



## **PETAWAWA DRINKING WATER SYSTEM 2017 ANNUAL REPORT**



**Prepared by:**

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Laurentian View Cluster – Eastern Region  
01/16/2018**



**Ontario Clean Water Agency  
Agence Ontarienne Des Eaux**

## **Foreword**

This document contains three different reports required for the Petawawa Drinking Water System:

- Section 11, Annual Report, as per the SDWA, 2002- Section 11 of the Ontario Regulation 170/03
- Summary Report, as per the SDWA, 2002- Schedule 22 of the Ontario Regulation 170/03
- Summary of the Raw Water values that were submitted to the Ministry of the Environment under the Ontario Regulation 387/04, OWRA, 1990- Water Taking.

Section 12 of Ontario Regulation 170/03 of the SDWA, 2002, requires both the Summary Report and the Annual Report be made available for inspection by any member of the public during normal business hours, without charge. These reports are to be made available for inspection at the office of the municipality and on the municipality internet site.

**SECTION 11**  
**ANNUAL REPORT 2017**



**Drinking Water Systems Regulation O. Reg. 170/03**  
**Section 11- Annual Report**

**System Information:**

<b>Drinking Water System Name</b>	Petawawa Drinking Water System
<b>Municipal Drinking Water License #</b>	199-101, Issue #2
<b>Drinking Water Works Permit #</b>	199-201, Issue #2
<b>Drinking Water System Number</b>	210002101
<b>System Owner</b>	Town of Petawawa
<b>Operating Authority</b>	Ontario Clean Water Agency
<b>Drinking Water System Category</b>	Large Municipal Residential
<b>DWQMS Status (SAI Global Certified- File # 1634127-01)</b>	Full Scope/ Entire DWQMS Re - Accreditation granted on October 25, 2015
<b>Reporting Period</b>	January 1, 2017 – December 31, 2017

**Summary Report (170/03 Schedule 22) will be available for inspection at:**

Town of Petawawa 1111 Victoria Street Petawawa, ON K8H 2E6
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**List all Drinking Water Systems which receive all of their drinking water from your system:**

<b>Name</b>	<b>Drinking Water System Number</b>
CFB Petawawa	Federal jurisdiction

**Provide a brief description of the system:**

Petawawa Water Treatment Plant is a conventional water treatment system using PAS-8 as the primary coagulant, and polymer as the secondary coagulant to achieve coagulation, flocculation, and sedimentation. Pre and post pH adjustment with soda ash is also utilized during the water treatment process. Dual media filters provide filtration and chlorine gas is used for disinfection. Fluoridation is also practiced.
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**What Treatment Chemicals were used during the Reporting Year:**

<b>Chemical Name</b>	<b>Use</b>	<b>Supplier</b>
PAS-8	Coagulant	Kemira
Fluoride	Fluoridation	Brenntag
Soda Ash Dense	pH Adjustment	Univar
Chlorine Gas	Disinfection	Brenntag
Superfloc A-100 Flocculant (Polymer)	Coagulant Aid	Kemira

**Summary of any Reports made to the Ministry under Subsection 18 (1) of the Act or Section 16-4 of Schedule 16:**

DRINKING WATER LEGISLATION	AWQI #	Cause			STATUS
		PARAMETER/EQUIPMENT FAILURE	DURATION	CORRECTIVE ACTION TAKEN	
None reported in 2017.					

**Does your Drinking-Water System serve more than 10 000 people?**

YES

NO

**If yes, is your annual report available to the public at no charge on a web site on the internet?**

YES

NO

**Indicate how you notified system users that your annual report is available, and is free of charge?**

- Notice via Government Office
- Town of Petawawa internet Web-Site

**Capacity Assessment of the Petawawa Drinking Water System:**

<b>Year</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Av. Day Flow (m <sup>3</sup> /d)	6 463.48	6 162.13	5 916.25	5 876.01	5 913.33
Design Capacity (m <sup>3</sup> /d)	21 500.0	21 500.0	21 500.0	21 500.0	21 500.0
<b>% of Capacity</b> (based on av. day flows)	30.1	28.7	27.5	27.3	27.5
Max. Day Flow (m <sup>3</sup> /d)	11 664.0	12 037.0	9 922.0	12 559.0	9 510.0
<b>% of Capacity</b> (based on max. day flows)	54.3	56.0	46.1	58.4	44.2

In 2017, the average day flow was at approximately 27.5 % of the current plant design, and the maximum day flow was at approximately 44.2 % of the plant design of 21 500.0 m<sup>3</sup>/d.

**Microbiological Testing (Ont. Reg. 170/03, Sch.10, Sch.11 or Sch.12 & Ont. Reg. 169/03 Standards – Not Detectable):**

	# of E-coli Samples Taken	E-Coli Results (min-max)	# of Total Coliform Samples Taken	Total Coliform Results (min-max)	# of HPC Samples Taken	HPC Results (min-max)
Raw	52	0-4	52	0-30	0	N/A
Treated	52	0-0	52	0-0	52	0-0
Distribution	365	0-0	365	0-0	365	0-6

**Operational Testing, On-Line (Ont. Reg. 170/03, Sch. 7, Sch. 8 or Sch. 9):**

Parameter	Ont. Reg. 170/03 Standard	Range of Results (min # - max #)
Filter #1 Turbidity	1 NTU	0 – 0 NTU
Filter #2 Turbidity	1 NTU	0 – 2.000 NTU
Filter #3 Turbidity	1 NTU	0 – 2.000 NTU
Treated Free Chlorine	0.05 mg/L – 4 mg/L	0 – 3.44 mg/L*
Distribution Free Chlorine**	0.2 mg/L – 4.0 mg/L	0.28– 1.63 mg/L*
Treated Fluoride	1.5 mg/L***	0 – 0.56 mg/L

\*spikes recorded by on-line instrumentation were a result of various maintenance/calibration activities and power outages. All spikes are reviewed for compliance with O. Reg. 170/03 and reported as required.

\*\*Includes all Booster Stations (2) and Tower (3) samples.

