



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

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**2010 Annual Compliance/Summary Report**  
**for the**  
**Larder Lake Drinking Water System**



Prepared by the Ontario Clean Water Agency  
on behalf of the Corporation of the Town of Larder Lake

**TABLE OF CONTENTS**

**Annual Report** .....2

    1.0 Introduction .....2

    2.0 Description of the Drinking Water System .....3

    3.0 List of Water Treatment Chemicals used over the Reporting Period.....4

    4.0 Significant Expenses Incurred in the Drinking Water System.....4

    5.0 Details on Notices of Adverse Test Results and Other Problems Reported to & Submitted to the Spills Action Center.....4

    6.0 Microbiological Testing Performed during the Reporting Period .....5

    7.0 Operational Testing Performed during the Reporting Period.....5

**Summary Report** .....10

    1.0 Introduction .....11

    2.0 Requirements the System Failed to Meet.....11

    3.0 Summary of Quantities & Flow Rates.....11

    4.0 Conclusion .....15

**LIST OF APPENDICES**

- APPENDIX A** – Monthly Summary of Microbiological Test Results
- APPENDIX B** – Monthly Summary of Operational Data

## Section 11

**ANNUAL REPORT**

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**Drinking-Water System Name:** LARDER LAKE DRINKING WATER SYSTEM  
**Drinking-Water System No.:** 220000326  
**Drinking-Water System Owner:** Larder Lake, The Corporation of the Township of  
**Drinking-Water System Category:** Large Municipal, Residential System  
**Period being reported:** January 1, 2010 to December 31, 2010

**1.0 INTRODUCTION**

**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.**

Larder Lake Municipal Office  
13 Godfrey Street  
Larder Lake, Ontario P0K 1L0

***Drinking Water Systems that receive drinking water from the Larder Lake Drinking Water System:***

The Larder Lake Drinking Water System provides all drinking water to the Community of Larder Lake.

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

The Ontario Clean Water Agency prepared the 2010 Annual Report for the Larder Lake Drinking Water System and provided a copy to the system owner; the Township of Larder Lake. The Larder Lake Drinking Water System is a stand-alone system that does not receive water from or send water to another system.

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

- Public access/notice via the web (municipal website)
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method - Local News Letter

## 2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM

The Larder Lake well supply and distribution system is owned by the Corporation of the Township of Larder Lake and operated by the Ontario Clean Water Center (OCWA). The system is a communal ground water well supply that services the Town of Larder Lake. It is a stand-alone system not connected to any other drinking water system.

The Larder Lake water treatment plant is located at 1 Tenth Avenue in the Town of Larder Lake. The water source is two municipal ground water wells that have been classified as a GUDI (Groundwater Under the Direct Influence) with Effective in situ Filtration. The wells are located near the Town's ski hill on Ski Hill Road, 60 meters south of Glendalough Lake.

The water treatment plant consists of two well pumphouses and a water treatment building. Each pumphouse has a vertical turbine pump with a rating of 11.6 L/s. Water is pumped from one of the wells to the water treatment building through a 100 mm diameter raw water main.

Raw water is disinfected with the use of an Ultraviolet (UV) Disinfection System. This system consists of nine ultraviolet disinfection units (seven duty and two standby), which run in parallel and deliver a minimum dose of 40 mJ/cm<sup>2</sup> at the end of lamp life at a maximum flow of 11.6 L/s with a UV Transmittance of 90% or greater. The system also includes a control panel which supplies automatic control, monitoring and an alarm system.

A 500 m<sup>3</sup> reinforced concrete water reservoir is located partially beneath the treatment building and is used to both store treated water as well as provide a minimum chlorine contact time of one half (0.5) log Giardia removal and two (2) log virus removal. The reservoir consists of two 200 cubic meter storage cells and a 100 cubic meter common pumpwell which houses three variable speed high lift vertical turbine pumps, rated at 8.7 L/second and one fixed speed high capacity pump rated at 38 L/second.

Treated water is disinfected using sodium hypochlorite. Chlorination is achieved at two points designated as 'primary' and 'secondary'. Primary chlorination is at the reservoir inlet and secondary chlorination at the treated water discharge header. Each process is equipped with a set of two metering pumps each rated at 7.5 L/h and two chemical storage tanks. Currently, only primary disinfection is in use.

