



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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February 17, 2015

Bill Jones, CAO
Municipality of Northern Bruce Peninsula
56 Lindsay Road 5
Lion's Head, Ontario
N0H 1W0

Re: Requirement under O. Reg. 170/03 Annual and Summary Reports

Attached are the 2014 Annual and Summary Reports for the Lion's Head WTP and the Annual Report for the Tobermory Primary Place Day Care Centre. These reports are completed in accordance with Section 11 and Schedule 22 of O. Reg. 170/03, which require an Annual Report to be prepared not later than February 28th of each year for the preceding calendar year and a Summary Report to be prepared not later than March 31st of the year for the preceding calendar year.

The Summary Report is to be provided to the members of the municipal council. Please ensure this distribution.

Section 12 of O. Reg. 170/03, requires both the Summary Reports and the Annual Reports be made available for inspection by any member of the public during normal business hours, without charge. The reports should be made available for inspection at the office of the municipality, or at a location that is reasonably convenient to the users of the water system.

Please acknowledge receipt of this document.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Laliberte".

Richard Laliberte, Senior Operations Manager
Ontario Clean Water Agency
West Highlands Hub

RL/cy

O.Reg 170 SECTION 11 ANNUAL REPORT

Drinking-Water System Number:	220002672
Drinking-Water System Name:	Lion's Head Water Supply and Distribution System
Drinking-Water System Owner:	Municipality of Northern Bruce Peninsula
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2014 to December 31, 2014

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> Municipality of Northern Bruce Peninsula R.R. 2, 56 Lindsay Road #5 Lion's Head, Ontario N0G 1W0 519-793-3522 </div>	<p style="text-align: center;"><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> </p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> </p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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List Drinking-Water Systems, which receive all of their drinking water from your system:

N/A

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes [] No [] N/A [X]

Indicate how you notified system users that your annual report is available, and is free of charge.

- [X] Public access/notice via the web
- [X] 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 _____

O.Reg 170 SECTION 11 ANNUAL REPORT

Describe your Drinking-Water System

WT II	WD I
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This facility was commissioned in May 19, 2005 under an Ontario Ministry of the Environment C of A approval (4272-5YAK6U). The official open house occurred on July 22, 2005.

The new plant, with an approximate footprint of 18 x 23m, is located at the intersection of Ida and Helen Streets in the Village of Lion's Head. It contains a combined 150 mm diameter of raw water header hydraulically connected to two membrane filtration package systems (in parallel), with a total design capacity of 15.63 L/s. Each package system consists of a set of rack-mounted 10 hollow-fiber filter modules (with room for expansion to 12), one filter feed pump, one filter backwash pump with a rated capacity of 14.2 L/s, one turbidity analyzer and one particle counter, located on the effluent side of the membrane filters using a chemical wash. A compressed air system is used for air scrubbing of the membrane filters. There are two concrete chlorine contact tanks (in parallel), located below the filters, each tank 96 cubic meters in size and with an overflow weir allowing water to flow to baffled reservoir tanks. The concrete reservoir tanks have a storage capacity of 576 cubic meters. Water flows from the water reservoirs to a common high-lift well header container, 384 cubic meters in size. Five variable speed vertical turbine high lift pumps draw water out of the well header, each discharging to a combined 150 mm diameter treated water header connected to the distributions system.

A target distribution pressure of around 560 kPa (80 psi) is maintained by the continuous monitoring and operation of the variable speed pumps. No storage reservoirs are used in the distribution system. Online instrumentation includes continuous free chlorine residual, turbidity, pH, and flow measurement located on the treated water header.

