TOWN OF FORT FRANCES

Operations and Facilities Executive Committee

AGENDA - November 20, 2019, 8:30 AM

MEETING - Civic Centre

Session #017

			Page
1.	**Call to Order**		
2.	**Disclosure of pecuniary interest and the general nature thereof**		
3.	**Approval of Previous Committee Minutes**		
	3.1	Minutes from the previous meeting on November 6, 2019	2 - 3
4.	**Non-agenda Items**		
5.	**Items Referred from Council**		
	5.1	Letter Dated October 24, 2019 from M. Ahrens Re: Student Safety and Legion Park Concerns	4 - 8
	5.2	Letter Dated October 31, 2019 from D. Taylor and L. Sharp Re: Sump Pump Discharge	9 - 11
6.	**New Business**		
	6.1	Vianet Water Tower Antenna Lease Agreement Renewal	12 - 13
	6.2	Request from Rick Socholotuk Re: Use of ATV on Town Roads	14 - 16
	6.3	July 2019 Drinking Water Systems Monthly Summary Report	17 - 25
	6.4	August 2019 Drinking Water Systems Monthly Summary Report	26 - 33
	6.5	September 2019 Drinking Water Systems Monthly Summary Report	34 - 41
7.	**Adjourn / Next Meeting Date**		

TOWN OF FORT FRANCES

MINUTES SESSION NO. #016 November 6, 2019

The meeting of Operations & Facilities Executive Committee of the Town of Fort Frances was held in the Civic Centre on November 6, 2019 from 8:30 a.m. to 9:55 a.m.

PRESENT: Chairperson R. Wiedenhoeft - Councillor, M. Behan - Councillor, J. McTaggart - Councillor, Mayor J. Caul (ex-officio)

ALSO PRESENT: T. Rob, Manager of Operations & Facilities, D. Brown, CAO

1 Call to Order

1.1 The meeting was called to order at 8:30 a.m.

2 Disclosure of pecuniary interest and the general nature thereof

2.1 None

3 Approval of Previous Committee Minutes

3.1 Minutes from the previous meeting on October 23, 2019 - the minutes were approved as circulated.

4 Non-agenda Items

4.1 None

5 New Business

5.1 2020 Operations and Facilities Division User Fees and Charges - the administration report was approved as amended.

5.2 2020/2021 Connecting Link Program - Kings Highway 11/71 - the administration report was approved as presented.

5.3 2020/2021 Connecting Link Program - Scott Street - the administration report was approved as recommended.

5.4 Drinking Water Quality Management System - Management Review - the administration report was aproved as amended.

5.5 Geospatial Data Share Agreement with Telecon - the administration report was approved as recommended.

5.6 Geospatial Data Share Agreement with Fire Underwriters - the administration report was approved as recommended.

5.7 Application to the Investing in Canada Infrastructure Program - Memorial Sports Centre - the administration report was approved as amended.

6 Information

6.1 None

7 Adjourn / Next Meeting Date

7.1 Adjourned at 9:55 a.m.
Next meeting November 20, 2019

_____
Executive Committee Chair

_____
T. Rob, Manager of Operations & Facilities

November 20, 2019

Report To: Mayor and Council

From: Travis Rob, Manager of Operations and Facilities

RE: Letter Dated October 24, 2019 from M. Ahrens RE: Student Safety and Legion Park Concerns

If Council recalls Mr. Ahrens brought forward a number of requests in the 2019 Budget process for consideration, I have attached the budget report for reference, the sidewalk along Keating Avenue was one of the matters considered.

Item 1:

Back when Rainy River District School Board was implementing Kiss and Ride, the sidewalk along Keating Avenue was considered heavily and at that time the School Board was asked to help cover the costs for the sidewalk and the property owners were contacted about the development. At that time the residents were not in favour with the development of a sidewalk along the west side of Keating Avenue. In addition, there is an issue with the location of the power poles along this section of roadway such that there is not sufficient room to get a sidewalk installed between the poles and the property line nor between the poles and curb. All four of the poles along this section would have to be re-located to facilitate the installation of a sidewalk. In addition to this issue, the lots along this road section are very flat and the development of a sidewalk along this road at this time may negatively impact the ability for these lots to drain to the roadway or cause water to flow back toward the houses. The best time to install a sidewalk is likely during a roadway reconstruction when proper grading and drainage can be accommodated. At this point the School Board would have to be approached again to discuss cost sharing, and the Northwest Catholic School Board should also be contacted as their higher student population would benefit from this sidewalk as well. Following that, it is recommended that the request be forwarded to the 2020 Capital Budget process for consideration.

Item 2:

The Legion Park off Kings Highway and Lillie Avenue does see some traffic at the end of Lillie Avenue where people turn around at the end of that roadway. Depending on the time of year we have to dress up the area that the vehicles turn around due to rutting. In the winter, this area is used for snow storage, so the turning area is not a concern. Given the relative openness of this area, if we were to put up barricades drivers would easily be able to go around them. The only way to address this matter would be through additional enforcement action from the OPP. Currently the vehicular traffic is focused in one small area and so at this time, it is recommended that no action be taken towards this matter.

It is the recommendation of the Operations and Facilities Executive Committee that:

1. the request for a sidewalk along Keating Avenue from J.W. Walker School to Second Street be referred to the 2020 Capital Budget Process
2. That no action be taken toward the traffic at the Legion Park.

Respectfully Submitted

Travis Rob, P.Eng

Council approval of this report will agree with the recommendation of the Operations and Facilities Executive Committee that:

1. **the request for a sidewalk along Keating Avenue from J.W. Walker School to Second Street be referred to the 2020 Capital Budget Process**
2. **That no action be taken toward the traffic at the Legion Park.**

Manager of Operations and Facilities

Document1

October 24, 2019

Dear Mayor Caul:

Re: 1) Pedestrian Safety - Keating Ave. / 1st St. W
2) Vehicular degradation of Legion Park (south end Lillie Ave.)

Elementary Student Safety - Keating Ave. / 1st Street W

* 400+ students will be attending St. Mary (Elementary) School (JK-Gr.8) beginning January 2020.

* A number of these students will walk from south of #11/71 to and from the school.

* Students using Keating Ave. and/or 1st St. West need sidewalks. (Each day 13+ school buses & long Kiss & Ride line-ups create traffic hazards.)

* The T of FF needs to budget / install a sidewalk along the west side of Keating Ave. from J. W. Walker School north to 2nd Ave. W.

* In the interim, during the winter months, a sidewalk plow needs to keep open a safe passageway off the west side of Keating Ave.

Degradation of Legion (Westend) Park (south end)

* Dozens of vehicles are invading the south end of Legion Park and using it as a turnaround.

* This ugly "traffic circle" has destroyed the grass, cut deep muddy ruts, and is hyper-stressing the young, shallow-rooted red pines.

* Management at the park seems to see the solution to be the responsibility of the Streets and Roads Department.

* The Streets and Roads Department seems to see the solution to be the responsibility of the Parks Department.

* An order from "***on high***" needs to be issued to stop this totally avoidable degradation of our beautiful Legion Park.

Respectfully re-submitted by Merv Ahrens

December 17, 2018

Report To: Mayor and Council

From: Travis Rob, Manager of Operations and Facilities

RE: 2019 Budget Request – Merv Ahrens Requests

At the December 10 meeting of Council, local resident Merv Ahrens brought forward a number of requests for addition to the Capital Budget, the following table summarizes these requests and lists estimated costs:

Item	Cost	Notes
1. Countdown Ped Signals Keating Ave.	$1530.00	New Controller installed in 2018
2. Countdown Ped Signals Central Ave.	N/A	Not possible See information below.
3. Sidewalk Along Kings Hwy Webster Ave. to First St.	$23,000.00	Estimated 102.4m at $224.61/m
4. Sidewalk along Keating Parker Street to First Street	$65,000.00	Been in the budget since 2014 cost shared with RRDSB 50/50
5. Cross walks	N/A	See comments below
6. Chain Link Fence along Legion Park	$22,000.00	Approximately 90m of 4' chain link fence

Item 1 and 2:

With the Keating Avenue and Kings Highway intersection, there is an additional fixture that would have to be added to the current hand/man signal to show the countdown time. The cost for the 4 new fixtures is estimated at: $1530.00. Currently the hand signal comes up and flashes for 10 seconds prior to going to solid don't walk and the traffic signals changing to amber then red. For the Central Avenue and Third Street intersection, there currently are no pedestrian signals in this intersection. This intersection will require a controller upgrade as part of the Town's phased replacement plan, however this intersection poses some very unique challenges to meet the new regulations and will, as a result, be a costly intersection to complete. This intersection will require 4 new signals, one additional pole, 4 pedestrian push buttons, and one pedestrian push button pole plus all of the associated underground wiring. This work is planned for 2021 as a standalone capital item.