Corrosion control equipment is also available on-site, but is not in use. It consists of two metering pumps, each rated at 7.5 L/h and fed from a corrosion control chemical storage tank. The chemical can be injected at the treated water discharge header to prevent corrosion and deterioration of the piping network.

The plant is equipped with four hydro pneumatic tanks each with a volume of 1200 L suitable for working pressures of 550 kPa to 1000 kPa.

The plant also has an emergency power system in the form of a diesel power generator rated at 125 kW. The generator has a 1360 L fuel tank, battery charger, and a control unit.

The system is classified as a Large Municipal Residential Drinking Water System and

provides water to approximately 900 residents through and estimated 536 service connections. The distribution system consists of cast iron, galvanized steel, copper and plastic water mains ranging in sizes from 25 mm to 250 mm diameter. There is no off site water storage facilities in the distribution system. A continuous free chlorine analyzer and circular chart recorder are located in the distribution system on Ninth Avenue and Commissioner Street at the Larder Lake Sewage Pump Station.

### 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 Larder Lake Water Treatment Plant.

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

The following work was scheduled and completed in 2010:

- May** Flushed distribution system (performed by municipal operators)
- October** Flushed distribution system (performed by municipal operators)
- November** Upgraded the Program Logic Controller (PLC) system.

No major breakdowns occurred at the water treatment plant as all routine maintenance practices were accomplished through OCWA's computerized Workplace Management System. However, two (2) water main breaks were repaired in the distribution 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, one adverse water quality incident was reported to the MOE's Spills Action Centre (AWQI# 93495).

On February 16, 2010, the Larder Lake Water Treatment System directed improperly disinfected water into the distribution system. Operational staff had a difficult time locating a water main break which caused high flows leaving the plant. The high treated flows reduced the water in the clearwells to critically low levels, resulting in insufficient contact time (CT). The CT calculated at the time of the incident was 16.82 mg/L.minute, The CT required to properly disinfect the water was 32.86 mg/L.minute.

The incident was immediately reported to the MOE's Spills Action Centre and the local Ministry of Health. The Health Inspector issued a precautionary Boil Water Advisory (BWA) to the users of the system until adequate disinfection could be restored and tests

confirm there was no microbiological contamination present in the distribution system. The BWA was lifted on February 19, 2010.

## 6.0 MICROBIOLOGICAL TESTING PERFORMED DURING THE REPORTING PERIOD

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)
Well #1 (LL-1)	52	<1 to <1	<1 to <1	0	N/A
Well #2 (PW-1)	52	<1 to <1	<1 to <1	0	N/A
Treated	54	<1 to <1	<1 to <1	54	<10 to <10
Distribution	113	<1 to <1	<1 to <1	61	<10 to 70

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

### *Continuous Monitoring in the Treatment Process*

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure
Chlorine (free)	8760	0.21 to 2.71	mg/L
Turbidity	8760	0.00 to 2.00	NTU

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

### *Summary of Raw Water Turbidity Data*

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure
Turbidity (Well #1 or LL-1)	51	0.32 to 0.85	NTU
Turbidity (Well #2 or PW-1)	51	0.19 to 1.20	NTU

### *Summary of Chlorine Residuals in the Distribution System*

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure	Standard
Free Chlorine (Analyzer)	8760	0.24 to 2.00	mg/L	0.05
Free Chlorine (Weekly)	111	0.32 to 1.30	mg/L	0.05

**Note:** Free chlorine residuals in the distribution system are continuously monitored by a chlorine analyzer equipped with an alarm system. The analyzer is located in the Larder Lake sewage pumping station on Ninth Avenue and Commissioner Street. Data from the analyzer is recorded on a circular paper chart and OCWA's remote monitoring system (Wonder Ware). Free chlorine residuals are also tested weekly by OCWA staff when collecting bacteriological samples.

A monthly summary of the above operational data can be found in *Appendix B*.

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

Certificate of Approval #7871-6LYMA8; issued February 16, 2006 & expired on November 12, 2010, required the following parameters related to the UV disinfection system to be continuously monitored and recorded every four (4) hours:

**UV Intensity** Measured continuously by UV system. UV intensity is monitored by each individual unit's control module and should the light intensity of the unit fall outside the specified range, the unit will automatically shut down and a standby unit will be activated. Such an event will be recorded by the UV control system.

