



2007 Annual Compliance/Summary Report
for the
Virginatown Well Supply



Prepared by the Ontario Clean Water Agency
on behalf of the Township of McGarry

**Part III Form 2
Section 11. ANNUAL REPORT.**

| | |
|--|---|
| Drinking-Water System Name: | McGARRY (VIRGINIATOWN) WELL SUPPLY |
| Drinking-Water System No.: | 220000317 |
| Drinking-Water System Owner: | McGarry, The Corporation of the Township of |
| Drinking-Water System Category: | Large Municipal, Residential System |
| Period being reported: | January 1, 2007 to December 31, 2007 |

| | |
|--|---|
| <p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No X</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [] No X</p> <p>Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>McGarry Municipal Office 27 Webster Street, Virginiatown ON P0K 1X0</p> </div> | <p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input style="width: 100px; height: 20px;" type="text"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <input style="width: 100px; height: 20px;" type="text"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p> |
|--|---|

Drinking-Water Systems, which receive all of their drinking water from your system:

Town of Virginiatown, North Virginiatown and Kearns

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes **X** No []

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

- Public access/notice via the web**
- Public access/notice via Government Office**
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method – Newsletter

Description of the Drinking-Water System

The McGarry Township water supply is a ground water system that draws its water from one production well with a permitted capacity of 1420 m³/d. The 26.2m deep drilled well is situated in the pumphouse building located approximately 500m east of Cheminis Road and 230m north of the Ontario Northland Railway tracks, adjacent to the Quebec border. The system provides water to approximately 840 people in the communities of Virginiatown, North Virginiatown and Kearns.

The raw water flow is measured at the pumphouse using a magnetic flow meter. Sodium hypochlorite is injected at the well site using two chemical metering pumps (one duty and one standby) to provide disinfection. Two sodium hypochlorite tanks equipped with spill containment are located inside the pumphouse.

A 56 kW diesel engine standby power generator set, complete with a fuel storage tank and spill containment is available in the event of a power failure.

The water is pumped from the pumphouse to an on-line elevated reservoir having a useable volume of 1300 m³. The water tower is located at the intersection of 27th Avenue and 27th Street in North Virginiatown. A feeder watermain, 6000 meter long and 200 mm in diameter, extends from the pumphouse, through Cheminis Road, Access Road, and Highway 66 to the tower.

The water tower is equipped with an overflow bypass valve, draining pipe, a pressure transmitter, an alarmed chlorine analyzer, chart recorder and an uninterrupted power source to ensure operation of the analyzer during a power interruption.

A list of all water treatment chemicals used over this reporting period

Sodium Hypochlorite - Disinfection

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment

Describe

February – hypochlorite injection points were relocated

Details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre?

| Incident Date | Parameter | Result | Unit of Measure | Corrective Action | Corrective Action Date |
|---------------|-----------------|---------|-----------------|---|--------------------------|
| October 3 | Total Coliforms | 5 | cfu/100mL | MOH and MOE SAC notified, chlorine residuals were taken, bacti samples were also collected | October 3 AWQI 75857 |
| October 5 | Total Coliforms | 2 | cfu/100mL | MOH and MOE SAC notified, a chlorine residuals were taken to ensure a residual of 0.2 mg/L in the distribution system, two sets of bacti samples were also collected 24-48 hrs apart (October 5 th and 7 th) | October 5 AWQI 75908 |
| October 8 | Total Coliforms | 3 and 4 | cfu/100mL | MOH and MOE SAC notified, the chlorine was increased at the plant, the area was flushed, re-samples were collected | October 8 AWQI 75934 |
| October 10 | Total Coliforms | 2 | cfu/100mL | MOH and MOE SAC notified, chlorine residuals were taken, the lines were flushed, and bacti samples were also collected | October 10 AWQI 75991 |