The treatment process includes a sodium hypochlorite feed system consisting of four chemical feed pumps, each with a rated capacity of at least 680 L/hr, with two pumps (duty, standby) for injection at the backwash supply to each membrane filter and the other two pumps (duty, standby) for injection at the filtered discharge of each filter and two 200 L day tanks, spill containment, piping, appurtenances, and associated controls, an acid feed system complete with two metering pumps each with a rated capacity of at least 680 L/hr, one 200 L day tank, spill containment, piping, appurtenances, and associated controls, a caustic feed system complete with two metering pumps each with a rated capacity of at least 680 L/hr, one 200 L day tank, spill containment, piping, appurtenances, and associated controls, one 250 kVA standby diesel generator set, complete with fuel containment, and associated controls, backwash/wastewater handling facilities consisting of a 120 cubic meter backwash settling tank and two supernatant pumps each rated at 2.63 L/s at 6.1 m TDH, transferring supernatant to the storm sewer, all other controls, electrical equipment, instrumentation, piping, and appurtenances essential for the proper operation of the above-noted works.

A dedicated back-up power supply is used to maintain the necessary electrical supply to operate the filtration plant during power outages.

List all water treatment chemicals used over this reporting period

- Sodium Hypochlorite 12%

O.Reg 170 SECTION 11 ANNUAL REPORT

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment

Describe

- Repaired Water Service @ 4 Scott, Main, Webster, Helen Streets.
- Significant number of frozen lines requiring temporary lines and thawing equipment.
- Rebuild low lift raw water sample pump.
- Replaced chlorine line.
- Repaired Dectron dehumidifier unit.
- Replaced circuit board assembly, lamps, and cable assembly on Hach online turbidity analyzer.
- Repaired Procon Pump

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date

Microbiological testing done under Schedule 10, 11 or 12 of Regulation 170/03 during this reporting Period

Location	Number of Samples	Range of E. Coli Results (min #) – (max #)	Range of Total Coliforms Results (min #) – (max #)	Number of HPC Samples	Range of HPC Results (min #) – (max #)
Raw - RW	51	0 - 38	0 - 91		
Treated - TW	51	0 - 0	0 - 0	51	0 - 1
Distribution - DW	102	0 - 0	0 - 0	51	0 - 78

Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (#-#)
Turbidity (NTU) Maximum	8760 8760	#1-0.01 - 0.09 NTU #2-0.02 - 0.08 NTU
Chlorine; TW	8760	1.19 - 1.83
Chlorine Residual Distribution System	149	0.4- 1.41

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

O.Reg 170 SECTION 11 ANNUAL REPORT

*NOTE: Record the unit of measure if it is **not** milligrams per litre.*

Summary of additional testing and sampling carried out in accordance with the requirement of an approval or order.

Date of order or C of A	Parameter	Date Sampled	Result	MDWL Limit	Unit of Measure
MDWL # 250-101	Suspended Solids	Monthly	Annual Average < 3.333	25	mg/L

Summary of Inorganic parameters tested during this reporting period or most recent

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Exceedance
Antimony: Sb (ug/L) - TW	2014/01/06	0.09	No
Arsenic: As (ug/L) - TW	2014/01/06	0.5	No
Barium: Ba (ug/L) - TW	2014/01/06	13.40	No
Boron: B (ug/L) - TW	2014/01/06	13.00	No
Cadmium: Cd (ug/L) - TW	2014/01/06	< 0.003	No
Chromium: Cr (ug/L) - TW	2014/01/06	< 0.50	No
Lead: Pb (ug/L) - DW			
Mercury: Hg (ug/L) - TW	2014/01/06	< 0.01	No
Selenium: Se (ug/L) - TW	2014/01/06	< 1.00	No
Sodium: Na (mg/L) - TW	2013/01/07	6.21	No
Uranium: U (ug/L) - TW	2014/01/06	0.186	No
Fluoride: F (mg/L)- TW	2013/01/07	0.010	No
Nitrite (mg/L) - TW	2014/01/06	< 0.003	No
Nitrite (mg/L) - TW	2014/04/06	< 0.0030	No
Nitrite (mg/L) - TW	2014/07/07	< 0.0030	No
Nitrite (mg/L) - TW	2014/10/6	< 0.0030	No
Nitrate (mg/L) - TW	2014/01/06	0.258	No
Nitrate (mg/L) - TW	2014/04/06	0.29	No
Nitrate (mg/L) - TW	2014/07/07	0.268	No
Nitrate (mg/L) - TW	2014/10/6	0.25	No

