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**STAFF REPORT: Infrastructure and Public Works**



**REPORT TO:** Committee of the Whole  
**MEETING DATE:** June 6, 2016  
**REPORT NO.:** CSPW.16.078  
**SUBJECT:** Water Section Operations Update – January to April 2016  
**PREPARED BY:** Meg Boyd, Compliance & Efficiency Coordinator

**A. Recommendations**

THAT Council receive Staff Report CSPW.16.078 entitled “Water Section Operations Update – January to April 2016” for their information.

**B. Background**

Ensuring the safety and quality of the Town’s drinking water system is not only the responsibility of the Water Operators who operate and maintain the system but also the Members of Municipal Council and Municipal Officials who exercise decision-making authority regarding the system. Town Council has requested regular updates. This Report continues to provide the information requested.

As mentioned in previous Reports, the purpose of Attachment # 1 – Water Operations Update is to provide regular up-to-date information with regards to the status and operation of the Town’s drinking water system and to report on water quality issues for the period of January to April 2016.

Topics such as an overview of the Town’s drinking water system were provided in the initial report, and as such will only be included intermittently to remind Council of the drinking water system components.

This report addresses:

- Raw, Treated and Distribution Water Quality Data
- Staff Training
- Water Treatment Plant Maintenance Summary
- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Water Quality
- Water Quality Concerns / Resident Complaints

The attached report demonstrates that Water Operators continue to provide quality drinking water to its residents while ensuring long-term sustainability of the system through regular preventative maintenance programs.

**C. The Blue Mountains' Strategic Plan**

The acceptance of this Report by Council furthers the Town Strategic Plan Goal # 5  
"Ensure that our infrastructure is sustainable."

**D. Environmental Impacts**

None

**E. Financial Impact**

None

**F. In Consultation With**

John Caswell, Manager of Water & Wastewater Services

**G. Attached**

1. Attachment # 1 – Water Section Operations Update – January to April 2016

Respectfully submitted,

**Meg Boyd**

Meg Boyd, Compliance & Efficiency  
Coordinator

**Reg Russwurm**

Reg Russwurm, MBA, P.Eng  
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Town of The Blue Mountains  
Water Section Operations Update  
January to April 2016



## Introduction

Ensuring the safety and quality of the Town's drinking water system is not only the responsibility of the Water Operators who operate and maintain the system but also the Members of Municipal Council and Municipal Officials who exercise decision-making authority regarding the system.

The purpose of this report is to provide Council with a brief overview of the Town's drinking water system and to report on water quality issues for the period of January to April 2016.

This report will address the following:

- Raw, Treated and Distribution Water Quality Data
- Staff Training
- Water Treatment Plant Maintenance Summary
- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Water Quality
- Water Quality Concerns / Resident Complaints

## System Information

<b>Drinking Water System Number:</b>	<b>220001762</b>
<b>Drinking Water System Name:</b>	<b>The Blue Mountains Drinking Water System</b>
<b>Drinking Water System Owner:</b>	<b>Town of The Blue Mountains</b>
<b>Drinking Water System Category:</b>	<b>Large Municipal Residential</b>
<b>Water Treatment Subsystem Class:</b>	<b>Class 2 Certificate No. 1758</b>
<b>Water Distribution Subsystem Class:</b>	<b>Class 3 Certificate No. 1759</b>
<b>Municipal Drinking Water License:</b>	<b>111-101</b>
<b>Municipal Drinking Water Permit:</b>	<b>111-201</b>

## Raw, Treated and Distribution Water Quality Data

Ontario Regulation 170/03 specifies guidelines for the number of samples to be taken, the frequency of sampling and the actions to be taken if any of the sample results indicate adverse water quality.

Schedule 10 of Ontario Regulation 170/03 requires weekly sampling and testing for E.Coli, Total Coliform and Heterotrophic Plate Count (HPC).

Weekly samples are collected for raw and treated water from the Thornbury Water Treatment Plant (WTP) and analyzed by an accredited laboratory.

Overviews of the raw and treated water sampling data for the period of January to April 2016 are presented in Tables 1 and 2 respectively.

**Table 1 – Raw Water**

Parameter	Result Range (Min – Max)	Parameter Limit
<b>E.Coli<sup>1</sup></b>	<b>0 to 29</b>	<b>N/A</b>
<b>Total Coliform<sup>2</sup></b>	<b>0 to 360</b>	<b>N/A</b>

**Table 2 – Treated Water**

Parameter	Result Range (Min – Max)	Parameter Limit
<b>E.Coli</b>	<b>0</b>	<b>0</b>
<b>Total Coliform</b>	<b>0</b>	<b>0</b>
<b>HPC<sup>3</sup></b>	<b>0</b>	<b>N/A</b>

<sup>1</sup>*Escherichia Coli (E.Coli)* is a fecal coliform and should not be detected/present in any drinking water sample.

