



Englehart Drinking Water System

# 2013 ANNUAL/SUMMARY REPORT



Prepared by the Ontario Clean Water Agency  
on behalf of the Town of Englehart



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## INTRODUCTION

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, operational highlights and plans for 2014.

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 municipal office located at 61 Fifth Avenue in Englehart. The availability of the Annual/Summary Report is communicated to the consumers via a notice inserted with the Town's water bill.



## REVIEW AND HIGHLIGHTS OF 2013

The Englehart drinking water system (DWS) provided a safe and reliable drinking water to the community of Englehart and six neighbouring distribution systems while meeting, exceeding, and continually improving on legal, operational, and quality management system requirements.

The Ontario Clean Water Agency is the accredited operating authority for the Englehart DWS having met the quality management system requirements of the SDWA. OCWA operators, certified by the Province of Ontario through the Ministry of the Environment (MOE) operate and maintain the system to ensure compliance with regulatory requirements and ensure the production and delivery of high quality drinking water to consumers.

### Inspections and Audits

The MOE performed a detailed inspection on April 23 and 24 of 2013. The inspection included a physical assessment of the water treatment plant, audit sampling and a document review for the period of April 30, 2012 to April 22, 2013. The system scored an inspection rating of 97.07 per cent having one non-compliance issue identified in the report.

July and August 2012 - Five weeks of distribution system sampling for microbiological parameters did not include testing for Heterotrophic Plate Count (HPC) as required under Section 10-2 of Ontario Regulation 170/03 which requires at least 25% of the distribution system samples taken and tested for *E. coli* and total coliforms are also tested for HPC. This item was resolved after confirmation was provided to the MOE that chain of custody forms have been prepared in advance with all required microbiological parameters specified.

A Quality and Environmental Management System (QEMS) was implemented for both the Englehart water treatment system, operated by OCWA and the Englehart distribution system, operated by the Town of Englehart. The provincially mandated Drinking Water Quality Management Standard (DWQMS) 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 for both systems was completed and achieved in 2013.

The quality management system for the distribution system was assessed on June 4, 2013 by SAI Global to ensure implementation of the Operational Plan and procedures and conformance to the standard. Two non-conformances were identified during the audit.

1. Training records of drinking water system employees are not complete and up to date. This item was resolved by updating and completing training records.
2. The Operating Authority has not completed training on emergency procedures and contingency plans. This item was addressed by the development of a formalized training schedule which was implemented on July 31, 2013.

The system and processes associated with the water treatment QEMS were evaluated on June 6, 2013. No non-conformances were identified during this audit.

Full scope accreditation was achieved for both systems with the issuance of Certificates of Accreditation for Full Scope, Entire DWQMS.



On November 1, 2013, OCWA assumed overall operational responsibility for the Englehart distribution system. The Quality and Environmental Management System (QEMS) for the water treatment and distribution systems were combined and implemented for the entire Englehart Drinking Water System. SAI Global will conduct a 12 month off-site surveillance audit of the system in June 2014.

Water Usage

The Englehart water treatment plant is rated to produce 2488 cubic meters of water per day as specified in the system’s Municipal Drinking Water Licence 209-101. The following information is presented to quickly assess the capability of the system to meet existing and future water usage needs:

<b>Rated Capacity of the Plant</b>	<b>2488 m<sup>3</sup>/day</b>	
<b>Average Daily Flow for 2013</b>	<b>996 m<sup>3</sup>/day</b>	<b>40.0 % of the rated capacity</b>
<b>Maximum Daily Flow for 2013</b>	<b>1393 m<sup>3</sup>/day</b>	<b>56.0 % of the rated capacity</b>
<b>Total Treated Water Produced in 2013</b>	<b>363,488 m<sup>3</sup></b>	

Operational Highlights

1. The Englehart Drinking Water System 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.

In 2013, a study of the Englehart Water Treatment Plant was completed by AECOM Engineering. The study was conducted to determine the causes of the elevated TTHM results and provide recommendations to address the issue. OCWA is working in conjunction with the Town and AECOM Engineering to find a suitable solution.

The study also evaluated the present and anticipated future water demands to allow the Town to better plan upgrades or expansions of the water treatment plant.

2. The Town of Englehart completed upgrades to the distribution system infrastructure that were in on-going from 2007.
3. On an annual basis, a review of the drinking water system’s infrastructure is conducted to assess its adequacy for the operation and maintenance of the system. In 2013, the following capital projects were approved and completed.
  - Changes to the Programmable Logic Controller (PLC) were performed to improve the alarm system at the plant and eliminate unnecessary call-outs.
  - Repairs to the stand-by generator were completed to eliminate a major problem with the water pump that rendered the genset inoperable



- The installation of a new chemical metering pump, for sodium hypochlorite injection, to replace older unit.