\*\*\*Where fluoride is added to drinking water, it is recommended that the concentration be adjusted to 0.5 – 0.8 mg/L which is the optimum level for the control of tooth decay. Where supplies contain naturally occurring fluoride at levels higher than 1.5 mg/L, but less than 2.4 mg/L, the Ministry of Health and Long Term Care recommends an approach through the local boards of health to raise public and professional awareness to control excessive exposure to fluoride from other sources (taken from the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines, June 2006, MOE PIBS 4449e01).

**Summary of Additional Non-Required Samples, In-House:**

Parameter	# of grab samples taken	Ont. Reg. 170/03 / Ont. Reg. 169/03 Standard (MAC), as applicable	Range of Results (min # - max #)
Treated Water Free Chlorine	102	0 mg/L – 1.0 mg/L	1.30 – 2.10 mg/L
Treated Water Fluoride	107	1.5 mg/L	0.25 – 0.75 mg/L
Treated Water Turbidity	103	1 NTU	0.027 – 0.56 NTU
Treated Water Alkalinity	53	30 – 500 mg/L (OG)*	21 – 39 mg/L
Treated Water Aluminum	103	0.1 mg/L (OG)	0 – 0.067 mg/L
Treated Water Colour	102	5 TCU (AO)**	< 3.0 – < 5.0 TCU
Treated Water pH	104	6.5 – 8.5 (OG)	6.02 – 7.52
Distribution Free Chlorine	306	0.2 mg/L – 4.0 mg/L	0.31 – 1.52 mg/L
Filter #1 Turbidity	104	1 NTU	0.024 – 0.226 NTU

Filter #2 Turbidity	103	1 NTU	0.026 – 0.191 NTU
Filter #3 Turbidity	103	1 NTU	0.021 – 0.660 NTU

\* (OG) - Operational Guidelines- are established for parameters that, if not controlled, may negatively affect the efficient and effective treatment, disinfection and distribution of the water.

\*\* (AO) – Aesthetic Objectives- are established for parameters that may impair the taste, odour or colour of water, or which may interfere with good water quality control practices (taken from the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines, MOECC PIBS 4449e01, June 2006).

### Laboratory:

Parameter	# of grab samples taken	Ont. Reg. 170/03 / Ont. Reg. 169/03 Standard (MAC), as applicable	Range of Results (min # - max #)
Treated Water Alkalinity	52	30 – 500 mg/L (OG)	26 – 40 mg/L
Treated Water Colour	52	5 TCU (AO)	0 – < 4 TCU
Treated Water Conductivity	52	300 – 500 uS/cm	132 – 167 uS/cm
Treated Water pH	52	6.5 – 8.5 (OG)	7.33 – 7.80
Treated Water Total Dissolved Solids	52	500 mg/L (AO)	70 – 110 mg/L
Treated Water Hardness	52	80 – 100 mg/L (OG)	14 – 28 mg/L
Treated Water Fluoride	52	1.5 mg/L	0.25 – 0.80 mg/L
Distribution Water Alkalinity	163	30 – 500 mg/L (OG)	27 – 53 mg/L
Distribution Water Colour	157	5 TCU (AO)	< 2 – < 5 TCU
Distribution Water Conductivity	157	300 – 500 uS/cm	135 – 173 uS/cm
Distribution Water pH	157	6.5 – 8.5 (OG)	7.16 – 7.90
Distribution Water Total Dissolved Solids	157	500 mg/L (AO)	60 – 120 mg/L
Distribution Water Hardness	157	80 – 100 mg/L (OG)	14 – 28 mg/L

### Summary of Additional Samples:

Reason	Date of Issuance	Parameter	Date Sampled	Result
MDWL # 199-101, Issue 2	July 5, 2016	Backwash Effluent Suspended Solids	4-Jan-17	4.0 mg/L
			4-Apr-17	< 2.0 mg/L
			7-Jul-17	12.0 mg/L
			2-Oct-17	< 2.0 mg/L*

\*The annual average for Backwash Effluent Suspended Solids is 5.0 mg/L, which is below the limit of 25 mg/L.

### Summary of Inorganic Parameters Tested or Most Recent Sample Results:

MAC = Maximum Allowable Concentration as per O. Reg. 169/03

(INSERTED ON THE NEXT PAGES)

### Summary of Organic Parameters Tested or Most Recent Sample Results:

MAC = Maximum Allowable Concentration as per O. Reg. 169/03

(INSERTED ON THE NEXT PAGES)

Drinking-Water System Number: 210002101  
 Drinking-Water System Name: PETAWAWA DRINKING WATER SYSTEM  
 Drinking-Water System Owner: Title Holder: Municipality  
 Drinking-Water System Category: Large Municipal Residential  
 Period being reported: 01/2017 12/2017

Table 4

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2017/01/03	<MDL 0.5	6.0	No	No
Arsenic: As (ug/L) - TW	2017/01/03	<MDL 1.0	25.0	No	No
Barium: Ba (ug/L) - TW	2017/01/03	<MDL 10.0	1000.0	No	No
Boron: B (ug/L) - TW	2017/01/03	<MDL 10.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2017/01/03	<MDL 0.1	5.0	No	No
Chromium: Cr (ug/L) - TW	2017/01/03	<MDL 1.0	50.0	No	No
Mercury: Hg (ug/L) - TW	2017/01/03	<MDL 0.1	1.0	No	No
Selenium: Se (ug/L) - TW	2017/01/03	<MDL 1.0	50.0	No	No
Uranium: U (ug/L) - TW	2017/01/03	<MDL 1.0	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2017/12/27	0.46	1.5	No	No
Nitrite (mg/L) - TW	2017/01/03	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW	2017/04/03	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW	2017/07/04	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW	2017/10/02	<MDL 0.1	1.0	No	No
Nitrate (mg/L) - TW	2017/01/03	0.2	10.0	No	No
Nitrate (mg/L) - TW	2017/04/03	0.24	10.0	No	No
Nitrate (mg/L) - TW	2017/07/04	0.16	10.0	No	No
Nitrate (mg/L) - TW	2017/10/02	0.16	10.0	No	No
Sodium: Na (mg/L) - TW	2017/05/15	25.0	20*	Yes	Yes

\*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified

when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.



