



MERRICKVILLE DRINKING WATER SYSTEM

2014 SUMMARY REPORT FOR MUNICIPALITIES

Schedule 22 of O. Reg. 170/03

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Section 11 of O. Reg. 170/03

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Annual Record of Water Taking of O. Reg. 387/04



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

Foreword

This document contains three different annual reports required for the Merrickville Drinking Water System:

These reports are the:

- Section 11 Annual Report as per section 11 of Ontario Regulation 170/03
- Summary Report as per Schedule 22 of the Ontario Regulation 170/03
- Summary of the raw water taking that were submitted to the Ministry of the Environment under the Ontario Regulation 387/04 (Water Taking and Transfer)

Section 12 of O. Reg. 170/03 requires both the Summary Report and the Annual Report be made available for inspection by any member of the public during normal business hours, without charge. These reports are to be made available for inspection at the office of the municipality.

Section 11 Report

As per

O. Reg. 170/03



Drinking-Water Systems Regulation O. Reg. 170/03
Section 11 Annual Report

System Information

Drinking-Water System Number:	220001227
Drinking-Water System Name:	Merrickville Drinking Water System
Drinking-Water System Owner:	Village of Merrickville-Wolford
Drinking-Water System Category:	Large-Municipal Residential
Period being reported:	January 01 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; min-height: 100px;"> <p>Available at the Municipal Office Municipal Website</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <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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Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
No other system receives water from the Merrickville Drinking Water System	

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 Not applicable

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

- 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 _____

Describe your Drinking-Water System

Merrickville WSS has three municipal wells that pump ground water into an underground reservoir. Sodium Hypochlorite is added to the well discharge for maximum detention time. The treated water is pumped to the 1000 residents through a distribution system by a continuously running duty high lift pump.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite

Were any significant expenses incurred to?

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

Please refer to the section on Maintenance.

Please provide a brief description and a breakdown of monetary expenses incurred

Please refer to the section on Maintenance.

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
The system met the requirements of the drinking water legislation.					

Treated Water Parameter	Result Value Range (min – max)	Average	Unit of Measure
Alkalinity	265 – 275	268.75	mg/L
Conductivity	566 – 704	664.5	umho/cm
Colour	< 2.0 – 4.0	< 2.75	TCU
Total Dissolved Solids	449 – 482	463.75	mg/L
Total Hardness	301 – 309	304	mg/L
pH	7.33 – 8.06	7.80	Not applicable
Manganese	0.028 – 0.035	0.030	mg/L
Iron	0.139 – 0.596	0.298	mg/L

Turbidity Raw Water (NTU)	Number of Grab Samples	Range of Results (min #)-(max #)	Average
Well #1	Min of one per month.	0.20 – 0.56	0.357
Well #2	Min of one per month.	0.14 – 0.61	0.322
Well #4	Min of one per month.	0.17 – 0.74	0.450

Below is a summary of operational testing done during the reporting period.

Free Chlorine Residual (mg/L)	Number of Samples	Range of Results (min #)-(max #)	Average
Treated Water Reservoir	8760	0.55 – 1.57	0.86
Distribution	8760	0.15 – 1.47	0.61
	Grab: 117	0.23 – 0.95	0.57

*8760 denotes results from continuous monitors

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

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
No additional testing and sampling is required.				

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 (min #) - (max #)	Range of Total Coliform Results (min #) - (max #)	Number of HPC Samples	Range of HPC Results (min #) - (max #)
Raw - RW1	52	0 - 0	0 - 0	21	2 – 20
Raw - RW2	52	0 - 0	0 - 0	14	10 - 20
Raw - RW4	52	0 - 0	0 - 0	13	10 - 30
Treated - TW	52	0 - 0	0 - 0	52	10 - 20
Distribution - DW	111	0 - 0	0 - 0	39	10 - 20

Summary of Schedule 23 and 24 parameters tested during this reporting period or most recent

Parameter	Sample Date	Sample Result	Exceedance
Antimony: Sb (mg/L) - TW	2014/01/28	< 0.0001	No
Arsenic: As (mg/L) - TW	2014/01/28	0.008	No
Barium: Ba (mg/L) - TW	2014/01/28	0.097	No
Boron: B (mg/L) - TW	2014/01/28	0.129	No
Cadmium: Cd (mg/L) - TW	2014/01/28	< 0.00002	No
Chromium: Cr (mg/L) - TW	2014/01/28	< 0.002	No
Lead: Pb (ug/L) - DW1	2013/03/11	0.26	No
Lead: Pb (ug/L) - DW2	2013/03/11	2.23	No
Mercury: Hg (mg/L) - TW	2014/01/28	< 0.00002	No
Selenium: Se (mg/L) - TW	2014/01/28	< 0.002	No
Sodium: Na (mg/L) - TW	2011/01/20	31.70	Yes
Uranium: U (mg/L) - TW	2014/01/28	0.00099	No
Fluoride Residual: Mean (mg/L) - TW	2013/10/15	0.50	No
Nitrite (mg/L) - TW	2014/01/26	< 0.10	No
Nitrite (mg/L) - TW	2014/04/24	< 0.10	No
Nitrite (mg/L) - TW	2014/07/21	< 0.10	No
Nitrite (mg/L) - TW	2014/10/14	< 0.10	No
Nitrate (mg/L) - TW	2014/01/26	0.10	No
Nitrate (mg/L) - TW	2014/04/24	0.20	No
Nitrate (mg/L) - TW	2014/07/21	< 0.10	No
Nitrate (mg/L) - TW	2014/10/14	< 0.10	No

