



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

2010 Annual Compliance/Summary Report

for the

New Liskeard Well Supply



Prepared by the Ontario Clean Water Agency
on behalf of the City of Temiskaming Shores

TABLE OF CONTENTS

Annual Report	2
1.0 INTRODUCTION.....	3
2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM	4
3.0 LIST OF WATER TREATMENT CHEMICALS USED OVER THE REPORTING PERIOD	5
4.0 SIGNIFICANT EXPENSES INCURRED TO THE DRINKING WATER SYSTEM	5
5.0 DETAILS ON NOTICES OF ADVERSE TEST RESULTS AND OTHER PROBLEMS REPORTED TO & SUBMITTED TO THE SPILLS ACTION CENTER	5
6.0 MICROBIOLOGICAL TESTING PERFORMED DURING THE REPORTING PERIOD	6
7.0 OPERATIONAL TESTING PERFORMED DURING THE REPORTING PERIOD	6
Summary Report	11
1.0 INTRODUCTION.....	11
2.0 REQUIREMENTS THE SYSTEM FAILED TO MEET	11
3.0 SUMMARY OF QUANTITIES & FLOW RATES	12
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

Drinking-Water System Name:	NEW LISKEARD DRINKING WATER SYSTEM
Drinking-Water System Number:	220000344
Drinking-Water System Owner:	The Corporation of the City of Temiskaming Shores
Drinking-Water System Category:	Large Municipal, Residential System
Reporting Period:	January 1, 2010 to December 31, 2010

1.0 INTRODUCTION

<p>Does your Drinking-Water System serve more than 10,000 people? No</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes</p> <p>Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:</p> <p>City of Temiskaming Shores Temiskaming Shores Administration Office 325 Farr Drive, P.O. Box 2050 Haileybury, ON P0J 1K0</p>
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Drinking-Water Systems that receive drinking water from the New Liskeard Drinking Water System:

The New Liskeard Drinking Water System provides all drinking water to the Community of New Liskeard.

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 New Liskeard Drinking Water System and provided a copy to the system owner; the City of Temiskaming Shores. The New Liskeard 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**
- 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 – Municipal building posting**



2.0 DESCRIPTION OF THE DRINKING WATER SYSTEM

The New Liskeard Well Supply is owned by the Corporation of the City of Temiskaming Shores. It is a ground water well supply that services the community of New Liskeard, located at 301 McCamus Avenue. The New Liskeard treatment system is operated by the Ontario Clean Water Agency (OCWA) and the distribution system is operated by the City of Temiskaming Shores Public Works department. It is classified as a Large Municipal Residential Drinking Water System serving an estimated 4 900 residents.

The New Liskeard Well Supply is supplied by a groundwater system consisting of two main production wells; Well 3 and Well 4. Well 3 is a 54.9 m deep drilled well equipped with a vertical turbine pump rated at 2 700 L/min. The well is housed in a secure building located directly across from the water plant. Well 4 is a 54.9 m deep drilled well also equipped with a vertical turbine pump rated at 2 700 L/min. This well is located inside the water treatment plant building. There is approximately 23 m of low permeability clay between the ground surface and the aquifer protecting the groundwater from surface spills.

Both wells supply raw water to individual treatment units inside the iron removal plant. Raw water from Well 3 is directed to the pressurized filter 1, while the raw water from Well 4 is directed to pressurized filter 2. Each filter consists of gravel and anthrafilt, has an area of 25.8 m², has a rated capacity of 3 928 m³/d, and is continuously monitored for turbidity. The two pressurized filters are manually backwashed, based on headloss. The backwash wastewater is discharged into the municipal sanitary sewage system which flows into the New Liskeard Lagoon.