Drinking-Water System Number:  
 Drinking-Water System Name:  
 Drinking-Water System Owner:  
 Drinking-Water System Category:  
 Period being reported:

210002101  
 PETAWAWA DRINKING WATER SYSTEM  
 Title Holder: Municipality  
 Large Municipal Residential  
 01/2017 12/2017

**Table 6**

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

TREATED WATER	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2017/01/03	<MDL 0.5	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2017/01/03	<MDL 0.2	5.00	No	No
Azinphos-methyl (ug/L) - TW	2017/01/03	<MDL 2.0	20.00	No	No
Benzene (ug/L) - TW	2017/01/03	<MDL 0.5	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2017/01/03	<MDL 0.01	0.01	No	Yes
Bromoxynil (ug/L) - TW	2017/01/03	<MDL 0.5	5.00	No	No
Carbaryl (ug/L) - TW	2017/01/03	<MDL 5.0	90.00	No	No
Carbofuran (ug/L) - TW	2017/01/03	<MDL 5.0	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2017/01/03	<MDL 0.2	2.00	No	No
Chlorpyrifos (ug/L) - TW	2017/01/03	<MDL 1.0	90.00	No	No
Diazinon (ug/L) - TW	2017/01/03	<MDL 1.0	20.00	No	No
Dicamba (ug/L) - TW	2017/01/03	<MDL 1.0	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2017/01/03	<MDL 0.4	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2017/01/03	<MDL 0.4	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2017/01/03	<MDL 0.2	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2017/01/03	<MDL 0.5	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2017/01/03	<MDL 4.0	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2017/01/03	<MDL 0.5	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2017/01/03	<MDL 1.0	100.00	No	No
Diclofop-methyl (ug/L) - TW	2017/01/03	<MDL 0.9	9.00	No	No
Dimethoate (ug/L) - TW	2017/01/03	<MDL 2.5	20.00	No	No
Diquat (ug/L) - TW	2017/01/03	<MDL 5.0	70.00	No	No
Diuron (ug/L) - TW	2017/01/03	<MDL 10.0	150.00	No	No
Glyphosate (ug/L) - TW	2017/01/03	<MDL 10.0	280.00	No	No
Malathion (ug/L) - TW	2017/01/03	<MDL 5.0	190.00	No	No
Metolachlor (ug/L) - TW	2017/01/03	<MDL 1.0	50.00	No	No
Metribuzin (ug/L) - TW	2017/01/03	<MDL 5.0	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2017/01/03	<MDL 0.2	80.00	No	No
Paraquat (ug/L) - TW	2017/01/03	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2017/01/03	<MDL 0.1	3.00	No	No
Pentachlorophenol (ug/L) - TW	2017/01/03	<MDL 0.5	60.00	No	No
Phorate (ug/L) - TW	2017/01/03	<MDL 0.5	2.00	No	No
Picloram (ug/L) - TW	2017/01/03	<MDL 5.0	190.00	No	No
Prometryne (ug/L) - TW	2017/01/03	<MDL 0.25	1.00	No	No
Simazine (ug/L) - TW	2017/01/03	<MDL 1.0	10.00	No	No
Terbufos (ug/L) - TW	2017/01/03	<MDL 0.4	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2017/01/03	<MDL 0.3	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2017/01/03	<MDL 0.5	100.00	No	No
Triallate (ug/L) - TW	2017/01/03	<MDL 1.0	230.00	No	No
Trichloroethylene (ug/L) - TW	2017/01/03	<MDL 0.3	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2017/01/03	<MDL 0.5	5.00	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2017/01/03	<MDL 10.0	100.00	No	No
Trifluralin (ug/L) - TW	2017/01/03	<MDL 1.0	45.00	No	No
Vinyl Chloride (ug/L) - TW	2017/01/03	<MDL 0.2	1.00	No	No
<b>DISTRIBUTION WATER</b>					
Trihalomethane: Total (ug/L) Annual Average - DW	2017/01/01	62.7	100.00	No	Yes
HAA Total (ug/L) Annual Average - DW	2017/01/01	59.7		N/A	N/A

**Summary of Community Lead Sampling Program:** (Ont. Reg. 169/03 Standard = 10 ug/L or 0.01 mg/L (MAC):

**Reduced Sampling:** Distribution Samples Only Required (Dec 15th-Apr 15th & Jun 15th-Oct 15<sup>th</sup> annually): Taken from 4 hydrants for Petawawa DWS.

Distribution Samples-

Date Sampled	pH Results		Alkalinity Results		Cl2 Results	
	Max Result	Min Result	Max Result	Min Result	Max Result	Min Result
10-Apr-17	7.46	7.12	40	34	0.96	0.78
11-Oct-17	7.10	7.06	34	28	1.08	0.24

**2017 Facility Work Order Status:**

Preventative Work Orders Completed	455
Operational Work Orders Completed	34
Call Back Work Orders Completed	48
Capital Work Orders Completed	24
Corrective Work Orders Completed	82
Emergency Work Orders Completed	1

**2017 Maintenance Summary:**

**Brief Description - Summary of Expenses Incurred for Installations, Repairs or Replacements for Capital Projects:**

- Installation of booster for cell phone signal.
- Annual boiler maintenance performed by Air Zone HVAC Services.
- Capital Miscellaneous items including chlorine strips for Jp2g Victoria Street sanitary sewer project; battery for Town Tower generator; maintenance parts for town tower generator; hydrant paint; replacing air bags on trac vac; painting supplies for plant; extra sampling; sample cell; and hardware supplies.
- Safety inspection and report of the elevated storage tanks in Petawawa performed by Landmark Municipal Services.
- Costs associated with Capital Controls work on communication systems.
- Costs associated with the MCC repairs due to water plant fire.

