

February 23, 2016

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: January 2016 Drinking Water Systems Monthly Summary Report

Please find attached the January 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 January 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 January 2016 Drinking Water Systems Monthly Summary Report and approve the report prior to it being made available to the general public.</p>

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

03CouncilwaterreportMarch 2015

January, 2016

**Monthly Summary Report
Water Systems**

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

Dated: February 17, 2016

1) **Introduction -**

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

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

Jan. 07th - cleaned the top and bottom tank on the poly unit.

Jan. 07th - cleaned the four (4) check valves on the poly unit.

Jan. 08th - ran generator for 45 minutes.

Jan. 08th - greased low lift # 1.

Jan. 12th - re-calibrated the distribution chlorine analyzer.

Jan. 13 - greased clarifier bearings and chains.

Jan. 15th - painted pipes and trim at water treatment plant.

Jan. 18th - re-calibrated the distribution chlorine analyzer.

Jan. 20th - cleaned clarifier troughs.

Jan. 20th - cleaned the flumes before filters.

Jan. 21st - re-calibrated the distribution chlorine analyzer.

Jan. 24th - re-calibrated the distribution chlorine analyzer.

Jan. 28th - cleaned the top and bottom tank on the poly unit.

Jan. 28th - cleaned the four (4) check valves on the poly unit.

8) **Water Complaints –**

- Poor Pressure – 0 complaint:
- Water quality – 0 complaint:

9) **Other Miscellaneous Information:**

Jan. 04th - took weekly routine micro samples.

Jan. 05th - received a load of Alum.

Jan. 06th - had a meeting to go over M.O.E. inspection report.

Jan. 11th - took weekly routine micro samples.

Jan. 11th - water main repair bacteriological samples – York Ave. - 1st set.

Jan. 12th - water main repair bacteriological samples – York Ave. - 2nd set.

Jan. 18th - took weekly routine micro samples.

Jan. 20th - took grab samples off each filter.

Jan. 25th - took weekly routine micro samples.

Jan. 25th - M.O.E. approved log books formats for the W.T.P. & Distribution.

Jan. 25th - took weekly routine micro samples.

Jan. 27th - meeting with management and W.T.P. staff and water distribution staff for disinfection procedure for water mains.

