November 16, 2015

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: October 2015 Drinking Water Systems Monthly Summary Report

Please find attached the October 2015 Summary Report on the drinking water systems, prepared by Randy White, Senior WTP Operator.

Your Administration recommends that Operations & Facilities Executive Committee accept the October 2015 report as presented.

Respectfully submitted,
Operations & Facilities Division

Doug Brown

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

Council approval of this report will accept the October 2015 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

October, 2015

Monthly Summary Report
Water Systems

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

Dated: November 13, 2015

1) **Introduction -**

This report contains the major maintenance activities and operational events that occurred during the month of October 2015 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**

Oct. 1st worked on air compressors

Oct. 2nd cleaned top and bottom tanks on the poly unit
cleaned all 4 check valves on the poly unit
worked on air compressors (safety guards)

Oct. 5th calibrated dist chlorine analyzer
took grab samples off the filters

Oct 13th changed all the filters on the dust collection system

Oct 16th calibrated dist chlorine analyzer

Oct 22nd took grab samples from filters

Oct 23rd calibrated the dist chlorine analyzer

Oct 29th cleaned top and bottom tanks on the poly unit
cleaned all 4 check valves on the poly unit

8) **Water Complaints –**

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

9) **Other Miscellaneous Information:**

Oct 5th	routine micro sample collection new main samples – Kings Highway – 1st set
Oct 6th	new main samples – Kings Highway – 2nd set new main samples – Nelson Street – 1st set
Oct 7th	new main samples – Nelson Street – 2nd set
Oct 8th	resample micro sample collection
Oct 13th	routine micro sample collection lead testing samples on distribution system
Oct 14th	received a bulk load of soda ash new main samples at Acklands – 1st set
Oct 15th	new main samples at Acklands – 2nd set
Oct 19th	routine micro sample collection new main samples Butler and Nelson – 1st set main repair samples at Simplicity – 1st set main repair samples at 526 First Street West – 1st set
Oct 20th	new main samples at Butler and Nelson – 2nd set main repair samples at Simplicity – 2nd set main repair samples at 526 First Street West – 2nd set took samples on new main – Kings Highway – 1st set
Oct 21st	took samples on new main – Kings Highway – 2nd set
Oct 26th	routine micro sample collection took the DWSP samples
Oct 27th	received a shipment of chlorine
Oct 28th	repair samples at Riverview and Elm – 1st set 560 Elm Avenue new main sample – 1st set
Oct 29th	repair samples at Riverview and Elm – 2nd set 560 Elm Avenue new main samples – 2nd set

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: _____
- John Albanese, Councillor: _____
- June Caul, 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
October 2013/2014 vs. October 2015
Flow and Operating Data

Flow Data October	Units	2013		2014		2015	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		145180		132900		170410
Raw Maximum Day	m^3	Sunday 13th	4990	Sunday 05th	4410	Saturday 24th	5730
Raw Minimum Day	m^3	Monday 7th	4310	Monday 06th	4140	Monday 26th	5230
Raw Avgerage Daily Consumption	m^3		4680		4290		5500
Total Treated Water	m^3		113160		106970		123450
Treated Water Maximim Day Consumption	m^3	Wednesday 2nd	4100	Monday 27th	4020	Monday 05th	4720
Treated Water Minimim Day Consumption	m^3	Tuesday 29th	3410	Monday 13th	3000	Monday 26th	3210
Treated Water Average Day Consumption	m^3		3650		3450		3980
Daily Average Per Household Consumption Rate	m^3		0.96		0.91		1.05
* Daily Average Per Person Consumption Rate	m^3		0.46		0.43		0.50
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		1.87		1.92		2.16
Total Chlorine Residual - Treated Water	mg/L		2.19		2.22		2.55
Aluminum Sulphate - Raw Water	mg/L		34.0		36.9		35.0
Aluminum Sulphate - Treated Water Residual	mg/L		0.06		0.04		0.03
Fluoride - Treated Water	mg/L		0.66		0.71		0.56
Soda Ash - Raw Water	mg/L		34.0		35.0		35.0
PH - Adjusted	mg/L		7.13		7.19		7.20
Temperature	C		12.5		10.9		12.0
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		4936.1		4906.5		5964.4
Polyelectrolyte	kg		50.0		50.0		62.5
Chlorine Gas	kg		609		583		789
Soda Ash - Used for PH Adjustment	kg		4936.1		4651.5		5964.4
Fluoride	kg		489		444		492