**New Prominent Sodium Hypochlorite Pump**

Plans for 2014

1. Process changes to reduce Total Trihalomethane (TTHM) levels in the distribution system.
2. The purchase of spare sodium hypochlorite flow monitor
3. The purchase of spare chlorine analyzer membranes and electrolytes
4. The purchase of spare sodium hypochlorite injector
5. The purchase of two spare parts kits for sodium hypochlorite pumps
6. The installation of curtains (baffles) in the clearwell to reduce short circuiting and improve CT



Englehart Drinking Water System

Section 11

# 2013 ANNUAL REPORT





Section 11

# ANNUAL REPORT

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## 1.0 INTRODUCTION

**Drinking-Water System Name:** ENGLEHART DRINKING WATER SYSTEM  
**Drinking-Water System No.:** 220000353  
**Drinking-Water System Owner:** The Corporation of the Town of Englehart  
**Drinking-Water System Category:** Large 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?** Yes at <http://www.englehart.ca/>

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

Englehart Town Office  
61 Fifth Avenue  
Englehart, Ontario P0J 1H0

### ***Drinking Water Systems that receive drinking water from the Englehart Drinking Water System:***

The Englehart Drinking Water System provides drinking water to the Town of Englehart and six neighbouring distribution systems:

- |                            |                      |
|----------------------------|----------------------|
| 1. Bradley Subdivision     | MOE DWS #: 260069927 |
| 2. First St North          | MOE DWS #: 260078871 |
| 3. Kap-kig-iwan Road       | MOE DWS #: 260078650 |
| 4. Bryans' Road            | MOE DWS #: 260080574 |
| 5. Brown's Road            | MOE DWS #: 260078663 |
| 6. Clarksville Subdivision | MOE DWS #: 260078741 |

### ***The Annual Report was provided to all Drinking Water System owners that are connected to the Englehart Drinking Water System.***

The Ontario Clean Water Agency prepared the 2013 Annual/Summary Report for the Englehart Drinking Water System and provided a copy to the system owner; the Town of Englehart. A copy was also provided to the Municipality of Charlton and Dack (Bradley Subdivision and Clarksville Subdivision) and the following list of representatives for the remaining private lines:



- |    |                      |                   |
|----|----------------------|-------------------|
| 1. | Ms. Cindy Kirkbride  | First St North    |
| 2. | Mr. Len Fisher       | Kap-kig-iwan Road |
| 3. | Ms. Marie Bryan      | Bryans' Road      |
| 4. | Mr. Daryl Rowlandson | Brown's Road      |

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

- A notice inserted with Water Bill

## **2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM**

The Englehart Drinking Water System is owned by the Corporation of the Town of Englehart and consists of a Class 1 water treatment subsystem and a Class 1 water distribution subsystem. The Ontario Clean Water Agency is designated as the Overall Responsible Operator for both the water treatment and water distribution facilities. Certified municipal operators assist OCWA with operations by performing regular maintenance and checks of the system. The system is a communal ground water well supply that services the Town of Englehart and six neighbouring distribution systems.

### ***Raw Water Supply***

The water treatment plant is located on 56 First Street in Evanturel Township in the district of Timiskaming and is supplied by two deep-drilled wells; Well No. 2 and Well No. 3.

Well No. 2 is located in a separate well house situated approximately 40 meters south of the treatment plant (approximately 52 m east of 1st Street and 15 m north of 6th Avenue). The well is drilled to a depth of 89.3 meters and consists of a stainless steel intake screen and a 400 mm diameter steel casing which reduces to a 200 mm diameter steel casing. It is equipped with vertical turbine pump and fixed-rate control system to pump at the maximum rate of 15.15 L/second. It includes a magnetic flow meter and pump-to-waste provisions.

Well No. 3 is located in a separate well house situated approximately 20 meters east of the treatment plant (approximately 75 m east of 1st Street and 53 m north of 6th Avenue). The well is drilled to a depth of 90.5 meters and consists of stainless steel intake screen and a 300 mm diameter casing that later reduces to a 150 mm diameter steel casing. It is equipped with vertical turbine pump and fixed-rate control system to pump at the maximum rate of 18.9 L/second. It also includes a magnetic flow meter and pump-to-waste provisions.