Prior to filtration, compressed air is added to the well water to oxidize iron. Chlorine gas is then added to the water to aid the oxidation process and precipitate the iron. After filtration, the treated water is re-chlorinated and directed into a contact tank comprised of two clearwells. The clearwells are located directly below the water treatment plant and have a total storage capacity of 271 m³. Baffles were installed to ensure sufficient chlorine contact time and a chlorine analyzer continuously monitors free chlorine levels to ensure adequate disinfection before water leaves the plant. The two clearwells are connected via an isolation valve to enable either clearwell to be drained for maintenance without compromising a continuous supply of water to users.

Two high lift pumps, each rated at 3 272 L/min, direct the treated water from the contact tank to the Shepherdson Road reservoir which has a storage capacity of 1 818 m³. A secondary disinfection system is in place at the reservoir using sodium hypochlorite to help maintain the chlorine levels in zone 2 and 3 of the distribution system. Three booster pumps, two electric and one diesel, supply water to pressure zones 2 and 3 in the system.

An emergency stand-by power generator is available at the Well 3 pumphouse to ensure continued operation of the water supply treatment and facility during a power outage. A 100 kW diesel generator was installed at the Shepherdson Street Reservoir.



3.0 LIST OF WATER TREATMENT CHEMICALS USED OVER THE REPORTING PERIOD

The following chemicals were used in the water treatment process at the New Liskeard Water Treatment Plant:

- Chlorine Gas – Disinfection
- Sodium Hypochlorite – Disinfection
- Compressed Air – Oxidation of Iron

4.0 SIGNIFICANT EXPENSES INCURRED TO THE DRINKING WATER SYSTEM

The following work was scheduled and completed in 2010:

Upgraded the old level tape with a Milltronics.

Installed the peristaltic pump off the filters for the chlorine residual

Moved the SCADA system out of the water plant and to Goodman SPS after the antenna was installed.

Fence installed around the Reservoir.

Cal-Val installed at the Reservoir.

All routine maintenance functions were accomplished through OCWA’s comprehensive Workplace Management computerized work order system.

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

Incident Date	Parameter	Result	Unit	Corrective Action	Corrective Action Date
February 25	Free Chlorine Residual Treated Water	0	mg/L	Free chlorine residual of 0 mg/L was detected in the clearwell on February 25. This incident lasted approximately 15 minutes (18:45 – 19:00). A breaker tripped causing the chlorine system to fail while high lift pumps kept running. High lift pumps were shut off by operations staff. Once the plant is shut down, water from the reservoir feeds back to the plant. The chlorine residual of this water was tested at 19:35 with a result of 0.3 mg/L. Sodium hypochlorite was added to the	February 25 (AWQI 93653)



Incident Date	Parameter	Result	Unit	Corrective Action	Corrective Action Date
				<p>clearwell. A distribution free chlorine residual sample was collected at the railway garage, next to the water plant at 19:40 with a result of 1.04 mg/L. Free chlorine at the reservoir at 20:10 was 0.72 mg/L</p> <p>The plant was back online at approximately 21:00 with a free chlorine residual of 3.5 mg/L. The local Health Unit and MOE SAC were notified. No further action required.</p>	

6.0 MICROBIOLOGICAL TESTING PERFORMED DURING THE REPORTING PERIOD

Sample Type	Number of Samples	Range of <i>E.coli</i> Results (min to max)	Range of Total Coliform Results (min to max)	Number of HPC Samples	Range of HPC Results (min to max)
Raw (Well 3)	52	<1 to <1	<1 to 1	N/A	N/A
Raw (Well 4)	52	<1 to <1	<1 to <1	N/A	N/A
Treated	53	<1 to <1	<1 to <1	52	<10 to 50
Distribution	171	<1 to <1	<1 to <1	68	<10 to 820

Maximum Acceptable 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 Turbidity Data in the Raw Water

Parameter	Number of Samples	Range of Results (min to max)	Unit of Measure
Turbidity (Well 3)	43	1.4 to 16.3	NTU
Turbidity (Well 4)	43	3.21 to 12.5	NTU

