

April 4, 2016

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: February 2016 Drinking Water Systems Monthly Summary Report

Please find attached the February 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 February 2016 report as presented.

Respectfully submitted,
Operations & Facilities Division



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

<p>Council approval of this report will accept the February 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

February, 2016

**Monthly Summary Report
Water Systems**

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

Dated: March 09, 2016

1) **Introduction -**

This report contains the major maintenance activities and operational events that occurred during the month of February 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): 5 samples taken no adverse results

Water Treatment Plant (raw): 5 samples taken no adverse results

Water Distribution System: 20 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

Feb. 3rd - painted pipes inside water treatment plant.

Feb. 4th - cleaned all 4 check valves on poly unit.
- cleaned top and bottom tanks on poly unit.

Feb. 8th - took clarifier #2 off line to clean and inspect.

Feb. 12th - worked on filter turbidity meters.

Feb. 16th - Lakeside here working on distribution Chlorine analyzers.

Feb. 17th - finished cleaning out clarifier #2 and did inspection.
- took grab samples off filters.
- Lakeside here working on distribution Chlorine analyzers.

Feb. 18th - Lakeside here working on distribution Chlorine analyzers.

Feb. 21st - calibrated distribution chlorine analyzer.

Feb. 23rd - transferred sludge from clarifier #1 to clarifier #2.

Feb. 24th - transferred sludge from clarifier #1 to clarifier #2.
- took grab samples off filters.
- ran the generator for approx. 1 hour

Feb. 25th - transferred sludge from clarifier #1 to clarifier #2.
- cleaned all 4 check valves on poly unit.
- cleaned top and bottom tanks on poly unit.

Feb. 29th - calibrated distribution chlorine analyzer.

8) **Water Complaints:**

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

9) **Other Miscellaneous Information:**

Feb. 01st - took weekly routine bacti samples.

Feb. 05th - received a load of alum.

Feb. 08th - took weekly routine bacti samples.

Feb. 17th - took weekly routine bacti samples.

Feb. 22nd - took weekly routine bacti samples.

Feb. 29th - 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 February 2016

Raw Water	10^3 M^3	17	5.93	5.10	5.08	5.10	5.12	5.29	5.02	4.97	5.07	5.08	5.09	5.06	5.27	5.00	5.08	4.90	5.11	5.04	5.12	4.96	5.09	5.15	5.06	5.03	5.01	5.12	5.00	5.09	4.97	147.91	5.10
Peak Instantaneous - Raw Water	L/s	n/a	59.67	59.61	59.57	59.56	59.54	59.56	59.63	59.55	59.46	59.40	59.42	59.34	59.33	59.3	59.3	59.26	59.34	59.24	59.31	59.36	59.26	59.19	59.17	62.66	61.79	61.18	59.18	59.17	59.05	1729.40	59.63
Treated Water	10^3 M^3	17	4.00	3.76	3.69	3.73	3.79	3.76	3.67	3.73	3.63	3.73	3.73	3.76	3.94	3.85	3.93	3.82	3.88	3.84	3.85	3.59	3.86	4.11	3.73	3.64	3.68	3.86	3.64	3.86	4.19	110.25	3.80
Peak Instantaneous - Treated Water	L/s	n/a	62.77	63.14	63.27	61.89	62.26	61.26	65.67	58.56	62.16	60.72	60.73	63.57	61.59	62.3	61.71	63.4	63.72	64.44	63.47	61.58	60.22	62.45	66.82	59.25	61.04	62.52	63.14	59.90	60.95	1804.50	62.22
BackWash Water	10^3 M^3	n/a	0.237	0.236	0.249	0.234	0.237	0.257	0.235	0.239	0.253	0.237	0.242	0.249	0.482	0.238	0.253	0.463	0.741	0.828	0.941	0.716	0.235	0.236	0.723	0.277	0.238	0.263	0.234	0.239	0.262	10.27	0.354
Fluoride Information																																	
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.55	0.54	0.50	0.70	0.67	0.59	0.61	0.59	0.57	0.59	0.64	0.64	0.61	0.60	0.59	0.56	0.59	0.56	0.66	0.63	0.52	0.50	0.64	0.67	0.55	0.60	0.60	0.59	0.63	17.29	0.60
Turbidity Information																																	
Raw Water	NTU	n/a	0.73	0.61	0.62	0.63	0.58	0.62	0.60	0.57	0.55	0.58	0.58	0.56	0.51	0.55	0.50	0.57	0.56	0.59	0.63	0.51	0.51	0.53	0.61	0.55	0.5	0.55	0.57	0.62	0.52	16.61	0.57
Settled Water	NTU	n/a	0.32	0.25	0.22	0.20	0.21	0.20	0.19	0.20	0.23	0.24	0.25	0.30	0.27	0.29	0.25	0.26	0.17	0.46	0.27	0.26	0.26	0.23	0.25	0.31	0.22	0.26	0.20	0.17	0.23	7.17	0.25
Treated Water	NTU	1	0.10	0.10	0.11	0.11	0.10	0.09	0.09	0.11	0.10	0.11	0.09	0.11	0.10	0.10	0.12	0.11	0.11	0.12	0.10	0.10	0.09	0.11	0.09	0.10	0.12	0.11	0.09	0.08	0.09	2.96	0.10
Other Operating Parameters																																	
pH - Treated Water	no units	6.5 to 8.5	7.74	7.80	7.14	7.25	7.24	7.21	7.17	7.28	7.30	7.26	7.28	7.19	7.15	7.12	7.17	7.26	7.17	7.19	7.22	7.27	7.28	7.21	7.26	7.31	7.22	7.12	7.17	7.20	7.14	210.32	7.25
pH - Settled water	no units	n/a	6.00	5.95	6.30	6.20	6.27	6.31	6.33	6.32	6.35	6.49	6.46	6.22	6.27	6.30	6.35	6.18	6.24	6.19	6.16	6.34	6.06	6.35	6.28	6.32	6.23	6.31	6.36	6.29	6.56	181.99	6.28
pH - Raw Water	no units	n/a	7.43	7.42	7.46	7.16	7.12	7.09	7.05	7.09	7.16	7.17	7.15	7.13	7.10	7.05	7.10	7.08	7.18	7.10	7.13	7.12	7.11	7.10	7.17	7.12	7.06	7.16	7.12	7.09	7.10	207.32	7.15
FAC - Treated Water	mg/l	0.2 to 4	2.14	1.96	2.02	2.1	2.15	2.21	2.41	2.18	2.12	2.1	2.42	2.2	2.1	2.13	2.12	2.18	2.2	2.28	2.32	2.28	2.2	2.22	2.23	2.15	2.13	2.26	2.29	2.10	63.40	2.19	
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.30	2.28	2.42	2.22	2.54	2.37	2.57	2.30	2.32	2.50	2.52	2.34	2.21	2.30	2.25	2.34	2.60	2.64	2.42	2.50	2.30	2.38	2.52	2.44	2.40	2.36	2.47	2.52	2.42	69.75	2.41
Temperature	C	15	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3.00	69.0	2.38
Fluoride used (Total Daily Consumption)	kg	n/a	15.0	14.0	15.0	15.0	17.0	18.0	16.0	16.0	16.0	15.0	16.0	16.0	16.0	15.0	15.0	15.0	16.0	15.0	14.0	15.0	15.0	16.0	14.0	15.0	15.0	14.0	15.0	17.0	15.0	446.0	15.38
Chlorine used (Total Daily Consumption)	kg	n/a	20.0	20.0	19.0	20.0	20.0	21.0	19.0	19.0	19.0	20.0	20.0	19.0	20.0	21.0	19.0	19.0	17.0	22.0	20.0	18.0	20.0	20.0	19.0	20.0	19.0	20.0	19.0	19.0	19.0	567.0	19.55
Soda ash (Total Daily Consumption)	kg	n/a	207.6	178.5	177.8	178.5	179.2	185.2	175.7	174.0	177.5	177.8	178.2	177.1	184.5	175.0	177.8	171.5	178.9	176.4	179.2	173.6	178.2	180.3	177.1	176.1	175.4	179.2	175.0	178.2	174.0	5176.9	178.51
Soda Ash - Dosage	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	35.0	1015.0	35.00
Alum residual - (Total Daily Consumption)	kg	n/a	207.6	178.5	177.8	178.5	179.2	185.2	175.7	174.0	177.5	177.8	178.2	177.1	184.5	175.0	177.8	171.5	178.9	176.4	179.2	173.6	178.2	180.3	177.1	176.1	175.4	179.2	175.0	178.2	174.0	5176.9	178.51
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	1015.0	35.00
Alum residual - Treated Water	mg/l	0.1	0.04	0.06	0.05	0.04	0.05	0.04	0.03	0.05	0.05	0.03	0.02	0.06	0.04	0.04	0.06	0.03	0.04	0.04	0.04	0.06	0.06	0.05	0.07	0.07	0.05	0.1	0.03	0.05	0.06	1.37	0.05
Poly bags added (25 kg bags)	kg				0.5														0.5					0.5				0.5				50.0	