Parameter	Sample Date	Result Value	Exceedance
Alachlor (ug/L) - TW	2014/01/28	< 0.30	No
Aldicarb (ug/L) - TW	2014/01/28	< 3.00	No
Aldrin + Dieldrin (ug/L) - TW	2014/01/28	< 0.020	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2014/01/28	< 0.50	No
Azinphos-methyl (ug/L) - TW	2014/01/28	< 1.00	No
Bendiocarb (ug/L) - TW	2014/01/28	< 3.00	No
Benzene (ug/L) - TW	2014/01/28	< 0.50	No
Benzo(a)pyrene (ug/L) - TW	2014/01/28	< 0.0050	No
Bromoxynil (ug/L) - TW	2014/01/28	< 0.30	No
Carbaryl (ug/L) - TW	2014/01/28	< 3.00	No
Carbofuran (ug/L) - TW	2014/01/28	< 1.00	No
Carbon Tetrachloride (ug/L) - TW	2014/01/28	< 0.20	No
Chlordane:Total (ug/L) - TW	2014/01/28	< 0.040	No
Chlorpyrifos (ug/L) - TW	2014/01/28	< 0.50	No
Cyanazine (ug/L) - TW	2014/01/28	< 0.50	No
Diazinon (ug/L) - TW	2014/01/28	< 1.00	No
Dicamba (ug/L) - TW	2014/01/28	< 5.00	No
1,2-Dichlorobenzene (ug/L) - TW	2014/01/28	< 0.10	No
1,4-Dichlorobenzene (ug/L) - TW	2014/01/28	< 0.20	No

Parameter	Sample Date	Result Value	Exceedance
Dichlorodiphenyltrichloroethane(DDT) + metabolites (ug/L) - TW	2014/01/28	< 0.10	No
1,2-Dichloroethane (ug/L) - TW	2014/01/28	< 0.10	No
1,1-Dichloroethylene (ug/L) - TW	2014/01/28	< 0.10	No
Dichloromethane (ug/L) - TW	2014/01/28	< 0.30	No
2,4-Dichlorophenol (ug/L) - TW	2014/01/28	< 0.10	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2014/01/28	< 5.00	No
Diclofop-methyl (ug/L) - TW	2014/01/28	< 0.50	No
Dimethoate (ug/L) - TW	2014/01/28	< 1.00	No
Dinoseb (ug/L) - TW	2014/01/28	< 0.50	No
Diquat (ug/L) - TW	2014/01/28	< 5.00	No
Diuron (ug/L) - TW	2014/01/28	< 5.00	No
Glyphosate (ug/L) - TW	2014/01/28	< 25.00	No
Heptachlor+Hepachlor Epoxide (ug/L) - TW	2014/01/28	< 0.10	No
Lindane: (ug/L) - TW	2014/01/28	< 0.10	No
Malathion (ug/L) - TW	2014/01/28	< 5.00	No
Methoxychlor (ug/L) - TW	2014/01/28	< 0.10	No
Metolachlor (ug/L) - TW	2014/01/28	< 3.00	No
Metribuzin (ug/L) - TW	2014/01/28	< 3.00	No
Monochlorobenzene (ug/L) - TW	2014/01/28	< 0.20	No
Paraquat (ug/L) - TW	2014/01/28	< 1.00	No
Parathion (ug/L) - TW	2014/01/28	< 3.00	No
Pentachlorophenol (ug/L) - TW	2014/01/28	< 0.10	No
Phorate (ug/L) - TW	2014/01/28	< 0.30	No
Picloram (ug/L) - TW	2014/01/28	< 5.00	No
Polychlorinated Bichenysl(PCB) (ug/L) - TW	2014/01/28	< 0.050	No
Prometryne (ug/L) - TW	2014/01/28	< 0.10	No
Simazine (ug/L) - TW	2014/01/28	< 0.50	No
THM (ug/L) - DW	2014	14.48	No
Temephos (ug/L) - TW	2014/01/28	< 10.00	No
Terbufos (ug/L) - TW	2014/01/28	< 0.30	No
Tetrachloroethylene (ug/L) - TW	2014/01/28	< 0.20	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2014/01/28	< 0.10	No
Triallate (ug/L) - TW	2014/01/28	< 10.00	No
Trichloroethylene (ug/L) - TW	2014/01/28	< 0.10	No
2,4,6-Trichlorophenol (ug/L) - TW	2014/01/28	< 0.10	No
2,4,5-Trichlorophenoxy acetic acid (ug/L) - TW	2014/01/28	< 10.00	No
Trifluralin (ug/L) - TW	2014/01/28	< 0.50	No
Vinyl Chloride (ug/L) - TW	2014/01/28	< 0.20	No

