

May 16, 2016

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

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

Please find attached the April 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 April 2016 report as presented.

Respectfully submitted,  
Operations & Facilities Division



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

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

03CouncilwaterreportMarch 2015

**April, 2016**

**Monthly Summary Report  
Water Systems**

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

**Dated: May 06, 2015**

### 1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of April 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. Arena  | 2. Daycare            | 3. Public Works  | 4. Water Tower  |
| 5. Arena  | 6. 1036 Victoria Ave. | 7. Super 8       | 8. Water Tower  |
| 9. Arena  | 10. Public Works      | 11. Super 8      | 12. Water Tower |
| 13. Arena | 14. Daycare           | 15. Public Works | 16. Water 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:**

- April 02<sup>nd</sup> - calibrated distribution chlorine analyzer.
- April 07<sup>th</sup> - cleaned all four (4) check valves on poly unit.
  - cleaned the top and bottom tank on the poly unit.
  - calibrated distribution chlorine analyzer.
- April 09<sup>th</sup> - clear tech at plant working on new chlorinator.
- April 11<sup>th</sup> - transferred sludge from Clarifier No. 1 to Clarifier No. 2.
- April 12<sup>th</sup> - ran generator for 1 hour.
  - cleaned the in-line mixer.
  - put Clarifier No. 1 back on line.
  - painted pipes and stands at Water Treatment Plant.
- April 14<sup>th</sup> - painted the lower level floor.
- April 26<sup>th</sup> - took Clear Well No. 2 off line to clean.
  - Lakeside here to hook up Fluoride Analyzer and to provide training.
- April 28<sup>th</sup> - hauled out chemicals and equipment for Sunny Cove.
  - Lakeside here working on Chlorine and Fluoride analyzers.
  - cleaned all four (4) check valves on poly unit.
  - cleaned the top and bottom tank on the poly unit

8) **Water Complaints:**

- Poor Pressure – 0 complaints
- Water Quality – 1 complaint

1312 Emo Road: Took chlorine residual - 1.45 mg/L. Customer satisfied after consultation.

9) **Other Miscellaneous Information:**

April 04<sup>th</sup> - took weekly routine bacti samples.

April 05<sup>th</sup> - lead sampling all day – distribution system.

April 06<sup>th</sup> - lead sampling all day – distribution system.

April 07<sup>th</sup> - took grab samples off the filters.

April 11<sup>th</sup> - took weekly routine bacti samples.

April 18<sup>th</sup> - took weekly routine bacti samples.

April 25<sup>th</sup> - took weekly routine bacti samples.

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: \_\_\_\_\_
- 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 April 2016**