Item 3:

Currently the sidewalk ends from the east at Webster Avenue and there is no more sidewalk along the north side of Kings Highway until Keating Avenue. An extension of the sidewalk in front of Husky would be from First Street to Webster Avenue, a distance of approximately 102.4m. Based on surface preparation costs, it is estimated that the capital cost for this installation would be $23,000.00. In addition, the abutting property owners would be required to approve of the sidewalk installation prior to the completion of the works and there would be an additional operating cost going forward for the ongoing winter and summer maintenance activities.

Item 4:

This request first came forward in the budget in 2014 at a request of the Traffic Safety Committee. This

block of Keating is not an easy block to install a sidewalk on as all of the utility poles down this stretch would have to be relocated to make room for the installation. In 2014 the Town requested 50% funding from the Rainy River District School Board and has yet to see a commitment from them on this initiative.

Item 5:
In 2019 the Administration will be looking for funds to complete necessary legal drawings of our Traffic Controlled intersections as a requirement of MTO for roads designated Connecting Link roads. The crosswalk at McDonalds, previously unapproved is one of the 'intersections' that MTO is looking for. This may render this crosswalk unapproved and have us being required to remove it. The possibility of installing a second cross walk at, or near Tim Horton's is not something that would be likely to be permitted. The pedestrian cross over located near the intersection of Church Street and Veteran Avenue, contrary to the presentation by Mr. Ahrens, is properly signed and lighted.

Item 6:
The installation of a chain link fence along the front of Legion park would be a capital cost of approximately $22,000.00 for a galvanized chain link fence, four feet tall in accordance with our fence by-law.

Administration is looking for clear direction on whether to include any or all of these 6 items in the 2019 Capital Budget.

With the change to the Municipal Act requiring Municipalities to adopt policies surrounding the protection and improvement of their Municipal Tree Canopy, administration has already started to draft a policy suited to our municipalities needs. The items listed in Mr. Ahrens' letter have already been considered by Administration and will be found within the draft policy slated to be brought forward to Council in early 2019.

Respectfully Submitted

Travis Rob, P.Eng
Manager of Operations and Facilities

2018Dec Request For Ped Improvements

November 20, 2019

Report To: Mayor and Council

From: Travis Rob, Manager of Operations and Facilities

RE: Letter Dated October 31, 2019 from D. Taylor and L. Sharp RE: Sump Pump Discharge

Upon notification of the issue with the sump pump in question, I worked with By-Law to determine how the matter should be addressed. I attended the site and noted the overland flow shortly after hearing about the complaint. At that time By-Law Enforcement was working with the property owner to address this issue while complying with the provisions of the applicable By-Law's.

It is my understanding that at this time the matter has been dealt with and there is no longer an issue with the noted property.

The Planning and Development Executive Committee recommends that administration continue to monitor the situation into the spring time thaw.

It is the recommendation of the Operations and Facilities Executive Committee that the matter be considered closed and further that administration follow up on this situation in the spring.

Respectfully Submitted

Travis Rob, P.Eng

Council approval of this report will agree with the recommendation of the Operations and Facilities Executive Committee that the matter be considered closed and further that administration follow up on this situation in the spring.

Manager of Operations and Facilities

2019Nov Taylor Sump Pump Request

Dalton Taylor and Lydia Sharp
1021 Third Street East
Fort Frances, ON P9A 1S3

RECEIVED
NOV 1 2019
TOWN OF FORT FRANCES

October 31, 2019

Town of Fort Frances
By-law Enforcement Office
Public Works Department
320 Portage Avenue,
Fort Frances, ON P9A 3P9

RE: 1015 Third Street East, Fort Frances – Sump line water discharge

Dear Sir/Madam:

This will confirm that we recently made a complaint to both the By-law Enforcement Department and the Public Works Department regarding the recent installation of a sump line at 1015 Third Street East that is being discharged directly on the municipal lane. The continuous discharge of water has caused flooding of the lane and adjoining properties. Both departments have advised the discharge of sump line subsurface ground water on municipal lane was permissible, which is extremely troubling.

As you are aware, the discharge from the sump line has created large puddles, erosion and continuously wet conditions on the municipal lane, which due to insufficient grading does not flow towards the storm sewers and therefor pools in the lane and neighboring properties. This has created a nuisance and a hazard. It has now reached the point that there are hazardous icy conditions and jagged ice chucks strewn about the lane and abutting properties. The Town could be held potentially liable in the event of property damage or personal injury.

The Town of Fort Frances By-law #06/16, and in particular paragraphs 8.4 and 8.8 (a), a copy of which is enclosed, applies to this situation and which should not be permitted to continue.

I trust that this matter will be addressed promptly and properly.

Sincerely,

Dalton Taylor
Lydia Sharp

Dalton Taylor/Lydia Sharp

cc: June Caul, Mayor

installation is made. The rates for the installation of this service are as provided in the current Town's User Fee by-law.

b) Where as determined by the Engineer, there is no acceptable storm sewer or open ditch abutting the property, the property owner may make application annually for permission to direct the discharge from the weeping tile sump pump to the sanitary sewer between October 15 and March 31 each year. Approval by the Engineer, of the application is required before any connection to the sanitary sewer is made. The property owner shall terminate the connection of the discharge from the weeping tile sump pump to the sanitary sewer and redirect the discharge to the outdoors by March 31 or as directed by the Engineer.

In special circumstances, the Engineer may grant permission to a property owner to deviate from the foregoing required timelines.

No property owner shall permit the discharge from the weeping tile sump pump to the surface of any municipal roads during winter months.

8.3 Development requiring site plan approval
For all new site plan approvals, all existing connections of foundation drains (weeping tile) shall be removed and no new connection of foundation drains shall be allowed to the sanitary sewer system unless approved by the Engineer.

8.4 Discharge of foundation drain (weeping tile) flows
Every person shall discharge all foundation drain (weeping tile) flows from a building in accordance with this by-law.

8.5 Gravity connections
No gravity connection of foundation drains (weeping tile) will be allowed to the storm sewer system unless the system has the capacity to provide for such connections and is approved by the Engineer.

8.6 New plans of subdivision
Where ever possible no person shall create a lot that does not have a storm sewer adjacent to it and, in subdivisions where the subdivision agreement has been approved by Council no person shall create a lot that does not have a storm private drain connection, except where a geotechnical engineer certifies that foundation drains (weeping tile) are not required.

8.7 When sump pumps are discharged to ground surface
For all new subdivisions, where the subdivision agreement is approved by Council where ever possible sump pumps shall discharge foundation drain (weeping tile) flows into a storm sewer. Where a sump pump discharges foundation drain (weeping tile) flows to the ground surface, the following shall apply:

a) if a problem related to a lot, caused by the discharge of the sump pump to the ground surface occurs prior to the Town's assumption of the street fronting that lot, the developer will be required to redirect the sump pump discharge to the storm sewer via a storm private drain connection at no cost to the Town;

b) prior to the assumption of a street by the Town, the developer will be required to engage a geotechnical engineer to certify that the soil and ground water conditions on any vacant lot or lots are such that a direct connection to a storm sewer will not be required. If such certification cannot be provided, the developer shall be required to install a storm private drain connection to serve each affected lot, at no cost to the Town;

c) prior to the assumption of a street by the Town, should the discharge of a sump pump on any lot adjacent to a vacant lot be required, because of unsuitable or unfavourable soil and ground water conditions, to be connected directly to the storm sewer, the developer shall install storm private drain connections to all vacant lots as directed by the Engineer, at no cost to the Town.

8.8 Requirements for foundation drain (weeping tile) flows
The foundation drain (weeping tile) flows from a building shall be discharged in the following manner:

a) via a sump pump to the ground surface, provided that the discharge to the ground surface does not create continually wet ground conditions and/or do not create any adverse effect upon municipal sidewalks and roads or upon adjacent properties; or

b) via a sump pump to a storm sewer; or

c) via a sump pump to a dry well system, provided that appropriate soil testing is completed to establish the suitability of using a dry well system, and that the dry well system is designed and certified by a qualified Ontario Professional Engineer; or

d) by gravity water flow to the storm sewer, if capacity and availability, as determined by the Engineer, exists in the storm sewer; and

e) in subdivisions where the subdivision agreements are approved by Council, notwithstanding the requirements of clauses 8.8 (a) to (d) inclusive, sump pump discharges shall be connected to storm building sewers, which shall be connected to storm private drain connections.