O.Reg 170 SECTION 11 ANNUAL REPORT

Summary of Organic parameters sampled during this reporting period or most recent

Parameter	Sample Date	Result Value	Exceedance
Alachlor (ug/L) - TW	2014/01/06	< 0.02	No
Aldicarb (ug/L) - TW	2014/01/06	< 0.01	No
Aldrin + Dieldrin (ug/L) - TW	2014/01/06	< 0.01	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2014/01/06	0.02	No
Azinphos-methyl (ug/L) - TW	2014/01/06	< 0.02	No
Bendiocarb (ug/L) - TW	2014/01/06	< 0.01	No
Benzene (ug/L) - TW	2014/01/06	< 0.32	No
Benzo(a)pyrene (ug/L) - TW	2014/01/06	< 0.004	No
Bromoxynil (ug/L) - TW	2014/01/06	< 0.33	No
Carbaryl (ug/L) - TW	2014/01/06	< 0.01	No
Carbofuran (ug/L) - TW	2014/01/06	< 0.01	No
Carbon Tetrachloride (ug/L) - TW	2014/01/06	< 0.16	No
Chlordane:Total (ug/L) - TW	2014/01/06	< 0.01	No
Chlorpyrifos (ug/L) - TW	2014/01/06	< 0.02	No
Cyanazine (ug/L) - TW	2014/01/06	< 0.03	No
Diazinon (ug/L) - TW	2014/01/06	< 0.02	No
Dicamba (ug/L) - TW	2014/01/06	< 0.20	No
1,2-Dichlorobenzene (ug/L) - TW	2014/01/06	< 0.41	No
1,4-Dichlorobenzene (ug/L) - TW	2014/01/06	< 0.36	No
Dichlorodiphenyltrichloroethane(DDT) + metabolites (ug/L) - TW	2014/01/06	< 0.01	No
1,2-Dichloroethane (ug/L) - TW	2014/01/06	< 0.35	No
1,1-Dichloroethylene (ug/L) - TW	2014/01/06	< 0.33	No
Dichloromethane (ug/L) - TW	2014/01/06	< 0.35	No
2,4-Dichlorophenol (ug/L) - TW	2014/01/06	< 0.15	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2014/01/06	< 0.19	No
Diclofop-methyl (ug/L) - TW	2014/01/06	< 0.40	No
Dimethoate (ug/L) - TW	2014/01/06	< 0.03	No
Dinoseb (ug/L) - TW	2014/01/06	< 0.36	No
Diquat (ug/L) - TW	2014/01/06	< 1.00	No

O.Reg 170 SECTION 11 ANNUAL REPORT

Diuron (ug/L) - TW	2014/01/06	< 0.03	No
Glyphosate (ug/L) - TW	2014/01/06	< 1.00	No
Heptachlor+Hepachlor Epoxide (ug/L) - TW	2014/01/06	< 0.01	No
Lindane: (ug/L) - TW	2014/01/06	< 0.01	No
Malathion (ug/L) - TW	2014/01/06	< 0.02	No
Methoxychlor (ug/L) - TW	2014/01/06	< 0.01	No
Metolachlor (ug/L) - TW	2014/01/06	< 0.01	No
Metribuzin (ug/L) - TW	2014/01/06	< 0.02	No
Monochlorobenzene (ug/L) - TW	2014/01/06	< 0.30	No
Paraquat (ug/L) - TW	2014/01/06	< 1.00	No
Parathion (ug/L) - TW	2014/01/06	< 0.02	No
Pentachlorophenol (ug/L) - TW	2014/01/06	< 0.15	No
Phorate (ug/L) - TW	2014/01/06	< 0.01	No
Picloram (ug/L) - TW	2014/01/06	< 1.00	No
Polychlorinated Bichenysl(PCB) (ug/L) - TW	2014/01/06	< 0.04	No
Prometryne (ug/L) - TW	2014/01/06	< 0.03	No
Simazine (ug/L) - TW	2014/01/06	< 0.01	No
***THM (ug/L) - DW	2014/01/01	29.75	No
Temephos (ug/L) - TW	2014/01/06	< 0.01	No
Terbufos (ug/L) - TW	2014/01/06	< 0.01	No
Tetrachloroethylene (ug/L) - TW	2014/01/06	< 0.35	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2014/01/06	< 0.14	No
Triallate (ug/L) - TW	2014/01/06	< 0.01	No
Trichloroethylene (ug/L) - TW	2014/01/06	< 0.44	No
2,4,6-Trichlorophenol (ug/L) - TW	2014/01/06	< 0.25	No
2,4,5-Trichlorophenoxy acetic acid (ug/L) - TW	2014/01/06	< 0.22	No
Trifluralin (ug/L) - TW	2014/01/06	< 0.02	No
Vinyl Chloride (ug/L) - TW	2014/01/06	< 0.17	No

