

August 22, 2016

Report To: Mayor & Council

From: Travis Rob, Manager of Operations & Facilities

SUBJECT: July 2016 Drinking Water Systems Monthly Summary Report

Please find attached the July 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 July 2016 report as presented.

Respectfully submitted,
Operations & Facilities Division

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

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| <p>Council approval of this report will accept the July 2016 Drinking Water Systems Monthly Summary Report and approve the report prior to it being made available to the general public.</p> |
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c.c. – Doug Herr, Environmental & Facilities Supt.
Randy White, Senior WTP Operator

03CouncilwaterreportMarch 2015

July, 2016

**Monthly Summary Report
Water Systems**

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

Dated: August 18, 2016

1) **Introduction -**

This report contains the major maintenance activities and operational events that occurred during the month of July 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. 1201 Idylwild Dr. | 2. 110 Victoria Ave. | 3. 1324 King's Hwy. | 4. W. Tower |
| 5. 1111 First St. E. | 6. 604 Third St. E. | 7. 740 Sixth St. W. | 8. W. Tower |
| 9. 720 Scott St. | 10. 1050 Portage Ave. | 11. 901 Wright Ave. | 12. W. Tower |
| 13. 1104 Church St. | 14. 525 First St. E. | 15. 1213 Colon. Rd. W. | 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

- July 02nd - installed a new soda ash pump and soda ash pipe line.
- July 04th - calibrated distribution chlorine analyzer.
- July 05th - worked on backwash valves.
- July 07th - cleaned all 4 check valves on the poly unit.
- cleaned top and bottom tanks on the poly unit.
- July 12th - calibrated distribution chlorine analyzer.
- July 19th - worked on Sunny Cove water system.
- July 20th - ran generator for one hour.
- July 25th - flushed poly lines from pumps to clarifier.
- July 27th - installed new poly pump motor.
- cleaned the water mixing valve on poly unit.
- July 28th - cleaned all 4 check valves on the poly unit.
- cleaned top and bottom tanks on the poly unit.
- July 30th - calibrated distribution chlorine analyzer.

8) **Water Complaints –**

- Poor Pressure – 0 complaints
- Water Quality – 1 complaint

835 Crowe Ave.: Discoloured water due to construction on Phair Avenue - flushed hydrant in area until water cleared.

9) **Other Miscellaneous Information:**

- July 04th - took weekly routine micro samples.
 - received a load of Alum.
 - customer service repair - bacti samples - 606 Portage Avenue - 1st set.
- July 05th - customer service repair - bacti samples - 606 Portage Ave. - 2nd set.
- July 11th - took weekly routine micro samples.
 - new water main - bacti samples - Colonization Road East from 3rd St. E. to 5th St. E. - 1st set.
- July 12th - new water main - bacti samples - Colonization Road East from 3rd St. E. to 5th St. E. – 2nd set.
 - took bacti samples at the Lion's head.
- July 13th - took samples at Sunny Cove.
- July 18th - took micro samples at Sunny Cove water system.
- July 17th - QMS meeting.
 - tie-in of existing water mains to new mains - bacti samples - Colonization Rd. E. at Front St./Scott St. - 1st set
- July 20th - tie-in of existing water mains to new mains - bacti samples - Colonization Road East at 3rd St. E. and 5th St. E. - 1st set.
- July 21st - tie-in of existing water mains to new mains - bacti samples - Colonization Road East at 3rd St. E. and 5th St. E. - 2nd set.
 - new water main - bacti samples - Phair Avenue from 3rd St. E. to 6th St. E. - 1st set.
 - took grab samples of filters.

- July 22nd - new water main - bacti samples - Phair Avenue from 3rd St. E. to 6th St. E. - 2nd set.
- July 25th - took weekly routine micro samples.
- July 26th - did D.W.S.P. samples.
- took grab samples of filters.
- July 28th - tie-in of existing water mains to new mains - bacti samples - Phair Avenue at 6th St. E. - 1st 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.: _____
- 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.