* 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
October 2015

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	5.59	5.53	5.35	5.63	5.57	5.50	5.51	5.52	5.49	5.62	5.56	5.56	5.27	5.50	5.50	5.52	5.46	5.49	5.45	5.47	5.45	5.53	5.38	5.73	5.51	5.23	5.47	5.42	5.51	5.49	5.60	170.41	5.50
Peak Instantaneous - Raw Water	L/s	n/a	64.65	**64.66**	64.58	64.54	64.58	64.62	64.58	64.46	64.53	64.38	64.43	64.37	64.27	64.23	64.29	64.21	64.13	64.03	63.97	63.88	64.09	64.13	64.03	64.03	64.12	63.93	64.07	63.95	63.97	64.13	63.88	1991.72	64.25
Treated Water	10^3 M^3	17	4.38	4.68	4.18	4.41	4.72	4.56	4.58	4.31	4.22	4.32	4.56	4.13	4.29	4.18	4.22	4.09	3.65	3.42	4.03	3.58	4.06	3.40	3.66	3.42	3.72	3.21	3.43	3.75	3.49	3.23	3.57	123.45	3.98
Peak Instantaneous - Treated Water	L/s	n/a	74.83	75.85	75.07	75.63	74.42	74.65	76.42	74.43	74.99	75.27	74.09	75.06	87.24	83.99	88.41	84.91	83.18	**89.70**	85.12	82.40	84.28	81.55	83.04	81.87		84.17	83.13	83.00	79.34	80.98	72.85	2399.87	80.00
BackWash Water	10^3 M^3	n/a	0.231	0.250	0.229	0.234	0.246	0.225	0.232	0.250	0.220		0.237	0.233	0.219	0.232	0.240	0.224	0.233	0.244	0.224	0.232	0.225	0.225	0.229	0.229	0.225	0.231	0.243	0.225	0.232	0.244	0.224	6.967	0.232
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.62	0.53	0.60	0.62	0.53	0.55	0.51	0.61	0.60	0.55	0.52	0.55	0.57	0.61	0.58	0.52	0.57	0.56	0.57	0.57	0.58	0.59	0.57	0.55	0.53	0.51	0.51	0.53	0.58	0.57	0.52	17.38	0.56
Turbidity Information																																			
Raw Water	NTU	n/a	1.70	1.68	1.59	1.63	1.71	1.46	1.37	1.62	1.51	1.56	1.47	1.49	1.74	1.62	1.88	1.51	1.63	1.45	1.75	1.44	1.53	1.47	1.58	1.51	1.44	1.57	1.37	1.50	1.53	1.45	1.37	48.13	1.55
Settled Water	NTU	n/a	0.11	0.11	0.10	0.10	0.16	0.13	0.12	0.13	0.12	0.11	0.12	0.12	0.19	0.14	0.15	0.12	0.11	0.16	0.15	0.14	0.15	0.12	0.11	0.12	0.11	0.14	0.11	0.17	0.13	0.12	0.11	3.98	0.13
Treated Water	NTU	1	0.07	0.07	0.05	0.04	0.08	0.08	0.07	0.09	0.09	0.08	0.09	0.10	0.09	0.08	0.10	0.08	0.08	0.10	0.08	0.08	0.07	0.05	0.04	0.06	0.06	0.08	0.08	0.09	0.08	0.09	0.07	2.37	0.08
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.30	7.15	7.24	7.16	7.26	7.23	7.21	7.18	7.15	7.19	7.12	7.17	7.18	7.21	7.21	7.14	7.18	7.18	7.24	7.19	7.23	7.27	7.24	7.25	7.21	7.16	7.25	7.27	7.19	7.15	7.12	223.23	7.20