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 January 2016

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	31	Total	Average
		or Range																																	
Flow rates																																			
Raw Water	10^3 M^3	17	5.44	4.99	4.98	4.94	5.18	5.07	5.10	5.11	5.09	5.13	5.14	5.11	5.08	5.15	5.13	5.08	5.12	5.10	5.11	5.09	5.12	5.14	5.39	5.09	4.82	5.03	5.16	5.20	5.10	4.96	5.19	158.34	5.11
Peak Instantaneous - Raw Water	L/s	n/a	59.68	59.68	59.57	59.63	59.74	59.74	59.80	59.78	59.82	59.75	59.73	59.75	59.76	59.79	59.74	59.71	59.73	59.69	59.74	59.80	59.81	59.83	59.79	59.73	59.71	59.71	59.76	59.78	59.71	59.72	1851.89	59.74	
Treated Water	10^3 M^3	17	3.78	3.34	3.46	3.62	3.62	3.69	3.71	3.56	3.99	3.66	4.12	3.79	4.05	4.10	3.70	3.86	3.99	4.13	3.99	3.95	3.93	3.79	3.98	3.87	3.75	3.79	3.98	3.86	3.79	3.59	3.67	118.11	3.81
Peak Instantaneous - Treated Water	L/s	n/a	61.86	58.92	62.91	60.50	63.93	62.42	61.58	63.50	64.90	61.11	62.23	64.64	64.15	63.68	63.43	64.87	63.53	62.71	64.12	62.71	63.39	63.54	63.50	62.57	62.69	62.57	65.46	61.51	60.80	61.06	61.21	1946.00	62.77
BackWash Water	10^3 M^3	n/a	0.235	0.238	0.256	0.233	0.242	0.243	0.256	0.233	0.242	0.254	0.236	0.242	0.252	0.236	0.241	0.257	0.234	0.242	0.254	0.233	0.000	0.237	0.256	0.236	0.235	0.248	0.238	0.240	0.486	0.239	0.249	7.523	0.243
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.60	0.61	0.58	0.60	0.60	0.65	0.63	0.66	0.68	0.66	0.65	0.63	0.55	0.50	0.55	0.59	0.59	0.51	0.64	0.66	0.58	0.64	0.62	0.63	0.61	0.63	0.62	0.63	0.58	0.53	0.63	18.84	0.61
Turbidity Information																																			
Raw Water	NTU	n/a	0.91	0.97	0.99	0.94	0.83	0.83	0.81	0.85	0.88	0.77	0.83	0.71	0.76	0.81	0.83	0.87	0.86	0.82	0.77	0.69	0.81	0.93	0.91	0.90	0.89	0.92	0.95	0.89	0.76	0.83	0.80	26.32	0.85
Settled Water	NTU	n/a	0.14	0.14	0.13	0.11	0.22	0.29	0.28	0.21	0.26	0.22	0.23	0.22	0.29	0.27	0.25	0.16	0.18	0.18	0.22	0.33	0.37	0.27	0.20	0.21	0.20	0.19	0.21	0.24	0.32	0.20	0.28	7.02	0.23
Treated Water	NTU	1	0.09	0.07	0.09	0.06	0.09	0.11	0.09	0.10	0.13	0.11	0.09	0.10	0.09	0.09	0.08	0.08	0.09	0.08	0.09	0.11	0.09	0.08	0.09	0.1	0.08	0.11	0.11	0.09	0.11	0.09	2.88	0.09	
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.20	7.15	7.12	7.26	7.26	7.25	7.33	7.34	7.35	7.39	7.38	7.31	7.29	7.44	7.31	7.26	7.27	7.19	7.29	7.25	7.41	7.22	7.16	7.15	7.21	7.13	7.36	7.24	7.77	7.75	7.73	226.77	7.32
pH - Settled water	no units	n/a	6.41	6.32	6.41	6.5	6.29	6.7	6.33	6.61	6.36	6.71	6.02	6.39	6.5	6.29	6.35	6.41	6.36	6.5	6.71	6.66	6.52	6.9	6.57	6.61	6.57	6.47	6.77	6.48	6.44	6.03	5.99	200.18	6.46
pH - Raw Water	no units	n/a	7.07	7.00	7.10	7.07	6.90	7.08	7.07	7.16	7.19	7.25	7.23	7.20	7.21	7.19	7.15	7.16	7.11	7.18	7.09	7.06	7.22	7.16	7.01	7.07	7.01	7.08	7.18	7.05	7.27	7.33	7.44	221.29	7.14
FAC - Treated Water	mg/l	0.2 to 4	2.17	2.25	2.35	2.22	2.42	2.34	2.16	2.03	2.03	2.11	2.20	2.20	2.22	2.17	2.35	2.04	2.13	2.20	2.09	2.22	2.24	2.40	2.15	1.65	2.42	2.06	2.18	2.08	2.04	2.20	2.22	67.54	2.18
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.3	2.33	2.41	2.58	2.52	2.5	2.34	2.26	2.2	2.28	2.34	2.44	2.4	2.36	2.51	2.36	2.33	2.42	2.4	2.48	2.72	2.6	2.23	1.81	2.61	2.4	2.42	2.34	2.26	2.32	2.36	63.00	2.38
Temperature	C	15	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	65.0	2.1
Fluoride used (Total Daily Consumption)	kg	n/a	16.0	14.00	14.0	14.0	14.0	14.0	15.0	14.0	16.0	16.0	17.0	16.0	16.0	17.0	16.0	16.0	15.0	16.0	15.0	15.0	15.0	15.0	16.0	16.0	14.0	15.0	15.0	14.0	15.0	14.0	15.0	470.0	15.2
Chlorine used (Total Daily Consumption)	kg	n/a	21.0	20.0	19.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	21.0	20.00	21.0	19.0	19.0	19.0	20.0	19.0	20.0	19.0	20.0	617.0	19.9
Soda ash (Total Daily Consumption)	kg	n/a	190.4	174.7	174.3	172.9	181.3	177.5	178.5	178.9	178.2	179.6	179.9	178.9	177.8	180.3	179.6	177.8	179.2	178.5	178.9	178.2	179.2	179.9	188.7	178.2	168.7	176.1	180.6	182.0	178.5	173.6	181.7	5541.9	178.8
Soda Ash - Dosage	mg/l	n/a	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	1050.0	35.0
Alum residual - (Total Daily Consumption)	kg	n/a	190.4	174.7	174.3	172.9	181.3	177.5	178.5	178.9	178.2	179.6	179.9	178.9	177.8	180.3	179.6	177.8	179.2	178.5	178.9	178.2	179.2	179.9	188.7	178.2	168.7	176.1	180.6	182.0	178.5	173.6	181.7	5541.9	178.8
Alum residual - Dosage	mg/l	n/a	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	1050.0	35.0
Alum residual - Treated Water	mg/l	0.1	0.02	0.04	0.01	0.04	0.05	0.05	0.04	0.04	0.06	0.04	0.04	0.05	0.04	0.04	0.03	0.02	0.01	0.02	0.04	0.05	0.06	0.06	0.04	0.05	0.04	0.04	0.05	0.04	0.05	0.07	0.05	1.28	0.04
Poly bags added (25 kg bags)	kg			0.5				0.5					0.5										0.5					0.5						62.5	