November 20, 2019

Report To: Mayor and Council

From: Travis Rob, Manager of Operations and Facilities

RE: Vianet Water Tower Antenna Lease Agreement Renewal

Vianet presently leases space on the Water Tower for an antenna. A 5-year term lease agreement has been in place since December 1, 2009, renewed first in 2015, where Vianet pays the Town $273.10 (HST extra) per month. This agreement expired on November 30, 2019.

Attached is a letter from John Ducharme requesting a renewal of this agreement for another 5-year term. An amended agreement will need to be signed to reflect both the Term and Possession timelines and new lease rates. The Term would be for another five (5) years (December 1, 2019 to November 30, 2024) at the new rate of $3,498.45 per year ($291.54/mth) plus HST. This rate was calculated by the inflationary increase to the existing rate over the past 5 years. All other conditions within the agreement remain the same.

It is the recommendation of the Operations and Facilities Executive Committee to enter into a renewal agreement with Vianet for antenna space on the Town's water tower for a period of 5 years, and further that Mayor and Clerk be authorized to execute the agreement on behalf of the corporation.

Respectfully Submitted

Travis Rob, P.Eng

Council approval of this report will agree with the recommendation of the Operations and Facilities Executive Committee to enter into a renewal agreement with Vianet for antenna space on the Town's water tower for a period of 5 years, and further that Mayor and Clerk be authorized to execute the agreement on behalf of the corporation.

Manager of Operations and Facilities

2019Nov Vianet Lease Agreement Renewal

Town of Fort Frances
320 Portage Avenue, Fort Frances, Ont. P9A 3P9
807-274-5323

To whom it may concern,

Vianet is writing to confirm that we intend to renew our agreement for the Fort Frances Water Tower for use of antenna structure for Wireless Internet.

John DuCharme
Vianet
November 13 2019

128 Larch Street, Suite 502, Sudbury, ON P3E 5J8
1-800-788-0363 | www.vianet.ca

November 20, 2019

Report To: Planning and Development Executive Committee

From: Operations and Facilities Executive Committee

RE: Request from Rick Socholotuk RE: Use of ATV on Town Roads

At the September 9, 2019 meeting of Council, a request from Mr. Rick Socholotuk to amend the Traffic Control By-Law to permit the use of All Terrain Vehicles on Town Roads was referred to the Planning and Development Executive Committee with input from the Operations and Facilities Executive Committee and Traffic Safety Committee.

Attached you will find a report and additional materials from the Traffic Safety Committee regarding this request. The recommendation from the Traffic Safety Committee is that the request be denied.

One key consideration brought forward from the Traffic Safety Committee is the safety of these vehicles for use on roadways. Simply put there are no safety standards these vehicles have to meet like a car would, how can we be sure that they are safe to use on the roads. One simple example is lights, not all vehicles, especially older vehicles have lights, in addition until recently brake lights were not available on ATV's. Having these vehicles on the roads with motor vehicles, pedestrians, cyclists, etc. raises too much risk. In many communities that permit the use of ATV's, there exists a network of trails for the riders to use necessitating the need to move about the Town to acquire services such as food or gas. In Fort Frances, this is not the case.

It is the recommendation of the Operations and Facilities Executive Committee to support the recommendation of the Traffic Safety Committee and recommend that the request to allow All Terrain Vehicles to be used on Town roads be denied.

Respectfully Submitted

Rick Wiedenhoeft

Chair, Operations and Facilities Executive Committee

2019Nov Request for ATV Use

November 8, 2019

Report To: Travis Rob, Manager of Operations and Facilities

From: Milt Strachan, Transportation Superintendent

Re: Letter of request from Rick Socholotuk, that ATVs' and Side-by-Sides' be allowed on the streets in Fort Frances.

I had a meeting with the member from the public on the Traffic Safety Committee, Robert Green, to discuss the request. Dr. Green served as a Coroner and in doing so has been witness to the end result of many accidents resulting from the use of ATVs', scooters etc… Dr. Green has provided an article from the Economist for your perusal. He would also be willing to provide a report from the Coroner if it is chosen to pursue this matter.
We both agree that this request is coming from a small group and that as a whole this is not something that most of the local population would consider a necessity.
There are so many unanswered questions on the safety of these vehicles, age limits, licensing, vehicles being up to safety standards, before even considering the safety of pedestrians, pets and other motor vehicles as well as who polices it?
Tourists do not travel with an ATV to explore Towns and Cities, they use them in the wilderness or on trails and back roads where they are off road. That is the same use that families have them for as a rule.
Dr. Greens parting remark was that we should never entertain convenience at the cost of safety. I could not agree more.
With so many unanswered questions the Traffic Safety Committee recommends that this request be denied.

Respectfully Submitted,

Milt Strachan,
Transportation Superintendent

Micromobility

Growing up

WARSAW

E-scooter startups turn cautious

ON MAY 29TH electric scooters began legally to glide down cycle lanes in the Swedish city of Helsingborg. The next day a rider collided with a car and died. The Swedish Transport Authority immediately called for a ban on the devices. The incident highlights the riskiness of the vehicles—and of the fast-growing micromobility business around the world.

Motorised versions of children's kick scooters are notoriously unsafe. Their silent motors catch pedestrians and other road users unawares. A study by the Portland Bureau of Transportation concluded that e-scooters get into accidents 22 times as often as cars do, and 44 times as often as motorbikes. Another, by the city of Austin, found that one in three users is hurt on their first go. They are also increasingly unwelcome. Abandoned dockless devices obstruct pavements and doorways. In 2018 San Francisco temporarily banned them. The mayor of Nashville recently tweeted that the city's experiment with them "is not working out".

In keeping with the startup credo of asking forgiveness rather than permission, firms often launched large e-scooter fleets without consulting local authorities, sometimes literally overnight. The backlash is making them rethink their approach. Bird, a two-year-old industry pioneer, has introduced a "GovTech platform" to let local authorities designate no-ride and no-park zones, set speed limits and display safety messages on scooter dashboards. VOI of Sweden, whose scooter was involved in last week's accident, accompanies launches with educational pop-ups. It is planning a "virtual traffic school" for novices.

A big remaining obstacle is insurance. In Sweden scooters limited to 20 kilometres per hour (12 miles per hour) are classified as bicycles and do not need motor-liability coverage. In some places, like Germany, authorities demand that micromobility startups take out such policies. Elsewhere, insurance is the responsibility of the renter. Like their customers, then, companies face a balancing act. Thom Rickert of Argo Group, an insurer, talks of a "complicated liability economy". It could get more complicated soon. The latest craze is for even more dangerous-looking electric-powered skateboards.

November 15, 2019, 2019

Report To: Mayor & Council

From: Travis Rob, P.Eng., Manager of Operations & Facilities

SUBJECT: July 2019 Drinking Water Systems Monthly Summary Report

Please find attached the July 2019 Summary Report on the drinking water systems, prepared by Brad Webb, Senior WTP Operator.

Your Administration recommends that Operations & Facilities Executive Committee accept the July 2019 report as presented.

Respectfully submitted,
Operations & Facilities Division

Travis Rob, P.Eng.
Manager of Operations & Facilities

Council approval of this report will accept the July 2019 report prior to it being made available to the general public.

c.c. – Craig Miller, P.Eng., Environmental Superintendent
Brad Webb, ORO, Senior WTP Operator

July 2019

Monthly Summary Report
Water Systems

Prepared by: Brad Webb, ORO
Senior Water Treatment Plant Operator

Dated: August 01, 2018

1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of July 2019 at the Water Treatment Plant - Water Works # 220000978 and the Airport Groundwater Well Water Works No. 849N7DGE0 (Precedes Airport Groundwater Well Water Works No. 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. The water treatment plant falls under the requirements of Ontario Regulation 170/03 – Drinking Water Systems.

The Airport Small Drinking Water System, System No. 849N7DGE0, was put into service August 01, 2017. The system falls under the requirements of Ontario Regulation 319/08 – Small Drinking Water Systems.

