

October 28, 2016

Report To: Mayor & Council

From: Travis Rob, Manager of Operations & Facilities

**SUBJECT: September 2016 Drinking Water Systems Monthly Summary Report**

Please find attached the September 2016 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 2016 report as presented.

Respectfully submitted,  
Operations & Facilities Division

Travis Rob, E.I.T.  
Manager of Operations & Facilities

<b>Council approval of this report will</b> accept the September 2016 Drinking Water Systems Monthly Summary Report and approve the report prior to it being made available to the general public.
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c.c. – Doug Herr, Environmental & Facilities Supt.  
Randy White, Senior WTP Operator

03CouncilwaterreportMarch 2015

**September, 2016**

**Monthly Summary Report  
Water Systems**

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

**Dated: October 17, 2016**

### 1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of October 2016 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.

Water distribution samples taken at the following locations:

1. 1227 Fifth St. E.	2. 720 Scott St.	3. 810 King's Hwy.	4. W. Tower
5. 1111 First St.	6. 122 Scott St.	7. 901 Wright Ave. N.	8. W. Tower
9. 720 Scott St.	10. 1150 Portage Ave.	11. 901 Wright Ave. N.	12. W. Tower
13. 1104 Church St.	14. 401 Nelson St.	15. 1036 Victoria Ave.	16. W. Tower

### 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. 01<sup>st</sup>     - cleaned top and bottom tanks on the poly unit.  
                  - cleaned all four (4) check valves on poly unit.
- Sept. 09<sup>th</sup>     - repaired laboratory pump.
- Sept. 13<sup>th</sup>     - ran generator for one hour.
- Sept. 19<sup>th</sup>     - installed a new Soda Ash pump
- Sept. 21<sup>th</sup>     - rebuilt Soda Ash pumps.
- Sept. 26<sup>th</sup>     - greased gears, chains and bearing for both clarifiers.
- Sept. 29<sup>th</sup>     - cleaned top and bottom tanks on the poly unit.  
                  - cleaned all four (4) check valves on poly unit.

8) **Water Complaints:**

- Poor Pressure – 0 complaints
- Water Quality – 0 complaints

9) **Other Miscellaneous Information:**

- Sept. 06<sup>th</sup> - took weekly routine micro samples.  
- tie-in of existing water mains to new mains - bacti samples - Third St. E. at Colonization Rd. E. - 1<sup>st</sup> set.  
- water service repair - bacti samples - First St. E. (300 blk.) at Victoria Ave. - 1<sup>st</sup> set
- Sept. 07<sup>th</sup> - tie-in of existing water mains to new mains - bacti samples - Third St. E. at Colonization Rd. E. - 2<sup>nd</sup> set.  
- water service repair - bacti samples - First St. E. (300 blk.) at Victoria Ave. - 2<sup>nd</sup> set
- Sept. 12<sup>th</sup> - took quarterly samples at the plant and water tower.  
- took weekly routine micro samples.
- Sept. 13<sup>th</sup> - took ground water samples at the landfill site.
- Sept. 14<sup>th</sup> - took micro samples at Sunny Cove water system.
- Sept. 19<sup>th</sup> - took weekly routine micro samples.
- Sept. 21<sup>st</sup> - took grab samples off the filters.
- Sept. 22<sup>nd</sup> - received a shipment of chlorine.
- Sept. 26<sup>th</sup> - took weekly routine micro samples.  
- took total suspended solids (T.S.S.) samples off filter No. 1.

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.: \_\_\_\_\_
- Travis Rob, Manager of Operations & Facilities: \_\_\_\_\_
- Doug Brown, CAO: \_\_\_\_\_
- Paul Ryan, Chair O& F Exec Committee: \_\_\_\_\_
- Roy Avis, Mayor: \_\_\_\_\_
- June Caul, Councillor: \_\_\_\_\_
- John Albanese, 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.

