February 27, 2017

Report To: Mayor & Council

From: Travis Rob, Manager of Operations & Facilities

SUBJECT: January 2017 Drinking Water Systems Monthly Summary Report

Please find attached the January 2017 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 2017 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 January 2017 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

January, 2017

Monthly Summary Report
Water Systems

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

Dated: February 07, 2017

1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of January 2017 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.

Water distribution samples taken at the following locations:

1. 1111 First St.	2. 1104 Church St.	3. 901 Wright Ave.	4. W. Tower
5. 740 Scott St.	6. 1050 Portage Ave.	7. 901 Wright Ave.	8. W. Tower
9. 122 Scott St.	10. 1036 Victoria Ave.	11. 810 King's Hwy.	12. W. Tower
13. 740 Scott St.	14. 1050 Portage Ave.	15. 901 Wright Ave.	16. W. Tower
17. 122 Scott St.	18. 1036 Victoria Ave.	19. 901 Wright Ave.	20. 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:**

Jan. 02nd - replaced parts on the poly lines

Jan. 05th - cleaned the four (4) check valves on the poly unit.
- cleaned the top and bottom tank on the poly unit.
- tested high turbidity alarm on Filter No. 3.

Jan. 10th - worked on turbidity meter - Filter No. 3.
- hauled a pallet of poly bags to second floor.

Jan. 11th - calibrated Distribution Chlorine Analyzer.

Jan. 12th - worked on lab sample pumps.

Jan. 18th - tested low chlorine alarm on SCADA system.

Jan. 24th - worked on the main backwash line.
- calibrated Distribution Chlorine Analyzer.

Jan. 30th - calibrated the Distribution Chlorine Analyzer.

Jan. 31st - ran emergency standby generator under load for one (1) hour.

8) **Water Complaints:**

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

9) **Other Miscellaneous Information:**

Jan. 03rd - took weekly routine micro samples.

Jan. 09th - took weekly routine micro samples.

Jan. 12th - M.O.E.C.C. Inspection (Focused).

Jan. 13th - M.O.E.C.C. Inspection (Focused).

Jan. 16th - took weekly routine micro samples.

Jan. 20th - received a load of Liquid Alum.

Jan. 23rd - took weekly routine micro samples.

Jan. 24th - took DWSP samples at the plant and water tower.
- took grab samples off the filters.

Jan. 30th - took weekly routine micro samples.
- took grab samples off the filters.

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.

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

Flow Data January	Units	2015		2016		2017	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		147280		158340		168830
Raw Maximum Day	m^3	Monday 26th	5890	Friday 01st	5440	Monday 14th	5640
Raw Minimum Day	m^3	Tuesday 06th	4060	Monday 25th	4820	Tuesday 26th	5140
Raw Avgerage Daily Consumption	m^3		4750		5110		5450
Total Treated Water	m^3		121570		118110		114550
Treated Water Maximim Day Consumption	m^3	Friday 23rd	4580	Monday 18th	4130	Friday 05th	4130
Treated Water Minimim Day Consumption	m^3	Sunday 11th	3620	Saturday 02nd	3340	Sunday 02nd & 25t	3460
Treated Water Average Day Consumption	m^3		3930		3810		3700
Daily Average Per Household Consumption Rate	m^3		1.039		1.007		0.978
* Daily Average Per Person Consumption Rate	m^3		0.492		0.477		0.463
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		1.95		2.18		2.25
Total Chlorine Residual - Treated Water	mg/L		2.00		2.38		2.46
Aluminum Sulphate - Raw Water	mg/L		37.4		35.0		35.0
Aluminum Sulphate - Treated Water Residual	mg/L		0.05		0.04		0.04
Fluoride - Treated Water	mg/L		0.59		0.61		0.54
Soda Ash - Raw Water	mg/L		35.8		35.0		35.0
PH - Adjusted	mg/L		7.14		7.32		7.24
Temperature	C		2.0		2.1		2.5
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		5514.4		5541.9		5909.1
Polyelectrolyte	kg		87.5		62.5		75.0
Chlorine Gas	kg		571		617		647
Soda Ash - Used for PH Adjustment	kg		5274.7		5541.9		5909.1
Fluoride	kg		295		470		553

* The Canadian Average is 450 Litres (0.45 m^3) per day.
* Population is 7986
* Number of Households is 3783

Town of Fort Frances - Water treatment Plant - Water Works # 220000978
Monitoring Record
January 2017