2) **Flow Data:**

Water Treatment Plant: See attached spreadsheet.

Airport Groundwater Well :

Estimated Daily Usage	0.21 m3
Estimated July Usage	6.5 m3

3) **Microbiological (Health Related) Water Analysis - Main Water System No. 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. E. 2. 1017 Cornwall Ave. 3. 901 Wright Ave. 4. W. Tower
5. 1111 First St. E. 6. 921 6th West. 7. 1324 Kings Hwy. 8. W. Tower
9. 746 6th St. West. 10. W. Tower. 11. F.F. cemetery 12.1509 School Rd.
13.720 Scott St. 14. 901 Wright Ave. 15. 704 Portage Ave. 16. W. Tower
17. 720 Scott St. 18. 1036 Victoria Ave. 19. 901 Wright Ave. 20. W. Tower

4) **Microbiological (Health Related) Water Analysis - Airport Groundwater Well No. 849N7DGE0:**

New drinking water system put on line August 01, 2017. No treatment required as the Airport groundwater tested negative for bacteria.

The Airport drinking water system is to be sampled and tested for bacteria once every three (3) months in accordance with Section 25 – Microbiological Sampling and Testing of the Small Drinking Water Systems Regulation, O. Reg. 319/08.

Water distribution sample taken April 16, 2019 – no adverse results.

5) **Free Available Chlorine Residual (FAC) - Main Water System No. 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 No. 849N7DGE0:**

New drinking water system put on line August 01, 2017. No treatment required as the Airport groundwater well tested negative for bacteria.

7) **Maintenance Activities at the WTP:**

July 02nd -worked on updating M.S.D.S. binder.

July 03rd - Received 15 barrels of fluoride.
- Cleaned out the soda ash line.
- Worked on updating M.S.D.S. binder.

July 04th - Received a load of Alum.
- Cleaned top and bottom tanks on the poly unit.
- Cleaned the four check valves on the poly unit.

July 05th - Calibrated the distribution chlorine analyzer.
-Calibrated fluoride analyzer.
-Took grab samples off filters 1,3 & 4.

July 10th -Power outage generator ran for ½ hour.

July 11th -Pulled motor off # 1 low lift to send in for rebuild.
-Galbraith electric here to test spare low lift motor.
-Took landfill site samples.

July 12th - Cleaned top and bottom tanks on the poly unit.
- Cleaned all four check valves on the poly unit.

July 15th -Replaced fluoride transfer pump.
-Worked on finished and filtered sample pumps.

July 16th - Received 4 tonners of CL2.

July 17th - Calibrated distribution chlorine analyzer.

July 19th - Pryde's Plumbing here to clean burners on hot water tank.

July 23rd - Reset filter unit at Sunny Cove.

July 24th -Air dryer plugged had to bypass it to get air to plant.

July 25th - Cleaned top and bottom tanks on the poly unit.
-Cleaned all four check valves on the poly unit.

July 29th -Greased gears and chains on clarifier # 1.
- Greased gears and chains on clarifier # 2.
-Greased air scour blower.
-Greased poly unit mixer motor.
-Greased Soda Ash auger.
-Changed belt on Soda Ash Feeder.
-Calibrated distribution cl2 analyzer.
-Calibrated Fluoride analyzer.

July 30th -

8) **Water Complaints:**

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

9) **Other Miscellaneous Information:**

July 2nd - routine micro sample collection.

July 8th - routine micro samples collection.

July 15th - routine micro sample collection.

July 22rd - routine micro sample collection.

-took micro samples at Sunny Cove Camp.
-took micro samples from temp main on 2nd Street 300 block.

July 23rd - took DWSP samples at the Plant and Water Tower.

July 25th -took new service sample at St. Frances school.

July 29th - 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:

- Brad Webb, ORO, Senior WTP Operator: _____
- Craig Miller, P.Eng. Environmental Superintendent: _____
- Travis Rob, P.Eng. Manager of Operations & Facilities: _____
- Doug Brown, P.Eng. CAO: _____
- Rick Wiedenhoeft, Chair O & F Exec Committee: _____
- June Caul, Mayor: _____
- John McTaggart, Councillor: _____
- Mike Behan, Councillor: _____
- Wendy Brunetta, Councillor: _____
- Doug Judson, Councillor: _____
- Andrew Hallikas, 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 Brad Webb, Senior WTP Operator at 274-2325.

Monthly Report July 2019

Town of Fort Frances - WTP - 220000978
2017/18 vs. July 2019
Flow and Operating Data

Flow Data JULY	Units	2017		2018		2019	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		205490		163390		165900
Raw Maximum Day	m^3	Sunday 23rd	6950	Sunday 15th	5460	Saturday 27th	5570
Raw Minimum Day	m^3	Monday 24th	6370	Thursday 5th	4870	Monday 29th	5180
Raw Avgerage Daily Consumption	m^3		6630		5270		5350
Total Treated Water	m^3		126300		125810		122360
Treated Water Maximim Day Consumption	m^3	Saturday 29th	5420	Tuesday 24th	5100	Wednesday 03rd	4560
Treated Water Minimim Day Consumption	m^3	Tuesday 04th	3040	Monday 2nd	3400	Sunday 28th	3350
Treated Water Average Day Consumption	m^3		4070		4060		3950
Daily Average Per Household Consumption Rate	m^3		1.08		1.07		1.04
* Daily Average Per Person Consumption Rate	m^3		0.51		0.51		0.49
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		2.15		2.12		2.07
Total Chlorine Residual - Treated Water	mg/L		2.31		2.37		2.29
Aluminum Sulphate - Raw Water	mg/L		35.0		35.0		35
Aluminum Sulphate - Treated Water Residual	mg/L		0.02		0.02		0.02
Fluoride - Treated Water	mg/L		0.65		0.75		0.71
Soda Ash - Raw Water	mg/L		35.0		35.0		35
PH - Adjusted	mg/L		7.31		7.03		7.18
Temperature	C		20.1		21.7		21.4
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		7192.2		4473.9		5806.5
Polyelectrolyte	kg		75.0		100.0		62.5
Chlorine Gas	kg		1002.0		848.0		815
Soda Ash - Used for PH Adjustment	kg		7192.2		5718.7		5806.5
Fluoride	kg		643.0		503.0		775