Continuous Flow Analyzers in Treatment Process

Parameter	Number of Samples	Range of Results (min to max)	Unit of Measure
Turbidity (Filter 1)	8760	0 to 1	NTU
Turbidity (Filter 2)	8760	0 to 1	NTU
Chlorine (Free)	8760	0* to 4.60	mg/L

NOTE: For continuous monitors use 8760 as the number of samples.
 *See AWQI 93653

Summary of Chlorine Residual Data in the Distribution System

Parameter	Number of Samples	Range of Results (min to max)	Unit of Measure	Standard
Chlorine (Free)	364	0.06 to 1.07	mg/L	≥ 0.05

Note: Four (4) chlorine residual samples are collected one day and three (3) on a second day of each week. The sample sets must be collected at least 48-hours apart and samples collected on the same day must be from different locations.

Summary of Nitrate & Nitrite Data at the Water Treatment Plant

Date of Sample	Nitrate Result Value	Nitrite Result Value	Unit of Measure	Exceedance
January 11	<0.1	<0.05	mg/L	No
April 12	<0.1	<0.05	mg/L	No
July 12	<0.1	<0.05	mg/L	No
October 25	<0.1	<0.05	mg/L	No

MAC for Nitrate = 10 mg/L

MAC for Nitrite = 1.0 mg/L

Summary of Total Trihalomethane Data in the Distribution System

Date of Sample	Result Value	Unit of Measure	Annual Running Average	Exceedance
January 11	21.4	ug/L	25.08	No
April 12	15.6	ug/L		
July 12	25.5	ug/L		
October 25	37.8	ug/L		

MAC for 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 New Liskeard Drinking Water System qualified for reduced sampling as described in section 15.1-1 of Ontario Regulation 170/03. Therefore sampling and testing was not required in 2010. The next sample periods are scheduled for December 15, 2010 to April 15, 2011 and June 15, 2011 to October 15, 2011.

Location Type	Number of Samples	Range of Lead Results (mg/L) (min to max)	Number of Exceedances
Plumbing	176	<0.0005 to 0.0078	0
Distribution	16	<0.0005 to 0.0005	0

MAC for lead = 0.010 mg/L

Location Type	Number of Samples	Range of pH Results (min to max)	Range of Alkalinity Results (mg/L) (min to max)
Plumbing	88	7.41 to 7.97	N/A
Distribution	16	7.57 to 8.04	206 to 229

Lead testing was conducted by Story Environmental Services on April 6, April 7, October 6 and October 7, 2009.

Summary of Most Recent Schedule 23 Inorganic Data at the Water Treatment Plant

(Sample required every 36 months)

Parameter	Result Value	Unit of Measure	MAC	Exceedance
Antimony	<0.5	ug/L	6	No

Parameter	Result Value	Unit of Measure	MAC	Exceedance
Arsenic	<1.0	ug/L	25	No
Barium	113	ug/L	1000	No
Boron	117	ug/L	5000	No
Cadmium	<0.1	ug/L	5	No
Chromium	2.8	ug/L	50	No
Mercury	<0.1	ug/L	0.001	No
Selenium	<1.0	ug/L	10	No
Uranium	<1.0	ug/L	20	No

Sample Date: October 26, 2009

Summary of Most Recent Schedule 24 Organic Data at the Water Treatment Plant

(Sample required every 36 months)