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

Operating Data			Unit	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																																					
10+3 M3/L/s	Raw Water	n/a	5.21	5.14	5.18	5.21	5.19	5.24	5.15	5.18	5.17	5.29	5.30	5.17	5.10	5.26	5.26	5.27	5.36	5.07	5.25	5.29	5.24	5.15	5.10	5.10	5.10	5.24	5.26	5.15	5.16	5.21	5.16	4.93	150.74	5.20	
	Peak Instantaneous - Raw Water	17	60.76	64.91	60.85	60.82	60.77	61.10	60.98	60.91	61.12	60.94	61.02	61.02	61.11	61.19	61.15	61.16	61.22	61.34	61.34	61.42	61.72	60.41	61.07	61.20	61.03	60.90	60.29	60.51	60.60	60.51	1833.25	61.11			
	Treated Water	L/s	3.68	3.57	3.74	3.90	3.71	4.33	3.70	3.97	3.63	3.56	3.82	3.75	3.67	3.47	3.50	3.60	3.32	3.43	3.35	3.41	3.49	3.08	3.34	3.35	3.44	3.35	3.45	3.45	3.29	3.34	3.24	106.74	3.56		
	Peak Instantaneous - Treated Water	5	69.76	70.34	71.07	70.80	73.19	70.80	77.96	74.38	75.79	69.37	71.17	73.40	74.57	73.59	72.16	69.80	65.87	71.71	69.78	69.74	69.40	70.32	66.58	67.57	68.44	69.30	67.50	69.74	69.25	2121.41	70.71				
	Backwash Water	M3	0.225	0.232	0.212	0.222	0.236	0.000	0.257	0.220	0.232	0.266	0.222	0.232	0.264	0.217	0.232	0.269	0.224	0.233	0.267	0.225	0.232	0.263	0.226	0.240	0.264	0.228	0.237	0.254	0.225	0.236	6.892	0.230			
Fluoride Information																																					
Fluoride Residual - Treated Water			mg/l	0.5 to 0.8	0.70	0.71	0.82	0.62	0.65	0.61	0.69	0.73	0.64	0.66	0.72	0.69	0.67	0.66	0.76	0.59	0.61	0.82	0.73	0.82	0.77	0.81	0.86	0.75	0.57	0.76	0.77	0.68	0.68	21.23	0.71		
Turbidity Information																																					
Raw Water			NTU	n/a	0.61	0.59	0.63	0.56	0.61	0.61	0.63	0.59	0.60	0.63	0.58	0.61	0.60	0.59	0.63	0.59	0.66	0.54	0.60	0.62	0.71	0.77	0.65	0.71	0.68	0.73	0.76	0.67	0.73	0.77	19.26	0.64	
Settled Water			NTU	n/a	0.29	0.31	0.33	0.23	0.26	0.32	0.29	0.28	0.20	0.17	0.27	0.19	0.32	0.34	0.28	0.21	0.19	0.24	0.25	0.32	0.28	0.26	0.28	0.30	0.31	0.26	0.29	0.33	0.32	0.19	8.11	0.27	
Treated Water			NTU	1	0.13	0.10	0.11	0.10	0.09	0.11	0.11	0.12	0.11	0.10	0.11	0.13	0.10	0.12	0.10	0.12	0.11	0.12	0.10	0.11	0.10	0.11	0.10	0.10	0.12	0.11	0.09	0.13	0.10	0.12	0.10	3.28	0.11
Other Operating Parameters																																					
pH - Treated Water			no units	6.5 to 8.5	7.40	7.29	7.43	7.43	7.46	7.45	7.42	7.38	7.35	7.44	7.42	7.51	7.5	7.48	7.35	7.31	7.43	7.44	7.43	7.41	7.44	7.41	7.41	7.45	7.45	7.41	7.31	7.54		7.42	7.42		
pH - Settled Water			no units	n/a	6.20	6.06	6.05	6.10	6.18	6.17	6.13	6.23	6.19	6.26	6.17	6.15	6.12	6.11	6.17	6.12	6.15	6.05	6.31	6.29	6.18	6.21	6.22	6.19	6.28	6.27	6.16	6.33	6.23	6.19	185.47	6.18	
pH - Treated Water			no units	7.17	7.25	7.20	7.36	7.40	7.38	7.42	7.39	7.30	7.26	7.33	7.30	7.42	7.42	7.42	7.41	7.20	7.41	7.20	7.42	7.43	7.38	7.42	7.43	7.44	7.42	7.43	7.41	7.25	7.41	7.35	220.59	7.35	
FAC - Treated Water			mg/l	0.2 to 4	2.26	2.32	2.30	2.26	2.20	2.28	2.32	2.20	2.22	2.16	2.29	2.20	2.18	2.20	2.21	2.26	2.32	2.34	2.25	2.11	2.12	2.07	2.08	2.07	2.08	2.11	2.20	2.26	2.24	66.39	2.21		
Total Chlorine Residual Treated			mg/l	0.3 to 7	2.52	2.66	2.70	2.66	2.72	2.70	2.74	2.68	2.49	2.47	2.64	2.66	2.72	2.62	2.47	2.52	2.66	2.58	2.52	2.46	2.50	2.48	2.52	2.44	2.48	2.52	2.66	2.68	2.57	77.76	2.59		
Temperature			C	15	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	3.0	4.0	5.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	4.0	5.0	5.0	6.0	6.0	130.0	4.3			
Fluoride used (Total Daily Consumption)			kg	n/a	17.0	17.0	17.0	18.0	17.0	17.0	17.0	18.0	19.0	20.0	20.0	19.0	19.0	18.0	19.0	18.0	19.0	18.0	18.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	16.0	17.0	18.0	19.0	537.0	17.9	
Chlorine used (Total Daily Consumption)			kg	n/a	21.0	21.0	21.0	22.0	21.0	22.0	21.0	22.0	22.0	22.0	22.0	21.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.0	21.0	21.0	645.0	21.5		
Soda ash (Total Daily Consumption)			kg	n/a	182.4	179.9	181.3	184.5	181.7	183.4	180.3	181.3	181.0	195.2	195.5	181.0	178.5	184.1	184.5	187.6	177.5	183.8	185.2	183.4	180.3	178.5	183.4	184.1	180.3	180.6	182.4	180.6	172.6	5458.3	181.9		
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	1050.0	35.0		
Alum residual - (Total Daily Consumption)			mg/l	n/a	182.4	179.9	181.3	184.5	181.7	183.4	180.3	181.3	181.0	195.2	195.5	181.0	178.5	184.1	184.5	187.6	177.5	183.8	185.2	183.4	180.3	178.5	183.4	184.1	180.3	180.6	182.4	180.6	172.6	5458.3	181.9		
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	1050.0	35.0		
Alum residual - (25 na baos)			mg/l	0.1	0.05	0.05	0.05	0.04	0.06	0.06	0.05	0.03	0.05	0.04	0.06	0.06	0.06	0.05	0.05	0.04	0.03	0.05	0.04	0.05	0.04	0.05	0.05	0.04	0.02	0.03	0.06	0.04	0.02	1.34	0.04		
Polk baos added (25 na baos)			kg		0.5																														75.0		

