consumption	m^3		3900		3560		4060
Daily Average Per Household Consumption Rate	m^3		1.03		0.94		1.07
* Daily Average Per Person Consumption Rate	m^3		0.49		0.45		0.51
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		1.81		1.72		2.18
Total Chlorine Residual - Treated Water	mg/L		2.18		2.04		2.5
Aluminum Sulphate - Raw Water	mg/L		34.0		36.8		35
Aluminum Sulphate - Treated Water Residual	mg/L		0.06		0.04		0.02
Fluoride - Treated Water	mg/L		0.58		0.62		0.55
Soda Ash - Raw Water	mg/L		34.0		36.6		35
PH - Adjusted	mg/L		7.15		7.25		7.25
Temperature	C		19.3		16.8		18.8
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		5138.1		5246.1		5819.5
Polyelectrolyte	kg		62.5		50		50
Chlorine Gas	kg		475		653		796
Soda Ash - Used for PH Adjustment	kg		5138.1		5210.9		5819.5
Fluoride	kg		578		439		510

* 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 2015

Operating Data	Units	*MAC	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
		or Range																																
Flow rates																																		
Raw Water	10^3 M^3	17	5.49	5.51	5.49	5.49	5.68	5.56	5.63	5.58	5.54	5.48	5.64	5.37	5.57	5.81	5.57	5.44	5.58	5.56	5.60	5.15	5.77	5.56	5.46	5.61	5.54	5.54	5.56	5.50	5.53	5.46	166.27	5.54
Peak Instantaneous - Raw Water	L/s	n/a	65.26	64.31	65.4	65.5	65.6	65.81	65.8	65.6	65.3	65.13	65.3	65.3	65.99	65	65.1	65.1		65.01	65	64.9	**88.5**	65.2	65	64.8	64.7	64.8	64.6	64.7	64.7	64.61	1912.07	65.93
Treated Water	10^3 M^3	17	4.23	4.25	4.13	4.42	3.84	3.57	3.66	3.96	3.63	3.89	3.96	3.77	4.07	4.04	4.12	4.33	4.38	3.99	4.23	4.08	3.45	4.29	4.05	4.23	4.44	4.25	3.95	3.89	**4.59**	4.23	121.92	4.06
Peak Instantaneous - Treated Water	L/s	n/a	73.56	74.42		74.49	74.98	72.16	72.22	73.33	72.84	72.84	73.20	74.19	74.40	73.82	75.93	75.44		74.91	74.91	75.79		74.46	73.49	73.70	**76.55**	73.76	73.83	74.01	74.05	73.82	2001.10	74.11
BackWash Water	10^3 M^3	n/a	0.464	0.522	0.252	0.240	0.223	0.260	0.251	0.246	0.360		0.584	0.223	0.254	0.235	0.222	0.258	0.223	0.233	0.253	0.223		0.232	0.254	0.231	0.230	0.251	0.231	0.229	0.248	0.230	7.662	0.274
Fluoride Information																																		
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.53	0.51	0.66	0.54	0.53	0.53	0.58	0.52	0.54	0.56	0.56	0.56	0.56	0.52	0.50	0.51	0.54	0.55	0.52	0.53	0.53	0.55	0.52	0.52	0.54	0.57	0.56	0.57	0.64	0.53	16.38	0.55
Turbidity Information																																		
Raw Water	NTU	n/a	1.27	1.08	1.04	1.15	1.04	1.18	1.24	1.01	1.14	1.28	1.54	1.61	1.41	1.30	1.48	1.35	1.39	1.32	1.21	1.27	1.47	1.46	1.63	1.68	1.87	1.74	1.43	1.49	1.66	1.51	41.25	1.38
Settled Water	NTU	n/a	0.09	0.12	0.13	0.34	0.16	0.16	0.10	0.09	0.09	0.09	0.18	0.11	0.10	0.14	0.13	0.15	0.12	0.17	0.12	0.14	0.12	0.13	0.11	0.12	0.13	0.14	0.18	0.11	0.10	0.12	3.99	0.13
