

January 23, 2017

Report To: Mayor & Council

From: Travis Rob, Manager of Operations & Facilities

SUBJECT: December 2016 Drinking Water Systems Monthly Summary Report

Please find attached the December 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 November 2016 report as presented.

Respectfully submitted,
Operations & Facilities Division

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

Council approval of this report will accept the December 2016 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

December, 2016

**Monthly Summary Report
Water Systems**

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

Dated: January 24, 2017

1) **Introduction**

This report contains the major maintenance activities and operational events that occurred during the month of December 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. 1036 Victoria Ave.	2. 1104 Church St.	3. 901 Wright Ave.	4. W. Tower
5. 740 Scott St.	6. 1150 Portage Ave.	7. 901 Wright Ave.	8. W. Tower
9. 1104 Church St.	10. 1111 First St.	11. 901 Wright Ave.	12. W. Tower
13. 1036 Victoria Ave.	14. 901 Wright Ave.	15. 810 Kings Hwy.	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**

- Dec. 06th - worked on the Chlorine System at tower.
- Dec. 07th - repaired Air Compressor.
- Dec. 08th - repaired Air Compressor No. 2.
 - cleaned the top and bottom tank on the Poly Unit.
 - cleaned the four (4) check valves on the Poly Unit.
- Dec. 09th - worked on Filter No. 3, its effluent valve and turbidity meter.
- Dec. 13th - changed the filters in Dust Collector.
- Dec. 17th - calibrated Distribution Chlorine Analyzer.
- Dec. 21st - installed a new Air Compressor.
- Dec. 29th - cleaned the top and bottom tank on the Poly Unit.
 - cleaned the four (4) check valves on the Poly Unit.
 - flushed the poly line to Clarifier.

8) **Water Complaints**

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

9) **Other Miscellaneous Information**

- Dec. 02nd - received a load of Alum.
- Dec. 05th - routine micro sample collection
- Dec. 13th - took quarterly samples at the plant and water tower.
- took T.S.S. samples off Filter No. 1 during backwash sample.
- Dec. 14th - routine micro sample collection.
- Dec. 15th - received a bulk load of Soda Ash.
- Dec. 19th - routine micro sample collection.
- Dec. 21st - ran the generator for approx. 2 hours under load due to power outage.
- Dec. 28th - routine micro sample collection.