**Flow Rate** Continuously measured by the raw water flow meter. Each UV unit is equipped with a flow restrictor which limits the flow to the rated hydraulic capacity. Each unit is also equipped with an electronically activated water shut-off valve which will automatically close in the event of a UV equipment malfunction, loss of power or ceases to provide an appropriate level of disinfection..

**UV Transmittance** Monitored by each unit's control module. Should the light transmittance of the unit fall outside the specified range, the unit will automatically shut down and a standby unit will be activated. Such an event will be recorded by the UV control system.

**Lamp Status** Monitored by each unit's control module. Should the lamp status fail, the unit will automatically shut down and a standby unit will be activated. Such an event will be recorded by the UV control system.

Municipal Drinking Water Licence #276-101 issued on November 12, 2010 required the UV disinfection system to maintain a continuous pass-through UV dose of at least 40 mJ/cm<sup>2</sup> throughout the life span of the UV lamps.

The UV disinfection system consists of nine (9) ultraviolet disinfection units (seven duty and two standby) running in parallel to deliver a minimum dose of 40 mJ/cm<sup>2</sup> at a maximum flow of 11.6 L/s (1.65 L/s for each unit) with a UV of 90% or greater. A built-in fail safe causes each unit to automatically shut down when parameters fall outside their specified range and activate standby unit.

### **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 25	<0.1	<0.05	mg/L	No
April 12	<0.1	<0.05	mg/L	No
July 19	0.14	<0.05	mg/L	No
October 18	0.28	<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 25	4.8	ug/L	5.4	No
April 12	4.1	ug/L		
July 19	5.2	ug/L		
October 18	7.5	ug/L		

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

**Summary 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 two most recent rounds of community lead testing were conducted on March 13, 2008 and June 18 & 20, 2008.

The Larder Lake Well Supply System qualified for reduced sampling after the first two rounds of testing as described in section 15.1-1 of Ontario Regulation 170/03. Therefore sampling and testing was not performed in 2009 or 2010. The next scheduled sample periods are from December 15, 2010 to April 15, 2011 and June 15, 2011 to October 15, 2011.

Location Type	# of Samples	Range of Lead Results (min to max)	Unit of Measure	# of Exceedances
Plumbing	88	<1 to 4.2	ug/L	0
Distribution	8	<1 to <1	ug/L	0

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

Location Type	# of Samples	Range of pH Results (min to max)	Range of Alkalinity Results (mg/L) (min to max)
Plumbing	44	6.32 to 8.80	N/A
Distribution	8	6.69 to 7.82	103 to 119

**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	1.4	ug/L	25	No
Barium	21.9	ug/L	1000	No
Boron	2.0	ug/L	5000	No
Cadmium	<0.1	ug/L	5	No
Chromium	2.4	ug/L	50	No
Mercury	0.163	ug/L	1.0	No
Selenium	<1.0	ug/L	10	No
Uranium	<1.0	ug/L	20	No

Note: Sample required every 12 months. Sample date = October 18, 2010

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

Parameter	Result Value	Unit of Measure	Standard	Exceedance
Alachlor	<0.41	ug/L	5	No
Aldicarb	<0.47	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	<0.31	ug/L	20	No
Bendiocarb	<0.95	ug/L	40	No
Benzene	<0.25	ug/L	5	No
Benzo(a)pyrene	<0.0056	ug/L	0.01	No
Bromoxynil	<0.6	ug/L	5	No
Carbaryl	<0.95	ug/L	90	No
Carbofuran	<0.95	ug/L	90	No
Carbon Tetrachloride	<0.25	ug/L	5	No
Chlordane (Total)	<0.004	ug/L	7	No
Chlorpyrifos	<0.31	ug/L	90	No
Cyanazine	<0.31	ug/L	10	No
Diazinon	<0.31	ug/L	20	No
Dicamba	<0.24	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	<0.052	ug/L	900	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	<0.24	ug/L	100	No
Diclofop-methyl	<0.24	ug/L	9	No
Dimethoate	<0.31	ug/L	20	No
Dinoseb	<0.06	ug/L	10	No
Diquat	<7,0	ug/L	70	No
Diuron	<4,7	ug/L	150	No
Glyphosate	<20	ug/L	280	No
Heptachlor + Heptachlor Epoxide	<0.004	ug/L	3	No
Lindane (Total)	<0.00048	ug/L	4	No
Malathion	<0.31	ug/L	190	No
Methoxychlor	<0.001	ug/L	900	No
Metolachlor	<0.21	ug/L	50	No
Metribuzin	<0.21	ug/L	80	No
Monochlorobenzene	<0.25	ug/L	80	No
Paraquat	<1	ug/L	10	No
Parathion	<0.21	ug/L	50	No
Pentachlorophenol	<0.052	ug/L	60	No
Phorate	<0.31	ug/L	2	No
Picloram	<0.06	ug/L	190	No
Polychlorinated Biphenyls (PCB)	<0.004	ug/L	3	No