Microbiological testing done under section 8(2) during this reporting period

| | Number of Samples | Range of <i>E.coli</i> Results (min# to max#) | Range of Total Coliform Results (min# to max#) | Number of HPC Samples | Range of HPC Results (min# to max#) |
|---------------------|-------------------|---|--|-----------------------|-------------------------------------|
| Raw | 52 | 0 to <1 | 0 to <1 | 0 | N/A |
| Treated | 54 | 0 to <1 | 0 to 5 | 54 | <1 to 43 |
| Distribution | 129 | 0 to 0 | 0 to 4 | 129 | <1 to 14 |

MAC for *E.coli* = 0 Counts/100 mL

MAC for Total Coliforms = 0 Counts/100 mL

MAC for HPC = 500 Counts/100 mL (June 5, 2006 amendment to O. Reg. 170/03, there is no longer a standard for HPC)

Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.
Continuous Monitoring in Treatment Process

| | Number of Samples | Range of Results (min# to max#) | Unit of Measure |
|--|-------------------|---------------------------------|-----------------|
| Chlorine (free) | 8760 | 0.086 to 1.863 | mg/L |
| NOTE: For continuous monitors use 8760 as the number of samples. | | | |

Summary of Turbidity Data in the Raw Water

| | Number of Samples | Range of Results (min# to max#) | Unit of Measure |
|-----------|-------------------|---------------------------------|-----------------|
| Turbidity | 26 | 0.06 to 0.58 | NTU |

Summary of Chlorine Residual Data in the Distribution System

| | Number of Samples | Range of Results (min# to max#) | Unit of Measure | Standard |
|------------------------|-------------------|---------------------------------|-----------------|----------|
| Free Chlorine (daily) | 365 | 0.12 to 1.05 | mg/L | 0.05 |
| Free Chlorine (weekly) | 189 | 0.12 to 0.77 | mg/L | 0.05 |

Note: As of June 5th 2006, O. Reg. 170/03 was amended for Large Municipal Residential Systems such that a total of seven operational checks for chlorine residual in the distribution system are required each week. The owner/operating authority can continue to test one sample per day or test four (4) samples one day and three (3) on a second day. The sample sets must be collected at least 48-hours apart and samples collected on the same day must be from different locations.

Free chlorine residuals are collected daily in the distribution system by certified municipal employees. Free chlorine residuals are tested weekly by OCWA staff when collecting bacteriological samples.

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

| Date Legal Instrument Issued | Parameter | Date Sampled | Result | Unit of Measure |
|--|-----------|--------------|--------|-----------------|
| No additional sampling and testing were required for the Virginiatown Water Treatment System during the 2006 reporting period due to an approval, order or other legal instrument. | | | | |

Summary of Nitrates & Nitrites tested during this reporting period.

| Date of Sample | Nitrate Result Value | Nitrite Result Value | Unit of Measure | Exceedance |
|----------------|----------------------|----------------------|-----------------|------------|
| January 8 | <0.1 | <0.01 | mg/L | No |
| April 16 | <0.1 | <0.05 | mg/L | No |
| July 3 | <0.1 | <0.05 | mg/L | No |
| October 15 | <0.1 | <0.05 | mg/L | No |

MAC for Nitrate = 10 mg/L MAC for Nitrite = 1.0 mg/L

Drinking-Water Systems Regulation O. Reg. 170/03

Summary of Total Trihalomethanes tested in the Distribution System during this reporting period

| Date of Sample | Result Value | Unit of Measure | Running Average | Exceedance |
|----------------|--------------|-----------------|-----------------|------------|
| January 8 | 2.6 | ug/L | 1.9 | No |
| April 16 | 1.5 | ug/L | | |
| July 3 | 1.8 | ug/L | | |
| October 15 | 1.8 | ug/L | | |

MAC for Trihalomethanes = 100 ug/L (Running Average)

Summary of Lead tested in the Distribution System

| Date of Sample | Number of Samples | Result Value | Unit of Measure | Standard | Exceedance |
|-----------------|-------------------|--------------|-----------------|----------|------------|
| October 9, 2006 | 1 | 0.08 | ug/L | 10 | No |

Note: The Ministry of Environment (MOE) has introduced an amendment in O. Reg. 170/03 that has replaced annual distribution system lead testing requirements under Section 13-3 of Schedule effective July 26, 2007. Lead was last sampled in October of 2006, but not in 2007 due to the changes. Lead testing will resume in the required time frames specified in Schedule 15.1.