Parameter	Result Value	Unit of Measure	MAC	Exceedance
Alachlor	<0.25	ug/L	5	No
1,1-Dichloroethylene (vinylidene chloride)	<0.25	ug/L	14	No
1,2-Dichlorobenzene	<0.25	ug/L	200	No
1,2-Dichloroethane	<0.25	ug/L	5	No
1,4-Dichlorobenzene	<0.051	ug/L	5	No
2,3,4,6-Tetrachlorophenol	<0.087	ug/L	100	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	<0.051	ug/L	280	No
2,4,6-Trichlorophenol	<0.35	ug/L	5	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	<0.051	ug/L	100	No
2-4 Dichlorophenol	<0.5	ug/L	900	No
Aldicarb	<0.004	ug/L	9	No
Aldrin + Dieldrin	<0.9	ug/L	0.7	No
Atrazine + N-dealkylated metabolites	<0.3	ug/L	5	No
Azinphos-methyl	<1.0	ug/L	20	No
Bendiocarb	<0.25	ug/L	40	No
Benzene	<0.01	ug/L	5	No
Benzo(a)pyrene	<0.87	ug/L	0.01	No
Bromoxynil	<1.0	ug/L	5	No
Carbaryl	<1.0	ug/L	90	No
Carbofuran	<0.25	ug/L	90	No
Carbon Tetrachloride	<0.004	ug/L	5	No
Chlordane (Total)	<0.3	ug/L	7	No
Chlorpyrifos	<0.3	ug/L	90	No
Cyanazine	<0.3	ug/L	10	No
Diazinon	<0.35	ug/L	20	No
Dicamba	<0.005	ug/L	120	No
Dichlorodiphenyl trichloroethane (DDT) + metabolites	<0.25	ug/L	30	No
Dichloromethane	<0.35	ug/L	50	No
Diclofop-methyl	<0.3	ug/L	9	No
Dimethoate	<0.087	ug/L	20	No
Dinoseb	<7.0	ug/L	10	No



Parameter	Result Value	Unit of Measure	MAC	Exceedance
Diquat	<5.0	ug/L	70	No
Diuron	<10.0	ug/L	150	No
Glyphosate	<0.004	ug/L	280	No
Heptachlor + Heptachlor Epoxide	<0.0005	ug/L	3	No
Lindane (Total)	<0.3	ug/L	4	No
Malathion	<0.0013	ug/L	190	No
Methoxychlor	<0.2	ug/L	900	No
Metolachlor	<0.2	ug/L	50	No
Metribuzin	<0.25	ug/L	80	No
Monochlorobenzene	<1.0	ug/L	80	No
Paraquat	<0.2	ug/L	10	No
Parathion	<0.051	ug/L	50	No
Pentachlorophenol	<0.3	ug/L	60	No
Phorate	<0.087	ug/L	2	No
Picloram	<0.0042	ug/L	190	No
Polychlorinated Biphenyls (PCB)	<0.2	ug/L	3	No
Prometryne	<0.3	ug/L	1	No
Simazine	<14.0	ug/L	10	No
Temephos	<0.2	ug/L	280	No
Terbufos	<0.25	ug/L	1	No
Tetrachloroethylene	<0.2	ug/L	30	No
Triallate	<0.25	ug/L	230	No
Trichloroethylene	<0.2	ug/L	50	No
Trifluralin	<0.25	ug/L	45	No
Vinyl Chloride	<0.25	ug/L	2	No

Sample Date: October 26, 2009

Inorganic or Organic Parameter(s) that Exceeded Half the Standard Prescribed in Schedule 2 of 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.

Parameter	Result Value	Unit of Measure	Date of Sample
No inorganic or organic parameter(s) exceeded half the standard found in Schedule 2 of the ODWS during the reporting period.			

Summary of Most Recent Sodium Data at the Water Treatment Plant

(Sample required every 60 months)

Date of Sample	Number of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 20, 2008	1	17.9	ug/L	20000	No

Summary of Most Recent Fluoride Data at the Water Treatment Plant

(Sample required every 60 months)

Date of Sample	Number of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 20, 2008	1	0.58	mg/L	1.5	No

NEW LISKEARD WELL SUPPLY

Large Municipal Residential Drinking Water System

SCHEDULE 22

SUMMARY REPORTS FOR MUNICIPALITIES

For the period of
JANUARY 2010 to DECEMBER 2010

Prepared by: **The Ontario Clean Water Agency**

Prepared for: **The Corporation of the City of Temiskaming Shores**



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Schedule 22
SUMMARY REPORTS FOR MUNICIPALITIES

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, 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 (2002) 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 documentation available to the Ontario Clean Water Agency, the following table lists any requirements the system failed to meet during the 2010 reporting period.

