



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

Bradley Subdivision Distribution System

# 2013 ANNUAL/SUMMARY REPORT

A large, high-quality photograph of a single water droplet falling into a pool of water, creating a series of concentric ripples. The droplet is captured mid-fall, with a small splash above it and a reflection below it. The background is a gradient of blue, matching the overall theme of the report.

Prepared by the Ontario Clean Water Agency  
on behalf of the Municipality of Charlton and Dack



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## EXECUTIVE SUMMARY

Municipalities throughout Ontario have been required to comply with Ontario Regulation 170/03 made under the Safe Drinking Water Act (SDWA) since June 2003. The Act was enacted following recommendations made by Commissioner O'Conner after the Walkerton Inquiry. The Act's purpose is to protect human health through the control and regulation of drinking water systems. O. Reg. 170/03 regulates drinking water testing, use of licensed laboratories, treatment requirements and reporting requirements.

Section 11 of Regulation 170/03 requires the owner to produce an Annual Report. This report must include the following:

1. Description of system & chemical(s) used
2. Summary of any adverse water quality reports and corrective actions
3. Summary of all required testing
4. Description of any major expenses incurred to install, repair or replace equipment

This annual report must be completed by February 28th of each year.

Section 22 of the regulation also requires a Summary Report which must be presented & accepted by Council by March 31<sup>st</sup> of each year for the preceding calendar year.

The report must list the requirements of the Act, its regulations, the system's Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), Certificate of Approval (if applicable), and any Provincial Officer Order the system failed to meet during the reporting period. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

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

To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report.

1. A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and the maximum daily flows.
2. A comparison of the summary to the rated capacity and flow rates approved in the systems approval, drinking water works permit or municipal drinking water licence or a written agreement if the system is receiving all its water from another system under an agreement.

The report also includes a review of inspection and audit findings and operational highlights.

The reports have been prepared by the Ontario Clean Water Agency (OCWA) on behalf of the Owner and presented to council as the 2013 Annual/Summary Report.



The report is accessible at the Charlton and Dack municipal complex located at #287237 Spruce Grove Road in Englehart. The availability of the Annual Report is communicated to consumers via notice on Charlton and Dack's radio bulletin (CJBB) and during public council meetings.



## REVIEW AND HIGHLIGHTS OF 2013

The Englehart drinking water system (DWS) supplied safe and reliable drinking water to the residents of the Bradley Subdivision while meeting, exceeding, and continually improving on legal, operational, and quality management system requirements.

OCWA operators, certified by the Province of Ontario through the Ministry of the Environment (MOE) perform water sampling and testing, monitor test results to ensure compliance with regulatory requirements and conduct distribution flushing to ensure the delivery of high quality drinking water to the consumers.

### Inspections and Audits

The MOE performed a focused inspection on July 10, 2013 which included a document review for the period of July 16, 2012 to July 9, 2013 and audit sampling. The system scored an inspection rating of 100 per cent having no non-compliance issues or best practice recommendations identified in the report.

A Quality and Environmental Management System (QEMS) has been implemented for the Bradley Subdivision distribution system. The provincially mandated standard requires municipalities to develop and maintain a quality management system to ensure consistent water quality now and into the future. The process for full scope accreditation was completed and achieved in 2013. The system and processes associated with the QEMS were evaluated on June 3, 2013 by SAI Global to ensure implementation of the Operational Plan and procedures and conformance to the standard. One minor non-conformance was identified during the audit.

1. There was no record of the Portable Flow Meter and the Pressure Gauge / Pressure Sensor being calibrated and the method of calibration was not defined or documented. The Operating Authority shall document a procedure for the calibration and maintenance of measurement and recording equipment and the Operating Authority shall implement and conform to the procedure. This item was resolved on July 30, 2013.

Full scope accreditation was achieved on August 7, 2013 with the issuance of a Certificate of Accreditation for Full Scope, Entire DWQMS.