- Purchase of chemical feed pump parts.
- Summer student labour hours.
- CL2 chemical pump repair kits required for maintenance.
- Replacement of bench top turbidimeter.
- pH meter controller replacement.
- Purchase of new fluoride chemical feed pumps.
- Overtimes costs for Michel working on communication for Towers.
- Replacement of the emergency stop solenoid on high lift pump #3.
- Air compressor semi-annual maintenance performed by Valley Compressor.
- Water service repair at 12 Algonquin by RGT Clouthier.
- Replacement of main controller for the back-up generator at Town Tower.
- Chemical feed pump parts to maintain the primary coagulant feed pumps.
- Replacement of the chlorine analyzer.
- Asphalt restoration for a water main repair November 17<sup>th</sup> on Petawawa Blvd.
- Costs associated with stripping and waxing the floors at the PT WTP.
- Purchase of a new pocket colorimeter for the WTP and distribution activities.
- Purchase of the addition of anthracite filter media.
- Miscellaneous capital items needed for repair and maintenance of the plant and equipment.

### Distribution Activities for 2017:

**Background:** OCWA is responsible for the operation of the water treatment plant, booster pumping stations (2), water storage facilities (3 towers), and the distribution system that OCWA assumed responsibility for on January 1st, 2011.

- Petawawa Water Treatment Plant is a Class 3 Facility.
- Petawawa Distribution System is a Class 1 System.

### Distribution Summary:

1. There were 8 watermain breaks/service line repairs in the Petawawa distribution system in 2017. They are as follows:
  - 687 Pine Ridge Crescent – April 18<sup>th</sup>
  - 28 Wilbert Street – May 3<sup>rd</sup>
  - 2 Marquis Drive – June 14<sup>th</sup>
  - 56 Dustin Drive – October 11<sup>th</sup>
  - 39 Doran Road – October 20<sup>th</sup>
  - 1 Mohns Avenue – November 14<sup>th</sup>
  - 13 Selkirk Street – November 29<sup>th</sup>
  - 12 Algonquin Street – September 25<sup>th</sup> & December 21<sup>st</sup>

2. Booster Pumping Stations are checked every week on Mondays and Thursdays. Towers are inspected twice weekly, as well.
3. Hydrant Flushing was performed on all (591) hydrants between May 24<sup>th</sup> – August 4<sup>th</sup>, 2017. Annual winterizing of hydrants was completed on November 15<sup>th</sup>-16<sup>th</sup>, 2017. All dead end hydrants were checked and flushed on April 24<sup>th</sup> and 25<sup>th</sup>, 2017 and September 27<sup>th</sup> to October 12<sup>th</sup>, 2017. Watermain valve exercising took place between May 9<sup>th</sup> and May 24, 2017.
4. The Community Lead Sampling Program was conducted during the Winter Period of December 15<sup>th</sup>, 2016 to April 15<sup>th</sup>, 2017 and again during the Summer Period of June 15<sup>th</sup> to October 15<sup>th</sup>, 2017. See Summary of Community Lead Sampling above for results.
5. Water Service Inspections (including water turn on/off, new home piping inspections, backflow preventer installations, charging/pressure and flow testing, locates, exercising valves, opening curb stops, assisting contractors, collecting bacti samples, etc.) were performed during 2017 on numerous homes, businesses and roads within the Town of Petawawa. These types of inspections to various locations within the Town, included such activities as:
  - Jan. 6 – Flushed hydrant 44B behind Petawawa Plaza.
  - Jan. 9 – Flushed dead end hydrants on Town Centre Blvd. and Dustin Drive.
  - Jan. 11 – 40 Northbrook Road – cloudy water complaint.
  - Feb. 2 – Pronto Warehouse – dark water complaint.
  - Feb. 8 – 2847 Petawawa Blvd. – sand in toilet tank complaint.
  - Feb. 21 – 28 Wilbert Street – leaking service line on homeowners side of curb stop.
  - Feb. - Repaired hydrant at water treatment plant by removing two-piece stem and installed one full length stem.
  - Apr. – Flushed all distribution system dead ends hydrants.
  - Apr. 18 – Service leak repair at 687 Pine Ridge Crescent.
  - May 3 – Service line repair at 28 Wilbert Street.
  - May 9 – valve exercising performed between May 9<sup>th</sup> to May 24<sup>th</sup>, 2017.
  - May 24 – Hydrant flushing performed.
  - June 14 – Service leak repair at 2 Marquis Drive.
  - July 7 – 15 & 20 East Street – complaints of yellow coloured water due to construction around sewage plant.
  - July – Straightened water isolation valve on Oak Street; Started flushing program.
  - Aug. 8 – Unplanned overflow of Township Tower due to communication failure.
  - Aug. 14 – Isolated Jan Drive water main for H & H Construction.
  - Aug. – Isolated East Street and Abbie Lane water main for H & H Construction.
  - Aug. – Isolated Mary Street for Eastway Construction to install new water main saddle.
  - Aug. – Water and sewer inspections at 32 Liam, 42 Dustin Drive, 10 Noble Crescent, 40 Dustin Drive, and 67 Highland Drive.
  - Aug. – Flushed Town Centre Blvd. dead end and input spring hydrant flushing data in database.
  - Sept. 5, 11, 18, 25 – Mary Street weekly bacti sampling on temporary water line.

- Sept. – Conducted daily chlorine residuals on May Street temporary water line.
- Sept. – Turned water on for new construction at 78 Oak Street.
- Sept. – Flushed dead end hydrants on Dustin Drive, Town Centre Blvd. and behind Petawawa Plaza.
- Oct. – Collected weekly bacti sampling on Mary Street temporary water line.
- Oct. – Conducted daily chlorine residuals on Mary Street temporary water line.
- Oct. 5 – RGT Clouthier did live tap on 12” main on Industrial Drive for new 4” service line.
- Oct. 11 – H & H Construction performed live tap on 12” main at 56 Dustin Drive.
- Oct. 17 – Eastway Construction performed live tap on 12” main on Edith Street for new service to 12 Doran Road.
- Oct. 20 – RGT Clouthier at 39 Doran Road to repair service line leak.
- Oct. – Mary Street new water main tie-in and flushing and testing.
- Oct. – Flushed dead end hydrants on Dustin Drive, Town Centre Blvd., and behind Petawawa Plaza.
- Nov. 15 – 55 Mohn Avenue – discoloured water complaint.
- Nov. 28 – 13 Selkirk – water leaking through ground on home owner’s side of curb stop.
- Nov. - Weekly bacti and chlorine residual sampling on Mary Street.
- Nov. – Bacti sampling on Dustin Drive for new water main for H & H Construction.
- Nov. – 7 Water and Sewer Inspections on Noble Crescent, Drew Street, and Dustin Drive for Marquis Homes, Tri-Rom Homes, and Waito Homes.
- Nov. 14 – Water service line repair at 1 Mohns Avenue with RGT Construction, and water main valves exercised and main line flushed.
- Nov. 29 – Service line repair at 13 Selkirk Street.
- Dec. 21 – Service line repair at 12 Algonguin Street.