Town of Fort Frances - WTP - 220000978
January 2014/15 vs. January 2016
Flow and Operating Data

Flow Data	January	Units	2014		2015		2016	
			Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m ³			155020		147280		158340
Raw Maximum Day	m ³		Thursday 9th	6970	Monday 26th	5890	Friday 01st	5440
Raw Minimum Day	m ³		Thursday 2nd	4020	Tuesday 06th	4060	Monday 25th	4820
Raw Average Daily Consumption	m ³			5000		4750		5110
Total Treated Water	m ³			129390		121570		118110
Treated Water Maximim Day Consumption	m ³		Wednesday 8th	6740	Friday 23rd	4580	Monday 18th	4130
Treated Water Minimim Day Consumption	m ³		Thursday 2nd	3480	Sunday 11th	3620	Saturday 02nd	3340
Treated Water Average Day Consumption	m ³			4180		3930		3810
Daily Average Per Household Consumption Rate	m ³			1.105		1.039		1.007
* Daily Average Per Person Consumption Rate	m ³			0.523		0.492		0.477
Monthly Averages - Operating Parameters WTP:								
FAC Residual - Treated Water	mg/L			1.81		1.95		2.18
Total Chlorine Residual - Treated Water	mg/L			2.00		2.00		2.38
Aluminum Sulphate - Raw Water	mg/L			34.0		37.4		35.0
Aluminum Sulphate - Treated Water Residual	mg/L			0.06		0.05		0.04
Fluoride - Treated Water	mg/L			0.67		0.59		0.61
Soda Ash - Raw Water	mg/L			34.0		35.8		35.0
PH - Adjusted	mg/L			7.08		7.14		7.32
Temperature	C			2.0		2.0		2.1
Quantity of Chemical Used:								
Aluminum Sulphate	kg			5270.7		5514.4		5541.9
Polyelectrolyte	kg			62.5		87.5		62.5
Chlorine Gas	kg			546		571		617
Soda Ash - Used for PH Adjustment	kg			5270.7		5274.7		5541.9
Fluoride	kg			470		295		470

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

* Population is 7986

* Number of Households is 3783