Treated Water	NTU	1	0.06	0.08	0.08	0.07	0.08	0.09	0.09	0.08	0.08	0.07	0.07	0.05	0.05	0.07	0.08	0.08	0.07	0.12	0.06	0.09	0.09	0.09	0.07	0.07	0.09	0.08	0.07	0.07	0.07	0.08	2.30	0.08
Other Operating Parameters																																		
pH - Treated Water	no units	6.5 to 8.5	7.17	7.12	7.31	7.34	7.36	7.16	7.10	7.39	7.31	7.36	7.38	7.32	7.32	7.27	7.36	7.36	7.25	7.22	7.17	7.12	7.24	7.23	7.18	7.28	7.15	7.24	7.19	7.21	7.23	7.27	217.61	7.25
pH - Settled water	no units	n/a	6.06	6.10	6.23	6.59	6.41	6.34	6.26	6.34	6.38	6.3	6.66	6.21	6.31	6.37	6.27	6.32	6.21	6.19	6.31	6.40	6.57	6.36	6.37	6.57	6.41	6.36	6.28	6.34	6.31	6.32	190.15	6.34
pH - Raw Water	no units	n/a	7.01	7.01	7.09	7.12	7.13	7.09	7.08	7.00	7.07	7.15	7.09	7.09	7.04	7.11	7.11	7.12	7.10	7.05	7.12	7.15	7.15	7.12	7.16	7.12	7.09	7.05	7.05	7.14	7.09	7.15	212.85	7.10
FAC - Treated Water	mg/l	0.2 to 4	2.16	2.26	2.17	2.14	1.97	1.68	1.82	2.0	2.06	2.02	2.14	2.22	2.34	2.20	2.19	2.19	2.06	2.00	2.50	2.20	2.34	2.20	2.17	2.30	2.28	2.32	2.26	2.28	2.38	2.48	65.35	2.18
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.60	2.60	2.50	2.44	2.28	1.90	2.06	2.28	2.36	2.32	2.48	2.52	2.64	2.54	2.66	2.54	2.27	2.20	3.00	2.41	2.68	2.58	2.52	2.62	2.66	2.68	2.68	2.70	2.60	2.76	75.08	2.50
Temperature	C	15	19.0	19.0	20	21	22	22	21	21	21	19	19	19	19	19	19	19	19	19	18	18	18	18	18	17	16	18	18	17	16	16	565.0	18.8
Fluoride used (Total Daily Consumption)	kg	n/a	15.0	17.0	20.0	19.0	19.0	18.0	18.0	18.0	18.0	17.0	17.0	17.0	16.0	18.0	16.0	17.0	16.0	17.0	16.0	15.0	17.0	16.0	16.0	16.0	15.0	16.0	19.0	19.0	16.0	16.0	510.0	17.0
Chlorine used (Total Daily Consumption)	kg	n/a	26.0	27.0	26.0	26.0	27.0	26.0	29.0	28.0	27.0	27.0	26.0	27.0	28.0	28.0	26.0	26.0	26.0	26.0	27.0	24.0	28.0	26.0	26.0	25.0	27.0	26.0	26.0	26.0	27.0	26.0	796.0	26.5
Soda ash (Total Daily Consumption)	kg	n/a	192.2	192.9	192.2	192.2	198.8	194.6	197.1	195.3	193.9	191.8	197.4	188.0	195.0	203.4	190.4	195.3	194.6	196.0	180.3	202.0	194.6	191.1	196.4	193.9	193.9	194.6	192.5	193.6	191.1	5819.5	5819.5	381.5
Soda Ash - Dosage	mg/l	n/a	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	1050.0	35.0
Alum residual - (Total Daily Consumption)	kg	n/a	192.2	192.9	192.2	192.2	198.8	194.6	197.1	195.3	193.9	191.8	197.4	188.0	195.0	203.4	190.4	195.3	194.6	196.0	180.3	202.0	194.6	191.1	196.4	193.9	193.9	194.6	192.5	193.6	191.1	5819.5	5819.5	381.5
Alum residual - Dosage	mg/l	n/a	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	1050.0	35.0
Alum residual - Treated Water	mg/l	0.1	0.04	0.03	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.01	0.04	0.02	0.01	0.04	0.04	0.03	0.04	0.03	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.01	0.03	0.02	0.05	0.74	0.02
Poly bags added (25 kg bags)	kg		0.5								0.5						0.5									0.5							50.0	