<sup>2</sup>The presence of any total coliform bacteria in water leaving a treatment plant or in any treated water immediately post treatment signifies inadequate treatment and is unacceptable.

<sup>3</sup> Schedule 10 of Ontario Regulation 170/03 requires testing for general bacteria population expressed as colony counts on HPC (Heterotrophic Plate Count). There are no reporting or corrective action requirements specified in Ontario Regulation 170/03 following HPC test results. HPC's are a good indicator of overall drinking water quality but not water safety.<sup>1</sup> The average for this reporting period is 2 CFU/100mg which continues to indicate good overall drinking water quality.

Drinking water quality is further monitored throughout the distribution system by a comprehensive sampling and analysis program involving weekly sampling at designated sampling stations as well as reservoirs and booster stations.

An overview of the distribution sampling data for the period of January to April 2016 is presented in Table 3:

**Table 3 – Distribution**

Parameter	Number of Samples	Result Range (Min – Max)	Parameter Limit
<b>E.Coli</b>	<b>170</b>	<b>0</b>	<b>0</b>
<b>Total Coliform</b>	<b>170</b>	<b>0</b>	<b>0</b>
<b>HPC<sup>1</sup></b>	<b>137</b>	<b>0 to 32</b>	<b>N/A</b>

<sup>1</sup> MOECC "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines," 2003 (revised 2006), 25 May 2015 <<http://www.ontario.ca/document/technical-support-document-ontario-drinking-water-standards-objectives-and-guidelines>>

## Staff Training

In accordance with Ontario Regulation 128/04, all Water Treatment and Distribution Operators possess operating licenses appropriate to the class of facility where they are employed. As the Town's distribution system is a Class 3 subsystem, Operators are required to complete a minimum of 26 hours of on the job practical training and 14 hours of formal Continuing Education Units (CEU) training per year.

A summary of the courses attended from January to April 2016 by Operators is provided in Table 4:

**Table 4 – Training Overview**

Operator Name	Training Course Attended
Stephanie Cole	<ul style="list-style-type: none"> <li>Standard First Aid &amp; AED Level C Training</li> </ul>
Scott Hill	<ul style="list-style-type: none"> <li>Georgian Bay Waterworks Spring Conference</li> </ul>
Scott Marritt	<ul style="list-style-type: none"> <li>Standard First Aid CPR &amp; AED HCP Training</li> </ul>
Don McArthur	<ul style="list-style-type: none"> <li>Georgian Bay Waterworks Spring Conference</li> </ul>

## Water Treatment Plant and Water Booster Station Maintenance Summary

The following table provides a breakdown of the maintenance performed at the Water Treatment Plant from January to April 2016.

**Table 5 – Water Treatment Plant and Booster Station Maintenance Summary**

Maintenance Performed	Number Completed
Replaced speed control valves on Highlift 1 and 2	1
Preventative Maintenance kit on Highlift 1 flow control valve	1
Third Party Annual maintenance completed on turbidimeters and colourimeters	1
Replaced quartz lamp sleeves on all UV units	1
Preventative Maintenance on air control valve for IT air on Rack # 2	1
Monthly Maintenance at Stations and WTP	4

New air regulator controls on top of IT air PRVs at WTP	1
Replaced plumbing on eye wash station	1
Repaired leak on Pall Membrane influent header Rack # 2	1
Cleaning and treating stainless piping at WTP	3
Annual service on air compressors at WTP	1
Preventative Maintenance kit in air scrub air regulator	1
Annual maintenance on generators performed by third party	1
New speed control valves on flow control valve on Highlift # 3 at Arrowhead Road Booster Station	1
Install backflow preventor on agitator line to waste filter	1
Change Rack # 3 IT air regulator	1
New air release on Rack # 1 replaced under warranty	1
Replace top portion of air release valve on Highlift # 2	1
3" air release piping completed on excess recirculation piping	1
Highlift # 1 pump and motor installed by International Water Supply	1
1" meter installed on UV cooling line	1
Communications Firm installed new wires from base to top of water tower due to communication loss	1
Replaced IT air Regulators on Pall Racks 1 and 2	1
Replaced motor on booster pump # 2 at 10 <sup>th</sup> Line Booster Station	1

## Distribution System Summary

The following table provides a breakdown of the Water Meter Field Service calls for January to April 2016:

**Table 6 – Water Meter Field Services Summary**

Nature of Call	Number of Calls
Frozen Meter Repairs	4
Replace/Repair Jammed Meter	12
Replace/Repair Remote Touchpads	15
Repair Meter Other (leaks, reversed, etc.)	7
Meter Inspections (re-inspections, renovations, new construction)	23