This amendment applies to large municipal residential, small municipal residential and non-municipal year-round residential systems. Note: within Schedule 15.1 certain sections or subsection may not apply to certain systems (system category or size). This amendment makes it mandatory for municipalities to:

- 1- regularly sample and test for lead at a specified number of taps within homes and other facilities,
- 2- notify the home and facility occupants of the result from their taps, and,
- 3- take corrective action in municipally owned systems with elevated lead levels, if any.

Standard sampling will take place twice per year (Section 15.1-4), as opposed to annually. Samples will be taken once between December 15 and April 15 starting December 15, 2007 as well as once between June 15 and October 15 starting June 15, 2008.

Minimum number of sampling points depends on population served by the system and range from 7 to 130. See Table in Section 15.1-4. Testing frequency and number can be reduced as per table in Section 15.1-5.

Samples must be collected from the plumbing of private residences (single family homes and units within multi-unit residential buildings) and non-residential buildings (commercial and industrial properties, designated facilities, public facilities). Another set of samples must be taken from the distribution system (from a fire hydrant or tap valve).

Summary of Most Recent Schedule 23 Inorganic parameters sampled at the Water Treatment Plant (sample required every 36 months)

| Parameter | Sample Date | Result Value | Unit of Measure | Standard | Exceedance |
|-----------|------------------|--------------|-----------------|----------|------------|
| Antimony | October 11, 2005 | <1 | ug/L | 6 | No |
| Arsenic | October 11, 2005 | <1 | ug/L | 25 | No |
| Barium | October 11, 2005 | 7 | ug/L | 1000 | No |
| Boron | October 11, 2005 | <10 | ug/L | 5000 | No |
| Cadmium | October 11, 2005 | <0.1 | ug/L | 5 | No |

Drinking-Water Systems Regulation O. Reg. 170/03

| Parameter | Sample Date | Result Value | Unit of Measure | Standard | Exceedance |
|-----------|------------------|--------------|-----------------|----------|------------|
| Chromium | October 11, 2005 | <5 | ug/L | 50 | No |
| Mercury | October 11, 2005 | <0.0001 | mg/L | 0.001 | No |
| Selenium | October 11, 2005 | <2 | ug/L | 10 | No |
| Uranium | October 11, 2005 | <0.2 | ug/L | 20 | No |

Summary of Most Recent Schedule 24 Organic parameters sampled at the Water Treatment Plant (sample required every 36 months)