Drinking Water Legislation	Requirement(s) the System Failed to Meet	Duration	Corrective Actions	Status
PTTW 0051-6XGNZX, January 15, 2007	PTTW allows 4000 m ³ /day to be drawn from Well 4 per day. Well 4 exceeded this limit on the following days: July 24 = 4051 m ³ July 25 = 4051 m ³ July 26 = 4040 m ³ July 27 = 4009 m ³	4 days	During the main breaker repair, Well 3 was turned off. After the completion of the repair it was turned back on which allowed for cycling between Well 3 and Well 4. No further action required.	Resolved

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

Raw Water Well 3- Monthly Usage for 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Average Volume (m ³ /day)	1475	1502	1455	1532	1465	1577	2051	1612	1542	1460	1293	1657	1553
Maximum Volume (m ³ /day)	2783	3055	2626	2784	3118	3117	3467	3290	2794	2693	2496	2556	3467
Total Volume (m ³)	45722	42056	43651	45964	45430	47296	63578	49965	46256	45257	38795	51368	565338

Raw Water Well 4- Monthly Usage for 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Average Volume (m ³ /day)	1893	1807	1817	1874	2291	2087	2533	2204	1734	1777	1688	1500	1936
Maximum Volume (m ³ /day)	2745	2751	2826	2743	3222	3119	4051	3253	2624	2791	2603	2552	4051
Total Volume (m ³)	58684	50597	56338	56213	71019	62620	78528	68339	52013	55100	50632	46513	706596

Treated Water - Monthly Usage for 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Average Volume (m ³ /day)	2682	2620	2520	2713	3284	2962	3666	3053	2538	2548	2329	2433	2782
Maximum Volume (m ³ /day)	3525	3124	2698	3384	4329	3499	4770	4091	3093	3440	2872	2693	4770
Total Volume (m ³)	83153	73352	78108	81404	101805	88864	113641	94645	76142	78995	69883	75434	1015426

Comparison of Summary to the Rated Capacity & Flow Rates Approved in the Systems Approval

In accordance with section 4.1 of Certificate of Approval No. 7953-7JET6J, the New Liskeard Well Supply shall not be operated to exceed a maximum flow rate of 7 865 m³/day into the distribution system. At no point during the reporting period did the plant exceed this rate.