### ***Water Treatment***

The production wells feed the main water treatment plant that has a maximum rated capacity of 2488 cubic meters per day ( $m^3/d$ ).

The process consists of an iron and manganese removal/pressure filtration system rated at 2998  $m^3/d$ . It consists of two reaction vessels; one for sodium hypochlorite and one for sodium bisulphite (which is currently not in use). Sodium hypochlorite is used as an oxidant for iron and



manganese removal and as a disinfectant. The system is equipped with a backwash flow meter, analyzers to continuously monitor turbidity and chlorine residual and a filter backwash pump. The backwash residue discharges to the sanitary sewer. A treated water flow meter is located on the common header just downstream of the pressure filter system.

Disinfection of the well water is accomplished by chlorination. The sodium hypochlorite feed system consists of two (2) chemical storage tanks with spill containment and two (2) flow paced chemical metering pumps with automatic backup/switch over. The chemical is injected into the low lift piping system, prior the filter system.

***Water Storage and Pumping Capabilities***

The reservoir consists of a twin cell underground clear well with a 3 meter depth and an overall storage volume 1360 m<sup>3</sup>. Each cell is vented and is accessible by an access hatch with ladder. A butterfly valve provides isolation of each cell if required. Two vertical turbine high lift pumps and fixed-rate control systems which pump at the maximum rates of 37.8 L/second and 45.4 L/second direct water into the distribution system. A distribution water flow meter and a continuous free chlorine analyzer are installed on the high lift discharge header.

***Emergency Power***

A 100 kW diesel generator is available in the water treatment building and can maintain all aspects of the operation during a power outage.

***Distribution System***

The Englehart Drinking Water System is classified as a Large Municipal Residential Drinking Water System and serves an estimated population of 1700 residents. Information regarding the age of the distribution system indicated that the it was originally installed in 1914. The water mains consists primarily of 12, 10, 8, and 6 inch diameter ductile iron constructed pipe with approximately 50 fire hydrants connected to the system to aid in fire protection. Residential service connections consist of 1/2, 5/8, and 3/4 inch copper tubing. There are no off site water storage facilities in the system. Additionally, the distribution system does not receive water from other sources but it provides drinking-water to six neighbouring regulated drinking water systems (one small municipal residential system and five non-municipal year-round residential systems) as listed below:

<b>Distribution System</b>	<b>DWS #</b>	<b>Owner/Operating Authority</b>	<b># of Service Connections</b>
Town of Englehart	220000353	Town of Englehart	750
Bradley Subdivision	260069927	Municipality of Charlton & Dack	17
First St North,	260078871	Ms. Cindy Kirkbride	9
Kap-kig-iwan Road	260078650	Mr. Len Fisher	8
Bryan's Road	260080574	Ms. Marie Bryan	13
Brown's Road	260078663	Mr. Daryl Rowlandson	12
Clarksville Subdivision	260078741	Municipality of Charlton & Dack	18

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

Sodium Hypochlorite, used as a disinfectant, was the only chemical used at the Englehart Water Treatment Plant.

Sodium bisulphite is available at the plant, but is currently not in use.

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

Refer to the section titled “Operational Highlights” for details on significant expenses incurred in the drinking water system in 2013.

OCWA is committed to maintaining the assets of the drinking water system and maintains a program of scheduled inspection and maintenance activities using a computerized Work Management System (WMS). All routine maintenance activities conducted at the water treatment plant were accomplished in 2013.

### 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, the Englehart Drinking Water System was in full compliance in 2013 with no adverse water quality incidents reported to the MOE’s Spills Action Centre.

### 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)
Raw (Well No. 2)	52	<1 to <1	<1 to 7	0	N/A
Raw (Well No. 3)	52	<1 to <1	<1 to 1	0	N/A
Treated	52	<1 to <1	<1 to <1	52	<10 to 10
Distribution	171	<1 to <1	<1 to <1	68	<10 to 20

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

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

## 7.0 OPERATIONAL TESTING PERFORMED DURING THE REPORTING PERIOD

### *Summary of Raw Water Turbidity Data*

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure
Turbidity (Well No. 2)	50	0.14 to 0.63	NTU
Turbidity (Well No. 3)	50	0.08 to 057	

**Note:** Samples required once every month.

### *Continuous Monitoring in the Treatment Process*

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure
Free Chlorine	8760	0.169 to 1.98	mg/L

**Note:** For continuous monitors use 8760 as the number of samples.

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

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure	Standard
Free Chlorine	366	0.15 to 2.10	mg/L	<0.05

**Note:** A total of seven operational checks for chlorine residual in the distribution system are collected each week. Four (4) samples are tested one day and three (3) on a second day. The sample sets are collected at least 48-hours apart and samples collected on the same day are from different locations. Free chlorine residuals in the distribution system are collected by certified town employees.

