

November 12, 2013

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: October 2013 Drinking Water Systems Monthly Summary Report



Please find attached the October 2013 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 2013 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 2013 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

10 Council Water ReportOctober 2013.doc

RECOMMENDED

NOV 20 2013
DIV. MNG. *Doug Brown*
EXECUTIVE COMM. *Randy White*

October, 2013

**Monthly Summary Report
Water Systems**

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

Dated: November 04, 2013

1) Introduction

This report contains the major maintenance activities and operational events that occurred during the month of October 2013 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. 03rd - cleaned the top and bottom tank on the poly unit.
- cleaned the four (4) check valves on the poly unit.

Oct. 04th - installed a new soda ash pump.
- cleaned soda ash line from pump to contact chamber.

Oct. 07th - tested backflow preventer at sewage plant.

Oct. 08th - recalibrated distribution chlorine analyzer.

Oct. 09th - flushed poly line to #1 clarifier.
- cleaned filter walls and the troughs to the filters.

Oct. 10th - flushed poly line to # 2 clarifier.

Oct. 16th - flushed poly line to clarifiers.

Oct. 17th - cleaned mixing valve on poly unit.

Oct. 22nd - recalibrated distribution chlorine analyzer

Oct. 28th - took grab samples from filter turbidity meters.

Oct. 30th - flushed poly lines to clarifiers.

Oct. 31st - cleaned the top and bottom tank on the poly unit.

8) Water Complaints –

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

9) **Other Miscellaneous Information:**

- Oct. 01st - received a load of chlorine tonners and shipped back empties.
- Oct. 02nd - lead samples taken throughout town.
- Oct. 03rd - lead samples taken throughout town.
- Oct. 07th - routine micro sample collection.
- Oct. 09th - two hydrant replacement samples on Idywild Drive - first set.
- Oct. 10th - two hydrant replacement samples on Idywild Drive - second set
- ALS lab notified staff of 3 lead exceedances - the 3 residences were notified and followed up with paper work to M.O.E., S.A.C. & M.O.H.
- Oct. 15th - routine micro sample collection.
- landfill site samples taken.
- service repair samples, Huffman Court - first set.
- Oct. 16th - service repair samples, Huffman Court - second set.
- winterized Sunny Cove Camp water system.
- Oct. 21st - routine micro sample collection.
- Oct. 22nd - R. White and B. Webb attended the Water / Wastewater conference in Thunder Bay October 23-25, 2013.
- Oct. 28th - routine micro sample collection.
- Oct. 29th - D.W.S.P. samples taken.

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: Randy White
- Doug Herr, Environmental & Facilities Supt.: D. Herr
- Doug Brown, Manager of Operations & Facilities: Doug Brown
- Mark McCaig, CAO: Mark McCaig
- Rick Wiedenhoeft, Chair O&F Exec Committee: Rick Wiedenhoeft
- Roy Avis, Mayor: Roy Avis
- Paul Ryan, Councillor: Paul Ryan
- John Albanese, Councillor: _____
- Andrew Hallikas, Councillor: _____
- ~~Sharon Tibbs, Councillor:~~ Doug Krownski
- Ken Perry, Councillor: Ken Perry

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.

Flow Data	October	Units	2011		2012		2013	
			Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m ^{^3}			186500		148030		145180
Raw Maximum Day	m ^{^3}		Saturday 08th	6380	Monday 22nd	5590		4990
Raw Minimum Day	m ^{^3}		Monday 31st	5690	Wednesday 24th	4130		4310
Raw Average Daily Consumption	m ^{^3}			6020		4775		4680
Total Treated Water	m ^{^3}			123010		116100		113160
Treated Water Maximim Day Consumption	m ^{^3}		Saturday 08th	5000	Sunday 21st	4970		4100
Treated Water Minimim Day Consumption	m ^{^3}		Saturday 01st	2880	Wednesday 10th	3160		3410
Treated Water Average Day Consumption	m ^{^3}			3970		3745		3650
Daily Average Per Household Consumption Rate	m ^{^3}			1.05		0.99		0.96
* Daily Average Per Person Consumption Rate	m ^{^3}			0.50		0.47		0.46
Monthly Averages - Operating Parameters WTP:								
FAC Residual - Treated Water	mg/L			2.05		1.65		1.87
Total Chlorine Residual - Treated Water	mg/L			2.4		1.95		2.19
Aluminum Sulphate - Raw Water	mg/L			34.5		34.5		34
Aluminum Sulphate - Treated Water Residual	mg/L			0.06		0.05		0.06
Fluoride - Treated Water	mg/L			0.71		0.58		0.66
Soda Ash - Raw Water	mg/L			34		34		34
PH - Adjusted	mg/L			7.29		7.41		7.13
Temperature	C			12.9		12.9		12.5
Quantity of Chemical Used:	kg							
Aluminum Sulphate	kg			6434.3		5107.0		4936.1
Polyelectrolyte	kg			62.5		87.5		50
Chlorine Gas	kg			729		508		609
Soda Ash - Used for PH Adjustment	kg			6160.6		4881.2		4936.1
Fluoride	kg			710		400		489