### Operational Highlights

The Englehart Drinking Water System, the donor system which supplies potable water to the Bradley Subdivision is operating well; however there are ongoing issues with elevated TTHM levels in the distribution system. TTHMs are formed when natural organic matter such as total organic carbon (TOC) in water reacts with some chemicals used for disinfection such as sodium hypochlorite.

The Town of Englehart recently received a Water Treatment Plant Study conducted by AECOM Engineering which provided recommendations to control these elevated TTHM levels. OCWA is working in conjunction with the Town and AECOM Engineering to find a suitable solution.

Bradley Subdivision Distribution System

Section 11

# 2013 ANNUAL REPORT





Section 11

## ANNUAL REPORT

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### 1.0 INTRODUCTION

**Drinking-Water System Name:** BRADLEY SUBDIVISION DISTRIBUTION SYSTEM  
**Drinking-Water System No.:** 260069927  
**Drinking-Water System Owner:** The Corporation of the Municipality of Charlton & Dack  
**Drinking-Water System Category:** Small Municipal, Residential System  
**Period being reported:** January 1, 2013 to December 31, 2013

**Does your Drinking Water System serve more than 10,000 people?** No

**Is your annual report available to the public at no charge on a web site on the Internet?** No

**Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.**

Municipality of Charlton & Dack  
#287237 Spruce Grove Road  
Englehart ON P0J 1H0

### ***Drinking Water Systems that receive drinking water from the Bradley Subdivision Distribution System***

The Bradley Subdivision does not provide drinking water to any other system.

***The Annual Report was not provided to any other Drinking Water System owners.***

The Ontario Clean Water Agency prepared the 2013 Annual/Summary Report for the Bradley Subdivision Distribution System and provided a copy to the system owner; the Municipality of Charlton and Dack as well as to the system's donor; the Town of Englehart.

***Notification to system users that the Annual Report is available for viewing is accomplished through:***

A notice will be posted on Charlton and Dack's Community Bulletin (CJBB radio) and through discussions during a public council meeting.



## 2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM

The Bradley Subdivision distribution system is a standalone system that consists of approximately 1370 meters of distribution water mains. It was constructed in the early 1980's by a private developer, but is currently owned by the Corporation of the Municipality of Charlton and Dack. The Ontario Clean Water Agency (OCWA) assumed operational responsibility on March 23, 2010.

Based on the number of residential service connections (17), the Bradley Subdivision Distribution System is classified as a small municipal residential drinking water system.

The water mains and appurtenances that comprise this water distribution system are described as follows:

- 6 inch PVC constructed water main located on the Old Ferguson Highway that connects to the Englehart Well Supply in the vicinity of Fifth Avenue, in front of the Grant Forest Products complex;
- 1½ inch PVC constructed water main connected to the 6 inch main, extending west along Highway 560 to service the residences in that area;
- 2 inch PVC constructed water main that connects to the 6 inch water main at Old Ferguson Highway, extending west down Christopher Street and north on Michael Street;
- a single fire hydrant located at the junction of Old Ferguson Highway and Christopher Street;

The system connects to and receives all water from the drinking water system owned by the Town of Englehart (Drinking Water System DWS # 220000353). It is a communal ground water well supply that services the Town of Englehart and six (6) neighbouring distribution systems. The Englehart water treatment plant is operated by the Ontario Clean Water Agency and the distribution system is operated by the Town of Englehart's Public Works department. The water treatment facility has a maximum rated capacity of 45.4 liters per second or 2,488 cubic meters per day. It is located on 56 First Street in Evanturel Township in the district of Timiskaming.

The Englehart water system consists of two deep-drilled wells that feed the main treatment building that houses the pressure filtration system, chlorination system, pump station and reservoir. A 100 kW diesel generator is in place and has the capacity to maintain all aspects of the operation during power outages.

More details on the Englehart Drinking Water System are available in the 2013 Annual/Summary Report which can be viewed at the Charlton & Dack Municipal Complex or the Englehart Town Office.





### **3.0 LIST OF WATER TREATMENT CHEMICALS USED OVER THE REPORTING PERIOD**

No chemicals are used in the Bradley Subdivision, however sodium hypochlorite is used as a disinfectant at the Englehart Water Treatment Plant.