# **SUMMARY REPORT**

**2017**

# PETAWAWA DRINKING WATER SYSTEM

## 2017 SUMMARY REPORTS FOR MUNICIPALITIES

### Report:

This report is a summary of water quality information for the Petawawa Drinking Water System, published in accordance with Schedule 22 of Ontario’s Drinking-Water Systems Regulation for the reporting period of January 1, 2017 to December 31, 2017. The Petawawa Drinking Water System is categorized as a Large Municipal Residential Drinking Water System.

This report was prepared by the Ontario Clean Water Agency on behalf of the Town of Petawawa.

### Who gets a copy of the Report?

- in the case of a drinking-water system owned by a municipality, the members of the municipal council;

### What must the Report contain?

The report must,

- (a) list the requirements of the Act, the regulations, the system’s approval and any order that the system **failed to meet** at any time during the period covered by the report and specify the duration of the failure; and
- (b) for each failure referred to in clause (a) describe the measures that were taken to correct the failure.

The following table lists the requirements that the system failed to meet and the measures taken to correct the failure:

Drinking Water Legislation	AWQI #	List the requirement(s) the system failed to meet	Specify the duration of the failure (i.e. date(s))	Describe the measures taken to correct the failure	Status (complete or outstanding)
<b>None reported in 2017.</b>					

### 2017 Non-Compliance – Petawawa DWS – Unplanned Overflow of Township Tower:

On August 8<sup>th</sup> 2017, the on-call operator received a page due to a communication failure between the Petawawa water plant and the Township tower, and also a communication failure between the water plant and the Booster Pumping Station #2. The booster station was filling the tower at the time the communications failure occurred, meaning the regular pump stop and start level limits weren’t available for the pumps to work properly. The pumps continued to fill the tower, overflowing the tower into its overflow catch basin. The spill did not leave the property.

# PETAWAWA DRINKING WATER SYSTEM

## 2017 SUMMARY REPORTS FOR MUNICIPALITIES

The Petawawa water plant underwent Ethernet phone line upgrades and new communication hardware at all the towers and booster stations, as well as, a new PLC/SCADA system due to the age of the systems. These upgrades should resolve the loss of communication issues, which was a frequent problem experienced at the plant with such outdated equipment.

This event was reported to the MOECC SAC (reference #5127-AQ2SZS), the local MOECC office, and the Municipality.

### 2016 – 2017 Petawawa DWS MOECC Inspection:

The Ministry of Environment conducted their annual site visit for the 2016-2017 reporting year on February 9th, 2017. The MOECC Drinking Water Inspector had 1 'Action Required' and 2 'BMP/Recommended Actions' identified in the inspection report, as reported below:

#### **1. Action(s) Required:**

The owner/operating authority shall insure that the requirements of Condition 3.2.1 that calibrations take place not more than 30 days after the anniversary of the equipment calibration in the previous 12-month period, are met going forward. Care must be taken to insure that all requirements of the MDWL are met.

#### **2. Recommendation:**

It is recommended that spill containment pallets of appropriate volume be acquired and put into immediate use.

#### **3. Recommendation:**

With the release of the 2016 Canadian Census, updated population figures are available to owners/operating authorities of municipal drinking water systems. Owners/operators should take care to confirm that distribution sampling programs are updated to reflect current population.

The final MOECC Report was received on March 20th, 2017 with an Inspection Rating of 98.69%.

### Summary of Community Complaints/Service Forms for 2017:

1. November 27, 2017 – 13 Selkirk Street – service leak.
2. November 15, 2017 – 55 Mohns Avenue – discoloured water.
3. July 7, 2017 – 15 East Street – discoloured water.
4. July 7, 2017 – 20 East Street – discoloured water.
5. Feb. 21, 2017 – 28 Wilbert Street – slow water into house and pipes vibrating and humming.
6. Feb. 8, 2017 – 2847 Petawawa Blvd. – sand in toilet, hot water tank blowing off, pressure issues.
7. Feb. 2, 2017 – Pronto Warehouse – dark coloured water.
8. January 11, 2017 – 40 Northbrook Road - cloudy, cold water.



## PETAWAWA DRINKING WATER SYSTEM 2017 SUMMARY REPORTS FOR MUNICIPALITIES

### What else must the Report contain?

The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

1. Summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence.

### Capacity Assessment of the Petawawa Drinking Water System:

<b>Year</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Av. Day Flow (m <sup>3</sup> /d)	6 463.48	6 162.13	5 916.25	5 876.01	5 913.33
Design Capacity (m <sup>3</sup> /d)	21 500.0	21 500.0	21 500.0	21 500.0	21 500.0
<b>% of Capacity</b> (based on av. day flows)	30.1	28.7	27.5	27.3	27.5
Max. Day Flow (m <sup>3</sup> /d)	11 664.0	12 037.0	9 922.0	12 559.0	9 510.0
<b>% of Capacity</b> (based on max. day flows)	54.3	56.0	46.1	58.4	44.2

In 2017, the average day flow was at approximately 27.5 % of the current plant design, and the maximum day flow was at approximately 44.2 % of the plant design of 21 500.0 m<sup>3</sup>/d.

