



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Clarksville Subdivision Distribution System

2014 ANNUAL REPORT



Prepared by the Ontario Clean Water Agency
on behalf of the Corporation of the Charlton and Dack (Owner Representative)



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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.

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

The Ontario Clean Water Agency (OCWA) prepared the 2014 Annual Report on behalf of the Owner Representative, the Municipality of Charlton and Dack.

REVIEW AND HIGHLIGHTS OF 2014

The Englehart drinking water system (DWS) supplied safe and reliable drinking water to the residents of the Clarksville 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) performed water sampling and testing, monitored test results to ensure compliance with regulatory requirements and conducted distribution flushing to ensure the delivery of high quality drinking water to the consumers.

Inspections

No MOE inspections were conducted in 2014. According to records kept by OCWA, the last inspection was performed on April 22, 2009. The inspection included a physical assessment of various components of the water distribution system and a document review for the period of January 1, 2007 to April 21, 2009. There were no non-compliance items identified in the inspection report.



Operational Highlights

The Englehart Drinking Water System, the donor system which supplies potable water to the Clarksville Subdivision operated well in 2014; but elevated TTHM levels continue to be an issue 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.

OCWA, on behalf of the Town submitted a Chloramination proposal to MOECC's Director of Approvals in September 2014. The objective of this chloramination pilot is to reduce trihalomethanes and to determine the effectiveness of using chloramination as secondary disinfection. The proposal was approved on December 2, 2014 and implementation is planned for March 2015.



Clarksville Subdivision Distribution System

Section 11

2014 ANNUAL REPORT



Section 11

ANNUAL REPORT

1.0 INTRODUCTION

Drinking-Water System Name: CLARKSVILLE SUBDIVISION DISTRIBUTION SYSTEM
Drinking-Water System No.: 260078741
Drinking-Water System Owner: Each property owner of the Clarksville Subdivision (Owner Representative is The Corporation of the Municipality of Charlton & Dack)
Drinking-Water System Category: Non-Municipal Year-Round Residential System
Period being reported: January 1, 2014 to December 31, 2014

Number of Designated Facilities served: zero (0)

Did you provide a copy of your annual report to all Designated Facilities you serve? Not applicable

Number of Interested Authorities you report to: zero (0)

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Not applicable

Drinking Water Systems that receive drinking water from the Clarksville Subdivision Distribution System

The Clarksville 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 2014 Annual Report for the Clarksville Subdivision Distribution System and provided a copy to the representative of 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 public council meetings.



2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM

The Clarksville Subdivision distribution system is a standalone system that is located in the Municipality of Charlton and Dack, directly adjacent to the northeast boundary of the Town of Englehart. It was constructed in the early 1950's by a private developer, but is currently owned by each property owner in the subdivision. The Ontario Clean Water Agency was contracted to perform water sampling, to monitor results, and to prepare regulatory reports.

The system has fifteen (15) residential service connections and four (4) non-residential service connections. Based on the number of residential service connections and the fact that the system is jointly owned by the property owners, the Clarksville Subdivision Distribution System is classified as a non-municipal year-round residential drinking water system.

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

- 2 inch galvanized steel constructed water main that connects to the Englehart Well Supply at the west end of Second Avenue, in the area of the Junction Gas Bar and Restaurant.
- service connections consists of ¾ inch plastic constructed water line.
- no fire hydrants or blow-off valves are located in the system.

The system connects to and receives all water from the drinking water system owned by the Corporation of 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 and the distribution system is operated by the Ontario Clean Water Agency. 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 newly installed 150 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 system's 2014 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 Clarksville 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, four (4) adverse water quality incidents were reported to the MOE's Spills Action Centre.

AWQI #	115767
Parameter	Total Trihalomethanes (TTHMs)
Sample Date	January 9, 2014 at 1534 hours
Result	122 ug/L (single sample result); 114 ug/L (running annual average)
Sample Location	Peter's Garage on Hwy 11
Maximum Allowable Limit	100 ug/L (running annual average)
Corrective Actions	The exceedance was reported to the MOE's Spills Action Centre and the Timiskaming Health Unit on January 16 th . A re-sample was collected on January 17 th at Peter's Garage (result = 122 ug/L). The local health unit was notified of the result and no further instructions were provided. The issue was resolved on January 27, 2014.

AWQI #	116751
Parameter	Total Trihalomethanes (TTHMs)
Sample Date	April 3, 2014 at 1510 hours
Result	128 ug/L (single sample result); 119.75 ug/L (running annual average)
Sample Location	Peter's Garage on Hwy 11
Maximum Allowable Limit	100 ug/L (running annual average)
Corrective Actions	The exceedance was reported to the MOE's Spills Action Centre and the Timiskaming Health Unit on April 9 th . A re-sample was collected on April 10 th at Peter's Garage (result = 127 ug/L). The local health unit was notified of the result and no further instructions were provided. The issue was resolved on April 17, 2014.

