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Staff Report

Infrastructure & Public Works

Report To: Committee of The Whole
Meeting Date: October 23, 2017
Report Number: CSPW.17.104
Subject: Water Section Operations Update – May to August 2017
Prepared by: Meg Boyd, Compliance & Efficiency Coordinator

A. Recommendations

THAT Council receive Staff Report CSPW.17.104 entitled “Water Section Operations Update – May to August 2017” for their information.

B. Overview

This report provides an overview of the Town’s drinking water system for the period of May to August 2017. The Town continues to provide quality drinking water to Town residents and visitors in compliance with regulatory requirements.

C. Background

Ensuring the safety and quality of the Town’s drinking water 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 May to August 2017.

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 and Water Booster Station Maintenance Summary

- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Water Quality
- Water Quality Concerns / Resident Complaints

D. Analysis

Attachment # 1 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.

E. The Blue Mountains Strategic Plan

Goal #5: Ensure Our Infrastructure is Sustainable

F. Environmental Impacts

None

G. Financial Impact

None

H. In consultation with

Allison Kershaw, Manager of Water & Wastewater Services

I. Attached

1. Attachment # 1 – Water Section Operations Update – May to August 2017

Respectfully submitted,

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Town of The Blue Mountains

Water Section Operations Update May to August 2017

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 May to August 2017.

This report will address the following:

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

System Information

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

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 sampling data for the period of May to August 31, 2017 are presented in Tables 1 and 2 respectively.

Table 1 – Raw Water

Parameter	Result Range (Min – Max)	Parameter Limit
E.Coli	0 to 22	N/A
Total Coliform	0 to 1080	N/A

Table 2 – Treated Water

Parameter	Result Range (Min – Max)	Parameter Limit
E.Coli	0	0
Total Coliform	0	0
HPC	0	N/A

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 May to August 31, 2017 is presented in Table 3:

Table 3 – Distribution

Parameter	Number of Samples	Result Range (Min – Max)	Parameter Limit
E.Coli	193	0	0
Total Coliform	193	0 to 320	0
HPC	143	0 to >2000	N/A

Drinking Water Quality Management Standard (DWQMS) Update

Brian O'Reilly and Sarah Traynor, acting as the Town's Internal Auditors, conducted an assessment of the Quality Management System (QMS) to ensure the Town's drinking water system meets the requirements of the DWQMS. The Internal Auditor's identified three (3) Minor Non-Conformances and two (2) Opportunities for Improvement (OFI). Staff have addressed the OFI's and Minor Non-Conformances to the satisfaction of the Internal Auditors. The next Internal Audit will occur in 2018.

Staff Training

In accordance with Ontario Regulation 128/04, all Water Treatment and Distribution Operators possess operating licenses appropriate to the class of the 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 May to August 31, 2017 by Operators is provided in Table 4:

Table 4 – Training Overview

Operator Name	Training Course Attended
Scott Hill	<ul style="list-style-type: none"> E-Training 101
Scott Marritt	<ul style="list-style-type: none"> Water Distribution Exam Preparation Course

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 May to August 31, 2017.

Table 5 – Water Treatment Plant and Booster Station Maintenance Summary

Maintenance Performed	Number Completed
Monthly Maintenance at WTP and Stations	32
Installed pressure transmitter at Sunset SLS and Arrowhead Booster Station Discharge	2
Replaced pressure transmitter at Happy Valley Booster Station	1
Replaced Cell # 2 transducer at Camperdown Reservoir	1
Programmed Happy Valley pressure transmitter to control highlifts and removed old transmitter in chamber from SCADA	1
Two new float alarms installed in separate clearwell cells at WTP	1
New 24-volt power supply installed at Happy Valley Reservoir	1
New Depolox 5 installed by waste tank at WTP	1
Installed new pilot on Thornbury Reservoir fill valve	1
Installed new solenoid on Thornbury Reservoir fill valve	1
Installed new chlorine pumps at Thornbury Reservoir	1
Installed new chlorine analyzers at 10 th Line Booster Station and Thornbury Reservoir	2
Replaced waste filter chlorine analyzer with new	1
Installed new 24-volt power supply at Happy Valley Booster Station for pressure transmitter	1
New Uninterruptible Power Supply (UPS) on Truck Fill Station at 10 th Line Water Booster Station	1
New Uninterruptible Power Supply (UPS) on Pall Programmable Logic Control (PLC)	1

Distribution System Summary

The following table provides a breakdown of the Water Meter Field Service calls for May to August 31, 2017:

Table 6 – Water Meter Field Services Summary

Nature of Call	Number of Calls
Frozen Meter repairs	3
Replace/Repair Jammed Meter	6
Replace/Repair Remote Touchpads	16
Repair Meter Other (leaks, reversed, etc.)	7
Meter Inspections (re-inspections, renovations, new construction)	87
Billing Verification, Hand Deliveries (notices, bills)	191
Install/Repair Radio Units	18
Customer Meetings (usage, pressure, complaints, etc.)	19
Closing Readings	219
Water Turn On	7
Meetings with contractors, business owners, site management (backflow requirements, unauthorized connections, losses etc.)	24

The following table provides a breakdown of the Water Distribution Work Orders completed for May to August 31, 2017