*** Annual average (THMs)

O.Reg 170 SECTION 11 ANNUAL REPORT

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
N/A			

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, small municipal non residential, large non municipal non residential)

Summary of lead testing under Schedule 15.1 during this reporting period

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

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	N/A		
Distribution	N/A		

The Lions Head Drinking Water System has been granted regulatory relief from sampling and testing for lead in plumbing samples. Four (4) distribution samples shall be collected and tested annually as per the requirements of the Municipal Drinking Water License # 250-101, issue #2. The next scheduled distribution lead sampling period is December 15, 2014 to April 15, 2015.



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

LION'S HEAD WATER TREATMENT

Large Municipal Residential Drinking Water System

SCHEDULE 22 **SUMMARY REPORT**

For the period of:
JANUARY 1, 2014 TO DECEMBER 31, 2014

Prepared by the Ontario Clean Water Agency
For The Municipality of Northern Bruce Peninsula

SUMMARY

This report is a summary of water quality and quantity information submitted in accordance with Schedule 22 of Ontario's Drinking Water System Regulation for the reporting period of January 1, 2014 to December 31, 2014 for the Lion's Head Water Treatment Plant located in the Municipality of Northern Bruce Peninsula.

The summary includes:

1. Any requirements of the Act and Regulation, Orders or System Approval (s) that the system failed to meet during the reporting period and the measures taken to correct each failure.
2. A summary of the quantities and flow rates of water supplied during the reporting period, including monthly averages and maximum daily flows.
3. A comparison of the average and monthly maximum daily flows to the approved capacity specified in the System Approval.

ISSUES OF NON-COMPLIANCE

Two MOE inspections, on February 26, 2014 and December 16, 2014, which were routine and announced, both resulted in an Inspection Report Rating of 100 %.

The following tables list the requirements of the Act, Regulations, System Approval (s) and any Order that the system failed to meet during the reporting period and the measures taken to correct each failure:

No actions required**ASSESSMENT OF FLOW RATES AND QUANTITIES OF WATER SUPPLIED**

The following table lists the quantities and flow rates of the water supplied during the reporting period covered by this report, including monthly average and maximum daily flows and a comparison to the rated capacity and flow rates specified in the system approval:

Lion's Head Water Treatment Plant

Month	Average Day Flow	% of Rated Capacity 1832 m3/d	Maximum Day Flow	% of Rated Capacity 1832 m3/d
January	318.51	17.39	505.29	27.58
February	329.45	17.98	385.10	21.02
March	335.67	18.32	367.71	20.07
April	354.19	19.33	399.23	21.79
May	369.87	20.19	398.60	21.76
June	395.86	21.61	477.56	26.07
July	352.90	19.26	431.30	23.54
August	343.55	18.75	535.47	29.23
September	311.30	16.99	441.14	24.08
October	302.45	16.51	341.00	18.61
November	321.06	17.53	366.70	20.02
December	292.99	15.99	340.55	18.59