Monthly Report July 2016

Town of Fort Frances - Water treatment Plant - Water Works # 220000978

| 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 | 5.41 | 5.48 | 5.69 | 5.36 | 5.42 | 5.43 | 6.24 | 6.24 | 6.24 | 5.32 | 5.71 | 5.06 | 5.99 | 6.00 | 5.98 | 5.38 | 5.72 | 5.71 | 5.74 | 5.76 | 5.68 | 5.77 | 5.90 | 5.67 | 5.60 | 5.07 | 5.81 | 5.82 | 5.85 | 5.86 | 5.74 | 5.86 | 170.15 | 5.78 | |
| Peak instantaneous - Raw Water | Li6 | 10 ³ M ³ | n/a | 63.81 | 63.77 | 63.73 | 63.75 | 63.69 | 63.40 | 63.45 | 72.08 | 72.02 | 72.00 | 71.30 | 71.09 | 70.81 | 70.14 | 70.44 | 70.22 | 66.90 | 66.85 | 66.69 | 66.75 | 67.37 | 67.77 | 68.17 | 67.73 | 67.94 | 67.80 | 68.04 | 68.54 | 68.70 | 68.70 | 68.35 | 209.06 | 67.68 | | |
| Peak instantaneous - Treated Water | Li6 | 10 ³ M ³ | 17 | 3.54 | 3.52 | 3.57 | 3.40 | 3.63 | 4.30 | 3.60 | 3.43 | 3.49 | 4.06 | 3.96 | 3.56 | 3.68 | 3.63 | 3.58 | 3.49 | 3.35 | 3.33 | 3.42 | 3.41 | 4.68 | 3.08 | 3.08 | 3.30 | 3.38 | 3.30 | 3.80 | 4.30 | 4.38 | 5.41 | 4.20 | 126.03 | 4.07 | | |
| Peak instantaneous - Treated Water | Li6 | 10 ³ M ³ | n/a | 75.93 | 59.91 | 54.76 | 55.94 | 60.12 | 61.77 | 103.96 | 67.06 | 57.45 | 58.12 | 119.96 | 66.98 | 66.81 | 61.72 | 72.62 | 58.59 | 51.87 | 75.44 | 77.30 | 73.02 | 126.80 | 160.39 | 84.22 | 126.90 | 160.39 | 84.22 | 126.90 | 160.39 | 84.22 | 126.90 | 160.39 | 84.22 | 126.90 | 160.39 | 84.22 |
| Backwash Water | Backwash Water | 10 ³ M ³ | n/a | 0.266 | 0.211 | 0.229 | 0.266 | 0.245 | 0.247 | 0.240 | 0.173 | 0.285 | 0.175 | 0.259 | 0.235 | 0.263 | 0.151 | 0.226 | 0.237 | 0.169 | 0.237 | 0.151 | 0.237 | 0.151 | 0.237 | 0.151 | 0.237 | 0.151 | 0.237 | 0.151 | 0.237 | 0.151 | 0.237 | 0.151 | 0.237 | 0.151 | 0.237 | |
| Fluoride Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride Residual - Treated Water | Fluoride Residual - Treated Water | mg/l | 0.5 to 0.8 | 0.75 | 0.73 | 0.75 | 0.72 | 0.73 | 0.75 | 0.72 | 0.76 | 0.72 | 0.70 | 0.62 | 0.65 | 0.62 | 0.53 | 0.53 | 0.56 | 0.52 | 0.58 | 0.64 | 0.50 | 0.64 | 0.64 | 0.68 | 0.68 | 0.69 | 0.69 | 0.70 | 0.71 | 0.69 | 0.72 | 0.71 | 0.72 | 20.69 | 0.67 | |
| Turbidity Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Raw Water | Raw Water | NTU | n/a | 1.50 | 1.49 | 1.58 | 1.61 | 1.63 | 1.59 | 1.49 | 1.51 | 1.55 | 1.45 | 1.53 | 1.49 | 1.26 | 1.33 | 1.38 | 1.45 | 1.45 | 1.51 | 1.43 | 1.37 | 1.43 | 1.39 | 1.45 | 1.54 | 1.58 | 1.44 | 1.37 | 1.31 | 1.45 | 1.40 | 1.49 | 45.45 | 1.47 | | |
| Settled Water | Settled Water | NTU | n/a | 0.14 | 0.11 | 0.10 | 0.09 | 0.11 | 0.12 | 0.11 | 0.12 | 0.13 | 0.14 | 0.19 | 0.12 | 0.11 | 0.15 | 0.14 | 0.17 | 0.16 | 0.12 | 0.13 | 0.16 | 0.12 | 0.11 | 0.10 | 0.13 | 0.12 | 0.11 | 0.10 | 0.13 | 0.12 | 0.14 | 0.11 | 0.10 | 0.38 | 0.12 | |
| Treated Water | Treated Water | NTU | 1 | 0.09 | 0.08 | 0.07 | 0.07 | 0.09 | 0.08 | 0.06 | 0.09 | 0.08 | 0.09 | 0.09 | 0.07 | 0.09 | 0.09 | 0.11 | 0.08 | 0.10 | 0.08 | 0.08 | 0.09 | 0.07 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.09 | 0.09 | 0.08 | 0.06 | 0.06 | 2.43 | 0.08 | |
| Other Operating Parameters | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH - Treated Water | pH - Treated Water | no units | 6.5 to 8.5 | 7.22 | 7.24 | 7.39 | 7.31 | 7.27 | 7.25 | 7.15 | 7.27 | 7.25 | 7.17 | 7.05 | 7.40 | 7.40 | 7.26 | 7.32 | 7.27 | 7.29 | 7.27 | 7.24 | 7.29 | 7.25 | 7.27 | 7.25 | 7.26 | 7.29 | 7.27 | 7.24 | 7.19 | 7.22 | 7.27 | 7.26 | 217.93 | 7.26 | | |