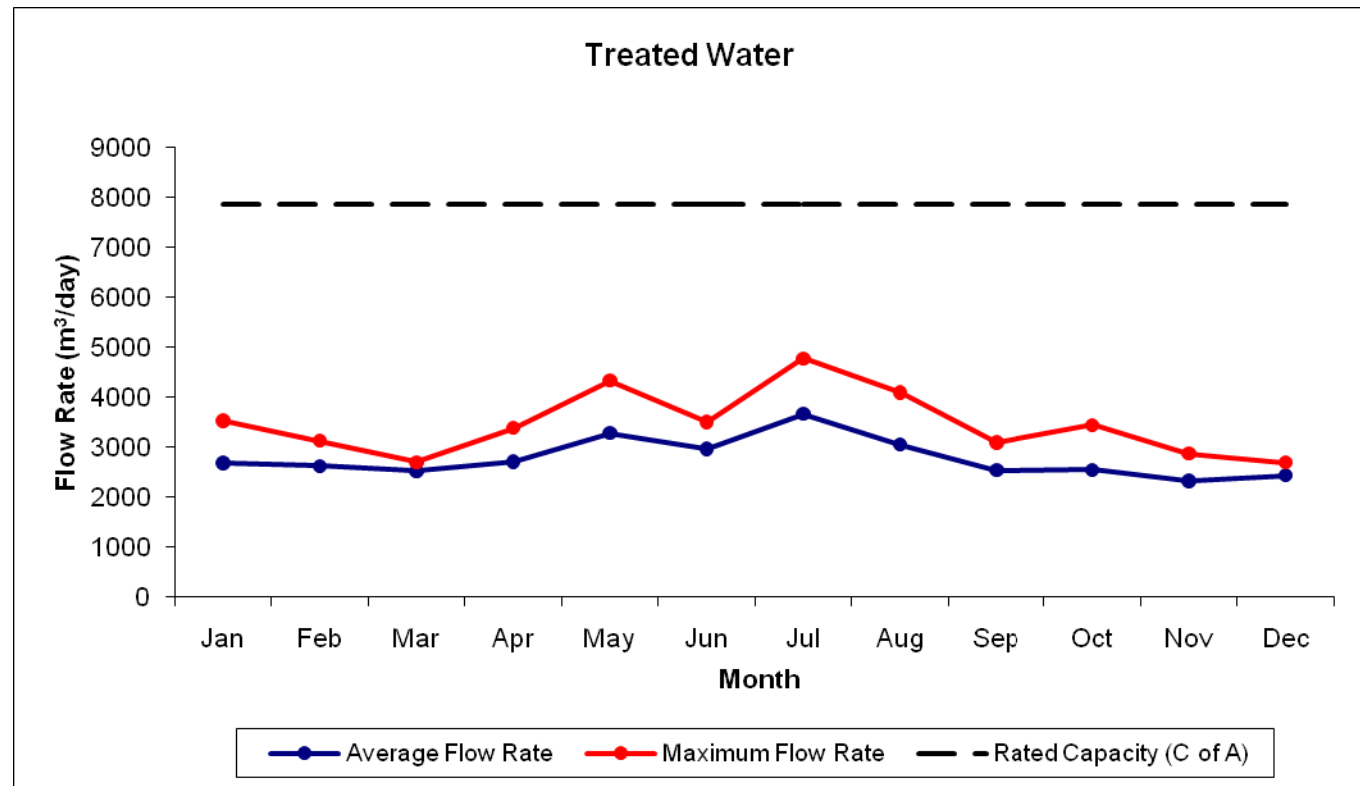
The maximum daily flow rate of water entering the distribution system was measured at 4 770 m³/day July 7, 2010.

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

**2010 Treated Flow Summary
(Flow into the Distribution System)**

Average Flow Rate (m³/day)
 Maximum Flow Rate (m³/day)
 Rated Capacity (C of A)
 % Rated Capacity

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Average Flow Rate (m ³ /day)	2682	2620	2520	2713	3284	2962	3666	3053	2538	2548	2329	2433	2782
Maximum Flow Rate (m ³ /day)	3525	3124	2698	3384	4329	3499	4770	4091	3093	3440	2872	2693	4770
Rated Capacity (C of A)	7865	7865	7865	7865	7865	7865	7865	7865	7865	7865	7865	7865	7865
% Rated Capacity	45	40	34	43	55	44	61	52	39	44	37	34	61



4.0 CONCLUSION

The New Liskeard Well Supply was able to operate in accordance with the terms and conditions of Certificate of Approval No. 7953-7JET6J, without exceeding the approved rated capacity while meeting the community's demand for water use.