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	31	Total	Average
Flow rates																																			
Raw Water	10^3 M^3	17	5.53	5.44	5.47	5.36	5.50	5.47	5.58	5.46	5.41	5.51	5.36	5.56	5.45	5.64	5.59	5.14	5.47	5.40	5.50	5.47	5.36	5.44	5.48	5.35	5.46	5.48	5.37	5.44	5.56	5.30	5.28	168.83	5.45
Peak Instantaneous - Raw Water	L/s	n/a	63.69	63.61	63.68	63.58		64.13	64.12	64.13	64.10	64.25	64.04	63.94	63.95	63.88	63.80	63.81	63.76	63.65	63.80	63.58	63.58	63.60	63.56	63.57	**64.45**	63.52	63.39	63.38	63.35	63.28	63.29	1912.47	63.75
Treated Water	10^3 M^3	17	3.89	3.46	3.47	3.57	4.13	3.74	3.50	3.80	3.89	3.80	3.61	3.78	3.61	3.86	3.95	3.52	3.79	3.68	3.75	3.69	3.49	3.72	3.81	3.52	3.46	3.82	3.65	3.61	3.86	3.70	3.42	114.55	3.70
Peak Instantaneous - Treated Water	L/s	n/a	**82.34**	79.46	80.15	78.97		81.84	79.27	80.32	81.99	81.04	80.82	80.76	80.32	81.51	81.55	80.44	82.28	80.73	80.67	81.12	81.47	82.25	80.33	81.40	79.26	81.43	81.04	80.34	81.60	80.78	80.40	2425.88	80.86
BackWash Water	10^3 M^3	n/a		0.273			0.196		0.218				0.271	0.196		0.655			0.702		0.241	0.271	0.196		0.242	0.272		0.526	0.262	0.961				5.482	0.365
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.54	0.52	0.54	0.54	0.52	0.54	0.54	0.54	0.53	0.52	0.55	0.53	0.59	0.55	0.52	0.54	0.53	0.52	0.52	0.58	0.56	0.50	0.55	0.59	0.57	0.52	0.54	0.54	0.54	0.50	0.58	16.75	0.54
Turbidity Information																																			
Raw Water	NTU	n/a	1.11	1.02	0.96	0.94	0.96	0.91	0.90	0.92	0.96	1.01	0.93	0.81	0.79	0.77	0.71	0.77	0.78	0.71	0.68	0.73	0.72	0.69	0.76	0.80	0.78	0.76	0.81	0.76	0.81	0.77	0.74	25.77	0.83
Settled Water	NTU	n/a	0.19	0.20	0.18	0.16	0.18	0.16	0.18	0.16	0.16	0.17	0.16	0.17	0.14	0.13	0.12	0.14	0.15	0.15	0.17	0.14	0.17	0.16	0.17	0.19	0.21	0.24	0.20	0.19	0.17	0.18	0.17	5.26	0.17
Treated Water	NTU	1	0.10	0.10	0.08	0.08	0.08	0.05	0.07	0.06	0.07	0.10	0.12	0.11	0.10	0.11	0.09	0.11	0.10	0.11	0.11	0.10	0.09	0.10	0.11	0.10	0.09	0.10	0.09	0.08	0.08	0.10	0.10	2.89	0.09
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.25	7.24	7.28	7.32	7.34	7.32	7.34	7.27	7.24	7.26	7.24	7.24	7.23	7.20	7.23	7.23	7.22	7.24	7.19	7.20	7.21	7.21	7.22	7.21	7.22	7.24	7.26	7.22	7.19	7.22	7.22	224.50	7.24
pH - Settled water	no units	n/a	6.72	6.83	6.69	6.64	6.68	6.67	6.71	6.71	6.9	6.81	6.85	6.81	6.78	6.71	6.77	6.85	6.88	6.84	6.89	6.87	6.77	6.82	6.89	6.83	6.94	6.79	6.64	6.69	6.69	6.85	6.92	210.44	6.79
pH - Raw Water	no units	n/a	7.24	7.23	7.26	7.21	7.19	7.16	7.20	7.24	7.26	7.28	7.27	7.25	7.26	7.19	7.15	7.23	7.25	7.26	7.23	7.21	7.23	7.21	7.21	7.26	7.20	7.29	7.24	7.22	7.20	7.20	7.26	224.09	7.23
FAC - Treated Water	mg/l	0.2 to 4	2.11	2.13	2.07	2.10	2.13	2.18	2.28	2.23	2.20	2.22	2.22	2.30	2.36	2.40	2.37	2.34	2.36	2.24	2.26	2.24	2.28	2.22	2.28	2.26	2.26	2.32	2.26	2.44	2.36	2.24	2.22	69.88	2.25
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.28	2.32	2.28	2.32	2.4	2.34	2.48	2.52	2.48	2.48	2.46	2.5	2.52	2.55	2.58	2.46	2.52	2.44	2.48	2.38	2.42	2.5	2.38	2.48	2.42	2.56	2.48	2.68	2.64	2.56	2.44	74.00	2.46
Temperature	C	15	3	3	3	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	3	77.0	2.5
Fluoride used (Total Daily Consumption)	kg	n/a	19.0	18.00	19.0	17.0	18.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	18.0	20.0	19.0	18.0	19.0	18.0	19.0	18.0	18.0	18.0	18.0	18.0	17.0	18.0	17.0	17.0	18.0	17.0	16.0	553.0	17.8
Chlorine used (Total Daily Consumption)	kg	n/a	20.0	21.0	21.0	21.0	20.0	21.0	21.0	21.0	22.0	21.0	21.0	21.0	20.0	23.0	21.0	20.0	22.0	20.0	22.0	20.0	21.0	20.00	21.0	21.0	20.0	21.0	21.0	21.0	22.0	20.0	20.0	647.0	20.9
Soda ash (Total Daily Consumption)	kg	n/a	193.6	190.4	191.5	187.6	192.5	191.5	195.3	191.1	189.4	192.9	187.6	194.6	190.8	197.4	195.7	179.9	191.5	189.0	192.5	191.5	187.6	190.4	191.8	187.3	191.1	191.8	188.0	190.4	194.6	185.5	184.8	5909.1	190.6
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	193.6	190.4	191.5	187.6	192.5	191.5	195.3	191.1	189.4	192.9	187.6	194.6	190.8	197.4	195.7	179.9	191.5	189.0	192.5	191.5	187.6	190.4	191.8	187.3	191.1	191.8	188.0	190.4	194.6	185.5	184.8	5909.1	190.6
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	0.04	0.05	0.04	0.04	0.02	0.02	0.02	0.01	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.04	0.05	0.05	0.03	0.04	0.04	0.06	0.06	0.04	0.02	0.04	0.04	0.04	1.15	0.04
Poly bags added (25 kg bags)	kg						0.5					0.5			0.5				0.5						0.5		0.5							75.0	