* The Canadian Average is 450 Litres (0.45 m^{^3}) per day.

* Population is 7986

* Number of Households is 3783

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	4.62	4.73	4.73	4.61	4.94	4.84	4.31	4.65	4.54	4.75	4.55	4.51	4.99	4.77	4.46	4.61	4.73	4.60	4.60	4.83	4.49	4.79	4.80	4.77	4.79	4.48	4.88	4.52	4.76	4.79	4.74	145.18	4.68	
	Peak Instantaneous - Raw Water	L/s		55.06	55.02	54.96	55.01	55.01	54.91	54.84	54.36	54.51	54.52	54.41	54.48	54.61	54.46	54.48	54.63	54.52	54.35	54.38	54.38	54.25	54.13	55.92	55.94	55.94	55.99	55.90	55.92	55.77	55.79	55.79	1706.14	55.04	
	Treated Water	10 ³ M ³	17	3.57	4.10	3.59	4.06	3.46	3.76	3.67	3.50	3.99	3.85	3.99	3.63	3.44	3.57	3.80	3.59	3.67	3.46	3.44	3.66	3.84	3.65	3.58	3.59	3.53	3.57	3.65	3.65	3.41	3.47	3.47	113.16	3.65	
	Peak Instantaneous - Treated Water	L/s		63.63	62.76	66.80	63.87	62.90	62.48	61.71	62.52	63.31	62.47	65.12	64.06	70.29	63.81	61.21	62.52	63.37	61.83	67.48	63.99	61.29	67.55	65.58	62.53	61.93	65.01	60.85	61.45	63.38	61.70	62.79	1970.19	63.55	
	Backwash Water	10 ³ M ³	n/a	0.235	0.201	0.214	0.235	0.202			0.236	0.419	0.236	0.204	0.217	0.238	0.207	0.217	0.239	0.208	0.215	0.235	0.204	0.219	0.239	0.212	0.215	0.233	0.206	0.219	0.229	0.209	0.219	0.231	6.619	0.227	
Fluoride Information																																					
	Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.60	0.60	0.72	0.71	0.72	0.71	0.61	0.60	0.62	0.64	0.54	0.62	0.68	0.73	0.73	0.70	0.69	0.67	0.65	0.61	0.60	0.64	0.61	0.70	0.73	0.75	0.76	0.65	0.61	0.64	0.72	20.56	0.66	
Turbidity Information																																					
	Raw Water	NTU	n/a	1.01	1.10	1.01	1.10	1.05	1.10	1.15	1.10	1.08	1.04	0.99	0.91	0.92	0.96	0.99	0.94	0.90	0.86	0.89	0.92	0.94	1.43	1.04	1.02	0.99	0.87	0.85	0.89	1.01	0.98	0.99	31.01	1.00	
	Settled Water	NTU	n/a	0.09	0.09	0.08	0.09	0.07	0.09	0.10	0.09	0.09	0.09	0.08	0.07	0.09	0.08	0.07	0.06	0.06	0.07	0.09	0.09	0.09	0.09	0.07	0.07	0.09	0.08	0.09	0.09	0.08	0.07	0.06	0.12	2.55	0.08
	Treated Water	NTU	1	0.04	0.05	0.06	0.05	0.06	0.05	0.06	0.05	0.07	0.05	0.05	0.06	0.07	0.05	0.04	0.04	0.04	0.04	0.06	0.05	0.06	0.06	0.05	0.05	0.05	0.05	0.06	0.05	0.06	0.05	0.06	1.65	0.05	
Other Operating Parameters																																					
	pH - Treated Water	no units	6.5 to 8.5	7.12	7.09	7.01	7.10	7.07	7.12	6.86	6.81	7.12	7.15	7.13	7.10	7.23	7.23	7.28	7.26	7.24	7.21	7.19	7.15	7.17	7.05	7.36	7.11	7.20	7.12	7.17	7.12	7.06	7.15	7.19	221.17	7.13	