AWQI #	118603
Parameter	Total Trihalomethanes (TTHMs)
Sample Date	July 3, 2014 at 1445 hours
Result	89.5 ug/L (single sample result); 111.88 ug/L (running annual average)
Sample Location	Peter's Garage
Maximum Allowable Limit	100 ug/L (running annual average)



Corrective Actions	The exceedance was reported to the MOE’s Spills Action Centre and the Timiskaming Health Unit on July 7 th . A re-sample was collected on July 8 th at Peter’s Garage (result = 106 ug/L). The local health unit was notified of the result and no further instructions were provided. The issue was resolved on July 15, 2014.
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AWQI #	120985
Parameter	Total Trihalomethanes (TTHMs)
Sample Date	October 9, 2014 at 1437 hours
Result	129 ug/L (single sample result); 117.13 ug/L (running annual average)
Sample Location	Peter’s Garage
Maximum Allowable Limit	100 ug/L (running annual average)
Corrective Actions	The exceedance was reported to the MOE’s Spills Action Centre and the Timiskaming Health Unit on October 14 th . A re-sample was collected on October 15 th at Peter’s Garage (result = 93.4 ug/L). The local health unit was notified of the result and no further instructions were provided. The issue was resolved on October 22, 2014.

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 20

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 was taken every two weeks and 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	0.21 to 1.13	mg/L	<0.05

Note: A total of two (2) operational checks for chlorine residual in the distribution system were taken each week. The samples were 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 9	122	ug/L	117.1	Yes
January 17 (resample)	122			
April 3	128			
April 10 (resample)	127			
July 3	89.5			
July 8 (resample)	106			
October 9	129			
October 15 (resample)	93.4			

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

Refer to the Section 5.0 of this report for further details on the adverse TTHM incidents,

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 Clarksville Subdivision Distribution System qualified for reduced sampling after the first two rounds of standard lead testing as prescribed in section 15.1-1 of Ontario Regulation 170/03 were conducted in 2008. The next scheduled sampling period should have occurred from December 15, 2010 to April 15, 2011 and June 15, 2011 to October 15, 2011, but was not approved by the owner’s representative.

In 2014, reduced sampling was approved and two rounds of community lead testing were conducted on April 10th and September 25th. Results are summarized in the tables below.

Summary of Lead Data

Location Type	# of Samples	Range of Lead Results (min to max)	Unit of Measure	# of Exceedances
Plumbing	12	<0.1 to 0.37	ug/L	0
Distribution	2	0.34 to 0.38	ug/L	0

Maximum Allowable Concentration (MAC) for Lead = 10 ug/L

Summary of pH & Alkalinity Data

Location Type	# of Samples	Range of pH Results (min to max)	Range of Alkalinity Results (mg/L) (min to max)
Plumbing	12	7.27 to 7.47	N/A
Distribution	2	7.24 to 7.30	230 to 233



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 Clarksville 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 Clarksville Subdivision Distribution System during the 2014 reporting period.

8.0 CONCLUSION

The Clarksville Subdivision Distribution System complied with the regulatory requirements of the Safe Drinking Water Act and its Regulations having no incidents of non-compliance during the reporting period.

Elevated TTHMs has been an ongoing issue in the distribution system and in response to these elevated results, the MOECC's Approvals and Licencing Department approved a process change in the donor's treatment system. Chloramination will be implemented at the Englehart water plant. Chloramination is widely practiced and has a long history of being effective in maintaining a long-lasting disinfection residual. It does not lead to the formation of TTHMs and it has also been successful in replacing chlorination in many municipalities that have high TTHM problems.



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: [260078741] - Clarksville Subdivision Distribution System
 Classification: Class 1 Water Distribution, Class 3 Water Treatment
 Water Source: Englehart River

Period: 01/01/2014 to 12/31/2014
 Serviced Population: 250
 Total Design Capacity(m³/day): 561.0

	Jan/2014	Feb/2014	Mar/2014	Apr/2014	May/2014	Jun/2014	Jul/2014	Aug/2014	Sep/2014	Oct/2014	Nov/2014	Dec/2014	<-- Summary -->
Distribution System\Microbiological - Distribution													
TC Samples (# collected)													
Sum	2.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	2.0	26.0
TC (cfu/100 mL): Maximum													
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
TC (cfu/100 mL): Minimum													
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
E. Coli Samples (# collected)													
Sum	2.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	2.0	26.0
E. Coli (cfu/100 mL): Maximum													
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
E. Coli (cfu/100 mL): Minimum													
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
HPC Samples (# collected)													
Sum	2.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	2.0	2.0	26.0
HPC (cfu/mL): Maximum													
Max	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	20.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	20.0
HPC (cfu/mL): Minimum													
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: [260078741] - Clarksville Subdivision Distribution System
 Classification: Class 1 Water Distribution, Class 3 Water Treatment
 Water Source: Englehart River

Period: 01/01/2014 to 12/31/2014
 Served Population: 250
 Total Design Capacity(m³/day): 561.0

	Jan/2014	Feb/2014	Mar/2014	Apr/2014	May/2014	Jun/2014	Jul/2014	Aug/2014	Sep/2014	Oct/2014	Nov/2014	Dec/2014	<-- Summary -->
Distribution System\Health - Distribution													
Cl Res. Dist Samples (# collected)													
Sum	9.0	8.0	9.0	8.0	9.0	9.0	9.0	8.0	9.0	9.0	8.0	9.0	104.0
Cl Res. in Dist.: Free Min. (mg/L)													
Min	0.22	0.21	0.33	0.37	0.29	0.45	0.26	0.41	0.28	0.45	0.52	0.59	0.21
Cl Res. in Dist.: Free Max. (mg/L)													
Max	0.65	0.44	0.69	0.92	0.98	0.91	0.88	0.63	0.84	0.81	0.8	1.13	1.13
Cl Residual: Free Mean (mg/L)													
Avg	0.404	0.344	0.447	0.555	0.673	0.679	0.509	0.539	0.58	0.653	0.713	0.808	0.577

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