### **4.0 SIGNIFICANT EXPENSES INCURRED IN THE DRINKING WATER SYSTEM**

There were no significant installations, replacements or repairs conducted in the system during the reporting period.

### **5.0 DETAILS ON NOTICES OF ADVERSE TEST RESULTS AND OTHER PROBLEMS REPORTED TO & SUBMITTED TO THE SPILLS ACTION CENTER**

Based on information kept on record by OCWA, three (3) adverse water quality incidents were reported to the MOE's Spills Action Centre.

#### **AWQI #110417**

On April 2, 2013, a drinking water sample collected at 12 Christopher Street gave a Total Trihalomethane (TTHM) value of 115 ug/L. The four quarter running average was calculated to be 102.15 ug/L exceeding the allowable limit of 100 ug/L. The exceedance was reported to the MOE's Spills Action Centre and the Timiskaming Health Unit on April 5<sup>th</sup>.

A resample was collected on April 8<sup>th</sup> at 12 Christopher Street (result = 109 ug/L). The local health unit was notified of the result and no further instructions were provided. The issue was resolved on April 11, 2013.

#### **AWQI #112503**

On July 8, 2013, a drinking water sample collected at 12 Christopher Street gave a TTHM value of 135 ug/L. The four quarter running average was calculated to be 112.75 ug/L exceeding the allowable limit of 100 ug/L. The exceedance was reported to the MOE's Spills Action Centre and the Timiskaming Health Unit on July 16<sup>th</sup>.

A resample was collected on July 18<sup>th</sup> at 12 Christopher Street (result = 101 ug/L). The local health unit was notified of the results and no further instructions were provided. The issue was resolved on July 29, 2013.

#### **AWQI #114677**

On October 18, 2013, a drinking water sample collected at 12 Christopher Street gave a TTHM value of 118 ug/L. The four quarter running average, was calculated to be 117 ug/L exceeding the allowable limit of 100 ug/L. The exceedance was reported to the MOE's Spills Action Centre and the Timiskaming Health Unit on October 22<sup>nd</sup>.



A resample was collected on October 25<sup>th</sup> at 12 Christopher Street (result = 140 ug/L). The local health unit was notified of the results and no further instructions were provided. The issue was resolved on November 5, 2013.

## 6.0 MICROBIOLOGICAL TESTING PERFORMED DURING THE REPORTING PERIOD

### Summary of Microbiological Data

Sample Type	# of Samples	Range of <i>E. coli</i> Results (min to max)	Range of Total Coliform Results (min to max)	# of HPC Samples	Range of HPC Results (min to max)
Distribution	26	<1 to <1	<1 to <1	26	<10 to 50

Maximum Allowable Concentration (MAC) for *E. coli* = 0 Counts/100 mL  
 MAC for Total Coliforms = 0 Counts/100 mL

**Note:** Bacteriological samples are collected and tested as described in Schedule 11-2 of Ontario Regulation 170/03. At least one distribution sample is taken every two weeks and is tested for *E. coli*, Total Coliforms and general bacteria population expressed as colony counts on a heterotrophic plate count (HPC).

Refer to *Appendix A* for a monthly summary of microbiological test results.

## 7.0 OPERATIONAL TESTING PERFORMED DURING THE REPORTING PERIOD

### Summary of Chlorine Residual Data in the Distribution System

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure	Standard
Free Chlorine Residual	104	0.06 to 0.83	mg/L	<0.05

**Note:** A total of two (2) operational checks for chlorine residual in the distribution system are taken each week. The samples are collected at least 48 hours apart.

Refer to *Appendix B* for a monthly summary of the above operational data.

### Summary of Total Trihalomethane Data (sampled in the distribution system)

Date of Sample	Result Value	Unit of Measure	Running Average	Exceedance
January 14	100	ug/L	106.4	Yes
April 2	115			
April 8 (resample)	135			
July 8	92.6			
July 18 (resample)	101			
October 18	118			
October 25 (resample)	140			

Maximum Allowable Concentration (MAC) for Total Trihalomethanes = 100 ug/L (Four Quarter Running Average)

**Note:** Results from re-samples taken specifically for corrective action purposes are not used to calculate the running annual average and are not used to determine routine compliance to the Ontario Drinking Water Quality Standard



For further details on the adverse TTHM incidents, refer to Section 5.0 of this report.