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APPENDIX A

Monthly Summary of Microbiological Test Results



Ontario Clean Water Agency Monthly Process Data Report

Municipality: Town of New Liskeard
 Facility: [6211] - New Liskeard WTP
 Works: [220000344] - New Liskeard WTP
 Classification: Class 2 Water Distribution, Class 1 Water Treatment
 Water Source: Well Water

Period: 01/01/2010 to 12/31/2010
 Serviced Population: 4,800
 Total Design Capacity(m³/day): 7,865.0

	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 -->
Raw Water/Microbiological - Well #3													
E. Coli (cfu/100 mL)													
Avg	< 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
Cnt	4.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	52.0
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
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
TC (cfu/100 mL)													
Avg	< 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
Cnt	4.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	52.0
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
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
Raw Water/Microbiological - Well #4													
E. Coli (cfu/100 mL)													
Avg	< 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
Cnt	4.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	52.0
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
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
TC (cfu/100 mL)													
Avg	< 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
Cnt	4.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	52.0
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
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
Treated Water/Microbiological - Treated Water													
E. Coli (cfu/100 mL)													
Avg	< 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
Cnt	4.0	4.0	6.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	53.0
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
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
TC (cfu/100 mL)													
Avg	< 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
Cnt	4.0	4.0	6.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	53.0
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
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 (cfu/mL)													
Avg	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 20.0	< 10.0	< 12.5	< 10.0	< 10.0	< 10.0	< 10.962



Ontario Clean Water Agency Monthly Process Data Report

Municipality: Town of New Liskeard
 Facility: [6211] - New Liskeard WTP
 Works: [220000344] - New Liskeard WTP
 Classification: Class 2 Water Distribution, Class 1 Water Treatment
 Water Source: Well Water

Period: 01/01/2010 to 12/31/2010
 Serviced Population: 4,800
 Total Design Capacity(m³/day): 7,865.0

	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	4.0	5.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	52.0
Max	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	50.0	< 10.0	20.0	10.0	< 10.0	< 10.0	50.0
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													
E. Coli Samples (# collected)													
Sum	14.0	24.0	14.0	12.0	15.0	12.0	13.0	15.0	12.0	13.0	15.0	12.0	171.0
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
E. Coli (cfu/100 mL): Maximum													
Avg	< 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
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 Samples (# collected)													
Sum	14.0	24.0	14.0	12.0	15.0	12.0	13.0	15.0	12.0	13.0	15.0	12.0	171.0
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
TC (cfu/100 mL): Maximum													
Avg	< 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
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
HPC Samples (# collected)													
Sum	6.0	16.0	5.0	4.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	68.0
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
HPC (cfu/mL): Maximum													
Avg	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	? 168.0	< 92.5	< 10.0	< 306.0	< 10.0	? 54.828
Max	10.0	10.0	< 10.0	< 10.0	< 10.0	10.0	10.0	? 800.0	330.0	< 10.0	820.0	< 10.0	820.0

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 New Liskeard
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 Water Source: Well Water

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 Serviced Population: 4,800
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	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 -->
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Raw Water/Raw Water - Well #3

Aquifer Level (ft): Avg.

Avg	69.645	71.25	72.032	72.633	71.71	70.8	72.194	71.581	71.167	70.586	69.567	69.419	71.05
Cnt	31.0	28.0	31.0	30.0	31.0	30.0	31.0	31.0	30.0	29.0	30.0	31.0	363.0
Max	74.0	74.0	76.0	76.0	76.0	74.0	75.0	75.0	74.0	74.0	72.0	72.0	76.0
Min	68.0	68.0	70.0	70.0	69.0	68.0	70.0	69.0	68.0	68.0	68.0	67.0	67.0

Turbidity: Mean (NTU)

Avg	4.563	4.597	5.502	9.945	10.557	9.155	8.05	8.433	9.23	7.543	8.62	7.1	7.594
Cnt	4.0	3.0	5.0	2.0	3.0	4.0	3.0	3.0	3.0	4.0	5.0	4.0	43.0
Max	5.25	9.3	9.64	14.7	16.3	14.9	10.0	9.3	15.7	9.7	10.6	11.2	16.3
Min	4.12	1.4	2.57	5.19	4.37	5.95	4.15	7.6	5.89	4.97	6.8	3.0	1.4

Raw Water/Aesthetic Obj - Well #3

Colour (TCU)