## Drinking-Water Systems Regulation O. Reg. 170/03

Parameter	Result Value	Unit of Measure	Standard	Exceedance
Prometryne	<0.21	ug/L	1	No
Simazine	<0.31	ug/L	10	No
Temephos	<13	ug/L	280	No
Terbufos	<0.21	ug/L	1	No
Tetrachloroethylene	<0.25	ug/L	30	No
2,3,4,6-Tetrachlorophenol	<0.052	ug/L	100	No
Triallate	<0.21	ug/L	230	No
Trichloroethylene	<0.25	ug/L	50	No
2,4,6-Trichlorophenol	<0.052	ug/L	5	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	<0.06	ug/L	280	No
Trifluralin	<0.21	ug/L	45	No
Vinyl Chloride	<0.25	ug/L	2	No

**Note:** Sample required every 12 months. Sample date = October 18, 2010

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

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential) Small Municipal Non-Residential has been removed and Non Municipal Year Round Residential has been added.

No inorganic or organic parameter(s) exceeded half the standard found in Schedule 2 of the ODWS during the reporting period.

### ***Most Recent Sodium Data Tested at the Water Treatment Plant***

Date of Sample	# of Samples	Result Value	Unit of Measure	Standard	Exceedance
October 18, 2010	1	9.67	mg/L	20	No

**Note:** Sample required every 60 months

### ***Most Recent Fluoride Data Tested at the Water Treatment Plant***

Date of Sample	# of Samples	Result Value	Unit of Measure	Standard	Exceedance
October 18, 2010	1	<0.1	mg/L	1.5	No

**Note:** Sample required every 60 months



# **LARDER LAKE DRINKING WATER SYSTEM**

**Large Municipal Residential Drinking Water System**

## **SCHEDULE 22**

### **SUMMARY REPORT FOR MUNICIPALITIES**

**For the period of**

**JANUARY 2010 to DECEMBER 2010**

## Schedule 22

**SUMMARY REPORTS FOR MUNICIPALITIES**

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**1.0 INTRODUCTION**

The Summary Report is prepared in accordance with Schedule 22 of Ontario's Drinking Water Systems Regulation 170/03 for the reporting period of January 1, 2010 to December 31, 2010. The owner of the drinking water system must ensure that the report is provided to members of municipal council.

The report must list the requirements of the Safe Drinking Water Act (2002), its regulations, the system's approval, drinking water works permit, municipal drinking water licence, 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 and the drinking water regulations can be viewed at the following website: <http://www.e-laws.gov.on.ca>.

To enable the owner of the system 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, 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, permits and licence (where applicable).

**2.0 REQUIREMENTS THE SYSTEM FAILED TO MEET**

According to information kept on record by OCWA, the Larder Lake Drinking Water System has complied with all the requirements set out in the system's Certificate of Approval #8480-78RQ4P issued January 30, 2008, Municipal Drinking Water Licence #276-101 issued November 12, 2010, Drinking Water Works Permit #276-201 issued November 10, 2010, the Act and its Regulations.

**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 2010 reporting period, including average monthly volumes, maximum monthly volumes, total monthly volumes and maximum flow rates.

## Water Usage Tables

### Well #1 (LL-1) - Monthly Water Usage for 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Average Volume (m <sup>3</sup> /day)	386	401	351	281	386	386	365	334	318	346	299	368	352
Maximum Volume (m <sup>3</sup> /day)	529	644	477	383	626	570	595	517	536	491	475	555	644
Total Volume (m <sup>3</sup> )	11973	11235	10891	8427	11969	11580	11311	10359	9531	10728	8975	11401	128380
Maximum Flow Rate (L/s)	7.67	8.24	8.49	7.73	10.06	8.86	8.50	7.65	7.79	7.79	7.67	7.59	10.1