Lead: Samples were collected between Dec 15, 2009 and Apr15, 2010. The results are summarized below:

Location	# of samples collected	Lead Results (mg/L)		pH Results (min. - max)	Alkalinity (mg/L) (min. - max)
		(min. - max)	Exceedance		
Residential Plumbing	1	0.00038 – 0.00051	No	7.55	Not applicable
Non-Residential Plumbing	1	0.00023 – 0.00028	No	7.55	Not applicable

pH , Alkalinity and Lead Sampling

	March 2014		July 2014		
	pH	Alkalinity (mg/L)	pH	Alkalinity (mg/L)	Lead (mg/L)
DW1	7.59	270	6.61	266	N/A
DW2	7.65	270	7.06	268	N/A

Maintenance Summary

WO#	Completion Date	Comments
3030459	01/23/2014	Restock hydrant parts used during routine maintenance.
3051721	06/11/2014	Rebuild 10 fire hydrants/extend 2 to grade level.
3051722	10/02/2014	Completed dead end distribution blow-off repairs.
3153926	08/05/2014	Replaced discharge piping for Well #1

End

Schedule 22
Summary Report

For

Municipalities

as per

O. Reg. 170/03

MERRICKVILLE DRINKING WATER SYSTEM
2014 SUMMARY REPORTS FOR MUNICIPALITIES

Report

This report is a summary of water quality information for the Merrickville Drinking Water System, published in accordance with Schedule 22 of Ontario's Drinking-Water Systems Regulation for the reporting period of January 1 to December 31, 2014. The Merrickville Drinking Water System is categorized as a Large Municipal Residential Drinking Water System.

This report was prepared by the Ontario Clean Water Agency for the Village of Merrickville-Wolford.

Who gets a copy of the Report:

- in the case of a drinking-water system owned by a municipality, the members of the municipal council;

What must the Report contain?

The report must,

- (a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water licence and any orders applicable to the system that were **Not** met at any time during the period covered by the report and specify the duration of the failure; and
- (b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

The following table lists the requirements that the system failed to meet and the measures taken to correct the failure:

Drinking Water Legislation	List the requirement(s) the system failed to meet	Specify the duration of the failure (i.e. date(s))	Describe the measures taken to correct the failure	Status (complete or outstanding)
The system met all drinking water legislation requirements in 2014				

SAC = Spills Action Centre

The following items were identified by the September 18, 2014 Ministry of the Environment and Climate Change Inspection Report:

Drinking Water Legislation	List the requirement(s) the system failed to meet	Specify the duration of the failure (i.e. date(s))	Describe the measures taken to correct the failure	Status (complete or outstanding)
There were no actions required noted in the last MOE inspection report.				

What else must the Report contain?

The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence.

The following table is a summary of the rated capacity flow rates and flow rates approved in the system's Municipal Drinking Water Licence.

2014	Month Avg. Day Volume (m ³ /d)	Month Max. Day Volume (m ³ /d)	Rated Capacity (m ³ /d)	Month Max Day Volume (%)
January	607.00	773.00	1880	41.1
February	629.00	813.00	1880	43.2
March	603.25	647.00	1880	34.4
April	635.03	877.00	1880	46.6
May	593.84	647.98	1880	34.5
June	598.02	689.00	1880	36.6
July	567.20	617.00	1880	32.8
August	560.54	626.72	1880	33.3
September	446.33	722.30	1880	38.4
October	512.90	729.00	1880	38.8
November	463.40	493.00	1880	26.2
December	495.65	577.00	1880	30.7

When Does the Report Get Submitted?

If a report is prepared for a system that supplies water to a municipality under the terms of a contract, the owner of the system shall give a copy of the report to the municipality by March 31.