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

### *Summary of Nitrate & Nitrite Data (sampled at the water treatment plant)*

Date of Sample	Nitrate Result Value	Nitrite Result Value	Unit of Measure	Exceedance
January 21	<0.1	<0.05	mg/L	No
April 2	<0.1	<0.05	mg/L	No
July 8	<0.1	<0.05	mg/L	No
October 21	<0.1	<0.05	mg/L	No

Maximum Allowable Concentration (MAC) for Nitrate = 10 mg/L

MAC for Nitrite = 1 mg/L

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

Date of Sample	Result Value	Unit of Measure	Running Average	Exceedance
January 21	90.1	ug/L	95.2	No
April 2	100			
July 8	105			
October 21	85.6			

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



**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 Englehart Drinking Water 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 5<sup>th</sup> and September 25<sup>th</sup> of 2013. 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 5	2	7.23 to 7.34	230 to 230
September 25	2	7.18 to 7.26	225 to 228

**Most Recent Schedule 23 Inorganic Data Tested at the Water Treatment Plant**

Parameter	Result Value	Unit of Measure	Standard	Exceedance
Antimony	<0.5	ug/L	6	No
Arsenic	<1.0	ug/L	25	No
Barium	397	ug/L	1000	No
Boron	208	ug/L	5000	No
Cadmium	0.53	ug/L	5	No
Chromium	<1.0	ug/L	50	No
Mercury	<0.01	ug/L	1	No
Selenium	3.0	ug/L	10	No
Uranium	<1.0	ug/L	20	No

**Note:** Sample required every 36 months (sample date = October 24, 2011). Next sampling scheduled for October 2014

**Most Recent Schedule 24 Organic Data Tested at the Water Treatment Plant**

Parameter	Result Value	Unit of Measure	Standard	Exceedance
Alachlor	<0.69	ug/L	5	No
Aldicarb	<0.64	ug/L	9	No
Aldrin + Dieldrin	<0.004	ug/L	0.7	No
Atrazine + N-dealkylated metabolites	<0.9	ug/L	5	No
Azinphos-methyl	<0.52	ug/L	20	No
Bendiocarb	<1.3	ug/L	40	No
Benzene	<0.25	ug/L	5	No



**Most Recent Schedule 24 Organic Data Tested at the Water Treatment Plant**

Parameter	Result Value	Unit of Measure	Standard	Exceedance
Benzo(a)pyrene	<0.0082	ug/L	0.01	No
Bromoxynil	<0.58	ug/L	5	No
Carbaryl	<1.3	ug/L	90	No
Carbofuran	<1.3	ug/L	90	No
Carbon Tetrachloride	<0.25	ug/L	5	No
Chlordane (Total)	<0.004	ug/L	7	No
Chlorpyrifos	<0.52	ug/L	90	No
Cyazine	<0.52	ug/L	10	No
Diazinon	<0.52	ug/L	20	No
Dicamba	<0.23	ug/L	120	No
1,2-Dichlorobenzene	<0.25	ug/L	200	No
1,4-Dichlorobenzene	<0.25	ug/L	5	No
Dichlorodiphenyl trichloroethane (DDT) + metabolites	<0.005	ug/L	30	No
1,2-Dichloroethane	<0.25	ug/L	5	No
1,1-Dichloroethylene (vinylidene chloride)	<0.25	ug/L	14	No
Dichloromethane	<0.25	ug/L	50	No
2,4-Dichlorophenol	<0.056	ug/L	900	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	<0.23	ug/L	100	No
Diclofop-methyl	<0.23	ug/L	9	No
Dimethoate	<0.52	ug/L	20	No
Dinoseb	<0.058	ug/L	10	No
Diquat	<7.0	ug/L	70	No
Diuron	<6.4	ug/L	150	No
Glyphosate	<20	ug/L	280	No
Heptachlor + Heptachlor Epoxide	<0.004	ug/L	3	No
Lindane (Total)	<0.00046	ug/L	4	No
Malathion	<0.52	ug/L	190	No
Methoxychlor	<0.0012	ug/L	900	No
Metolachlor	<0.34	ug/L	50	No
Metribuzin	<0.34	ug/L	80	No
Monochlorobenzene	<0.25	ug/L	80	No
Paraquat	<1.0	ug/L	10	No
Parathion	<0.34	ug/L	50	No
Pentachlorophenol	<0.056	ug/L	60	No
Phorate	<0.52	ug/L	2	No
Picloram	<0.058	ug/L	190	No
Polychlorinated Biphenyls (PCB)	<0.0038	ug/L	3	No
Prometryne	<0.34	ug/L	1	No
Simazine	<0.52	ug/L	10	No
Temephos	<18	ug/L	280	No