| Parameter | Sample Date | Result Value | Unit of Measure | Standard | Exceedance |
|--|---------------|--------------|-----------------|----------|------------|
| Alachlor | Oct. 11, 2005 | <0.50 | ug/L | 5 | No |
| Aldicarb | Oct. 11, 2005 | <5.0 | ug/L | 9 | No |
| Aldrin + Dieldrin | Oct. 11, 2005 | <0.012 | ug/L | 0.7 | No |
| Atrazine + N-dealkylated metabolites | Oct. 11, 2005 | <1.0 | ug/L | 5 | No |
| Azinphos-methyl | Oct. 11, 2005 | <2 | ug/L | 20 | No |
| Bendiocarb | Oct. 11, 2005 | <2.0 | ug/L | 40 | No |
| Benzene | Oct. 11, 2005 | <0.1 | ug/L | 5 | No |
| Benzo(a)pyrene | Oct. 11, 2005 | <0.0090 | ug/L | 0.01 | No |
| Bromoxynil | Oct. 11, 2005 | <0.50 | ug/L | 5 | No |
| Carbaryl | Oct. 11, 2005 | <5.0 | ug/L | 90 | No |
| Carbofuran | Oct. 11, 2005 | <5.0 | ug/L | 90 | No |
| Carbon Tetrachloride | Oct. 11, 2005 | <0.1 | ug/L | 5 | No |
| Chlordane (Total) | Oct. 11, 2005 | <0.012 | ug/L | 7 | No |
| Chlorpyrifos | Oct. 11, 2005 | <1.0 | ug/L | 90 | No |
| Cyanazine | Oct. 11, 2005 | <1.0 | ug/L | 10 | No |
| Diazinon | Oct. 11, 2005 | <1.0 | ug/L | 20 | No |
| Dicamba | Oct. 11, 2005 | <1.0 | ug/L | 120 | No |
| 1,2-Dichlorobenzene | Oct. 11, 2005 | <0.1 | ug/L | 200 | No |
| 1,4-Dichlorobenzene | Oct. 11, 2005 | <0.1 | ug/L | 5 | No |
| Dichlorodiphenyl trichloroethane (DDT) + metabolites | Oct. 11, 2005 | <0.024 | ug/L | 30 | No |
| 1,2-Dichloroethane | Oct. 11, 2005 | <0.1 | ug/L | 5 | No |
| 1,1-Dichloroethylene (vinylidene chloride) | Oct. 11, 2005 | <0.1 | ug/L | 14 | No |
| Dichloromethane | Oct. 11, 2005 | <0.5 | ug/L | 50 | No |
| 2-4 Dichlorophenol | Oct. 11, 2005 | <0.50 | ug/L | 900 | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | Oct. 11, 2005 | <1.0 | ug/L | 100 | No |
| Diclofop-methyl | Oct. 11, 2005 | <0.90 | ug/L | 9 | No |
| Dimethoate | Oct. 11, 2005 | <2.5 | ug/L | 20 | No |
| Dinoseb | Oct. 11, 2005 | <1.0 | ug/L | 10 | No |
| Diquat | Oct. 11, 2005 | <7 | ug/L | 70 | No |
| Diuron | Oct. 11, 2005 | <10 | ug/L | 150 | No |
| Glyphosate | Oct. 11, 2005 | <10 | ug/L | 280 | No |
| Heptachlor + Heptachlor Epoxide | Oct. 11, 2005 | <0.012 | ug/L | 3 | No |
| Lindane (Total) | Oct. 11, 2005 | <0.006 | ug/L | 4 | No |
| Malathion | Oct. 11, 2005 | <5.0 | ug/L | 190 | No |
| Methoxychlor | Oct. 11, 2005 | <0.024 | ug/L | 900 | No |
| Metolachlor | Oct. 11, 2005 | <0.50 | ug/L | 50 | No |
| Metribuzin | Oct. 11, 2005 | <5.0 | ug/L | 80 | No |

Drinking-Water Systems Regulation O. Reg. 170/03

| Parameter | Sample Date | Result Value | Unit of Measure | Standard | Exceedance |
|--|---------------|--------------|-----------------|----------|------------|
| Monochlorobenzene | Oct. 11, 2005 | <0.1 | ug/L | 80 | No |
| Paraquat | Oct. 11, 2005 | <1 | ug/L | 10 | No |
| Parathion | Oct. 11, 2005 | <1.0 | ug/L | 50 | No |
| Pentachlorophenol | Oct. 11, 2005 | <0.50 | ug/L | 60 | No |
| Phorate | Oct. 11, 2005 | <0.50 | ug/L | 2 | No |
| Picloram | Oct. 11, 2005 | <5.0 | ug/L | 190 | No |
| Polychlorinated Biphenyls (PCB) | Oct. 11, 2005 | <0.05 | ug/L | 3 | No |
| Prometryne | Oct. 11, 2005 | <0.25 | ug/L | 1 | No |
| Simazine | Oct. 11, 2005 | <1.0 | ug/L | 10 | No |
| Temephos | Oct. 11, 2005 | <10 | ug/L | 280 | No |
| Terbufos | Oct. 11, 2005 | <0.70 | ug/L | 1 | No |
| Tetrachloroethylene | Oct. 11, 2005 | <0.1 | ug/L | 30 | No |
| 2,3,4,6-Tetrachlorophenol | Oct. 11, 2005 | <0.50 | ug/L | 100 | No |
| Triallate | Oct. 11, 2005 | <1.0 | ug/L | 230 | No |
| Trichloroethylene | Oct. 11, 2005 | <0.1 | ug/L | 50 | No |
| 2,4,6-Trichlorophenol | Oct. 11, 2005 | <0.50 | ug/L | 5 | No |
| 2,4,5-Trichlorophenoxy acetic acid (2,4,5-T) | Oct. 11, 2005 | <1.0 | ug/L | 280 | No |
| Trifluralin | Oct. 11, 2005 | <1.0 | ug/L | 45 | No |
| Vinyl Chloride | Oct. 11, 2005 | <0.2 | ug/L | 2 | No |