End

Annual Record of Water Taking

(Permit to Take Water)

of

O. Reg. 387/04

Facility Flow Summary

Drinking-Water System Number: 220001227
 Drinking-Water System Name: MERRICKVILLE DRINKING WATER SYSTEM
 Drinking-Water System Owner: Title Holder: Municipality
 Drinking-Water System Category: Large Municipal Residential
 Municipal Drinking Water License: 264-101
 Period being reported: Jan-14 Dec-14

Raw Water					
Raw Water (Source Name)		RW Well 1			
Source Type:		Drilled			
Drinking Water Permit to Take Water No:		4573-73AR7F			
Month	Monthly Flow Total (m3/month)	Daily Flow Average (m3/day)	Daily Flow Maximum (m3/day)	Daily Flow Peak Flow Rate (L/min)	Number of Days of Water Taking
Jan	6439.00	207.71	257.00	414.60	31
Feb	6014.00	214.79	280.00	441.00	28
Mar	6465.10	208.55	242.80	508.20	31
Apr	6576.00	219.20	310.00	699.00	30
May	6442.01	207.81	239.00	663.60	31
Jun	6183.98	206.13	232.00	410.40	30
Jul	6169.92	199.03	286.89	719.40	31
Aug	6440.52	207.76	239.90	453.00	31
Sep	5755.04	191.83	284.29	435.60	30
Oct	6031.00	194.55	275.00	442.20	31
Nov	5280.00	176.00	189.00	432.00	30
Dec	5780.00	186.45	228.00	439.80	31
Total	73576.57				365
Avg	6131.38	201.65	255.32	508.81	30
Max	6576.00	219.20	310.00	719.00	31

Facility Flow Summary

Drinking-Water System Number: 220001227
 Drinking-Water System Name: MERRICKVILLE DRINKING WATER SYSTEM
 Drinking-Water System Owner: Title Holder: Municipality
 Drinking-Water System Category: Large Municipal Residential
 Municipal Drinking Water License: 264-101
 Period being reported: Jan-14 Dec-14

Raw Water					
Raw Water (Source Name)		RW Well 2			
Source Type:		Drilled			
Drinking Water Permit to Take Water No:		4573-73AR7F			
Month	Monthly Flow Total (m3/month)	Daily Flow Average (m3/day)	Daily Flow Maximum (m3/day)	Daily Flow Peak Flow Rate (L/min)	Number of Days of Water Taking
Jan	3586.00	115.68	142.00	261.60	31
Feb	3298.00	117.79	155.00	258.60	28
Mar	3789.00	122.23	191.20	483.60	31
Apr	3777.00	125.90	177.00	746.40	30
May	3526.01	113.74	128.00	675.60	31
Jun	3307.99	110.27	119.00	702.60	30
Jul	3577.04	115.39	165.00	697.80	31
Aug	3639.12	117.39	129.94	730.80	31
Sep	3264.04	108.80	183.00	715.20	30
Oct	3417.00	110.23	153.00	630.60	31
Nov	2982.00	99.40	106.00	287.40	30
Dec	3296.00	106.32	127.00	553.20	31
Total	41459.20				365
Avg	3454.93	113.59	148.01	561.95	30
Max	3789.00	125.90	191.20	746.40	31

Facility Flow Summary

Drinking-Water System Number: 220001227
 Drinking-Water System Name: MERRICKVILLE DRINKING WATER SYSTEM
 Drinking-Water System Owner: Title Holder: Municipality
 Drinking-Water System Category: Large Municipal Residential
 Municipal Drinking Water License: 264-101
 Period being reported: Jan-14 Dec-14

Raw Water					
Raw Water (Source Name)		<i>RW Well 4</i>			
Source Type:		<i>Drilled</i>			
Drinking Water Permit to Take Water No:		<i>4573-73AR7F</i>			
Month	Monthly Flow Total (m3/month)	Daily Flow Average (m3/day)	Daily Flow Maximum (m3/day)	Daily Flow Peak Flow Rate (L/min)	Number of Days of Water Taking
Jan	8973.00	289.45	357.00	523.10	31
Feb	8418.00	300.64	390.00	524.70	28
Mar	9233.40	297.85	362.90	531.00	31
Apr	9148.00	304.93	427.00	533.40	30
May	8671.00	279.71	328.00	533.40	31
Jun	8398.96	279.97	322.00	529.20	30
Jul	8913.09	287.52	389.00	526.80	31
Aug	6746.30	217.62	265.90	529.20	31
Sep	7605.02	253.50	374.01	520.80	30
Oct	8158.00	263.16	368.00	522.60	31
Nov	7197.00	239.90	255.00	523.80	30
Dec	7923.00	255.58	309.00	523.10	31
Total	99384.77				365
Avg	8282.06	272.49	345.65	526.75	30
Max	9233.40	304.93	427.00	533.40	31



Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 4573-73AR7F
Permit Holder: THE CORPORATION OF THE VILLAGE OF MERRICKVILLE-WOLFORD.
Received on: Feb 4, 2015 3:22 PM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.