**Monthly Report September 2016**

**Town of Fort Frances - Water treatment Plant - Water Works # 220000978**  
**Monitoring Record**  
**September 2016**

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 M³/3	17	5.70	5.69	5.89	5.71	5.70	5.45	5.74	5.69	5.70	5.75	5.73	5.48	5.65	5.63	5.61	5.62	5.50	5.63	5.67	5.60	5.56	5.62	5.54	5.68	5.54	5.62	5.61	5.62	5.60	169.15	5.64		
	Peak Instantaneous - Raw Water	L/s	n/a	66.27	66.46	67.00	66.80	66.40	66.38	66.40	67.30	66.80	66.50	66.30	66.23	66.07	66.00	65.80	65.60	65.59	65.41	65.50	65.60	65.50	65.60	65.50	65.50	65.50	65.50	65.40	65.70	65.54	1979.55	65.99		
	Treated Water	10×3 M³/3	17	4.30	4.56	4.10	3.62	3.39	3.40	3.39	3.48	3.37	3.55	3.27	3.48	3.53	3.53	3.29	3.35	3.12	3.25	3.43	3.97	3.21	3.25	3.34	3.30	3.45	3.28	3.34	3.29	3.36	3.06	104.26	3.48	
	Peak Instantaneous - Treated Water	L/s	n/a	82.50	87.33	89.07	86.21	80.36	81.15	78.78	84.12	82.14	81.47	81.63	80.25	80.78	90.56	80.22	82.27	81.80	86.62	79.35	82.65	82.33	81.31	81.25	82.81	79.18	80.21	80.03	80.79	80.45	81.06	2470.68	82.36	
Backwash Water	10×3 M³/3	n/a	0.175	0.173	0.362	0.201	0.235	0.311	0.207	0.149	0.268	0.197	0.342	0.264	0.264	0.140	0.188	0.268	0.153	0.153	0.269	0.190	0.212	0.264	0.190	0.243	0.262	0.298	0.245	0.270	0.820	0.209	7.258	0.25		
Fluoride Information																																				
Fluoride Residual - Treated Water		mg/l	0.5 to 0.8	0.59	0.72	0.71	0.71	0.65	0.52	0.58	0.52	0.62	0.61	0.62	0.58	0.52	0.52	0.63	0.68	0.59	0.68	0.62	0.75	0.68	0.66	0.68	0.70	0.70	0.68	0.76	0.61	0.63	19.20	0.64		
Turbidity Information																																				
Raw Water		NTU	n/a	1.06	1.21	1.30	1.19	1.12	1.17	1.22	1.33	1.38	1.41	1.39	1.26	1.35	1.22	1.19	1.31	1.20	1.27	1.31	1.21	1.38	1.26	1.33	1.39	1.47	1.35	1.29	1.42	1.49	1.37	38.85	1.30	
Settled Water		NTU	n/a	0.13	0.14	0.14	0.12	0.14	0.13	0.11	0.13	0.11	0.12	0.10	0.13	0.17	0.14	0.13	0.17	0.11	0.14	0.16	0.07	0.18	0.16	0.15	0.16	0.17	0.14	0.13	0.12	0.11	0.12	4.09	0.14	
Treated Water		NTU	1	0.10	0.11	0.09	0.09	0.08	0.10	0.08	0.09	0.09	0.07	0.07	0.10	0.10	0.09	0.08	0.11	0.09	0.09	0.10	0.08	0.11	0.10	0.10	0.09	0.10	0.11	0.11	0.09	0.10	0.09	2.81	0.09	
Other Operating Parameters																																				
pH - Treated Water		no units	6.5 to 8.5	7.15	7.19	7.17	7.12	7.12	7.21	7.09	7.13	7.14	7.21	7.19	7.07	7.17	7.19	7.20	7.20	7.21	7.16	7.15	7.15	7.13	7.23	7.08	7.11	7.14	7.08	7.10	7.06	7.17	7.12	214.53	7.15	
pH - Settled water		no units	n/a	6.37	6.41	6.31	6.50	6.20	6.14	6.33	6.36	6.43	6.34	6.40	6.31	6.33	6.72	6.53	6.64	6.46	6.62	6.50	6.77	6.60	6.54	6.57	6.39	6.40	6.73	6.52	6.79	6.78	6.71	194.91	6.50	
pH - Raw Water		no units	n/a	7.13	7.10	7.21	7.15	7.21	7.06	7.04	7.03	7.16	7.1	7.12	7.12	7.09	7.13	7.11	7.10	7.10	7.07	7.04	7.10	7.06	7.19	7.07	7.12	7.11	7.03	7.07	6.96	7.09	7.01	212.88	7.10	
FAC - Treated Water		mg/l	0.2 to 4	2.40	2.36	2.24	2.24	2.09	2.12	2.22	2.2	2.17	2.21	2.24	2.39	2.24	2.20	2.24	2.30	2.28	2.26	2.30	2.20	2.10	2.24	2.36	2.32	2.37	2.34	2.36	2.42	2.40	2.35	68.16	2.27	
Total Chlorine Residual Treated		mg/l	0.3 to 7	2.68	2.49	2.42	2.51	2.23	2.40	2.44	2.32	2.34	2.45	2.51	2.66	2.36	2.38	2.40	2.48	2.36	2.46	2.56	2.46	2.42	2.44	2.68	2.57	2.62	2.48	2.54	2.62	2.64	2.51	74.43	2.48	
Temperature		°C	15	21.0	21	21	21	21	21	21	21	21	21	21	20	20	19	19	19	19	18	18	17	17	17	17	17	17	17	16	16	15	566.0	18.9		
Fluoride used (Total Daily Consumption)	kg	n/a	17.0	16.0	17.0	16.0	12.0	8.0	11.0	10.0	10.0	10.0	12.0	11.0	13.0	21.0	22.0	23.0	21.0	22.0	22.0	22.0	22.0	22.0	22.0	21.0	23.0	18.0	21.0	19.0	21.0	21.0	524.0	17.5		
Chlorine used (Total Daily Consumption)	kg	n/a	28.0	28.0	30.0	28.0	29.0	28.0	29.0	28.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0	26.0	27.0	27.0	28.0	28.0	28.0	28.0	28.0	27.0	28.0	28.0	28.0	28.0	28.0	28.0	845.0	28.2		
Soda ash (Total Daily Consumption)	kg	n/a	199.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	197.3	6.7			
Soda Ash - Dosage	kg	n/a	35.0																														35.0	35.0		
Alum residual - (Total Daily Consumption)	kg	n/a	199.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	197.3	6.7			
Alum residual - Dosage	mg/l	n/a	35.0																														35.0	35.0		
Alum residual - Treated Water	mg/l	n/a	0.1	0.01	0.03	0.03	0.02	0.04	0.02	0.04	0.03	0.05	0.03	0.01	0.04	0.06	0.02	0.02	0.02	0.01	0.02	0.03	0.01	0.01	0.01	0.02	0.03	0.01	0.02	0.03	0.02	0.74	0.02	75.0		
Poly bags added (25 kg bags )	kg						0.5						0.5			0.5							0.5													

