

STAFF REPORT: ENGINEERING AND PUBLIC WORKS DEPARTMENT

REPORT TO: Infrastructure & Recreation Committee
MEETING DATE: November 8, 2011
REPORT NO.: EPW.11.099
SUBJECT: Water Section Operations Update
PREPARED BY: Meg Boyd, Compliance & Efficiency Coordinator

A. Recommendations

THAT Council receive Staff Report EPW.11.099 entitled "Water Section Operations Update" for their information.

B. Background

Ensuring the safety and quality of the Town's drinking water system is the responsibility of both the Water Operators who operate and maintain the system and the Members of Municipal Council who exercise decision-making authority regarding the system

The purpose of Attachment # 1 – Water Section Operations Update is to provide 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 August 2011.

As this is the first operations update to Council, it covers an eight month period. Future reports will be presented on a quarterly basis.

The report addresses:

- Overview of the Town's drinking water system
- Raw and Treated Water Quality Data
- Staff Training
- Summary of Plant Flows
- Watermain Break Summary
- Hydrant Inspection Program
- Water Quality Concerns / Resident Complaints
- Incidents of Adverse Water Quality

The Thornbury WTP and its associated distribution system continue to operate within Ministry of the Environment Guidelines and Legislation.

C. The Blue Mountains' Strategic

This Report furthers the Town Strategic Plan Goal #6 "providing a strong well managed municipal government".

D. Environmental Impacts

None

E. Financial Impact

None

F. In Consultation With

Not Applicable

G. Attached

1. Water Section Operations Update – January to August 2011

Respectfully submitted,

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Water Section Operations Update

January – August 2011



Introduction

Ensuring the safety and quality of the Town's drinking water system is the responsibility of both the Water Operators who operate and maintain the system and the Members of Municipal Council 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 August 2011.

This report will address the following:

- Overview of the Town's Drinking Water System
- Raw, Treated and Distribution Water Quality Data
- Staff Training
- Summary of Plant Flows
- Watermain Break Summary
- Hydrant Inspection Programs
- Water Quality Concerns / Resident Complaints
- Incidents of Adverse Water Quality

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 Licence:	111-101
Municipal Drinking Water Permit:	111-201
Maximum Rated Capacity:	13,536 m³/d

Overview of the Town's Drinking Water System

The raw water source for The Blue Mountains' Thornbury Water Treatment Plant (WTP) is Georgian Bay. The WTP has the following components: intake, low lift pumping facilities, strainers, three membrane trains, clearwell for storage, high lift pumps, ultraviolet disinfection, gas chlorine disinfection, a backwash wastewater system, and dechlorination of wastewater to the Little Beaver River.

A supplemental water supply is received from the Public Utilities of the Town of Collingwood through the Mountain Road Booster Station.

The distribution system consists of approximately 120 kilometers of water main ranging in sizes up to 400mm. Distribution facilities include of an elevated tank, four booster stations, two above ground reservoirs complete with booster stations, in-ground reservoirs and one standpipe.

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.

Weekly samples are collected for raw and treated water from the Thornbury WTP and analyzed by an accredited laboratory.

An overview of the raw water sampling data for the period of January to August 2011 is presented in Table 1:

Table 1 – Raw Water

Parameter	Result Range (Min – Max)
E.Coli	0 to 10
Total Coliform	0 to 480

An overview of the treated water sampling data for the period of January to August 2011 is presented in Table 2:

Table 2 – Treated Water

Parameter	Result Range (Min – Max)
E.Coli	0 to 0
Total Coliform	0 to 0
HPC ¹	0 to 3

¹ Schedule 10 of Ontario Regulation 170/03 requires testing for general bacteria population expressed as colony counts on a heterotrophic plate count (HPC). There are no reporting or corrective action requirements specified in O. Reg 170/03 following HPC test results. HPC's are a good indicator of overall drinking water quality but not water safety.

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 August 2011 is presented in Table 3:

Table 3 – Distribution

Parameter	Number of Samples	Result Range (Min – Max)	Parameter Limit
E.Coli	389	0 to 0	0
Total Coliform	389	0 to 0	0
HPC	294	0 to 600	N/A

Staff Training

In accordance with Ontario Regulation 128/04, all Water Treatment and Distribution Operators possess operating licences 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, at a minimum, 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 to date by Operators is provided in Table 4:

Table 4 – Training Overview

Operator Name	Training Course Attended
Darren Shilvock	<ul style="list-style-type: none"> • Fire Hydrant Training • Trenching & Excavating • Workplace Violence & Harassment • Spills Response Training • Standard of Care – SDWA Course
Don McArthur	<ul style="list-style-type: none"> • Trenching & Excavating • Safe Handling of W & WW Chemicals • Workplace Violence & Harassment • Spills Response Training • Maintenance on Scott Air Pack
Kevin McGuire	<ul style="list-style-type: none"> • Fire Hydrant Training • Trenching & Excavating • Safe Handling of W & WW Chemicals • Entry-Level Drinking Water Operator Course • Workplace Violence & Harassment • Spills Response Training • Training on Scott Air Pack • Georgian Bay Waterworks Conference • Standard First Aid

Meg Boyd	<ul style="list-style-type: none"> • Workplace Violence & Harassment • Standard First Aid • In Search of Loss Water Webinar • Water Technologies Forum • Standard of Care – SDWA Course
Rob Gilchrist	<ul style="list-style-type: none"> • Trenching & Excavating • Safe Handling of W & WW Chemicals • Workplace Violence & Harassment • Maintenance on Scott Air Pack • Georgian Bay Waterworks Conference • Water Supply and Distribution System Certification Preparation Class III/IV
Scott Hill	<ul style="list-style-type: none"> • Fire Hydrant Training • Workplace Violence & Harassment
Scott Marritt	<ul style="list-style-type: none"> • Fire Hydrant Training • Trenching & Excavating • Safe Handling of W & WW Chemicals • Workplace Violence & Harassment • Maintenance on Scott Air Pack • IDUS Training on Maintenance Program • Maintenancefest
Stephanie Cole	<ul style="list-style-type: none"> • Fire Hydrant Training • Trenching & Excavating • Safe Handling of W & WW Chemicals • Workplace Violence & Harassment • Maintenance on Scott Air Pack • IDUS Training on Maintenance Program • Propane in Construction • Safe Operation of Elevated Work Platforms • Water Treatment Plant Operation Volume 1 • Water Technologies Forum • Maintenancefest

Summary of Plant Flows

A summary of the WTP Raw, Treated and supplemental flow supply received from the Town of Collingwood is presented in Table 5:

Table 5:

Month	Town of The Blue Mountains' Raw Water Flows				Town of The Blue Mountains' Treated Water Flows				Supplemental Flows Received from the Town of Collingwood			
	Monthly Total (m ³)	Daily Average (m ³)	Maximum Day (m ³)	Minimum Day (m ³)	Monthly Total (m ³)	Daily Average (m ³)	Maximum Day (m ³)	Minimum Day (m ³)	Monthly Total (m ³)	Daily Average (m ³)	Maximum Day (m ³)	Minimum Day (m ³)
January	62,779	2,025	3,004	1,004	51,507	1,662	2,529	841	72,725	2,346	3,522	1,046
February	63,660	2,274	6,346	884	52,623	1,879	5,296	745	64,125	2,290	3,279	664
March	50,119	1,617	2,452	919	41,649	1,344	2,068	566	70,154	2,263	3,119	1,333
April	45,875	1,529	2,576	725	38,234	1,274	2,166	603	54,777	1,826	2,675	1,211
May	54,308	1,752	3,370	842	45,043	1,453	2,821	711	66,759	2,154	3,150	1,294
June	59,100	1,970	3,834	527	49,988	1,666	3,182	451	77,579	2,586	3,947	1,322
July	94,891	3,061	5,382	1,540	79,247	2,556	4,463	1,282	121,530	3,920	3,970	3,669
August	76,005	2,452	3,871	948	63,369	2,044	3,270	769	114,143	3,682	4,003	2,796
Total	506,737				421,651				641,792			
Max	94,891		6,346				5,296				4,003	
Min	45,875			527				451				664

Watermain Break Summary

Watermain breaks are typically reported by homeowners 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.

From the period of January 1st, 2011 to August 31, 2011, there was one watermain break on Cottage Avenue shown on Figure 1 below:

Figure 1



The watermain break was repaired the same day with minimal service disruption. Operators complete a Field Data for Main Break Evaluation Form and record such information such as type of pipe, soil conditions and nature of the break. The details of the watermain repairs are also recorded in the water distribution system log book.

Hydrant Inspection Programs

The entire distribution system is flushed at minimum, once annually as part of the hydrant inspection and maintenance program. Operators also flush privately owned fire hydrants as part of the Town's Private Hydrant Maintenance Program.

Operators have also developed a comprehensive dead end flushing program whereby areas with low flows, seasonal populations or dead end mains are flushed on a rotating weekly basis.