* 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
July 2019

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	5.28	5.42	5.33	5.31	5.48	5.48	5.35	5.27	5.37	5.34	5.28	5.42	5.27	5.40	5.29	5.37	5.43	5.26	5.54	5.21	5.38	5.47	5.32	5.37	5.31	5.36	5.57	5.33	5.18	5.21	5.30	165.90	5.35
Peak Instantaneous - Raw Water	L/s	n/a	62.17	62.15	62.11	62.31	62.45	62.82	62.75	63.25	63.25	63.16	62.61	63.11	62.90	62.74	63.00	63.10	63.05	63.17	63.88	**63.90**	62.93	62.95	62.91	62.69	62.55	62.55	62.49	62.50	62.32	61.20	61.11	76.80	62.71
Treated Water	10^3 M^3	17	3.83	4.35	4.56	4.08	3.71	4.28	3.52	4.28	4.29	4.14	3.42	4.20	3.58	3.64	4.09	3.76	4.21	3.55	4.41	3.57	3.73	3.80	4.18	4.31	4.09	4.07	3.77	3.35	3.61	3.70	4.28	122.36	3.95
Peak Instantaneous - Treated Water	L/s	n/a	64.40	66.10	66.32	**68.65**	65.49	65.33	65.12	66.20	66.20	67.48	67.60		64.99	66.68	63.51	63.64	68.04	66.73	65.34	68.31	65.15	65.11	63.79	65.18	64.01	65.81	65.61	63.00	64.31	64.46	66.56	1969.12	65.64
BackWash Water	10^3 M^3	n/a	0.252	0.288	0.267	0.256	0.288	0.268	0.252	0.286	2.670	2.530	2.880	2.690	2.520	2.890	2.700	2.520	2.900	2.740	2.520	2.890	2.690	2.460	0.288	0.272	0.253	0.287	0.251	0.251	0.289	0.182	0.183	42.013	1.355
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.74	0.74	0.72	0.73	0.75	0.72	0.70	0.70	0.71	0.71	0.71	0.71	0.70	0.70	0.70	0.70	0.69	0.70	0.72	0.70	0.70	0.70	0.70	0.69	0.69	0.69	0.70	0.69	0.75	0.75	0.75	22.06	0.71
Turbidity Information																																			
Raw Water	NTU	n/a	1.68	1.64	1.45	1.33	1.39	1.44	1.41	1.47	1.39	1.42	1.37	1.45	1.23	1.31	0.74	1.65	1.43	1.19	1.75	1.89	1.45	1.11	1.67	1.33	1.66	1.52	1.42	1.41	1.14	1.14	1.46	43.94	1.42
Settled Water	NTU	n/a	0.10	0.09	0.11	0.16	0.14	0.12	0.10	0.12	0.11	0.12	0.11	0.10	0.10	0.11	0.11	0.20	0.08	0.16	0.11	0.13	0.13	0.12	0.11	0.14	0.11	0.11	0.12	0.14	0.16	0.16	0.17	3.85	0.12
Treated Water	NTU	1	0.05	0.05	0.06	0.05	0.07	0.09	0.06	0.05	0.05	0.06	0.05	0.05	0.06	0.06	0.07	0.06	0.05	0.06	0.07	0.06	0.07	0.07	0.07	0.08	0.08	0.09	0.11	0.12	0.11	0.11	0.11	2.20	0.07
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.12	7.11	7.08	7.08	7.15	7.21	7.17	7.20	7.11	7.19	7.24	7.15	7.17	7.18	7.18	7.27	7.24	7.18	7.18	7.11	7.21	7.23	7.24	7.18	7.24	7.18	7.03	7.02	7.23	7.30	7.23	215.29	7.18
pH - Settled water	no units	n/a	6.19	6.17	6.16	6.20	6.25	6.19	6.32	6.15	6.14	6.16	6.23	6.28	6.15	6.17	6.24	6.24	6.22	6.22	6.20	6.17	6.25	6.27	6.30	6.29	6.27	6.23	6.36	6.29	6.36	6.32	6.29	193.28	6.23
pH - Raw Water	no units	n/a	7.10	7.02	7.10	7.22	7.19	7.17	7.10	7.19	7.13	7.16	7.12	7.07	7.19	7.25	7.10	7.24	7.36	7.46	7.20	7.22	7.31	7.43	7.03	7.09	7.07	7.28	7.06	6.97	7.32	7.09	7.14	222.38	7.17
FAC - Treated Water	mg/l	0.2 to 4	1.96	2.08	2.09	2.15	2.26	2.06	2.02	2.04	2.07	2.03	2.02	2.08	1.98	1.97	2.03	2.05	2.20	2.04	2.03	2.01	1.97	2.00	2.05	2.16	2.14	2.14	1.89	1.95	2.10	2.17	2.29	64.03	2.07
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.12	2.26	2.36	2.36	2.48	2.22	2.20	2.22	2.36	2.26	2.30	2.32	2.32	2.32	2.38	2.28	2.24	2.14	2.10	2.30	2.36	2.06	2.18	2.48	2.32	2.28	2.06	2.14	2.28	2.54	2.64	70.88	2.29
Temperature	C	15	20.0	19.0	19.0	20.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	22.0	23.0	22.0	22.0	23.0	23.0	21.0	21.0	21.0	22.0	21.0	22.0	22.0	21.0	22.0	22.0	22.0	22.0	23.0	663.0	21.4
Fluoride used (Total Daily Consumption)	kg	n/a	27.0	28.0	26.0	26.0	26.0	26.0	25.0	24.0	24.0	23.0	24.0	22.0	22.0	24.0	22.0	23.0	23.0	25.0	28.0	27.0	27.0	27.0	27.0	26.0	25.0	26.0	26.0	25.0	24.0	24.0	23.0	775.0	25.0
Chlorine used (Total Daily Consumption)	kg	n/a	26.0	27.0	27.0	26.0	28.0	27.0	27.0	26.0	27.0	26.0	26.0	27.0	26.0	27.0	27.0	26.0	28.0	26.0	27.0	25.0	26.0	27.0	27.0	26.0	26.0	26.0	22.0	26.0	25.0	26.0	26.0	815.0	26.3
Soda ash (Total Daily Consumption)	kg	n/a	184.8	189.7	186.6	185.9	191.8	191.8	187.3	184.5	188.0	186.9	184.8	189.7	184.5	189.0	185.2	188.0	190.1	184.1	193.9	182.4	188.3	191.5	186.2	188.0	185.9	187.6	195.0	186.6	181.3	182.4	185.5	5806.5	187.3
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	184.8	189.7	186.6	185.9	191.8	191.8	187.3	184.5	188.0	186.9	184.8	189.7	184.5	189.0	185.2	188.0	190.1	184.1	193.9	182.4	188.3	191.5	186.2	188.0	185.9	187.6	195.0	186.6	181.3	182.4	185.5	5806.5	187.3
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	0.02	0.02	0.01	0.02	0.05	0.05	0.04	0.04	0.01	0.03	0.03	0.03	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.02	0.02	0.60	0.02
Poly bags added (25 kg bags)	kg			0.5						0.5			0.5					0.5							0.5									62.5	

November 15, 2019, 2019

Report To: Mayor & Council

From: Travis Rob, P.Eng., Manager of Operations & Facilities

SUBJECT: August 2019 Drinking Water Systems Monthly Summary Report

Please find attached the August 2019 Summary Report on the drinking water systems, prepared by Brad Webb, Senior WTP Operator.

Your Administration recommends that Operations & Facilities Executive Committee accept the August 2019 report as presented.

Respectfully submitted,
Operations & Facilities Division

Travis Rob, P.Eng.
Manager of Operations & Facilities

Council approval of this report will accept the August 2019 report prior to it being made available to the general public.

c.c. – Craig Miller, P.Eng., Environmental Superintendent
Brad Webb, ORO, Senior WTP Operator

August 2019

Monthly Summary Report
Water Systems

Prepared by: Brad Webb, ORO
Senior Water Treatment Plant Operator

Dated: September 03, 2019

1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of August 2019 at the Water Treatment Plant - Water Works # 220000978 and the Airport Groundwater Well Water Works No. 849N7DGE0 (Precedes Airport Groundwater Well Water Works No. 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. The water treatment plant falls under the requirements of Ontario Regulation 170/03 – Drinking Water Systems.

The Airport Small Drinking Water System, System No. 849N7DGE0, was put into service August 01, 2017. The system falls under the requirements of Ontario Regulation 319/08 – Small Drinking Water Systems.

2) **Flow Data:**

Water Treatment Plant: See attached spreadsheet.

Airport Groundwater Well:

Estimated Daily Usage	0.21 m3
Estimated August Usage	6.5 m3

3) **Microbiological (Health Related) Water Analysis - Main Water System No. 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. 740 Scott St.	2. 320 Portage Ave.	3. 901 Wright Ave.	4. W. Tower
5. 746 6th St. W.	6. 1324 Kings Hwy.	7. 943 3rd St. E.	8. W. Tower
9. 740 Scott St.	10. 1036 Victoria Ave.	11. 901 Wright Ave.	12. W. Tower
13.1111 First St. E.	14. 1104 Church St.	15. 740 Scott St.	16. W. Tower

4) **Microbiological (Health Related) Water Analysis - Airport Groundwater Well No. 849N7DGE0:**

New drinking water system put online August 01, 2017. No treatment required as the Airport groundwater tested negative for bacteria.

The Airport drinking water system is to be sampled and tested for bacteria once every three (3) months in accordance with Section 25 – Microbiological Sampling and Testing of the Small Drinking Water Systems Regulation, O. Reg. 319/08.

Water distribution sample taken April 16, 2019 – no adverse results.

5) **Free Available Chlorine Residual (FAC) - Main Water System No. 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 No. 849N7DGE0:**

New drinking water system put online August 01, 2017. No treatment required as the Airport groundwater well tested negative for bacteria.

7) **Maintenance Activities at the WTP:**

Aug 01st - Cleaned top and bottom tanks on the poly unit.
- Cleaned all 4 check valves on the poly unit.

Aug 8th - Cleaned top and bottom tanks on the poly unit.
- Cleaned all 4 check valves on the poly unit.

Aug.14th -Fire and Security here finishing up fire alarm panel.

Aug.15th -Cleaned top and bottom tanks on the poly unit.
- Cleaned all 4 check valves on the poly unit.

Aug 16th - took grab samples off the filters.

Aug 20th - annual calibrations by Lakeside Controls.

Aug 21st -annual calibrations by Lakeside Controls.
-Jamie Davis here installing new air dryers on compressors.