**Summary of Most Recent Lead Data**

(applicable to the following drinking water systems; large municipal residential systems, small, municipal residential systems, and non-municipal year-round residential systems)

The Bradley Subdivision Distribution System was eligible to follow the “Exemption from Plumbing Sampling” as described in section 15.1-5(9) and 15.1-5(10) of Schedule 15.1 of Ontario Regulation 170/03. The exemption applies to a drinking water system if, in two consecutive periods at reduced sampling, not more than 10% of all samples from plumbing exceed the maximum allowable concentration (MAC) of 10 ug/L for lead. As such, the system was required to test for total alkalinity and pH in one distribution sample collected during the periods of December 15 to April 15 (winter period) and June 15 to October 15 (summer period). This testing is required in every 12-month period with lead testing in every third 12-month period.

Two rounds of alkalinity and pH testing were carried out on April 2<sup>nd</sup> and September 12<sup>th</sup> of 2012. Results are summarized in the table below.

**Summary of pH & Alkalinity Data** (sampled in the distribution system)

Date of Sample	# of Samples	Range of pH Results (min to max)	Range of Alkalinity Results (mg/L) (min to max)
April 2	1	6.84	227
September 12	1	7.85	232

**Inorganic or Organic Test Results that Exceeded Half the Standard Prescribed in Schedule 2 of the Ontario Drinking Water Quality Standards.**

This section is not applicable to the Bradley Subdivision Distribution System. Inorganic (Schedule 24) and Organic (Schedule 23) parameters are tested on treated water entering a distribution system.

**Summary of Additional Testing Performed in Accordance with a Legal Instrument.**

No additional sampling and testing was required for the Bradley Subdivision Distribution System during the 2013 reporting period.

Bradley Subdivision Distribution System

Schedule 22

# 2013 SUMMARY REPORT

## FOR MUNICIPALITIES





Schedule 22

## **SUMMARY REPORTS FOR MUNICIPALITIES**

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### **1.0 INTRODUCTION**

<b>Drinking-Water System Name:</b>	<b>BRADLEY SUBDIVISION DISTRIBUTION SYSTEM</b>
<b>Municipal Drinking Water Licence (MDWL) No.:</b>	271-102 (issued March 11, 2011)
<b>Drinking Water Work Permit (DWWP) No.:</b>	271-202 (issued March 3, 2011)
<b>Period being reported:</b>	January 1, 2013 to December 31, 2013

### **2.0 REQUIREMENTS THE SYSTEM FAILED TO MEET**

According to information kept on record by OCWA, the Bradley Subdivision Distribution System has complied with all the requirements set out in the system's MDWL, its DWWP, the Act and its Regulations.

However, it should be noted that, three (3) water sample results exceeded the Total Trihalomethane (TTHM) maximum allowable concentration of the Ontario Drinking Water Quality Standard during the reporting period. Refer to Section 5.0 - DETAILS ON NOTICES OF ADVERSE TEST RESULTS AND OTHER PROBLEMS REPORTED TO & SUBMITTED TO THE SPILLS ACTION CENTER on page 6 of this report.

### **3.0 SUMMARY OF QUANTITIES & FLOW RATES**

The water volumes and flow rates supplied to the Bradley Subdivision Distribution System are unknown. The Bradley Subdivision Distribution System is connected to and receives all water from the Englehart Drinking Water System.

Further details on the Englehart Drinking Water System are available in the 2013 Annual/Summary Report which can be viewed at the Charlton & Dack Municipal Complex or the Englehart Municipal Office.

### **4.0 CONCLUSION**

The Bradley Subdivision Distribution System complied with the regulatory requirements of the Safe Drinking Water Act and its Regulations and met the terms and conditions outlined in its site specific licence and permit having no incidents of non-compliance during the reporting period.