**Most Recent Schedule 24 Organic Data Tested at the Water Treatment Plant**

Parameter	Result Value	Unit of Measure	Standard	Exceedance
Terbufos	<0.34	ug/L	1	No
Tetrachloroethylene	<0.25	ug/L	30	No
2,3,4,6-Tetrachlorophenol	<0.056	ug/L	100	No
Triallate	<0.34	ug/L	230	No
Trichloroethylene	<0.25	ug/L	50	No
2,4,6-Trichlorophenol	<0.056	ug/L	5	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	<0.058	ug/L	280	No
Trifluralin	<0.34	ug/L	45	No
Vinyl Chloride	<0.25	ug/L	2	No

**Note:** Sample required every 36 months (sample date = October 24, 2011). Next sampling scheduled for October 2014

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

No inorganic or organic parameter(s) listed in Schedule 23 and 24 of Ontario Regulation 170/03 exceeded half the standard found in Schedule 2 of the Ontario Drinking Water Standard (O. Reg. 169/03) during the reporting period.

**Most Recent Sodium Data Sampled at the Water Treatment Plant**

Date of Sample	# of Samples	Result Value	Unit of Measure	Standard	Exceedance
October 18, 2010	1	54.8	mg/L	20	Yes
October 26, 2010 (resample)	1	54.0			

**Note:** Sample required every 60 months. Next sampling scheduled for October 2015

The adverse sodium result was reported to MOE SAC and the Timiskaming Health Unit on October 25, 2010 as required under Schedule 16 of O. Reg. 170/03 (AWQI# 98814).

The aesthetic objective for sodium in drinking water is 200 mg/L at which it can be detected by a salty taste. It is required that the local Medical Officer of Health be notified when the concentration exceeds 20 mg/L so that persons on sodium restricted diets can be notified by their physicians. The adverse sodium result was reported to MOE SAC and the Timiskaming Health Unit on October 25, 2010 as required under Schedule 16 of O. Reg. 170/03 (AWQI# 98814).

**Most Recent Fluoride Data Sampled at the Water Treatment Plant**

Date of Sample	# of Samples	Result Value	Unit of Measure	Standard	Exceedance
October 18, 2010	1	0.36	mg/L	1.5	No

**Note:** Sample required every 60 months. Next sampling scheduled for October 2015





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

No additional sampling and testing was required for the Englehart Drinking Water System during the 2013 reporting period.



Englehart Drinking Water System

Schedule 22

# 2013 SUMMARY REPORT

## FOR MUNICIPALITIES



Schedule 22

## SUMMARY REPORTS FOR MUNICIPALITIES

### 1.0 INTRODUCTION

<b>Drinking-Water System Name:</b>	<b>ENGLEHART DRINKING WATER SYSTEM</b>
<b>Municipal Drinking Water Licence (MDWL) No.:</b>	209-101 Issue 2 (dated December 21, 2012)
<b>Drinking Water Work Permit (DWWP) No.:</b>	209-201 (issued June 23, 2011)
<b>Permit to Take Water (PTTW) No.:</b>	4742-854PPE (issued May 21, 2010)
<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 in 2013 by OCWA, the Englehart Drinking Water System has complied with all the requirements set out in the system’s MDWL, its DWWP, the Act and its Regulations.

The 2013 MOE inspection report which covered a period of April 30, 2012 to April 22, 2013 identified a non-compliance in 2012. Refer to the section titled “*Review and Highlights for 2013*” for details.

### 3.0 SUMMARY OF QUANTITIES & FLOW RATES

The following water usage tables summarize the quantities and flow rates of water taken and produced during the 2013 reporting period, including total monthly volumes, average monthly volumes, maximum monthly volumes, and maximum flow rates.