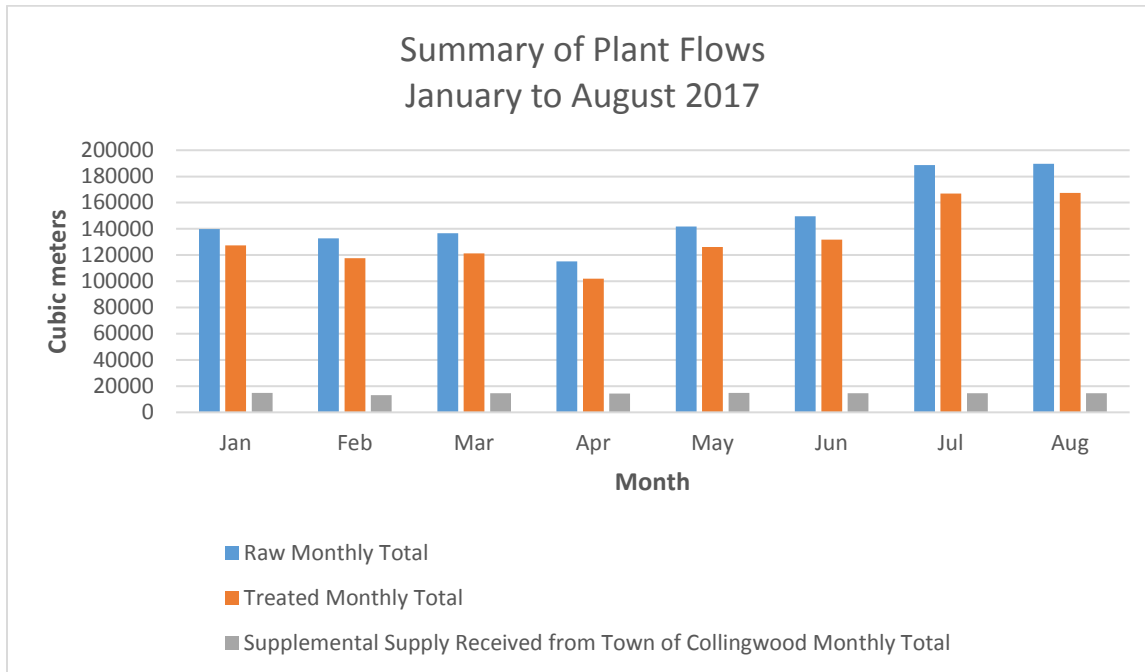
Table 7 – Distribution Work Orders

Work Order Description	Number Completed
Watermain Dig Site Clean up	6
Valves operated (Curb Stop Valves, Main Valves and Hydrant Valves)	608
Service Connection New Installations	7
Service Connection Curb Stop Repairs – Vacuum Unit	22
Service Connection Curb Stop Repairs – Dig	6
Service Connection Repairs	5
Valves Repaired	1
Annual Flushing Program (Spring)	517
Pressure reducing valve inspections or repairs	26
Air relief valve inspections or repairs	77
Dead End Flushing Program – Number of Fire Hydrants Flushed	291
Water and Sewer locates completed	312 2 Emergency
Automatic Flushing Stations – Weekly check of chlorine residuals	402
Automatic Flushing Stations – Repairs and Installations	6
Confined Space Entries	15
Double Drain Chamber Inspection / Repair	9
Meter and Valve Chamber Inspections or Repairs	6
GPS Unit – Curb Stops and Valves	3.5 days
Fire Hydrant Repairs from Inspections	12
Sample Station Repaired or Installed	1
Fire Hydrants Painted	60

Summary of Plant Flows

A summary of the WTP Raw, Treated and supplement 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 May 1 to August 31, 2017, there were no watermain breaks.

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 was (1) one precautionary boil water advisory issued and one (1) incident of adverse water quality for the period of May 1 to August 31, 2017.

On August 15, 2017, the Town issued a precautionary boil water advisory for two homes on Arlberg Crescent. During the installation of a new watermain, the existing watermain on Arlberg Crescent was damaged. There was a period of time where there was negative pressure on the main feeding two homes on Arlberg Crescent. The main break was repaired same day. Notification was provided to both homes.

The Grey Bruce Owen Sound Public Health Unit and Spills Action Centre (MOECC) were notified. Two consecutive sets of samples were collected and both returned with 0 E.Coli and 0 Total Coliform. The precautionary boil water advisory was lifted on August 21, 2017.

On August 23, 2017, we received notification from our lab that the drinking water microbiological sample taken from the George McRae Road Sample Station failed for total coliform. The lab result was 320 cfu/100 ml total coliform. The E.coli was 0 cfu/100ml. The free chlorine when this sample was taken was 0.66 mg/L. In accordance with the Regulations, Operators collected two sets of samples, each set consisting of three samples, one upstream, one downstream and one at the site, 24 hours apart.

On August 25, 2017, both sets of resamples came back clear from the lab and Water Operators completed the Notice of Issue Resolution and submitted to the Grey Bruce Owen Sound Health Unit and the Spills Action Centre of the Ministry of Environment and Climate Change.

Water Quality Concerns / Resident Complaints

Staff record information relating to the 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 an area is deteriorating.

A summary of the water quality concerns received during the May to August 31, 2017 period is included in Table 8 below:

Table 8 – Water Quality Concerns

Water Quality Concern	Dates	Number of Occurrences
Cloudy Water	May 5	1
Fluctuating Water Pressure	June 12	1
Taste	May 31	1
Low Water Pressure	May 24, June 14, June 20, July 16, July 21	5
High Water Pressure	May 25, July 14	2