Billing Verification, Hand Deliveries (notices, bills)	203
Install/ Repair Radio Units	19
Customer Meetings (usage, pressure, complaints, etc.)	20
Closing Readings	94
Water Turn On	4
Meeting with contractors, business owners, site management (backflow requirements, unauthorized connections, losses etc.)	14

The following table provides a breakdown of the Water Distribution Work Orders completed for January to April 2016:

**Table 7 – Distribution Work Orders**

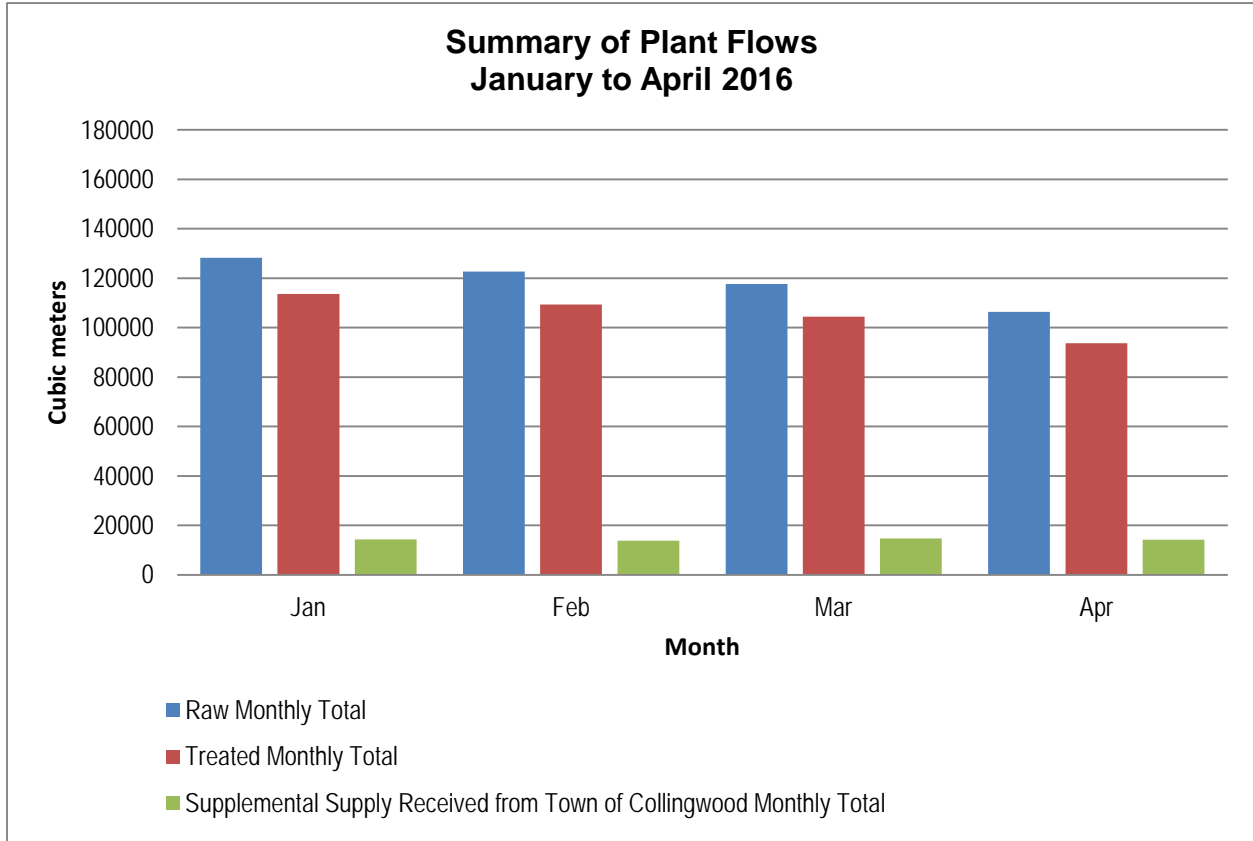
<b>Work Order Description</b>	<b>Number Completed</b>
Watermain Repairs	4
Valves Operated	57
Service Connection Repairs Complete	8
Service Connection Installations	3
Air Relief Valve Inspections	83
Dead End Flushing Program – Number of Fire Hydrants Flushed	198
Water and Sewer Locates Completed	95
Automatic Flushing Stations – Weekly check of chlorine residuals	355
Valve and Meter Pit Inspections	22
Painting of Station Floors (10 <sup>th</sup> Line BS, Thornbury Reservoir, Camperdown Reservoir)	3
Number of Days Spent GPS Valves	8.5
Flow Testing Hydrants	3