### Well #2 (PW-1) - Monthly Water Usage for 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Average Volume (m <sup>3</sup> /day)	339	344	284	256	361	298	318	305	248	281	262	292	299
Maximum Volume (m <sup>3</sup> /day)	545	775	403	468	759	485	527	405	338	460	358	403	775
Total Volume (m <sup>3</sup> )	10498	9637	8797	7678	11185	8946	9870	9454	7443	8710	7870	9046	109134
Maximum Flow Rate (L/s)	9.04	9.05	8.63	8.93	10.8	10.8	9.04	9.14	8.96	9.02	9.05	9.18	10.8

### Combined Raw Water - Monthly Water Usage for 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Average Volume (m <sup>3</sup> /day)	510	553	471	435	542	498	495	457	458	480	443	491	486
Maximum Volume (m <sup>3</sup> /day)	554	775	533	500	759	570	595	571	536	672	496	555	775
Total Volume (m <sup>3</sup> )	15823	15480	14598	13042	16791	14942	15357	14158	13742	14879	13286	15215	177313
Maximum Flow Rate (L/s)	9.02	9.05	8.56	8.92	10.8	9.04	9.02	9.13	8.68	9.01	9.04	9.01	10.8

### Treated Water - Monthly Water Usage for 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Average Volume (m <sup>3</sup> /day)	484	550	445	394	525	486	466	443	438	449	412	468	463
Maximum Volume (m <sup>3</sup> /day)	514	977	481	422	743	557	554	504	601	623	460	501	977
Total Volume (m <sup>3</sup> )	14993	15411	13805	11834	16273	14585	14460	13724	13150	13928	12366	14499	169028
Maximum Flow Rate (L/s)	20.1	34.3	20.6	21.1	33.9	20.4	10.6	33.1	39.4	32.7	10.1	20.2	39.4

## Comparison of the Flow Summary to the Rated Capacity & Flow Rates Allowed in the Systems Approval/Licence & Permits

The system's Permit to Take Water #8372-6H6NYM (issued October 19, 2005) allows the municipality to withdraw water at a maximum flow rate of 696 L/minute (11.6 L/s) or 1002.24 m<sup>3</sup>/day from either Well #LL-1 or Well #PW-1 or from both wells combined.

At no point during the reporting period did the system exceed these rates. The maximum combined flow rate of water taking was recorded at 10.8 L/s and the maximum volume taken was 775 m<sup>3</sup>/day.

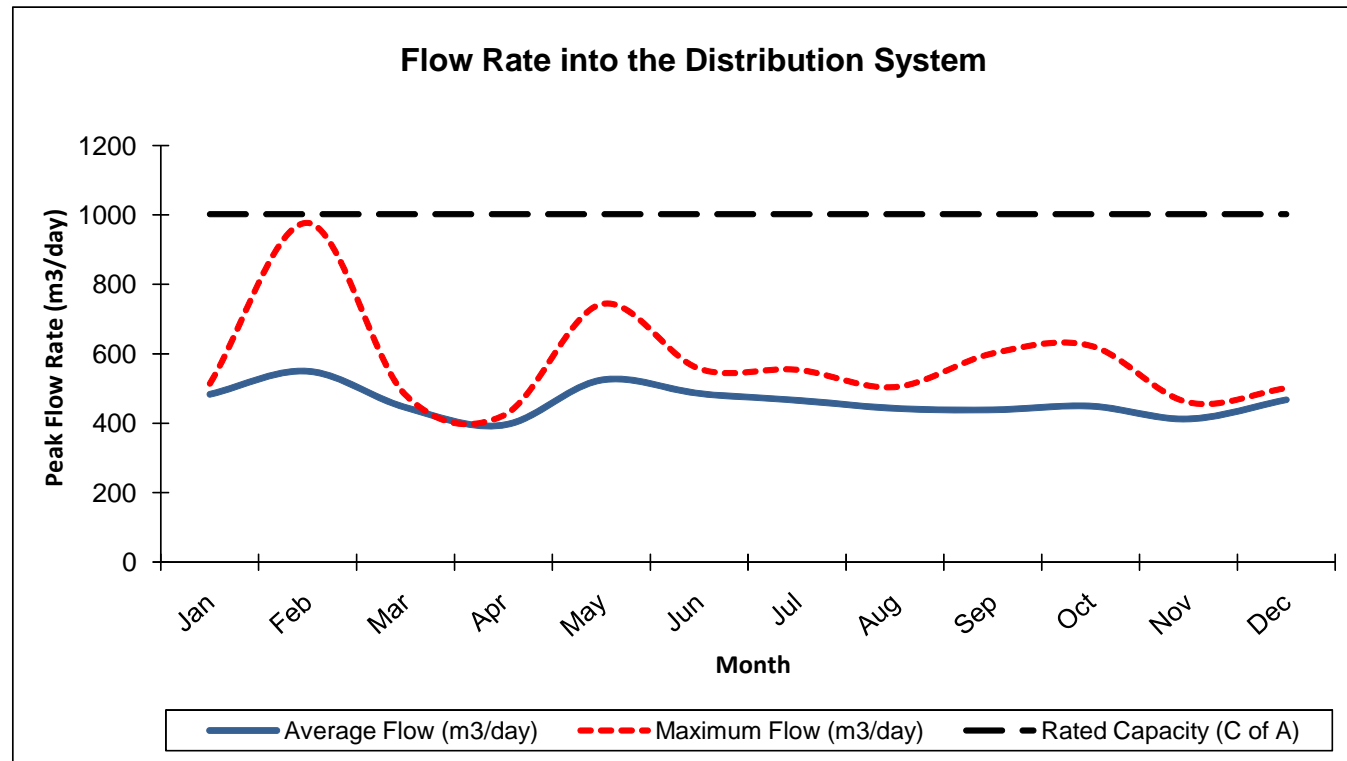
Section 4.1 of Certificate of Approval #8480-78RQ4P and Schedule C, Section 1.1 of Municipal Drinking Water Licence #276-101 states that the Larder Lake Drinking Water System shall not be operated to exceed a maximum flow rate into the distribution system of 1002.2 m<sup>3</sup>/day.