	pH - Settled water	no units	n/a	6.01	6.10	6.25	6.20	6.19	6.09	6.26	6.21	6.63	6.45	6.52	6.60	6.60	6.61	6.29	6.34	6.26	6.39	6.25	6.19	6.22	6.56	6.42	6.71	6.68	6.43	6.35	6.37	6.92	6.86	6.91	198.87	6.42	
	pH - Raw Water	no units	n/a	7.05	7.10	6.89	7.01	6.95	7.00	6.79	6.81	7.06	6.73	6.87	6.70	7.07	7.05	7.60	7.04	7.07	7.01	7.00	7.11	7.10	6.99	6.72	6.79	6.85	6.81	6.99	6.98	6.83	6.85	6.82	215.14	6.84	
	FAC - Treated Water	mg/l	0.2 to 4	1.88	1.96	1.82	1.85	1.89	1.79	1.75	1.99	2.12	1.96	1.90	1.93	1.85	1.89	1.82	1.84	1.78	1.75	1.69	1.71	1.80	1.85	1.90	1.98	1.93	1.82	1.84	1.86	1.91	1.86	1.99	57.91	1.87	
	Total Chlorine Residual Treated	mg/l	0.3 to 7	2.20	2.20	2.12	2.15	2.15	1.99	2.10	2.20	2.60	2.39	2.35	2.36	2.11	2.17	2.16	2.19	2.11	2.08	2.01	2.15	2.11	2.19	2.26	2.35	2.30	2.10	2.13	2.15	2.19	2.16	2.30	66.03	2.19	
	Temperature	C	15	17.0	17.0	16.0	16.0	16.0	15.0	14.0	14.0	14.0	15.0	15.0	15.0	14.0	13.0	13.0	12.0	12.0	12.0	11.0	11.0	11.0	11.0	11.0	10.0	10.0	9.0	9.0	8.0	8.0	8.0	388.0	12.5		
	Fluoride used (Total Daily Consumption)	kg	n/a	15.0	19.0	16.0	16.0	18.0	14.0	14.0	16.0	15.0	21.0	20.0	19.0	21.0	21.0	19.0	20.0	20.0	19.0	20.0	21.0	19.0	21.0	18.0	18.0	17.0	15.0	15.0	15.0	15.0	16.0	489.0	15.8		
	Chlorine used (Total Daily Consumption)	kg	n/a	19.0	21.0	21.0	20.0	22.0	22.0	19.0	20.0	20.0	21.0	20.0	19.0	21.0	21.0	19.0	20.0	20.0	19.0	20.0	21.0	19.0	21.0	18.0	18.0	19.0	18.0	18.0	17.0	18.0	18.0	609.0	19.6		
	Soda ash (Total Daily Consumption)	kg	n/a	157.1	160.8	160.8	156.7	168.0	164.6	146.5	158.1	154.4	161.5	154.7	153.3	169.7	162.2	151.6	156.7	160.8	156.4	156.4	164.2	152.7	162.9	163.2	162.2	162.9	152.3	165.9	153.7	161.8	162.9	161.2	4936.1	159.2	
	Soda Ash - Dosage	mg/l	n/a	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	1054.0	34.0	
	Alum residual - (Total Daily Consumption)	kg	n/a	157.1	160.8	160.8	156.7	168.0	164.6	146.5	158.1	154.4	161.5	154.7	153.3	169.7	162.2	151.6	156.7	160.8	156.4	156.4	164.2	152.7	162.9	163.2	162.2	162.9	152.3	165.9	153.7	161.8	162.9	161.2	4936.1	159.2	
	Alum residual - Dosage	mg/l	n/a	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	1054.0	34.0	
	Alum residual - Treated Water	mg/l	0.1	0.06	0.05	0.09	0.08	0.09	0.07	0.09	0.09	0.08	0.06	0.07	0.07	0.03	0.06	0.04	0.06	0.06	0.04	0.06	0.05	0.04	0.05	0.06	0.06	0.05	0.06	0.05	0.06	0.04	0.08	0.04	1.88	0.06	
	Poly bags added (25 kg bags)	kg						0.5								0.5										0.5				0.5					50.0		