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 December 2016

Town of Fort Frances - Water treatment Plant - Water Works # 220000978
Monitoring Record
December 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	5.51	5.53	5.66	5.58	5.75	5.50	5.52	5.46	5.57	5.43	5.55	5.57	5.50	5.49	5.51	5.55	5.53	5.54	5.39	5.52	5.51	5.09	5.51	5.65	5.57	5.47	5.33	5.48	5.44	5.44	5.36	5.36	5.51
Peak Instantaneous - Raw Water	L/s	n/a	64.40	64.41	64.38	64.44	64.49	64.51	64.48	64.47	64.39	64.32	64.43	64.45	64.38	64.41	64.34	64.44	64.38	64.40	64.35	64.41	64.34	64.43	64.47	64.39	64.42	64.44	64.31	63.70	63.71	63.73	63.66	1993.88	64.32
Treated Water	10^3 M^3	17	3.18	3.22	3.39	3.22	3.23	2.97	3.31	3.18	3.42	3.23	3.55	3.52	3.45	3.75	3.53	3.62	3.64	3.65	3.74	3.60	3.68	3.61	3.61	3.84	3.81	3.38	3.51	3.59	3.43	3.59	3.58	108.03	3.48
Peak Instantaneous - Treated Water	L/s	n/a	79.42	79.82	82.03	80.08	78.72	79.22	79.51	80.02	80.91	80.96	81.89	79.40	80.25	81.33	81.02	80.73	81.03	82.67	80.27	81.53	80.58		81.16	81.14	80.42	78.49	80.35	81.39	80.36	80.54	79.60	2414.84	80.49
BackWash Water	10^3 M^3	n/a	0.468	0.573	0.265	0.203	0.183	0.276	0.205	0.379	0.208	0.435	0.000	0.201	0.000	0.267	0.000	0.323	0.220	0.000	0.000	0.000	0.183	0.000	0.564	0.000	0.202	0.271	0.190	0.000	0.000	0.234	0.000	5.850	0.189
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.57	0.57	0.55	0.59	0.55	0.58	0.57	0.54	0.55	0.53	0.54	0.56	0.57	0.53	0.55	0.54	0.54	0.55	0.54	0.58	0.54	0.54	0.56	0.52	0.51	0.53	0.54	0.55	0.54	0.53	0.51	16.97	0.55
Turbidity Information																																			
Raw Water	NTU	n/a	1.65	1.61	1.67	1.60	1.58	1.62	1.52	1.23	1.11	1.06	1.08	1.17	1.11	1.00	1.09	0.99	0.92	0.97	0.94	0.91	0.97	0.94	0.97	1.01	1.05	1.00	1.07	1.02	1.11	1.03	1.06	36.06	1.16
Settled Water	NTU	n/a	0.19	0.21	0.22	0.22	0.24	0.21	0.23	0.26	0.23	0.25	0.25	0.24	0.30	0.30	0.21	0.20	0.19	0.18	0.19	0.21	0.22	0.21	0.19	0.22	0.21	0.24	0.23	0.21	0.24	0.22	0.25	6.97	0.22
Treated Water	NTU	1	0.12	0.17	0.18	0.19	0.17	0.19	0.18	0.21	0.23	0.23	0.19	0.20	0.21	0.19	0.14	0.14	0.14	0.12	0.11	0.14	0.15	0.14	0.12	0.13	0.14	0.12	0.12	0.13	0.12	0.12	0.11	4.85	0.16
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.23	7.21	7.20	7.15	7.22	7.28	7.27	7.24	7.30	7.27	7.26	7.27	7.27	7.27	7.22	7.28	7.28	7.31	7.36	7.27	7.35	7.28	7.26	7.16	7.21	7.31	7.22	7.22	7.26	7.20	7.27	224.90	7.25
pH - Settled water	no units	n/a	6.58	6.55	6.51	6.49	6.61	6.69	6.81	6.83	6.83	6.83	6.81	6.80	6.85	6.84	6.68	6.61	6.59	6.68	6.71	6.59	6.55	6.55	6.68	6.57	6.60	6.67	6.82	6.89	6.84	6.83	6.84	207.73	6.70
pH - Raw Water	no units	n/a	7.21	7.17	7.12	7.22	7.22	7.17	7.20	7.25	7.27	7.31	7.28	7.29	7.28	7.30	7.18	7.24	7.26	7.27	7.22	7.19	7.23	7.15	7.24	7.19	7.27	7.29	7.21	7.20	7.23	7.12	7.24	224.02	7.23
FAC - Treated Water	mg/l	0.2 to 4	2.40	2.45	2.35	2.34	2.32	2.30	2.20	2.18	2.28	2.20	2.18	2.12	2.18	2.09	2.00	2.03	2.10	2.08	2.09	2.10	2.07	2.19	2.04	1.97	2.02	1.97	2.20	2.12	2.13	2.14	2.10	66.94	2.16
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.66	2.67	2.51	2.49	2.56	2.62	2.48	2.56	2.50	2.54	2.48	2.46	2.42	2.30	2.26	2.24	2.36	2.28	2.24	2.21	2.20	2.38	2.29	2.19	2.22	2.19	2.42	2.36	2.44	2.44	2.32	74.29	2.40
Temperature	C	15	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	81.0	2.7	
Fluoride used (Total Daily Consumption)	kg	n/a	19.0	19.0	20.0	20.0	18.0	19.0	19.0	18.0	18.0	18.0	19.0	18.0	19.0	18.0	18.0	17.0	18.0	18.0	17.0	17.0	17.0	19.0	20.0	20.0	20.0	20.0	18.0	19.0	18.0	18.0	18.0	85.0	2.7
Chlorine used (Total Daily Consumption)	kg	n/a	23.0	23.0	24.0	23.0	23.0	23.0	22.0	23.0	22.0	22.0	23.0	22.0	22.0	21.0	21.0	22.0	21.0	21.0	21.0	22.0	21.0	20.0	21.0	22.0	21.0	22.0	20.0	21.0	20.0	21.0	21.0	574.0	18.5
Soda ash (Total Daily Consumption)	kg	n/a	192.9	193.6	198.1	195.3	201.3	192.5	193.2	191.1	195.0	190.1	194.3	195.0	192.5	192.2	####	192.9	194.3	193.6	193.9	188.7	193.2	192.9	178.2	192.9	197.8	195.0	191.5	186.6	191.8	190.4	190.4	#REF!	#REF!
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	35.0	35.0	1085.0	35.0
Alum residual - (Total Daily Consumption)	kg	n/a	192.9	193.6	198.1	195.3	201.3	192.5	193.2	191.1	195.0	190.1	194.3	195.0	192.5	192.2	####	192.9	194.3	193.6	193.9	188.7	193.2	192.9	178.2	192.9	197.8	195.0	191.5	186.6	191.8	190.4	190.4	#REF!	#REF!
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	35.0	1085.0	35.0
Alum residual - Treated Water	mg/l	0.1	0.05	0.06	0.06	0.05	0.06	0.05	0.05	0.07	0.05	0.04	0.05	0.06	0.05	0.04	0.04	0.06	0.03	0.02	0.04	0.02	0.02	0.03	0.06	0.04	0.05	0.04	0.04	0.04	0.04	0.03	0.03	1.37	0.04
Poly bags added (25 kg bags)	kg						1.0				0.5					0.5		0.5						0.5								0.5		87.5	