## Summary of Plant Flows

A summary of the WTP Raw, Treatment and supplemental flow supply received from the Town of Collingwood is presented in Graph 1:

**Graph 1:**

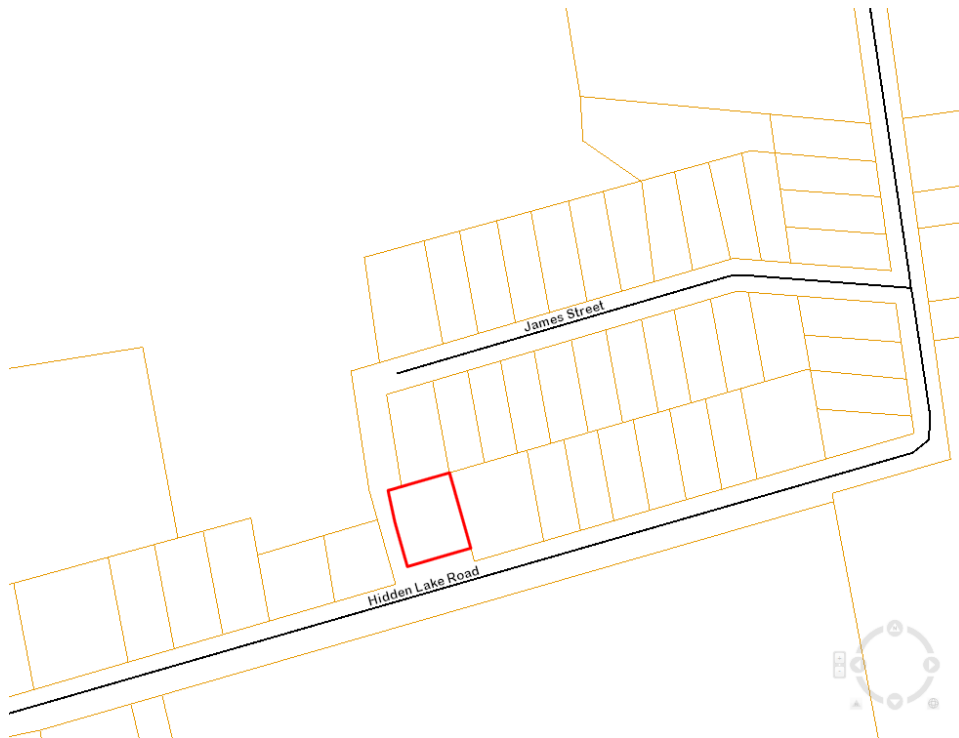


## Watermain Break Summary

Watermain breaks are typically reported by the public, Town Staff or discovered during visual inspections by Operators. In most instances, watermain breaks are repaired by Operators and, at times, with the assistance of outside contractors or Staff from the Town's Roads Department.

For the period of January 1 to April 30, 2016, there was one (1) watermain break as summarized below:

Water Operators received notification from the Town's Road Department that there was a possible watermain break on Hidden Lake Road. Upon investigation staff found that due to a shift in the road hillside, the watermain was pulled apart, creating a leak. This was not caused by pipe failure or material.



## Incidents of Adverse Water Quality

This section describes all Adverse Water Quality Incidents (AWQI). This term refers to any treated water test result that does not meet a provincial water quality standard or a situation where disinfection of the Town's drinking water may be compromised. A single AWQI does not necessarily mean that the system's drinking water is unsafe – it indicates that, on at least one occasion, a water quality standard was not met.

The Town's drinking water system is operated in accordance with Ontario Regulation 170/03 and Operators follow the direction of this regulation when dealing with incidents

of adverse drinking water. There were no incidents of adverse drinking water quality for the period of January 1 to April 30, 2016.

### **Water Quality Concerns/ Resident Complaints**

Staff record information relating to water quality issues on the Resident Water Quality Concern Form. If required, Operators attend the location of concern to collect samples or assess the nature of the concern.

The ongoing analysis of the water quality data is useful in determining if the water quality is changing throughout the distribution system over time. As an example, taste and odour complaints may indicate that the watermain in a particular area is deteriorating.

A summary of the water quality concerns received during the January to April 2016 period is included in Table 8 below.

**Table 8 – Water Quality Concerns**

<b>Water Quality Concern</b>	<b>Dates</b>	<b>Number of Occurrences</b>
High Water Pressure <sup>2</sup>	January 18, 28, February 5, March 2, April 12	5
Low Water Pressure	April 25	1
Water Composition	January 12	1
Water Hardness	March 11	1
No Water	April 29	1

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<sup>2</sup> There has recently been a surge of calls related to Thermal Expansion Tanks and high water pressure. Residents are given incorrect information by external contractors about the Town's role in regulating pressure and the supply of thermal expansion tanks. Staff are seeking to rectify this.