Summary of Most Recent Sodium Data tested at the Water Treatment Plant (sample required every 60 months)

| Date of Sample | Number of Samples | Result Value | Unit of Measure | Standard | Exceedance |
|------------------|-------------------|--------------|-----------------|----------|------------|
| October 11, 2005 | 1 | 15000 | ug/L | 20000 | No |

Summary of Most Recent Fluoride Data tested at the Water Treatment Plant (sample required every 60 months)

| Date of Sample | Number of Samples | Result Value | Unit of Measure | Standard | Exceedance |
|------------------|-------------------|--------------|-----------------|----------|------------|
| October 11, 2005 | 1 | <0.1 | mg/L | 1.5 | No |

Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

| Parameter | Result Value | Unit of Measure | Date of Sample |
|--|--------------|-----------------|----------------|
| No inorganic or organic parameter(s) exceeded half the standard found in Schedule 2 of the ODWS during the reporting period. | | | |

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential) **Small Municipal Non-Residential has been removed and Non Municipal Year Round Residential has been added.**

McGARRY (VIRGINIATOWN) WELL SUPPLY

Large Municipal Residential Drinking Water System

SCHEDULE 22

SUMMARY REPORT FOR MUNICIPALITIES

For the period of

JANUARY 2007 to DECEMBER 2007

Prepared by: OCWA
Prepared for: The Corporation of the Township of McGarry

**Schedule 22.
SUMMARY REPORTS FOR MUNICIPALITIES**

This report is a summary of water quality information for the **Virgintown Water Treatment System**. It is published in accordance with Schedule 22 of Ontario's Drinking Water Systems Regulation 170/03 for the reporting period of January 1, 2007 to December 31, 2007 and must be submitted to members of council.

The report must list the requirements of the Safe Drinking Water Act (2002) and the drinking water regulations which can be viewed at the following website:
<http://www.e-laws.gov.on.ca>.

Requirements the System Failed to Meet

Compliance with the Safe Drinking Water Act involves conforming to the system's approval and any order issued at any time during the period covered by this report. The duration of the failure and details of the actions that were taken to correct the failure must be described.

The following table lists, to my knowledge, the requirements of the Act, its Regulations, the system's Approvals and any Provincial Officer Order issued during the 2006 reporting period.

| Drinking Water Legislation | Requirement(s) the System Failed to Meet | Duration | Corrective Actions | Status |
|------------------------------------|---|-----------------|---|---------------|
| Permit to Take Water No. 01-p-6063 | Raw flows | December 22-25 | The connection linking the on-line monitoring equipment and the data collection system was re-established | Complete |

Summary of Flow Rates

Under schedule 22-2(3) of Ontario Regulation 170/03, the Summary Report must include the following:

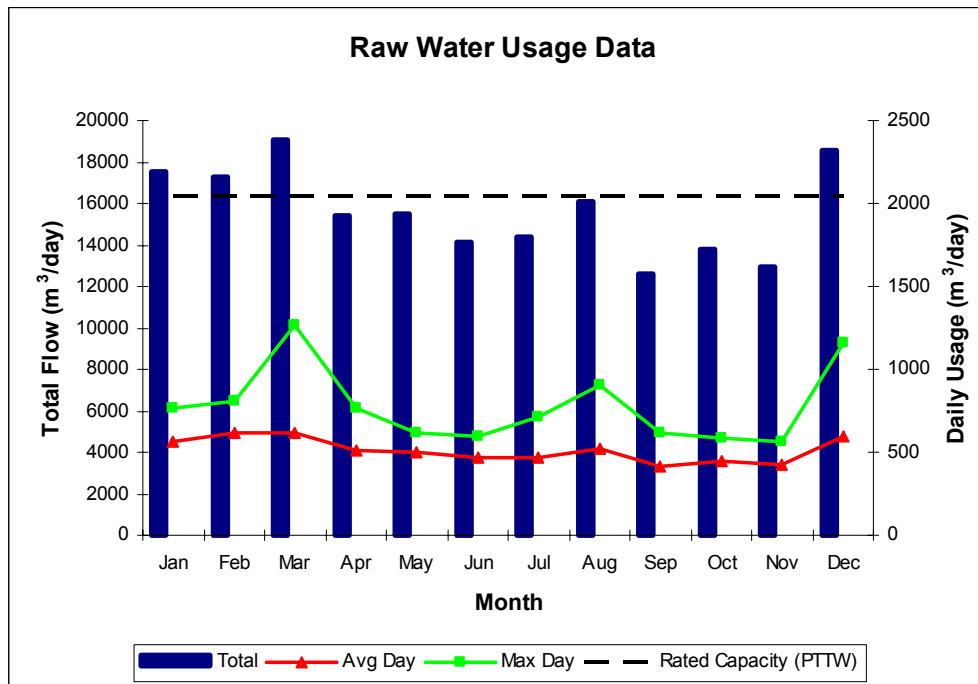
1. A summary of flow rates, including monthly average and maximum daily flows and daily instantaneous peak flow rates.
2. A comparison of the summary referred to in #1 to the rated capacity and flow rates approved in the system's approval and permit.

The following tables and graphs indicate the quantities and flow rates of water taken and produced during the reporting period, including monthly average flows, maximum daily flows and total monthly volumes. A comparison of the water data is made to the rated capacity and flow rates specified in the system's approval and permit.