Aug 22nd - annual calibrations by Lakeside Controls.

Aug 23rd - cleaned top and bottom tanks on the poly unit.
Cleaned all 4 check valves on the poly unit.

Aug 27th - calibrated distribution chlorine analyzer.
-received a load of Alum.
-Fire Dept here testing emergency lights.

Aug 28th - calibrated fluoride analyzer.
- cleaned Soda Ash Line.
-

Aug 30th - cleaned top and bottom tanks on the poly unit.
Cleaned all 4 check valves on the poly unit.

8) **Water Complaints:**

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

9) **Other Miscellaneous Information:**

Aug. 01st - took micro samples on 2nd and Victoria construction 1st set.

Aug. 02nd - took micro samples on 2nd and Victoria construction 2nd set.

Aug. 12th - routine micro samples collection.
-Samples for tie-in at Flinders and 3rd St. W. new school 1st set.

Aug. 13th – micro samples for tie-in at Flinders and 3rd St. W. new school 2nd set.
-Took monthly micro samples at Sunny Cove.
-Took micro samples at Fort Frances Airport.

Aug. 19th - routine micro sample collection.

Aug 25th - 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:

- Brad Webb, ORO, Senior WTP Operator: _____
- Craig Miller, P.Eng. Environmental Superintendent: _____
- Travis Rob, P.Eng. Manager of Operations & Facilities: _____
- Doug Brown, P.Eng. CAO: _____
- Rick Wiedenhoeft, Chair O & F Exec Committee: _____
- June Caul, Mayor: _____
- John McTaggart, Councillor: _____
- Mike Behan, Councillor: _____
- Wendy Brunetta, Councillor: _____
- Doug Judson, Councillor: _____
- Andrew Hallikas, 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 Brad Webb, Senior WTP Operator at 274-2325.

Monthly Report August 2019

Town of Fort Frances - WTP - 220000978
August 2015/2016 vs. August 2018 Flow and Operating Data

Flow Data August	Units	2017		2018		2019	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		204690		185980		159470
Raw Maximum Day	m^3	Monday 28th	6900	Sunday 19th	6740	Wednesday 02nd	5260
Raw Minimum Day	m^3	Sunday 13th	6290	Mon 6th & Sat 11th	5280	Thursday 24th	5010
Raw Avgerage Daily Consumption	m^3		6600		6000		5140
Total Treated Water	m^3		123420		132730		118250
Treated Water Maximim Day Consumption	m^3	Tuesday 01st	5680	Monday 13th	5780	Monday 07th	4880
Treated Water Minimim Day Consumption	m^3	Sunday 27th	3300	Monday 6th	3340	Tuesday 08th	3120
Treated Water Average Day Consumption	m^3		3980		4280		3810
Daily Average Per Household Consumption Rate	m^3		1.05		1.13		1.01
* Daily Average Per Person Consumption Rate	m^3		0.50		0.54		0.48
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		2.25		2.16		2.11
Total Chlorine Residual - Treated Water	mg/L		2.43		2.42		2.33
Aluminum Sulphate - Raw Water	mg/L		35.0		35.0		35
Aluminum Sulphate - Treated Water Residual	mg/L		0.02		0.02		0.02
Fluoride - Treated Water	mg/L		0.70		0.72		0.74
Soda Ash - Raw Water	mg/L		35.0		35.0		35
PH - Adjusted	mg/L		7.31		6.97		7.26
Temperature	C		21.5		21.7		21.7
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		7164.2		6509.3		5581.5
Polyelectrolyte	kg		75.0		75.0		87.5
Chlorine Gas	kg		1036		919		778
Soda Ash - Used for PH Adjustment	kg		7164.2		6509.3		5581.5
Fluoride	kg		654		656		729

* 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
August 2019

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	5.24	5.26	5.14	5.21	5.18	5.25	5.15	5.15	5.16	5.25	5.13	5.05	5.24	5.12	5.16	5.15	5.14	5.13	5.06	5.15	5.09	5.13	5.07	5.01	5.06	5.23	5.06	5.06	5.12	5.17	5.15	159.47	5.14
Peak Instantaneous - Raw Water	L/s	n/a	61.17	61.37	61.47	**61.68**	60.81	60.77	60.61	60.34	60.31	60.21	60.49	60.49	60.68	60.45	60.62	60.45	60.14	59.95	59.92	59.88	60.03	59.67	60.03	59.64	59.48	59.53	59.49	59.62	59.52	60.17	60.19	1869.18	60.30
Treated Water	10^3 M^3	17	4.06	3.82	3.99	3.74	3.94	4.03	4.88	3.12	3.66	4.21	3.98	4.40	3.97	4.31	4.04	4.23	4.20	3.32	3.39	3.85	3.58	3.56	3.17	3.60	3.47	3.68	3.16	3.92	4.05	3.69	3.23	118.25	3.81
Peak Instantaneous - Treated Water	L/s	n/a	65.95	65.36	65.25	64.38	64.90	64.81	65.85	**66.77**	64.30	63.41	64.15	66.12	64.72	64.96	64.57	65.55	64.81	65.26	65.73	63.69	65.87	65.38	63.31	62.89	65.42	62.96	63.19	62.84	64.68	64.47	63.47	2005.02	64.68
BackWash Water	10^3 M^3	n/a	0.291	0.140	0.231	2.860	0.268	0.241	0.286	0.269	0.244	0.324	0.271	0.241	0.288	0.273	0.237	0.288	0.271	0.248	0.289	0.273	0.249	0.288	0.274	0.252	0.288	0.276	0.250	0.288	0.272	0.258	0.288	10.816	0.349
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.74	0.74	0.76	0.75	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.77	0.78	0.74	0.74	0.72	0.72	0.70	0.73	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	23.03	0.74
Turbidity Information																																			
Raw Water	NTU	n/a	1.09	1.42	1.36	1.31	1.39	1.18	1.16	1.19	1.24	1.20	1.15	1.10	0.98	1.08	1.18	1.15	1.20	1.11	1.22	1.33	1.26	1.21	1.26	1.31	1.27	1.29	1.14	1.26	1.41	1.54	1.77	38.76	1.25
Settled Water	NTU	n/a	0.13	0.12	0.13	0.12	0.12	0.11	0.11	0.11	0.10	0.09	0.10	0.11	0.12	0.11	0.11	0.09	0.08	0.06	0.09	0.07	0.06	0.07	0.07	0.07	0.07	0.08	0.11	0.09	0.09	0.09	0.10	2.98	0.10
Treated Water	NTU	1	0.12	0.10	0.10	0.10	0.11	0.10	0.11	0.11	0.11	0.10	0.10	0.11	0.12	0.11	0.11	0.09	0.08	0.06	0.09	0.07	0.06	0.07	0.07	0.07	0.07	0.08	0.11	0.09	0.09	0.09	0.10	2.90	0.09
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.13	7.26	7.26	7.28	7.32	7.29	7.27	7.28	7.22	7.31	7.32	7.17	7.31	7.35	7.13	7.21	7.22	7.17	7.23	7.26	7.37	7.43	7.45	7.42	7.41	7.21	7.13	7.19	7.12	7.19	7.12	225.03	7.26
pH - Settled water	no units	n/a	6.29	6.23	6.23	6.25	6.23	6.31	6.29	6.30	6.28	6.26	6.29	6.20	6.19	6.27	6.28	6.20	6.25	6.12	6.18	6.24	6.27	6.28	6.38	6.41	6.33	6.35	6.32	6.33	6.44	6.43	6.41	194.84	6.29
pH - Raw Water	no units	n/a	7.12	7.25	7.43	7.36	7.26	7.24	7.24	7.32	7.26	7.29	7.33	7.09	7.08	7.08	7.06	7.00	7.01	7.07	7.07	7.09	7.02	7.00	7.09	7.03	7.05	7.15	7.14	7.08	7.05	7.11	7.03	221.40	7.14
FAC - Treated Water	mg/l	0.2 to 4	2.16	2.26	2.15	2.07	2.09	2.06	2.08	2.14	2.12	2.10	2.04	2.20	1.97	2.04	2.17	2.30	2.11	1.96	2.06	2.15	2.18	2.22	2.15	2.18	2.13	1.96	2.06	1.96	2.10	2.20	2.16	65.53	2.11
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.54	2.54	2.28	2.30	2.30	2.56	2.26	2.38	2.40	2.30	2.20	2.22	2.08	2.28	2.22	2.52	2.28	2.18	2.26	2.28	2.32	2.46	2.42	2.30	2.28	2.28	2.22	2.36	2.32	2.54	2.38	72.26	2.33
Temperature	C	15	22.0	22.0	23.0	23.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.0	21.0	21.0	21.0	21.0	21.0	20.0	20.0	20.0	19.0	672.0	21.7
Fluoride used (Total Daily Consumption)	kg	n/a	24.0	23.0	25.0	27.0	26.0	26.0	25.0	25.0	25.0	25.0	25.0	23.0	25.0	23.0	23.0	22.0	22.0	21.0	21.0	21.0	16.0	16.0	22.0	25.0	25.0	26.0	24.0	24.0	25.0	25.0	24.0	729.0	23.5
Chlorine used (Total Daily Consumption)	kg	n/a	26.0	26.0	25.0	26.0	25.0	25.0	25.0	26.0	25.0	25.0	25.0	25.0	26.0	25.0	25.0	25.0	25.0	24.0	25.0	25.0	25.0	25.0	24.0	25.0	24.0	26.0	24.0	25.0	25.0	25.0	26.0	778.0	25.1
Soda ash (Total Daily Consumption)	kg	n/a	183.4	184.1	179.9	182.4	181.3	183.8	180.3	180.3	180.6	183.8	179.6	176.8	183.4	179.2	180.6	180.3	179.9	179.6	177.1	180.3	178.2	179.6	177.5	175.4	177.1	183.1	177.1	177.1	179.2	181.0	180.3	5581.5	180.0
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	183.4	184.1	179.9	182.4	181.3	183.8	180.3	180.3	180.6	183.8	179.6	176.8	183.4	179.2	180.6	180.3	179.9	179.6	177.1	180.3	178.2	179.6	177.5	175.4	177.1	183.1	177.1	177.1	179.2	181.0	180.3	5581.5	180.0
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	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.03	0.04	0.01	0.02	0.04	0.03	0.03	0.01	0.01	0.01	0.02	0.01	0.03	0.03	0.03	0.04	0.02	0.03	0.61	0.02
Poly bags added (25 kg bags)	kg			0.5					0.5						0.5							0.5			0.5				0.5				0.5	87.5	