| pH - Settled Water | pH - Settled Water | no units | n/a | 6.10 | 6.06 | 6.02 | 6.06 | 6.09 | 6.01 | 6.07 | 6.09 | 6.12 | 6.04 | 6.15 | 6.16 | 6.16 | 6.20 | 6.25 | 6.19 | 6.15 | 6.07 | 6.22 | 6.18 | 6.14 | 6.16 | 6.15 | 6.17 | 6.16 | 6.15 | 6.17 | 6.11 | 6.12 | 6.09 | 6.17 | 6.16 | 11.11 | 6.13 | |
| pH - Raw Water | pH - Raw Water | no units | n/a | 7.16 | 7.11 | 7.17 | 7.11 | 7.17 | 7.14 | 7.18 | 7.21 | 7.09 | 7.17 | 7.14 | 7.18 | 7.10 | 7.07 | 7.23 | 7.13 | 7.21 | 7.19 | 6.98 | 7.26 | 7.24 | 7.20 | 7.19 | 7.16 | 7.19 | 7.20 | 7.17 | 7.16 | 7.09 | 7.27 | 7.17 | 7.16 | 22.91 | 7.16 | |
| FAC - Treated Water | FAC - Treated Water | mg/l | 0.2 to 4 | 2.30 | 2.16 | 2.10 | 2.14 | 1.98 | 1.97 | 1.86 | 1.99 | 2.04 | 2.20 | 2.18 | 1.80 | 2.08 | 2.30 | 2.05 | 2.00 | 2.15 | 2.12 | 2.15 | 2.14 | 2.12 | 2.10 | 2.12 | 2.00 | 2.03 | 1.89 | 2.81 | 2.12 | 1.99 | 2.64 | 2.15 | 2.07 | | | |
| Total Chlorine Residual | Total Chlorine Residual | mg/l | 0.3 to 7 | 2.42 | 2.37 | 2.29 | 2.36 | 2.17 | 2.15 | 2.09 | 2.16 | 2.21 | 2.41 | 2.38 | 2.18 | 2.26 | 2.59 | 2.32 | 2.42 | 2.48 | 2.36 | 2.40 | 2.36 | 2.39 | 2.36 | 2.32 | 2.29 | 2.34 | 2.24 | 2.19 | 2.15 | 2.14 | 2.37 | 2.26 | 71.53 | 2.31 | | |
| Temperature | Temperature | °C | 15 | 17.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 19.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 21.0 | 20.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 23.0 | 23.0 | 63.30 | 20.4 | | |
| Fluoride used (Total Daily Consumption) | Fluoride used (Total Daily Consumption) | kg | n/a | 19.0 | 18.0 | 19.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 18.0 | 17.0 | 18.0 | 17.0 | 17.0 | 16.0 | 17.0 | 17.0 | 17.0 | 17.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 18.0 | 18.0 | 17.0 | 18.0 | 58.50 | 18.0 | | |
| Chlorine used (Total Daily Consumption) | Chlorine used (Total Daily Consumption) | kg | n/a | 27.0 | 26.0 | 27.0 | 26.0 | 26.0 | 33.0 | 31.0 | 31.0 | 27.0 | 30.0 | 29.0 | 29.0 | 30.0 | 27.0 | 28.0 | 28.0 | 29.0 | 30.0 | 30.0 | 28.0 | 28.0 | 30.0 | 30.0 | 30.0 | 30.0 | 29.0 | 30.0 | 29.0 | 29.0 | 29.0 | 29.0 | 89.0 | 28.7 | | |
| Soda ash (Total Daily Consumption) | Soda ash (Total Daily Consumption) | kg | n/a | 189.4 | 191.8 | 199.2 | 187.6 | 189.7 | 190.1 | 215.4 | 218.4 | 221.2 | 196.9 | 212.1 | 209.7 | 210.0 | 208.6 | 188.3 | 200.2 | 199.9 | 200.1 | 201.6 | 198.8 | 202.0 | 206.5 | 198.5 | 196.0 | 209.0 | 203.4 | 203.7 | 204.8 | 205.1 | 200.9 | 205.1 | 627.30 | 202.3 | | |
| Soda Ash - Dosage | 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 | 35.0 | 35.0 | | |
| Alum residual - (Total Daily Consumption) | Alum residual - (Total Daily Consumption) | kg | n/a | 189.4 | 191.8 | 199.2 | 187.6 | 189.7 | 190.1 | 215.4 | 218.4 | 221.2 | 196.9 | 212.1 | 209.7 | 210.0 | 208.6 | 188.3 | 200.2 | 199.9 | 200.1 | 201.6 | 198.8 | 202.0 | 206.5 | 198.5 | 196.0 | 209.0 | 203.4 | 203.7 | 204.8 | 205.1 | 200.9 | 205.1 | 627.30 | 202.3 | | |
| Alum residual - Dosage | 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 | 35.0 | 35.0 | | |
| Poly bas added (25 kg ba | Poly bas added (25 kg ba | kg | 0.1 | 0.04 | 0.02 | 0.04 | 0.02 | 0.04 | 0.03 | 0.04 | 0.02 | 0.04 | 0.04 | 0.04 | 0.04 | 0.02 | 0.02 | 0.03 | 0.02 | 0.02 | 0.03 | 0.05 | 0.01 | 0.01 | 0.01 | 0.03 | 0.04 | 0.02 | 0.04 | 0.02 | 0.06 | 0.03 | 0.06 | 0.04 | 0.02 | 0.03 | 0.03 | |