Drinking-Water Systems Regulation O. Reg. 170/03

2007 Raw Water

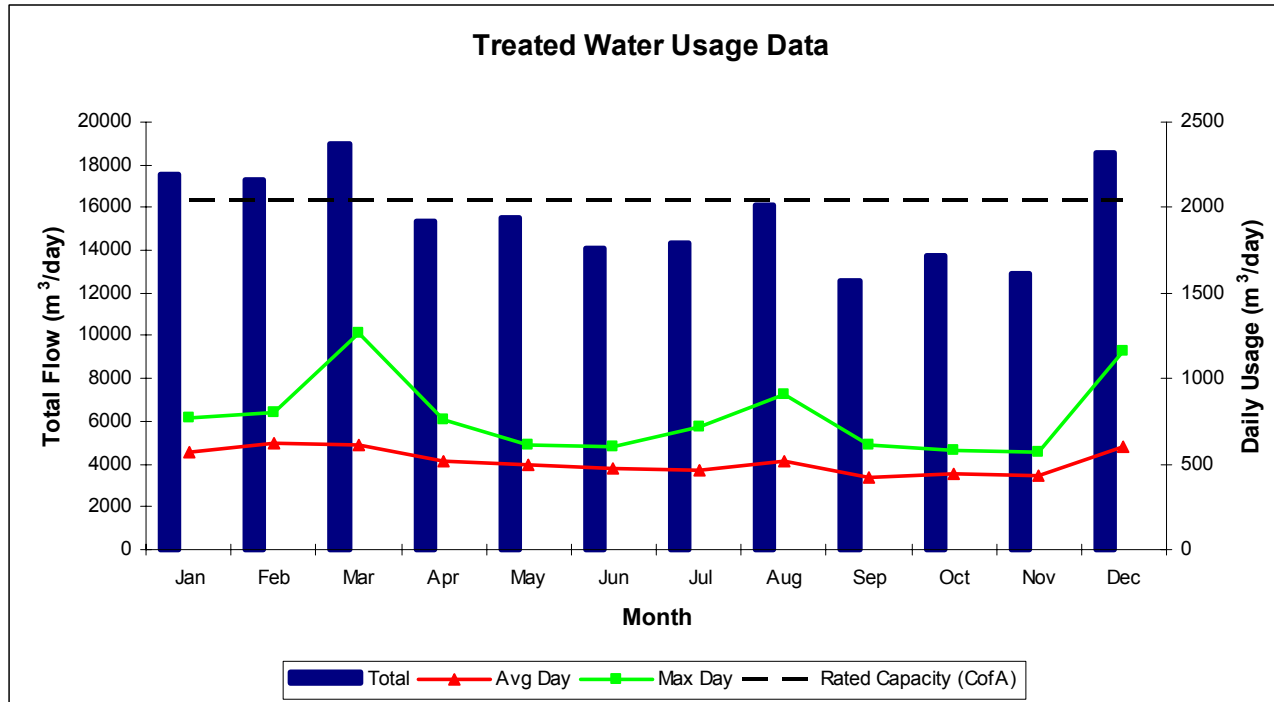
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Year to Date |
|------------------------------|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| | <i>Volume (m³/day)</i> | | | | | | | | | | | | |
| <i>Avg Day</i> | 565 | 617 | 614 | 513 | 500 | 471 | 463 | 520 | 419 | 445 | 430 | 598 | 513 |
| <i>Total</i> | 17519 | 17270 | 19025 | 15392 | 15514 | 14128 | 14361 | 16109 | 12564 | 13797 | 12902 | 18549 | 187130 |
| <i>Max Day</i> | 769 | 806 | 1268 | 764 | 617 | 598 | 714 | 906 | 613 | 585 | 569 | 1156 | 1268 |
| <i>Rated Capacity (PTTW)</i> | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 |
| <i>% Rated Capacity</i> | 38 | 39 | 62 | 37 | 30 | 29 | 35 | 44 | 30 | 29 | 28 | 57 | 62 |



Drinking-Water Systems Regulation O. Reg. 170/03

2007 Treated Water

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Year to Date |
|------------------------------|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| | <i>Volume (m³/day)</i> | | | | | | | | | | | | |
| <i>Avg Day</i> | 565 | 622 | 614 | 513 | 500 | 471 | 463 | 520 | 419 | 445 | 430 | 598 | 513 |
| <i>Total</i> | 17519 | 17270 | 19025 | 15392 | 15514 | 14128 | 14361 | 16109 | 12564 | 13797 | 12902 | 18549 | 186661 |
| <i>Max Day</i> | 769 | 806 | 1268 | 764 | 617 | 598 | 714 | 906 | 613 | 585 | 569 | 1156 | 1268 |
| <i>Rated Capacity (CofA)</i> | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 | 2045 |
| <i>% Rated Capacity</i> | 38 | 39 | 62 | 37 | 30 | 29 | 35 | 44 | 30 | 29 | 28 | 57 | 62 |



Treated water flow is equivalent to the raw water flow for this facility since there is no water loss from processes between the raw source and the point of discharge of treated water at the tower.

Comparison of Flow Summary to System's Approval & Permit

Certificate of Approval, #9405-6BTJ8Q specifies a maximum rated flow into the treatment system as 1420 L/minute or 2044.8 m³/day. The maximum flow rate for the reporting period did not exceed this limit. A maximum instantaneous peak flow rate of 1414.5 L/minute was recorded on August 21, 2007.

Permit to Take Water #01-P-6063 was issued on December 12, 2006, and authorizes the municipality to withdraw water from Cheminis Well at a maximum flow rate of 2044.8 m³/day. The rate of taking was not exceeded during the reporting period. The maximum daily volume of water taken in 2007 was 1268 m³/day on March 1, 2007.