At no point during the reporting period did the plant exceed this limit. The maximum daily flow rate of water entering the distribution system was recorded at 977 m<sup>3</sup>/day. A water main break caused abnormally high flows on February 16<sup>th</sup> and 17<sup>th</sup> resulting in an adverse water quality incident. 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 4 for more details.

The following table and graph compares the treated water flows to the approved rated capacity of the system.

## 2010 - Flow Rate into the Distribution System

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Flow (m <sup>3</sup> /day)	484	550	445	394	525	486	466	443	438	449	412	468
Maximum Flow (m <sup>3</sup> /day)	514	977	481	422	743	557	554	504	601	623	460	501
Total Flows (m <sup>3</sup> /day)	14993	15411	13805	11834	16273	14585	14460	13724	13150	13928	12366	14499
Rated Capacity (C of A)	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2
% Rated Capacity	51	97	48	42	74	56	55	50	60	62	46	50



#### **4.0 CONCLUSION**

The Larder Lake 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 approval, licence and permits 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 approval/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 Larder Lake  
 Facility: [5075] - Larder Lake Water Treatment Plant  
 Works: [220000326] - Larder Lake Water - Artesian Well water source  
 Classification: Class 1 Water Treatment  
 Water Source: Artesian Well

Period: 01/01/2010 to 12/31/2010  
 Served Population: 960  
 Total Design Capacity(m<sup>3</sup>/day): 1,002.2

	Jan/2010	Feb/2010	Mar/2010	Apr/2010	May/2010	Jun/2010	Jul/2010	Aug/2010	Sep/2010	Oct/2010	Nov/2010	Dec/2010	<-- Summary -->
Treated Water\Microbiological - Treated Water													
HPC (cfu/mL)													
Cnt	4.0	6.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	54.0
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	8.0	15.0	10.0	8.0	10.0	8.0	8.0	10.0	10.0	8.0	10.0	8.0	113.0
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	8.0	15.0	10.0	8.0	10.0	8.0	8.0	10.0	10.0	8.0	10.0	8.0	113.0
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	11.0	5.0	4.0	5.0	4.0	4.0	5.0	6.0	4.0	5.0	4.0	61.0
HPC (cfu/mL): Maximum													
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	70.0
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 Larder Lake  
 Facility: [5075] - Larder Lake Water Treatment Plant  
 Works: [220000326] - Larder Lake Water - Artesian Well water source  
 Classification: Class 1 Water Treatment  
 Water Source: Artesian Well

Period: 01/01/2010 to 12/31/2010  
 Serviced Population: 960  
 Total Design Capacity(m<sup>3</sup>/day): 1,002.2