Flow Data	SEPTEMBER	Units	2014		2015		2016	
			Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m <sup>3</sup>			142440		166270		169150
Raw Maximum Day	m <sup>3</sup>		Monday 01st	6270	Monday 14th	5810	Saturday 03rd	5890
Raw Minimum Day	m <sup>3</sup>		Monday 29th	3290	Sunday 20th	5150	Tuesday 06th	5450
Raw Average Daily Consumption	m <sup>3</sup>			4750		5450		5640
Total Treated Water	m <sup>3</sup>			106940		121920		104260
Treated Water Maximim Day Consumption	m <sup>3</sup>		Tuesday 16th	4700	Tuesday 29th	4590	Friday 02nd	4560
Treated Water Minimim Day Consumption	m <sup>3</sup>		Monday 22nd	3000	Monday 21st	3450	Friday 30th	3060
Treated Water Average Day Consumption	m <sup>3</sup>			3560		4060		3480
Daily Average Per Household Consumption Rate	m <sup>3</sup>			0.94		1.07		0.92
* Daily Average Per Person Consumption Rate	m <sup>3</sup>			0.45		0.51		0.44
Monthly Averages - Operating Parameters WTP:								
FAC Residual - Treated Water	mg/L			1.72		2.18		2.27
Total Chlorine Residual - Treated Water	mg/L			2.04		2.5		2.48
Aluminum Sulphate - Raw Water	mg/L			36.8		35.0		35.0
Aluminum Sulphate - Treated Water Residual	mg/L			0.04		0.02		0.02
Fluoride - Treated Water	mg/L			0.62		0.55		0.64
Soda Ash - Raw Water	mg/L			36.6		35.0		35.0
PH - Adjusted	mg/L			7.25		7.25		7.15
Temperature	C			16.8		18.8		18.9
Quantity of Chemical Used:		kg						
Aluminum Sulphate	kg			5246.1		5819.5		5920.3
Polyelectrolyte	kg			50		50		75
Chlorine Gas	kg			653		796		845
Soda Ash - Used for PH Adjustment	kg			5210.9		5819.5		5920.3
Fluoride	kg			439		510		524

\* The Canadian Average is 450 Litres (0.45 m<sup>3</sup>) per day.

\* Population is 7986

\* Number of Households is 3783