| Flow Data JULY | Units | 2014 | | 2015 | | 2016 | |
|--|----------------|------------------|--------|------------------|--------|------------------|--------|
| | | | | | | | |
| | | Day of the Month | | Day of the Month | | Day of the Month | |
| | | | | | | | |
| Total Raw Water | m ³ | | 168590 | | 193370 | | 179150 |
| Raw Maximum Day | m ³ | Friday 25th | 6470 | Sunday 12th | 6970 | Saturday 09th | 6320 |
| Raw Minimum Day | m ³ | Sunday 06th | 4480 | Wednesday 08th | 4170 | Monday 04th | 5360 |
| Raw Average Daily Consumption | m ³ | | 5440 | | 6240 | | 5780 |
| | | | | | | | |
| Total Treated Water | m ³ | | 129810 | | 134840 | | 126030 |
| Treated Water Maximim Day Consumption | m ³ | Thursday 31st | 5540 | Friday 31st | 5530 | Friday 29th | 5680 |
| Treated Water Minimim Day Consumption | m ³ | Wednesday 02nd | 3350 | Thursday 02nd | 3470 | Saturday 02nd | 3320 |
| Treated Water Average Day Consumption | m ³ | | 4190 | | 4350 | | 4070 |
| Daily Average Per Household Consumption Rate | m ³ | | 1.11 | | 1.15 | | 1.08 |
| * Daily Average Per Person Consumption Rate | m ³ | | 0.52 | | 0.54 | | 0.51 |
| | | | | | | | |
| | | | | | | | |
| Monthly Averages - Operating Parameters WTP: | | | | | | | |
| FAC Residual - Treated Water | mg/L | | 1.83 | | 1.99 | | 2.07 |
| Total Chlorine Residual - Treated Water | mg/L | | 2.16 | | 2.33 | | 2.31 |
| Aluminum Sulphate - Raw Water | mg/L | | 36.0 | | 35.0 | | 35.0 |
| Aluminum Sulphate - Treated Water Residual | mg/L | | 0.05 | | 0.03 | | 0.03 |
| Fluoride - Treated Water | mg/L | | 0.59 | | 0.55 | | 0.67 |
| Soda Ash - Raw Water | mg/L | | 36.0 | | 35.0 | | 35.0 |
| PH - Adjusted | mg/L | | 7.15 | | 7.22 | | 7.26 |
| Temperature | C | | 18.8 | | 21.6 | | 20.4 |
| | | | | | | | |
| Quantity of Chemical Used: | kg | | | | | | |
| Aluminum Sulphate | kg | | 6069.2 | | 6768.0 | | 6270.3 |
| Polyelectrolyte | kg | | 75.0 | | 75.0 | | 100.0 |
| Chlorine Gas | kg | | 797.0 | | 933.0 | | 890.0 |
| Soda Ash - Used for PH Adjustment | kg | | 6069.2 | | 6069.2 | | 6270.3 |
| Fluoride | kg | | 408.0 | | 572.0 | | 558.0 |

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

* Population is 7986

* Number of Households is 3783