Water Quality Concerns/ Resident Complaints

Staff record information relating to water quality issues on the Resident Water Quality Concern Form and then forward data to the GIS Coordinator for tracking. If required, Operators attend the location of concern to collect samples or access 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 map detailing the water quality concerns received from October 2004 to October 2011 is included as Attachment 1.

Incidents of Adverse Water Quality

There were no incidents of adverse water quality for the reporting period of January to August 2011.

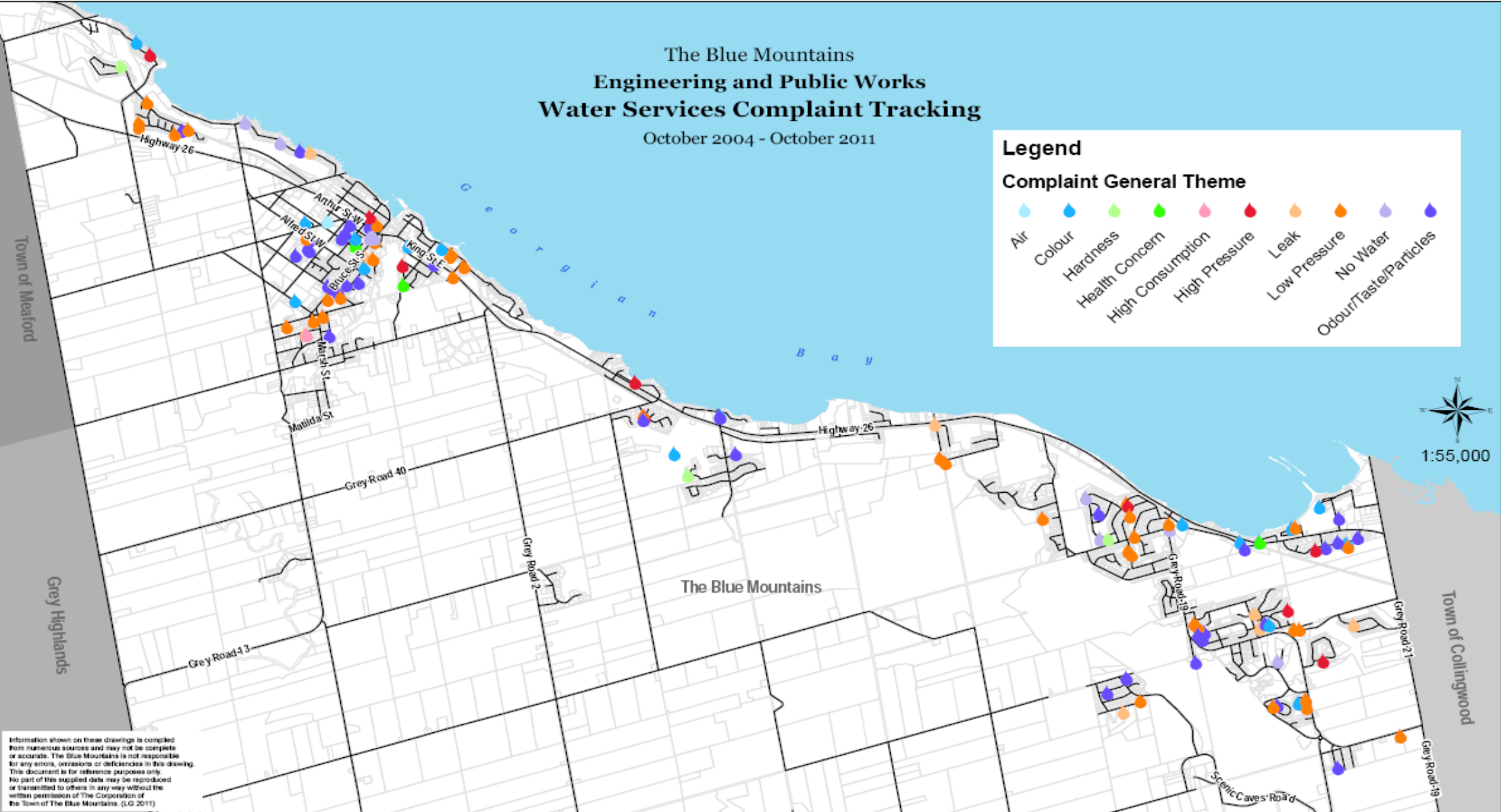
The Blue Mountains
 Engineering and Public Works
Water Services Complaint Tracking

October 2004 - October 2011

Legend

Complaint General Theme

- Air
- Colour
- Hardness
- Health Concern
- High Consumption
- High Pressure
- Leak
- Low Pressure
- No Water
- Odour/Taste/Particles



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