November 15, 2019

Report To: Mayor & Council

From: Travis Rob, P.Eng., Manager of Operations & Facilities

SUBJECT: September 2019 Drinking Water Systems Monthly Summary Report

Please find attached the September 2019 Summary Report on the drinking water systems, prepared by Brad Webb, Senior WTP Operator.

Your Administration recommends that Operations & Facilities Executive Committee accept the September 2019 report as presented.

Respectfully submitted,
Operations & Facilities Division

Travis Rob, P.Eng.
Manager of Operations & Facilities

Council approval of this report will accept the September 2019 report prior to it being made available to the general public.

c.c. – Craig Miller, P.Eng., Environmental Superintendent
Brad Webb, ORO, Senior WTP Operator

September 2019

Monthly Summary Report
Water Systems

Prepared by: Brad Webb , ORO
Senior Water Treatment Plant Operator

Dated: October 01, 2019

1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of August 2019 at the Water Treatment Plant - Water Works # 220000978 and the Airport Groundwater Well Water Works No. 849N7DGE0 (Precedes Airport Groundwater Well Water Works No. 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. The water treatment plant falls under the requirements of Ontario Regulation 170/03 – Drinking Water Systems.

The Airport Small Drinking Water System, System No. 849N7DGE0, was put into service August 01, 2017. The system falls under the requirements of Ontario Regulation 319/08 – Small Drinking Water Systems.

2) **Flow Data:**

Water Treatment Plant: See attached spreadsheet.

Airport Groundwater Well :

Estimated Daily Usage	0.21 m3
Estimated August Usage	6.5 m3

3) **Microbiological (Health Related) Water Analysis - Main Water System No. 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. E.	2. 940 3rd St. E.	3. 746 6th St. W.	4. W. Tower
5. 1301 Calder Dr.	6. 901 Wright Ave.	7.F.F. Cemetery.	8. W. Tower
9. 720 Scott St.	10. 1036 Victoria Ave.	11. 901 Wright Ave.	12. W. Tower
13.1301 Calder Dr.	14. 746 6th St. W.	15.500 Keating Ave.	16. W. Tower
17.943 3rd St. E.	18.704 Portage Ave.	19. 901 Wright Ave.	20. W. Tower

4) **Microbiological (Health Related) Water Analysis - Airport Groundwater Well No. 849N7DGE0:**

New drinking water system put on line August 01, 2017. No treatment required as the Airport groundwater tested negative for bacteria.

The Airport drinking water system is to be sampled and tested for bacteria once every three (3) months in accordance with Section 25 – Microbiological Sampling and Testing of the Small Drinking Water Systems Regulation, O. Reg. 319/08.

Water distribution sample taken August 22, 2019 – no adverse results.

5) **Free Available Chlorine Residual (FAC) - Main Water System No. 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 No. 849N7DGE0:**

New drinking water system put on line August 01, 2017. No treatment required as the Airport groundwater well tested negative for bacteria.

7) **Maintenance Activities at the WTP:**

Sept 03rd -worked on filter # 3 effluent valve.

Sept 04th - worked on filter # 3 effluent valve.

Sept 05th - cleaned all 4 check valves on the poly unit.
- cleaned top and bottom tanks on the poly unit.
-put a new sensor on turbidity meter on filter # 3.

Sept 09th - Calibrated distribution chlorine analyzer.

Sept 12th - cleaned all 4 check valves on the poly unit.
- cleaned top and bottom tanks on the poly unit.

Sept 13th -Fusion welding here to weld soda ash line.

Sept 16th - Calibrated distribution chlorine analyzer.

Sept 18th -Honeywell here to install data loggers on high lift pumps.

Sept 19th - cleaned all 4 check valves on the poly unit.

- cleaned top and bottom tanks on the poly unit.

Sept 25th - Took grab samples off the filters.
-shut plant down to change out power supplies for computors.

Sept 30th - greased clarifier chains and gears and bearings

Sept 26th - cleaned all 4 check valves on the poly unit.
- cleaned top and bottom tanks on the poly unit.

8) **Water Complaints:**

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

9) **Other Miscellaneous Information:**

Sept 03rd - routine micro sample collection.

Sept 09th - routine micro sample collection.

Sept 10th - New main samples on 300 block 2nd Street East. 1st set. Pre tie in.

Sept 11th - New main samples on 300 block 2nd Street East. 2nd set. Pre tie in.
- Took quarterly samples at the Plant and Tower.
-Took T.S.S. samples off filter #1.
- Took micro samples at Sunny Cove.
-Took quarterly samples at Sunny Cove.

Sept 16th - routine micro sample collection.

Sept 23rd - routine micro sample collection.
-lead sampling program

Sept 24th - New water main tie ins 300 block 2nd Street, – 1st set
-lead sampling program
-Ran generator for 1 hour.

Sept 25th - New water main tie ins 300 block 2nd Street, – 2nd set

Sept 30th - 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:

- Brad Webb, ORO, Senior WTP Operator: _____
- Craig Miller, P.Eng. Environmental Superintendent: _____
- Travis Rob, P.Eng. Manager of Operations & Facilities: _____
- Doug Brown, P.Eng. CAO: _____
- Rick Wiedenhoeft, Chair O & F Exec Committee: _____
- June Caul, Mayor: _____
- John McTaggart, Councillor: _____
- Mike Behan, Councillor: _____
- Wendy Brunetta, Councillor: _____
- Doug Judson, Councillor: _____
- Andrew Hallikas, 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 Brad Webb, Senior WTP Operator at 274-2325.