Three (3) adverse Total Trihalomethane results were reported to the MOE's Spills Action Centre in 2013. Elevated TTHMs has been an ongoing issue in the distribution system and in response to these elevated results, the Town of Englehart approved the performance of a Water Study which was conducted in 2013 by AECOM Engineering. The study provided recommendations to



control the high TTHM levels. OCWA is working in conjunction with the Town and AECOM Engineering to find the most suitable solution.



# **APPENDIX A**

Monthly Summary of Microbiological Test Results



# Ontario Clean Water Agency Monthly Process Data Report

Municipality: Town of Charlton  
 Facility: [5049] - Charlton Water Treatment Plant  
 Works: [260069927] - Bradley Subdivision Distribution System  
 Classification: Class 1 Water Distribution, Class 3 Water Treatment  
 Water Source: Englehart River

Period: 01/01/2013 to 12/31/2013  
 Serviced Population: 250  
 Total Design Capacity(m<sup>3</sup>/day): 561.0

	Jan/2013	Feb/2013	Mar/2013	Apr/2013	May/2013	Jun/2013	Jul/2013	Aug/2013	Sep/2013	Oct/2013	Nov/2013	Dec/2013	<-- Summary -->
<b>Distribution System\Microbiological - Distribution</b>													
<b>TC Samples (# collected)</b>													
Sum	2.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	2.0	27.0
<b>TC (cfu/100 mL): Maximum</b>													
Max	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
<b>TC (cfu/100 mL): Minimum</b>													
Min	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
<b>E. Coli Samples (# collected)</b>													
Sum	2.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	2.0	27.0
<b>E. Coli (cfu/100 mL): Maximum</b>													
Max	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
<b>E. Coli (cfu/100 mL): Minimum</b>													
Min	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
<b>HPC Samples (# collected)</b>													
Sum	2.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	2.0	27.0
<b>HPC (cfu/mL): Maximum</b>													
Max	< 10.0	< 10.0	< 10.0	50.0	< 10.0	< 10.0	< 10.0	< 10.0	10.0	< 10.0	< 10.0	< 10.0	50.0
<b>HPC (cfu/mL): Minimum</b>													
Min	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0

Note: ? Calculation not verifiable. At least one result reported as < and at least one result reported >.





# **APPENDIX B**

Monthly Summary of Chlorine Residual Data



**Ontario Clean Water Agency  
Monthly Process Data Report**

Municipality: Town of Charlton  
 Facility: [5049] - Charlton Water Treatment Plant  
 Works: [260069927] - Bradley Subdivision Distribution System  
 Classification: Class 1 Water Distribution, Class 3 Water Treatment  
 Water Source: Englehart River

Period: 01/01/2013 to 12/31/2013  
 Served Population: 250  
 Total Design Capacity(m<sup>3</sup>/day): 561.0

	Jan/2013	Feb/2013	Mar/2013	Apr/2013	May/2013	Jun/2013	Jul/2013	Aug/2013	Sep/2013	Oct/2013	Nov/2013	Dec/2013	<-- Summary -->
Distribution System\Health - Distribution													
Cl Res. Dist Samples (# collected)													
Sum	9.0	8.0	8.0	9.0	9.0	8.0	9.0	9.0	9.0	9.0	8.0	9.0	104.0
Cl Res. in Dist.: Free Min. (mg/L)													
Min	0.06	0.11	0.13	0.13	0.11	0.13	0.1	0.13	0.07	0.07	0.08	0.1	0.06
Cl Res. in Dist.: Free Max. (mg/L)													
Max	0.3	0.42	0.39	0.34	0.26	0.31	0.83	0.5	0.16	0.33	0.16	0.18	0.83
Cl Residual: Free Mean (mg/L)													
Avg	0.182	0.304	0.254	0.197	0.183	0.218	0.368	0.248	0.113	0.138	0.125	0.124	0.204

Note: ? Calculation not verifiable. At least one result reported as < and at least one result reported >.