#### **Raw Water Usage**

##### **2013 - Monthly Summary of Water Takings from the Source (Well No. 2 and Well No. 3)**

Governed by Permit to Take Water (PTTW) #4742-854PPE issued May 21, 2010

##### **Well No. 2**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m <sup>3</sup> )	9709	8282	8882	8814	9917	9910	10761	10292	9364	9618	8715	8881	113145
Average Volume (m <sup>3</sup> /d)	313	296	287	294	320	330	347	332	312	310	291	286	310
Maximum Volume (m <sup>3</sup> /d)	394	375	321	313	399	355	421	365	346	370	418	355	421
PTTW - Maximum Allowable Volume (m <sup>3</sup> /day)	1205	1205	1205	1205	1205	1205	1205	1205	1205	1205	1205	1205	1205
Maximum Flow Rate (L/min)	876	900	858	787	744	731	722	732	761	737	744	751	900
PTTW - Maximum Allowable Flow Rate (L/min)	909	909	909	909	909	909	909	909	909	909	909	909	909



**Well No. 3**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m <sup>3</sup> )	20754	17572	18428	17794	20912	21115	23187	22126	19998	20635	18435	18571	239527
Average Volume (m <sup>3</sup> /d)	669	628	594	593	675	704	748	714	667	666	615	599	656
Maximum Volume (m <sup>3</sup> /d)	850	807	646	626	856	762	912	792	740	796	895	751	912
PTTW - Maximum Allowable Volume (m <sup>3</sup> /day)	1591	1591	1591	1591	1591	1591	1591	1591	1591	1591	1591	1591	1591
Maximum Flow Rate (L/min)	1500	1500	1406	1500	1398	1500	1371	1367	1385	1424	1398	1408	1500
PTTW - Maximum Allowable Flow Rate (L/min)	1727	1727	1727	1727	1727	1727	1727	1727	1727	1727	1727	1727	1727

**Combined Water Taking (Well No. 2 and Well No. 3)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m <sup>3</sup> )	30463	25854	27310	26608	30829	31025	33948	32418	29362	30253	27150	27452	352672
Average Volume (m <sup>3</sup> /d)	983	923	881	887	994	1034	1095	1046	979	976	905	886	966
Maximum Volume (m <sup>3</sup> /d)	1244	1182	963	939	1255	1117	1333	1157	1085	1166	1313	1106	1333
PTTW - Maximum Allowable Volume (m <sup>3</sup> /day)	2796	2796	2796	2796	2796	2796	2796	2796	2796	2796	2796	2796	2796

**Treated Water Usage**

**2013 - Monthly Summary of Treated Water Supplied to the Distribution System**

Governed Municipal Drinking Water Licence (MDWL) #209-101 - Issue 2, dated December 21, 2012

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m <sup>3</sup> )	31889	26883	27307	26108	31043	31371	35087	33775	30094	31531	28982	29418	363488
Average Volume (m <sup>3</sup> /d)	1029	960	881	870	1001	1046	1132	1090	1003	1017	966	949	995
Maximum Volume (m <sup>3</sup> /d)	1288	1178	1026	902	1267	1205	1393	1288	1110	1274	1243	1066	1393
MDWL/C of A - Rated Capacity (m <sup>3</sup> /day)	2488	2488	2488	2488	2488	2488	2488	2488	2488	2488	2488	2488	2488

**Flow Monitoring**

MDWL No. 209-101 requires the owner to install a sufficient number of flow measuring devices to permit the continuous measurement and recording of:

- the flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system, and
- the flow rate and daily volume of water that flows into the treatment subsystem.

The flow monitoring equipment identified in the MDWL is present and operating as required. These flow meters are calibrated on an annual basis as specified in the manufacturers' instructions.



### ***Comparison of the Flow Summary to the Rated Capacity & Flow Rates Allowed in the Systems Licence & Permit***

The system's Permit to Take Water #4742-854PPE allows the Town to withdraw water at the following rates:

Well No. 2:	909 L/minute / 1204.69 m <sup>3</sup> /day
Well No. 3	1727 L/minute / 1591.10 m <sup>3</sup> /day
Combined daily volume:	2795.79 m <sup>3</sup> /day

A review of the raw water flow data indicates that the total daily volume of water taken from each well never exceeded the allowable limits. The maximum combined volume measured was 1333 m<sup>3</sup> on July 5, 2013.