Attached is a copy of the Facility Flow Summary for the Petawawa Drinking Water System. This document contains all required flow information. Also, attached is the confirmation for the submission into the MOECC WTRS for the 2017 reporting period.

### When Does the Report Get Submitted?

If a report is prepared for a system that supplies water to a municipality under the terms of a contract, the owner of the system shall give a copy of the report to the municipality by March 31st.



**ANNUAL WATER TAKING AND TRANSFER  
REPORT - SUBMITTED DATA TO MOECC,  
FOR THE YEAR OF 2017**

| [WT DATA](#) | [REPORTS](#) | [SEARCH WT DATA](#) | [ADMINISTRATION](#) | [USER PROFILE](#) | [CONTACT US](#) | [HELP](#) | [HOME](#) | [LOG](#)

Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#)

WTR

### Water Taking Data submitted successfully.

**Confirmation:**

Thank you for submitting your water taking data online.

Permit Number: 3814-9J2RQN

Permit Holder: THE CORPORATION OF THE TOWN OF PETAWAWA.

Received on: Feb 16, 2018 8:35 AM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

| [WT DATA](#) | [REPORTS](#) | [SEARCH WT DATA](#) | [ADMINISTRATION](#) | [USER PROFILE](#) | [CONTACT US](#) | [HELP](#) | [HOME](#) | [LOG](#)

Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#)

WTR

### Water Taking Data submitted successfully.

**Confirmation:**

Thank you for submitting your water taking data online.

Permit Number: 0782-8W3HY8

Permit Holder: THE CORPORATION OF THE TOWNSHIP OF WHITEWATER REGION.

Received on: Feb 16, 2018 8:38 AM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

Thank you  
Helen D'Apice

-----Original Message-----

From: Brenda Royce [<mailto:BRoyce@ocwa.com>]

Sent: February 15, 2018 12:58 PM

To: WTRS Helpdesk

Subject: Uploading xml files to WTRS - 2017

# Ontario Clean Water Agency Annual Water Taking and Transfer Report

From 01/01/2017 To 12/31/2017

Facility: PETAWAWA DRINKING WATER SYSTEM-5710  
 Tag: Raw Flow: Sum (m3/d)  
 Tag Group: Raw Water

Permit#: 3814-9J2RQN  
 Source Name: ALLUMETTE LAKE (OTTAWA RIVER)  
 Source: SURFACE  
 Type: RIVER  
 Purpose: Municipal

Coordinate Zone: 18  
 Easting: 322258  
 Northing: 5088033  
 Method deter: Metered

Date Measured	Value (m <sup>3</sup> /d)	Value (Litres)
01/01/2017	5337.0000	5337000.0000
02/01/2017	5147.0000	5147000.0000
03/01/2017	5071.0000	5071000.0000
04/01/2017	5724.0000	5724000.0000
05/01/2017	5417.0000	5417000.0000
06/01/2017	5412.0000	5412000.0000
07/01/2017	5556.0000	5556000.0000
08/01/2017	6239.0000	6239000.0000
09/01/2017	4979.0000	4979000.0000
10/01/2017	4942.0000	4942000.0000
11/01/2017	5039.0000	5039000.0000
12/01/2017	6523.0000	6523000.0000
13/01/2017	6618.0000	6618000.0000
14/01/2017	6346.0000	6346000.0000
15/01/2017	5933.0000	5933000.0000
16/01/2017	6608.0000	6608000.0000
17/01/2017	6092.0000	6092000.0000
18/01/2017	4965.0000	4965000.0000
19/01/2017	5226.0000	5226000.0000
20/01/2017	6356.0000	6356000.0000
21/01/2017	5760.0000	5760000.0000
22/01/2017	5486.0000	5486000.0000
23/01/2017	6323.0000	6323000.0000
24/01/2017	5995.0000	5995000.0000
25/01/2017	5837.0000	5837000.0000
26/01/2017	5748.0000	5748000.0000
27/01/2017	5901.0000	5901000.0000
28/01/2017	5409.0000	5409000.0000
29/01/2017	5472.0000	5472000.0000
30/01/2017	6259.0000	6259000.0000
31/01/2017	6077.0000	6077000.0000
01/02/2017	5646.0000	5646000.0000
02/02/2017	5650.0000	5650000.0000
03/02/2017	5851.0000	5851000.0000
04/02/2017	6053.0000	6053000.0000
05/02/2017	5759.0000	5759000.0000
06/02/2017	6320.0000	6320000.0000
07/02/2017	5995.0000	5995000.0000
08/02/2017	5840.0000	5840000.0000
09/02/2017	5969.0000	5969000.0000
10/02/2017	5705.0000	5705000.0000
11/02/2017	5590.0000	5590000.0000

12/02/2017	5949.0000	5949000.0000
13/02/2017	6229.0000	6229000.0000
14/02/2017	6049.0000	6049000.0000
15/02/2017	5661.0000	5661000.0000
16/02/2017	5655.0000	5655000.0000
17/02/2017	5849.0000	5849000.0000
18/02/2017	5814.0000	5814000.0000
19/02/2017	5883.0000	5883000.0000
20/02/2017	5772.0000	5772000.0000
21/02/2017	6048.0000	6048000.0000
22/02/2017	6026.0000	6026000.0000
23/02/2017	6083.0000	6083000.0000
24/02/2017	5999.0000	5999000.0000
25/02/2017	5496.0000	5496000.0000
26/02/2017	5718.0000	5718000.0000
27/02/2017	6234.0000	6234000.0000
28/02/2017	6055.0000	6055000.0000
01/03/2017	4815.0000	4815000.0000
02/03/2017	5961.0000	5961000.0000
03/03/2017	5718.0000	5718000.0000
04/03/2017	5610.0000	5610000.0000
05/03/2017	6225.0000	6225000.0000
06/03/2017	6288.0000	6288000.0000
07/03/2017	6232.0000	6232000.0000
08/03/2017	6258.0000	6258000.0000
09/03/2017	6421.0000	6421000.0000
10/03/2017	6039.0000	6039000.0000
11/03/2017	5616.0000	5616000.0000
12/03/2017	5541.0000	5541000.0000
13/03/2017	5547.0000	5547000.0000
14/03/2017	5576.0000	5576000.0000
15/03/2017	6203.0000	6203000.0000
16/03/2017	5389.0000	5389000.0000
17/03/2017	5397.0000	5397000.0000
18/03/2017	5474.0000	5474000.0000
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20/03/2017	5982.0000	5982000.0000
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22/03/2017	5841.0000	5841000.0000
23/03/2017	5946.0000	5946000.0000
24/03/2017	5483.0000	5483000.0000
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26/03/2017	5480.0000	5480000.0000
27/03/2017	5687.0000	5687000.0000
28/03/2017	5648.0000	5648000.0000
29/03/2017	5699.0000	5699000.0000
30/03/2017	5126.0000	5126000.0000
31/03/2017	5289.0000	5289000.0000
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03/04/2017	5683.0000	5683000.0000
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06/04/2017	4994.0000	4994000.0000
07/04/2017	5285.0000	5285000.0000
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11/04/2017	5276.0000	5276000.0000
12/04/2017	5295.0000	5295000.0000
13/04/2017	5066.0000	5066000.0000