Flow Data	DECEMBER	Units	2014		2015		2016	
			Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m ³		133860		159580		170510	
Raw Maximum Day	m ³	Wednesday 24th	4860	Saturday 12th	5380	Monday 05th	5750	
Raw Minimum Day	m ³	Sunday 07th	4040	Monday 14th	4890	Thursday 22nd	5090	
Raw Average Daily Consumption	m ³		4250		5150		5510	
Total Treated Water	m ³		110550		107110		108030	
Treated Water Maximim Day Consumption	m ³	Tuesday 23rd	4140	Sunday 20th	3760	Saturday 24th	3840	
Treated Water Minimim Day Consumption	m ³	Saturday 06th	3230	Saturday 12th	3150	Tuesday 06th	2970	
Treated Water Average Day Consumption	m ³		3570		3460		3480	
Daily Average Per Household Consumption Rate	m ³		0.94		0.91		0.92	
* Daily Average Per Person Consumption Rate	m ³		0.45		0.43		0.44	
Monthly Averages - Operating Parameters WTP:								
FAC Residual - Treated Water	mg/L		1.91		2.09		2.16	
Total Chlorine Residual - Treated Water	mg/L		2.17		2.29		2.40	
Aluminum Sulphate - Raw Water	mg/L		37.2		35.0		35.0	
Aluminum Sulphate - Treated Water Residual	mg/L		0.05		0.04		0.04	
Fluoride - Treated Water	mg/L		0.66		0.58		0.55	
Soda Ash - Raw Water	mg/L		35.7		35.0		35.0	
PH - Adjusted	mg/L		7.22		7.27		7.25	
Temperature	C		2.0		3.3		2.7	
Quantity of Chemical Used:		kg						
Aluminum Sulphate	kg		4973.5		5585.3		5973.1	
Polyelectrolyte	kg		75.0		75.00		87.5	
Chlorine Gas	kg		513		616		574	
Soda Ash - Used for PH Adjustment	kg		4780.5		5585.3		5973.1	
Fluoride	kg		355		474		574.0	

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

* Population is 7986

* Number of Households is 3783