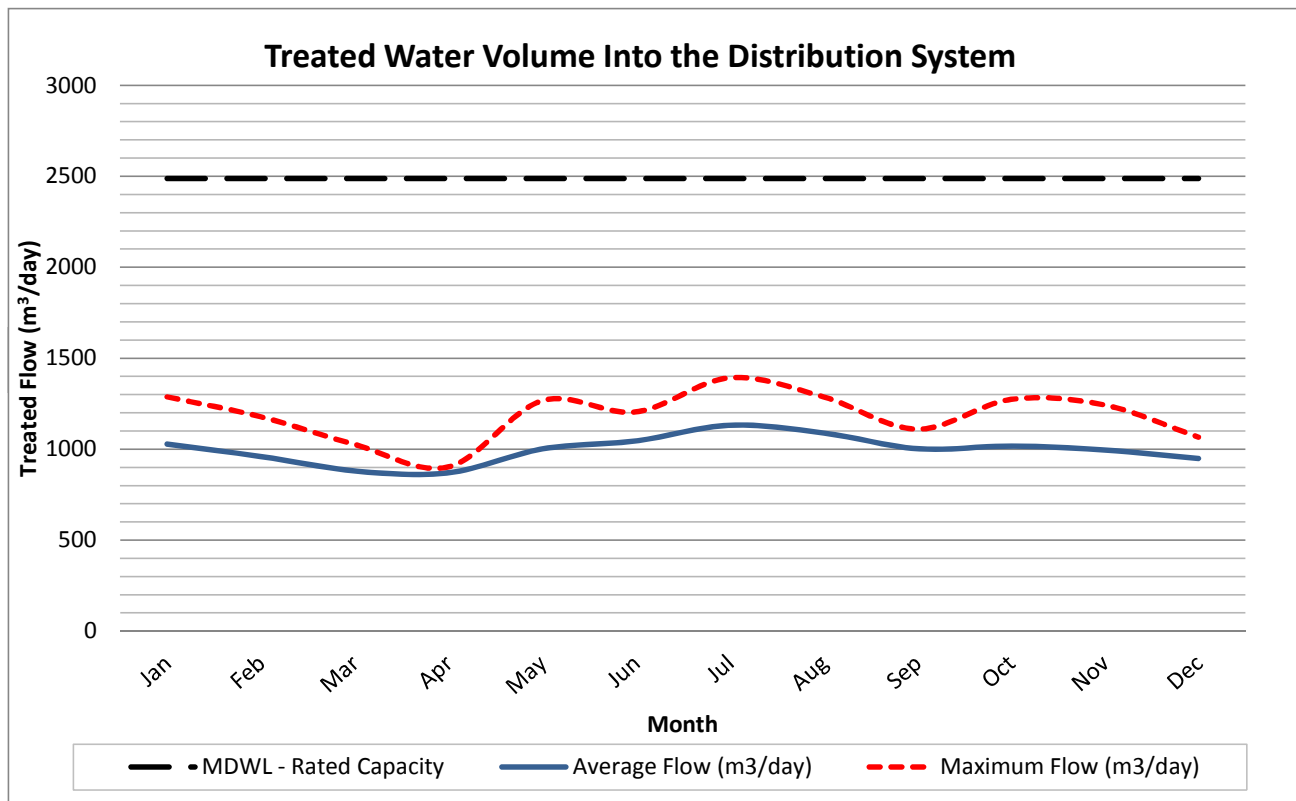
The maximum flow rates for each well were not exceeded during the reporting point. The maximum flow rate for Well No. 2 was 900 L/minute on February 7, 2013. The maximum flow rate measured for Well No. 3 was 1500 L/minute on January 29<sup>th</sup>, February 5<sup>th</sup>, April 28<sup>th</sup>, and June 26<sup>th</sup> of 2013.

Schedule C, Section 1.1 of MDWL No. 209-101 states that the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed a maximum flow rate of 2488 m<sup>3</sup>/day. The Englehart DWS complied with this limit having a recorded maximum volume of 1393 m<sup>3</sup>/day on July 5, 2013.

Figure 1 compares the average and maximum flow rates into the distribution system to the rated capacity of the system identified in the MDWL. This information enables the Owner to assess the system's existing and future planned water usage needs.

**Figure 1: 2013 - Daily Volume of Treated Water into the Distribution System**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Flow (m <sup>3</sup> /day)	1029	960	881	870	1001	1046	1132	1090	1003	1017	996	949
Maximum Flow (m <sup>3</sup> /day)	1288	1178	1026	902	1267	1205	1393	1288	1110	1274	1243	1066
MDWL - Rated Capacity	2488	2488	2488	2488	2488	2488	2488	2488	2488	2488	2488	2488
% Rated Capacity	52	47	41	36	51	48	56	52	45	51	50	43





#### **4.0 CONCLUSION**

The Englehart Drinking Water 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 drinking water works permit and municipal drinking water licence having no incidents of non-compliance during the reporting period.

The system was able to operate within the water taking limits of the permit and in accordance with the rated capacity of the licence while meeting the community's demand for water use.