Flow Data	APRIL	Units	2014		2015		2016	
			Day of the Month		Day of the Month		Day of the Month	
Total Raw Water		m <sup>3</sup>		206600		165700		150740
Raw Maximum Day		m <sup>3</sup>		9660	Friday 17th	6650	Sunday 17th	5360
Raw Minimum Day		m <sup>3</sup>		4770	Thursday 09th	5270	Saturday 30th	4930
Raw Average Daily Consumption		m <sup>3</sup>		7120		5710		5200
Total Treated Water		m <sup>3</sup>		173600		112830		106740
Treated Water Maximim Day Consumption		m <sup>3</sup>	Thursday 03rd	7020	Sunday 12th	4260	Wednesday 06th	4330
Treated Water Minimim Day Consumption		m <sup>3</sup>	Saturday 26th	4810	Tuesday 21st	3390	Saturday 23rd	3080
Treated Water Average Day Consumption		m <sup>3</sup>		5790		3760		3560
Daily Average Per Household Consumption Rate		m <sup>3</sup>		1.53		0.99		0.94
* Daily Average Per Person Consumption Rate		m <sup>3</sup>		0.73		0.47		0.45
Monthly Averages - Operating Parameters WTP:								
FAC Residual - Treated Water		mg/L		1.63		2.04		2.21
Total Chlorine Residual - Treated Water		mg/L		1.92		2.32		2.59
Aluminum Sulphate - Raw Water		mg/L		34.5		35.6		35
Aluminum Sulphate - Treated Water Residual		mg/L		0.06		0.06		0.04
Fluoride - Treated Water		mg/L		0.63		0.68		0.71
Soda Ash - Raw Water		mg/L		35.0		37.3		35
PH - Adjusted		mg/L		7.25		7.19		7.42
Temperature		C		2.7		5.5		4.3
Quantity of Chemical Used:		kg						
Aluminum Sulphate		kg		7457.2		6105.7		5458.3
Polyelectrolyte		kg		75.0		62.5		75.0
Chlorine Gas		kg		689		639		645
Soda Ash - Used for PH Adjustment		kg		7565.3		6398.2		5458.3
Fluoride		kg		574		365		537

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

\* Population is 7986

\* Number of Households is 3783