14/04/2017	4646.0000	4646000.0000
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16/04/2017	4615.0000	4615000.0000
17/04/2017	4601.0000	4601000.0000
18/04/2017	5683.0000	5683000.0000
19/04/2017	4764.0000	4764000.0000
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23/04/2017	4853.0000	4853000.0000
24/04/2017	5082.0000	5082000.0000
25/04/2017	5729.0000	5729000.0000
26/04/2017	5984.0000	5984000.0000
27/04/2017	5559.0000	5559000.0000
28/04/2017	5944.0000	5944000.0000
29/04/2017	5546.0000	5546000.0000
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03/05/2017	5702.0000	5702000.0000
04/05/2017	5475.0000	5475000.0000
05/05/2017	5246.0000	5246000.0000
06/05/2017	5212.0000	5212000.0000
07/05/2017	5773.0000	5773000.0000
08/05/2017	5467.0000	5467000.0000
09/05/2017	5791.0000	5791000.0000
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11/05/2017	5820.0000	5820000.0000
12/05/2017	5440.0000	5440000.0000
13/05/2017	5538.0000	5538000.0000
14/05/2017	5021.0000	5021000.0000
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16/05/2017	5942.0000	5942000.0000
17/05/2017	5763.0000	5763000.0000
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25/05/2017	7247.0000	7247000.0000
26/05/2017	5964.0000	5964000.0000
27/05/2017	5712.0000	5712000.0000
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29/05/2017	7961.0000	7961000.0000
30/05/2017	5803.0000	5803000.0000
31/05/2017	6418.0000	6418000.0000
01/06/2017	5985.0000	5985000.0000
02/06/2017	6172.0000	6172000.0000
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09/06/2017	7585.0000	7585000.0000
10/06/2017	7582.0000	7582000.0000
11/06/2017	8275.0000	8275000.0000
12/06/2017	9894.0000	9894000.0000
13/06/2017	9402.0000	9402000.0000

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17/06/2017	6451.0000	6451000.0000
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19/06/2017	7001.0000	7001000.0000
20/06/2017	7844.0000	7844000.0000
21/06/2017	7806.0000	7806000.0000
22/06/2017	8041.0000	8041000.0000
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26/06/2017	7673.0000	7673000.0000
27/06/2017	6746.0000	6746000.0000
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06/07/2017	8660.0000	8660000.0000
07/07/2017	9099.0000	9099000.0000
08/07/2017	7409.0000	7409000.0000
09/07/2017	6819.0000	6819000.0000
10/07/2017	7518.0000	7518000.0000
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13/07/2017	7462.0000	7462000.0000
14/07/2017	7924.0000	7924000.0000
15/07/2017	6859.0000	6859000.0000
16/07/2017	7578.0000	7578000.0000
17/07/2017	7239.0000	7239000.0000
18/07/2017	8677.0000	8677000.0000
19/07/2017	6600.0000	6600000.0000
20/07/2017	9424.0000	9424000.0000
21/07/2017	9764.0000	9764000.0000
22/07/2017	9816.0000	9816000.0000
23/07/2017	9215.0000	9215000.0000
24/07/2017	7364.0000	7364000.0000
25/07/2017	6447.0000	6447000.0000
26/07/2017	6913.0000	6913000.0000
27/07/2017	7040.0000	7040000.0000
28/07/2017	7254.0000	7254000.0000
29/07/2017	7554.0000	7554000.0000
30/07/2017	7943.0000	7943000.0000
31/07/2017	8513.0000	8513000.0000
01/08/2017	9252.0000	9252000.0000
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03/08/2017	8422.0000	8422000.0000
04/08/2017	6992.0000	6992000.0000
05/08/2017	6933.0000	6933000.0000
06/08/2017	6552.0000	6552000.0000
07/08/2017	6319.0000	6319000.0000
08/08/2017	7575.0000	7575000.0000
09/08/2017	8234.0000	8234000.0000
10/08/2017	8471.0000	8471000.0000
11/08/2017	7357.0000	7357000.0000
12/08/2017	7351.0000	7351000.0000
13/08/2017	7040.0000	7040000.0000