Town of Fort Frances - WTP - 220000978
September 16vs17vs18
Flow and Operating Data

Flow Data SEPTEMBER	Units	2017		2018		2019	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		188500		183370		151480
Raw Maximum Day	m^3	Saturday 02nd	6840	Saturday 02nd	6640	Wednesday 04th	5890
Raw Minimum Day	m^3	Monday 25th	5430	Monday 25th	5200	Tuesday 03rd	4300
Raw Avgerage Daily Consumption	m^3		6280		6110		5050
Total Treated Water	m^3		107620		104130		100160
Treated Water Maximim Day Consumption	m^3	Tuesday 12th	4430	Tuesday 12th	4590	Wednesday 25th	3990
Treated Water Minimim Day Consumption	m^3	Friday 04th	3100	Friday 04th	3120	Friday 27th	2810
Treated Water Average Day Consumption	m^3		3590		3470		3340
Daily Average Per Household Consumption Rate	m^3		0.95		0.92	0.00	0.88
* Daily Average Per Person Consumption Rate	m^3		0.45		0.43	0.00	0.42
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		2.24		2.26		2.26
Total Chlorine Residual - Treated Water	mg/L		2.45		2.47		2.53
Aluminum Sulphate - Raw Water	mg/L		35.0		35.0		35
Aluminum Sulphate - Treated Water Residual	mg/L		0.03		0.02		0.03
Fluoride - Treated Water	mg/L		0.57		0.66		0.75
Soda Ash - Raw Water	mg/L		35.0		35.0		35
PH - Adjusted	mg/L		7.26		6.96		7.34
Temperature	C		17.7		17.7		16.7
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		6597.5		6418		5301.7
Polyelectrolyte	kg		75		87.5		62.5
Chlorine Gas	kg		934		870		726
Soda Ash - Used for PH Adjustment	kg		6597.5		6418		5301.7
Fluoride	kg		602		646		724

* 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
September 2019

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	Total	Average
		or Range																																
Flow rates																																		
Raw Water	10^3 M^3	17	5.19	5.13	4.30	5.89	5.13	5.18	5.04	5.15	5.21	5.04	5.32	5.11	5.13	5.16	5.09	5.16	5.05	5.08	5.14	5.00	4.94	4.71	5.17	5.00	4.73	4.85	5.01	5.01	5.03	4.53	151.48	5.05
Peak Instantaneous - Raw Water	L/s	n/a	60.13	60.09	59.94	60.09	**60.50**	60.19	60.06	60.00	60.13	60.01	60.19	60.01	59.89	60.07	59.84	59.95	59.92	59.73	59.88	59.76		59.02	58.51	58.23			58.1	58.01	57.9	57.78	1607.86	59.55
Treated Water	10^3 M^3	17	3.51	2.99	3.46	3.48	3.29	3.36	3.15	3.43	3.23	3.26	3.62	3.42	3.05	3.49	3.09	3.79	3.45	3.49	3.21	3.03	3.76	3.19	3.03	3.45	**3.99**	3.54	2.81	3.36	3.27	2.96	100.16	3.34
Peak Instantaneous - Treated Water	L/s	n/a	63.62	63.15	64.63	64.02	63.44	64.72	64.43	65.98	63.26	65.08	67.44	66.95	64.35	64.65	63.74	63.15	65.18	65.15	64.19	64.16		**71.46**	62.42	64.33			66.20	64.65	64.53	63.37	1748.25	64.75
BackWash Water	10^3 M^3	n/a	0.271	0.278	0.272	0.288	0.212	0.253	0.288	0.271	0.249	0.287	0.270	0.505	0.288	0.268	0.246	0.289	0.270	0.244	0.290	0.270	0.245	0.290	0.270	0.244	0.288	0.278	0.287	0.242	0.288	0.268	8.309	0.277
Fluoride Information																																		
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.75	0.75	0.73	0.73	0.74	0.75	0.75	0.75	0.74	0.74	0.74	0.74	0.75	0.75	0.74	0.74	0.74	0.74	0.74	0.75	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	22.46	0.75
Turbidity Information																																		
Raw Water	NTU	n/a	1.32	1.22	1.35	1.47	1.32	1.69	1.26	1.24	1.06	1.17	1.12	1.22	1.31	1.28	1.18	1.42	1.45	1.24	1.32	1.53	1.51	1.64	1.47	1.48	1.24	1.23	1.32	1.28	1.42	1.86	40.62	1.35
Settled Water	NTU	n/a	0.12	0.12	0.10	0.08	0.12	0.09	0.05	0.09	0.10	0.11	0.11	0.11	0.12	0.11	0.11	0.13	0.07	0.14	0.11	0.07	0.08	0.12	0.13	0.11	0.14	0.14	0.12	0.11	0.11	0.09	3.21	0.11
Treated Water	NTU	1	0.09	0.10	0.09	0.08	0.06	0.07	0.07	0.04	0.09	0.09	0.10	0.09	0.09	0.10	0.08	0.09	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.08	0.06	0.09	0.09	0.08	0.09	0.08	2.18	0.07
Other Operating Parameters																																		
pH - Treated Water	no units	6.5 to 8.5	7.18	7.17	7.39	7.38	7.42	7.31	7.38	7.33	7.45	7.28	7.39	7.30	7.24	7.38	7.46	7.35	7.28	7.24	7.40	7.40	7.42	7.35	7.41	7.20	7.60	7.31	7.30	7.29	7.23	7.25	220.09	7.34
pH - Settled water	no units	n/a	6.36	6.23	6.34	6.34	6.37	6.40	6.41	6.42	6.41	6.38	6.44	6.41	6.36	6.38	6.45	6.42	6.38	6.33	6.35	6.40	6.41	6.30	6.41	6.43	6.44	6.46	6.50	6.44	6.55	6.45	191.97	6.40
pH - Raw Water	no units	n/a	7.09	7.09	6.99	6.97	7.14	7.14	7.14	7.16	7.41	7.21	7.11	7.14	7.19	7.08	7.39	7.15	7.17	7.18	7.15	7.11	7.08	7.20	7.16	7.15	7.18	7.13	7.17	7.17	7.18	7.08	214.51	7.15
FAC - Treated Water	mg/l	0.2 to 4	2.22	2.10	2.30	2.24	2.28	2.26	2.24	2.28	2.18	2.23	2.30	2.38	2.30	2.26	2.22	2.36	2.40	2.42	2.22	2.20	2.22	2.32	2.28	2.16	2.18	2.14	2.16	2.18	2.38	2.26	67.67	2.26
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.60	2.42	2.70	2.58	2.62	2.46	2.62	2.52	2.58	2.48	2.60	2.58	2.46	2.38	2.44	2.68	2.72	2.80	2.50	2.46	2.58	2.52	2.48	2.54	1.96	2.42	2.46	2.56	2.52	2.68	75.92	2.53
Temperature	C	15	19.0	18.0	18.0	18.0	18.0	18.0	18.0	17.0	17.0	16.0	17.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	17.0	17.0	17.0	17.0	17.0	17.0	16.0	16.0	16.0	16.0	14.0	502.0	16.7
Fluoride used (Total Daily Consumption)	kg	n/a	24.0	24.0	23.0	23.0	26.0	27.0	27.0	27.0	27.0	26.0	26.0	26.0	25.0	26.0	25.0	25.0	24.0	23.0	24.0	23.0	26.0	21.0	23.0	22.0	22.0	23.0	22.0	21.0	21.0	22.0	724.0	24.1
Chlorine used (Total Daily Consumption)	kg	n/a	26.0	26.0	25.0	25.0	25.0	25.0	24.0	26.0	26.0	24.0	26.0	25.0	25.0	25.0	24.0	25.0	24.0	24.0	25.00	24.0	23.0	22.0	25.0	23.0	19.0	22.0	24.0	24.0	23.0	22.0	726.0	24.2
Soda ash (Total Daily Consumption)	kg	n/a	181.7	179.6	150.5	206.2	179.6	181.3	176.4	180.3	182.4	176.4	186.1	178.9	179.6	180.6	178.2	180.6	176.8	177.8	179.9	175.0	172.9	164.9	181.0	175.0	165.6	169.8	175.4	175.4	176.1	158.6	5301.7	176.7
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	1050.0	35.0
Alum residual - (Total Daily Consumption)	kg	n/a	181.7	179.6	150.5	206.2	179.6	181.3	176.4	180.3	182.4	176.4	186.1	178.9	179.6	180.6	178.2	180.6	176.8	177.8	179.9	175.0	172.9	164.9	181.0	175.0	165.6	169.8	175.4	175.4	176.1	158.6	5301.7	176.7
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	1050.0	35.0
Alum residual - Treated Water	mg/l	0.1	0.03	0.03	0.01	0.06	0.06	0.04	0.03	0.06	0.04	0.03	0.01	0.01	0.02	0.01	0.01	0.01	0.04	0.04	0.05	0.04	0.04	0.04	0.03	0.05	0.06	0.03	0.03	0.01	0.02	0.02	0.96	0.03
Poly bags added (25 kg bags)	kg					0.5						0.5						0.5				0.5							0.5				62.5	