Flow Data	FEBRUARY	Units	2014		2015		2016	
			Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m ³		139720		146690		147910	
Raw Maximum Day	m ³	Friday 28th	6020	Tuesday 24th	6120	Monday 1st	5930	
Raw Minimum Day	m ³	Friday 10th	4560	Monday 2nd & Thursday 12th	4850	Tuesday 16th	4900	
Raw Average Daily Consumption	m ³		4990		5240		5100	
Total Treated Water	m ³		124530		107690		110250	
Treated Water Maximum Day Consumption	m ³	Thursday 27th	5470	Saturday 28th	4470	Monday 29th	4190	
Treated Water Minimum Day Consumption	m ³	Tuesday 07th	3580	Thursday 12th	3340	Saturday 20th	3590	
Treated Water Average Day Consumption	m ³		4450		3850		3800	
Daily Average Per Household Consumption Rate	m ³		1.176		1.018		1.004	
* Daily Average Per Person Consumption Rate	m ³		0.557		0.482		0.476	
Monthly Averages - Operating Parameters WTP:								
FAC Residual - Treated Water	mg/L		1.80		1.94		2.19	
Total Chlorine Residual - Treated Water	mg/L		2.13		2.22		2.41	
Aluminum Sulphate - Raw Water	mg/L		34.0		37.5		35.0	
Aluminum Sulphate - Treated Water Residual	mg/L		0.06		0.06		0.05	
Fluoride - Treated Water	mg/L		0.57		0.57		0.60	
Soda Ash - Raw Water	mg/L		34.0		36.4		35.0	
PH - Adjusted	mg/L		7.04		7.12		7.25	
Temperature	C		2.00		2.00		2.38	
Quantity of Chemical Used:	kg							
Aluminum Sulphate	kg		4750.5		5499.3		5176.9	
Polyelectrolyte	kg		37.5		62.5		50.0	
Chlorine Gas	kg		479		542		567	
Soda Ash - Used for PH Adjustment	kg		4750.5		5341.9		5176.9	
Fluoride	kg		473		290		446	

* The Canadian Average is 450 Litres (0.45 m³) per day.

* Population is 7986

* Number of Households is 3783