14/08/2017	8378.0000	8378000.0000
15/08/2017	7873.0000	7873000.0000
16/08/2017	9130.0000	9130000.0000
17/08/2017	8793.0000	8793000.0000
18/08/2017	7960.0000	7960000.0000
19/08/2017	7307.0000	7307000.0000
20/08/2017	6484.0000	6484000.0000
21/08/2017	8035.0000	8035000.0000
22/08/2017	7399.0000	7399000.0000
23/08/2017	7845.0000	7845000.0000
24/08/2017	6878.0000	6878000.0000
25/08/2017	7539.0000	7539000.0000
26/08/2017	6811.0000	6811000.0000
27/08/2017	7751.0000	7751000.0000
28/08/2017	7768.0000	7768000.0000
29/08/2017	8178.0000	8178000.0000
30/08/2017	8195.0000	8195000.0000
31/08/2017	7660.0000	7660000.0000
01/09/2017	6661.0000	6661000.0000
02/09/2017	6589.0000	6589000.0000
03/09/2017	6776.0000	6776000.0000
04/09/2017	6142.0000	6142000.0000
05/09/2017	6808.0000	6808000.0000
06/09/2017	6753.0000	6753000.0000
07/09/2017	7073.0000	7073000.0000
08/09/2017	7372.0000	7372000.0000
09/09/2017	6615.0000	6615000.0000
10/09/2017	6817.0000	6817000.0000
11/09/2017	7360.0000	7360000.0000
12/09/2017	7644.0000	7644000.0000
13/09/2017	7190.0000	7190000.0000
14/09/2017	7922.0000	7922000.0000
15/09/2017	7295.0000	7295000.0000
16/09/2017	7420.0000	7420000.0000
17/09/2017	7203.0000	7203000.0000
18/09/2017	8120.0000	8120000.0000
19/09/2017	7851.0000	7851000.0000
20/09/2017	7592.0000	7592000.0000
21/09/2017	7295.0000	7295000.0000
22/09/2017	8250.0000	8250000.0000
23/09/2017	8542.0000	8542000.0000
24/09/2017	7826.0000	7826000.0000
25/09/2017	9455.0000	9455000.0000
26/09/2017	9957.0000	9957000.0000
27/09/2017	8067.0000	8067000.0000
28/09/2017	7752.0000	7752000.0000
29/09/2017	7001.0000	7001000.0000
30/09/2017	6651.0000	6651000.0000
01/10/2017	6161.0000	6161000.0000
02/10/2017	7928.0000	7928000.0000
03/10/2017	6991.0000	6991000.0000
04/10/2017	7620.0000	7620000.0000
05/10/2017	6571.0000	6571000.0000
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08/10/2017	5802.0000	5802000.0000
09/10/2017	5925.0000	5925000.0000
10/10/2017	6794.0000	6794000.0000
11/10/2017	6519.0000	6519000.0000
12/10/2017	7002.0000	7002000.0000
13/10/2017	6453.0000	6453000.0000

14/10/2017	5909.0000	5909000.0000
15/10/2017	6035.0000	6035000.0000
16/10/2017	6781.0000	6781000.0000
17/10/2017	6570.0000	6570000.0000
18/10/2017	6638.0000	6638000.0000
19/10/2017	6499.0000	6499000.0000
20/10/2017	6992.0000	6992000.0000
21/10/2017	6663.0000	6663000.0000
22/10/2017	5942.0000	5942000.0000
23/10/2017	6826.0000	6826000.0000
24/10/2017	6414.0000	6414000.0000
25/10/2017	6735.0000	6735000.0000
26/10/2017	6207.0000	6207000.0000
27/10/2017	6420.0000	6420000.0000
28/10/2017	6164.0000	6164000.0000
29/10/2017	5557.0000	5557000.0000
30/10/2017	6931.0000	6931000.0000
31/10/2017	6166.0000	6166000.0000
01/11/2017	6611.0000	6611000.0000
02/11/2017	5905.0000	5905000.0000
03/11/2017	6960.0000	6960000.0000
04/11/2017	6274.0000	6274000.0000
05/11/2017	6398.0000	6398000.0000
06/11/2017	7508.0000	7508000.0000
07/11/2017	6683.0000	6683000.0000
08/11/2017	6932.0000	6932000.0000
09/11/2017	6976.0000	6976000.0000
10/11/2017	7216.0000	7216000.0000
11/11/2017	6352.0000	6352000.0000
12/11/2017	6499.0000	6499000.0000
13/11/2017	6912.0000	6912000.0000
14/11/2017	6843.0000	6843000.0000
15/11/2017	6795.0000	6795000.0000
16/11/2017	6651.0000	6651000.0000
17/11/2017	6401.0000	6401000.0000
18/11/2017	6500.0000	6500000.0000
19/11/2017	6515.0000	6515000.0000
20/11/2017	6778.0000	6778000.0000
21/11/2017	6839.0000	6839000.0000
22/11/2017	6773.0000	6773000.0000
23/11/2017	6136.0000	6136000.0000
24/11/2017	6698.0000	6698000.0000
25/11/2017	6032.0000	6032000.0000
26/11/2017	6408.0000	6408000.0000
27/11/2017	6283.0000	6283000.0000
28/11/2017	6866.0000	6866000.0000
29/11/2017	6651.0000	6651000.0000
30/11/2017	6454.0000	6454000.0000
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02/12/2017	6043.0000	6043000.0000
03/12/2017	6040.0000	6040000.0000
04/12/2017	7153.0000	7153000.0000
05/12/2017	6281.0000	6281000.0000
06/12/2017	6468.0000	6468000.0000
07/12/2017	6925.0000	6925000.0000
08/12/2017	6317.0000	6317000.0000
09/12/2017	6455.0000	6455000.0000
10/12/2017	7035.0000	7035000.0000
11/12/2017	6116.0000	6116000.0000
12/12/2017	6207.0000	6207000.0000
13/12/2017	6179.0000	6179000.0000

14/12/2017	6211.0000	6211000.0000
15/12/2017	6179.0000	6179000.0000
16/12/2017	5961.0000	5961000.0000
17/12/2017	5693.0000	5693000.0000
18/12/2017	6127.0000	6127000.0000
19/12/2017	5909.0000	5909000.0000
20/12/2017	5794.0000	5794000.0000
21/12/2017	5873.0000	5873000.0000
22/12/2017	6110.0000	6110000.0000
23/12/2017	5872.0000	5872000.0000
24/12/2017	5906.0000	5906000.0000
25/12/2017	6202.0000	6202000.0000
26/12/2017	5524.0000	5524000.0000
27/12/2017	5725.0000	5725000.0000
28/12/2017	6439.0000	6439000.0000
29/12/2017	6575.0000	6575000.0000
30/12/2017	7070.0000	7070000.0000
31/12/2017	6641.0000	6641000.0000