Avg	6.25	6.0	5.2	8.333	20.0	21.25	30.0	28.333	26.667	17.5	20.0	16.25	16.333
Cnt	4.0	4.0	5.0	3.0	3.0	4.0	3.0	3.0	3.0	4.0	5.0	4.0	45.0
Max	10.0	10.0	6.0	10.0	20.0	30.0	40.0	30.0	50.0	25.0	20.0	20.0	50.0
Min	5.0	2.0	4.0	5.0	20.0	15.0	20.0	25.0	10.0	5.0	20.0	15.0	2.0

Raw Water/Raw Water - Well #4

Aquifer Level (ft): Avg.

Avg	76.032	77.357	78.581	78.6	78.871	75.733	79.097	79.065	77.517	77.75	77.633	73.935	77.515
Cnt	31.0	28.0	31.0	30.0	31.0	30.0	31.0	31.0	30.0	28.0	30.0	31.0	362.0
Max	85.0	86.0	86.0	86.0	85.0	85.0	87.0	86.0	90.0	86.0	85.0	85.0	90.0
Min	69.0	70.0	70.0	70.0	70.0	68.0	70.0	70.0	70.0	70.0	68.0	67.0	67.0

Turbidity: Mean (NTU)

Avg	4.548	7.32	5.588	7.855	8.653	7.605	9.55	8.6	7.913	7.57	8.64	7.835	7.516
Cnt	4.0	3.0	5.0	2.0	3.0	4.0	3.0	3.0	3.0	4.0	5.0	4.0	43.0
Max	5.2	10.0	9.01	11.3	12.5	8.66	10.4	9.2	10.7	8.9	9.5	11.0	12.5
Min	4.1	3.46	3.21	4.41	4.46	6.44	9.0	8.2	5.4	5.48	8.2	4.74	3.21

Raw Water/Aesthetic Obj - Well #4

Colour (TCU)

Avg	7.5	4.5	5.0	8.333	19.0	23.75	30.0	31.667	21.667	25.0	29.0	12.75	17.689
Cnt	4.0	4.0	5.0	3.0	3.0	4.0	3.0	3.0	3.0	4.0	5.0	4.0	45.0
Max	10.0	5.0	5.0	10.0	25.0	30.0	30.0	35.0	30.0	35.0	30.0	15.0	35.0
Min	5.0	4.0	5.0	5.0	12.0	15.0	30.0	30.0	15.0	10.0	25.0	10.0	4.0



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

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Treated Water\Health - Treated Water													
CI Residual: Free Min. (mg/L)													
Min	0.505	0	0.35	0.451	0.451	0.5	0.653	0.45	0.599	0.599	0.505	0.4	0
CI Residual: Free Max. (mg/L)													
Max	1.404	1.303	3.86	3.054	2.155	2.01	1.303	1.404	2.702	1.65	1.1	4.601	4.601
CI Residual: Free Mean (mg/L)													
Avg	1.027	1.058	1.072	1.037	1.081	1.0	0.948	0.989	0.989	0.922	0.91	0.964	1.0
Distribution System\Health - Distribution System													
CI Res. Dist Samples (# collected)													
Sum	28.0	28.0	32.0	31.0	32.0	28.0	31.0	32.0	31.0	28.0	32.0	31.0	364.0
CI Res. in Dist.: Free Min. (mg/L)													
Min	0.22	0.1	0.31	0.23	0.08	0.24	0.16	0.22	0.11	0.13	0.09	0.06	0.06
CI Res. in Dist.: Free Max. (mg/L)													
Max	0.99	1.07	0.9	0.71	0.84	0.86	0.87	0.94	0.74	0.77	0.79	1.03	1.07
CI Residual: Free Mean (mg/L)													
Avg	0.509	0.566	0.606	0.479	0.539	0.57	0.566	0.507	0.383	0.505	0.423	0.479	0.51

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