	Jan/2010	Feb/2010	Mar/2010	Apr/2010	May/2010	Jun/2010	Jul/2010	Aug/2010	Sep/2010	Oct/2010	Nov/2010	Dec/2010	<-- Summary -->
<b>Raw Water\In-House Result - Well # LL-1</b>													
<b>Turbidity (NTU) -grab IH</b>													
Avg	0.4	0.383	0.46	0.588	0.6	0.593	0.59	0.562	0.545	0.573	0.5	0.533	0.526
Cnt	4.0	4.0	5.0	4.0	5.0	3.0	4.0	5.0	4.0	4.0	5.0	4.0	51.0
Max	0.51	0.51	0.67	0.7	0.85	0.73	0.7	0.62	0.71	0.75	0.62	0.6	0.85
Min	0.32	0.32	0.4	0.41	0.44	0.33	0.39	0.5	0.35	0.48	0.41	0.5	0.32
<b>Raw Water\In-House Result - Well # PW-1</b>													
<b>Turbidity (NTU) -grab IH</b>													
Avg	0.365	0.42	0.29	0.625	0.564	0.487	0.61	0.662	0.498	0.44	0.642	0.55	0.515
Cnt	4.0	4.0	5.0	4.0	5.0	3.0	4.0	5.0	4.0	4.0	5.0	4.0	51.0
Max	0.63	0.56	0.42	0.65	0.69	0.74	0.78	0.87	0.68	0.62	1.2	0.61	1.2
Min	0.19	0.25	0.21	0.58	0.37	0.28	0.47	0.44	0.34	0.36	0.43	0.46	0.19
<b>Treated Water\Health - Treated Water</b>													
<b>Turbidity: Maximum (NTU)</b>													
Max	1.49	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.26	0.25	2.0	2.0
<b>Turbidity: Minimum (NTU)</b>													
Min	0.11	0.11	0	0.16	0	0	0.12	0	0	0	0	0.09	0
<b>Turbidity: Mean (NTU)</b>													
Avg	0.184	0.209	0.189	0.208	0.254	0.204	0.188	0.218	0.194	0.184	0.108	0.135	0.189
<b>Cl Residual: Free Max. (mg/L)</b>													
Max	1.0	2.71	1.18	0.91	1.73	1.37	1.15	0.99	1.17	1.95	2.65	1.49	2.71
<b>Cl Residual: Free Min. (mg/L)</b>													
Min	0.5	0.21	0.71	0.63	0.61	0.39	0.75	0.6	0.52	0.5	0.44	0.52	0.21
<b>Cl Residual: Free Mean (mg/L)</b>													
Avg	0.757	1.011	0.894	0.792	0.858	0.922	0.922	0.813	0.822	0.804	0.833	0.895	0.859
<b>Distribution System\Health - Weekly with Bactis</b>													
<b>Cl Res. Dist Samples (# collected)</b>													
Sum	8.0	14.0	10.0	8.0	10.0	8.0	8.0	10.0	9.0	8.0	10.0	8.0	111.0
<b>Cl Res. in Dist.: Free Min. (mg/L)</b>													
Min	0.42	0.32	0.53	0.48	0.51	0.65	0.61	0.63	0.44	0.55	0.6	0.51	0.32
<b>Cl Res. in Dist.: Free Max. (mg/L)</b>													
Max	0.94	0.89	0.88	0.74	1.3	0.99	0.78	0.81	0.73	0.78	0.94	0.81	1.3
<b>Cl Residual: Free Mean (mg/L)</b>													
Avg	0.628	0.76	0.72	0.63	0.761	0.779	0.701	0.715	0.581	0.671	0.765	0.673	0.704



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

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Distribution System\Health - Distribution System													
Cl Res. in Dist.: Free Min. (mg/L)													
Min	0.36	0.43	0.51	0.48	0.47	0.24	0.47	0.49	0.38	0.46	0.57	0.53	0.24
Cl Res. in Dist.: Free Max. (mg/L)													
Max	1.05	1.87	0.99	0.69	1.36	1.38	0.85	1.88	0.86	2.0	1.23	0.92	2.0
Cl Residual: Free Mean (mg/L)													
Avg	0.697	0.863	0.715	0.6	0.742	0.703	0.67	0.724	0.601	0.686	0.702	0.723	0.701

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