pH - Settled water	no units	n/a	6.59	6.34	6.21	6.19	6.42	6.45	6.41	6.62	6.54	6.50	6.41	6.39	6.37	6.52	6.68	6.72	6.78	6.53	6.77	6.54	6.54	6.42	6.36	6.31	6.40	6.84	6.62	6.34	6.48	6.37	6.39	201.05	6.49
pH - Raw Water	no units	n/a	7.12	7.05	7.01	7.04	7.13	7.09	7.00	7.18	7.15	7.09	7.00	7.12	7.08	7.16	7.16	7.17	7.09	7.14	7.13	7.08	7.10	7.06	7.01	7.00	70.07	7.16	7.15	7.19	7.12	7.09	7.01	282.95	9.13
FAC - Treated Water	mg/l	0.2 to 4	2.46	2.09	2.09	2.07	2.46	2.42	2.21	2.54	1.99	1.86	2.26	2.18	2.19	2.22	2.08	1.92	2.15	2.01	2.15	2.23	2.18	2.10	2.21	2.08	2.10	2.12	1.97	2.10	2.08	2.23	2.28	67.03	2.16
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.70	2.86	2.62	2.52	2.80	2.88	2.37	2.82	2.20	2.17	2.39	2.37	2.92	2.70	2.74	2.68	2.66	2.72	2.68	2.64	2.68	2.56	2.63	2.25	2.30	2.50	2.40	2.22	2.24	2.31	2.39	78.92	2.55
Temperature	C	15	16.0	16.0	16.0	15.0	15.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	13.0	13.0	12.0	12.0	11.0	11.0	11.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	9.0	8.0	8.0	8.0	371.0	12.0
Fluoride used (Total Daily Consumption)	kg	n/a	16.0	16.0	16.0	16.0	17.0	16.0	16.0	16.0	16.0	16.0	16.0	15.0	15.0	16.0	16.0	16.0	15.0	16.0	16.0	16.0	15.0	16.0	15.0	17.0	15.0	15.0	15.0	15.0	16.0	18.0	17.0	492.0	15.9
Chlorine used (Total Daily Consumption)	kg	n/a	27.0	27.0	25.0	27.0	27.0	26.0	27.0	26.0	26.0	27.0	26.0	26.0	26.0	26.0	26.0	27.0	26.0	26.0	26.0	25.0	26.0	26.0	25.0	26.0	24.0	22.0	23.0	22.0	23.0	24.0	23.0	789.0	25.5
Soda ash (Total Daily Consumption)	kg	n/a	195.7	193.6	187.3	197.1	195.0	192.5	192.9	193.2	192.2	196.7	194.6	194.6	184.5	192.5	192.5	193.2	191.1	192.2	190.8	191.5	190.8	193.6	188.3	200.6	192.9	183.1	191.5	189.7	192.9	192.2	196.0	5964.4	192.4
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	35.0	35.0	1085.0	35.0
Alum residual - (Total Daily Consumption)	kg	n/a	195.7	193.6	187.3	197.1	195.0	192.5	192.9	193.2	192.2	196.7	194.6	194.6	184.5	192.5	192.5	193.2	191.1	192.2	190.8	191.5	190.8	193.6	188.3	200.6	192.9	183.1	191.5	189.7	192.9	192.2	196.0	5964.4	192.4
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	0.03	0.01	0.02	0.03	0.03	0.01	0.01	0.02	0.04	0.04	0.02	0.04	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.03	0.04	0.04	0.03	0.03	0.03	0.04	0.03	0.04	0.04	0.02	0.81	0.03
Poly bags added (25 kg bags)	kg			0.5				0.5								0.5						0.5								0.5				62.5	