# **APPENDIX A**

Monthly Summary of Microbiological Test Results







# Ontario Clean Water Agency Monthly Process Data Report

Municipality: Town of Enlehart  
 Facility: [6213] - Enlehart Ground Water Treatment Plant and Iron Removal Plant  
 Works: [220000353] - Enlehart Ground Water Treatment Plant and Iron Removal Plant  
 Classification: Class 2 Water Treatment  
 Water Source: Groundwater

Period: 01/01/2013 to 12/31/2013  
 Serviced Population: 1,700  
 Total Design Capacity(m<sup>3</sup>/day): 3,922.0

	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 -->
Treated Water\Microbiological - Treated water													
HPC (cfu/mL)													
Cnt	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	52.0
Max	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
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
Distribution System\Microbiological - Distribution System													
TC Samples (# collected)													
Sum	12.0	12.0	12.0	15.0	24.0	12.0	15.0	13.0	15.0	13.0	13.0	15.0	171.0
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	12.0	12.0	12.0	15.0	24.0	12.0	15.0	13.0	15.0	13.0	13.0	15.0	171.0
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	4.0	4.0	4.0	5.0	16.0	4.0	5.0	5.0	5.0	5.0	6.0	5.0	68.0
HPC (cfu/mL): Maximum													
Max	< 10.0	10.0	10.0	< 10.0	10.0	< 10.0	< 10.0	20.0	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 Operational Data



# Ontario Clean Water Agency Monthly Process Data Report

Municipality: Town of Englehart  
 Facility: [6213] - Englehart Ground Water Treatment Plant and Iron Removal Plant  
 Works: [220000353] - Englehart Ground Water Treatment Plant and Iron Removal Plant  
 Classification: Class 2 Water Treatment  
 Water Source: Groundwater

Period: 01/01/2013 to 12/31/2013  
 Serviced Population: 1,700  
 Total Design Capacity(m<sup>3</sup>/day): 3,922.0

	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 -->
Raw Water\Raw Water - Raw water Well #2													
Turbidity: Mean (NTU)													
Avg	0.473	0.243	0.41	0.31	0.373	0.485	0.176	0.188	0.166	0.43	0.428	0.36	0.33
Cnt	4.0	3.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	3.0	4.0	5.0	50.0
Max	0.6	0.36	0.55	0.35	0.52	0.63	0.19	0.24	0.2	0.55	0.62	0.43	0.63
Min	0.35	0.18	0.25	0.21	0.22	0.35	0.16	0.15	0.14	0.3	0.23	0.27	0.14
Raw Water\Raw Water - Raw water Well #3													
Turbidity: Mean (NTU)													
Avg	0.215	0.083	0.088	0.324	0.28	0.36	0.162	0.208	0.138	0.27	0.215	0.238	0.217
Cnt	4.0	3.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	3.0	4.0	5.0	50.0
Max	0.47	0.09	0.09	0.48	0.39	0.57	0.2	0.31	0.22	0.49	0.36	0.33	0.57
Min	0.08	0.08	0.08	0.12	0.14	0.22	0.12	0.11	0.11	0.15	0.13	0.17	0.08
Treated Water\Health - Treated water													
Cl Residual: Free Max. (mg/L)													
Min	1.2	1.131	0.813	0.962	0.833	0.873	0.962	0.922	0.903	0.853	0.813	0.823	0.813
Cl Residual: Free Min. (mg/L)													
Max	1.18	1.418	1.15	0.655	0.942	1.061	1.26	1.012	0.68	0.873	0.744	0.575	1.418
Cl Residual: Free Mean (mg/L)													
Avg	1.09	1.26	1.002	0.763	0.846	0.911	1.106	0.955	0.776	0.869	0.82	0.695	0.923
Distribution System\Health - Weekly													
Cl Res. Dist Samples (# collected)													
Sum	31.0	28.0	28.0	32.0	31.0	28.0	32.0	33.0	32.0	31.0	28.0	32.0	366.0
Cl Res. in Dist.: Free Min. (mg/L)													
Min	0.47	0.67	0.38	0.31	0.4	0.21	0.2	0.22	0.16	0.15	0.24	0.21	0.15
Cl Res. in Dist.: Free Max. (mg/L)													
Max	1.11	1.41	2.1	0.86	1.42	1.0	1.37	1.31	0.79	1.41	0.83	0.63	2.1
Cl Residual: Free Mean (mg/L)													
Avg	0.849	1.019	0.841	0.557	0.64	0.557	0.852	0.679	0.432	0.602	0.525	0.364	0.657

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