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

OPTIONAL ANNUAL REPORT TEMPLATE.

Drinking-Water System Number:	**220004046**
Drinking-Water System Name:	Holland Landing Water Supply System
Drinking-Water System Owner:	Regional Municipality of York
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2009 to December 31, 2009

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [X]

Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]

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

Regional Municipality of York
Administrative Building
Environmental Services Department
17250 Yonge Street,
Newmarket, Ontario

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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
Holland-Queensville-Sharon Distribution System	260001747

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 [X] No [ ]

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
[x] Public access/notice via a newspaper
[x] Public access/notice via Public Request
[ ] Public access/notice via a Public Library
[ ] Public access/notice via other method _____

Describe your Drinking-Water System

York Region operates two production wells servicing Holland Landing in the Town of East Gwillimbury. The Holland Landing wells draw water from the Yonge Street Aquifer which is also the source of water for the Town of Newmarket and the Town of Aurora.

Water withdrawal from each of the wells is regulated by a Permit to Take Water, issued by the Ministry of the Environment for the Yonge Street Aquifer as a whole. York Region is continuing to work to improve our understanding of the Yonge Street Aquifer and the effects of water taking through detailed hydrogeological studies, numerical modeling analysis and an extensive monitoring program.

Chloramination (adding chlorine and ammonia) is the disinfection process used for the Holland Landing production wells. Sodium silicate is added to the water following chloramination to reduce the potential for iron to stain plumbing fixtures and laundry in the serviced area.

Following treatment, water enters the Holland Landing distribution system from two points: Well #1 and Well #2. There are two storage facilities servicing the community of Holland Landing. There is a back up supply to the community from the Queensville Well Supply System.

York Region is the wholesale supplier of water to the community of Holland Landing and is responsible for the supply, production, treatment and storage of water. The Town of East Gwillimbury owns and operates the distribution system that delivers the water from the regional watermains to homes in Holland Landing.

List all water treatment chemicals used over this reporting period

Chlorine Gas
Sodium Silicate
Ammonia Sulphate

Were any significant expenses incurred to?

- **[ ]** Install required equipment
- **[ ]** Repair required equipment
- **[ ]** Replace required equipment

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

Some of the following expenditures represent only part of the total project costs.

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
August 20, 2009	Combined Chlorine	0.0	Mg/L	Tower drained, flushed and re-sampled	August 20, 2009
October 30, 2009	Sodium >20 mg/L	23.0	Mg/L	Re-sampled – Same result. Notified SAC	November 3, 2009

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

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	96	0	0		
Treated	95	0	0	95	1-2
Distribution					

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity (Treated)	8760	0.021 – 2.073
Turbidity (Raw)	23	0.17 – 0.84
Chlorine	8760	0.348 – 3.402
Fluoride (If the DWS provides fluoridation)		

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

__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, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure

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

Note: See attached results for Inorganic parameters

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony				
Arsenic				
Barium				
Boron				
Cadmium				
Chromium				
Lead				
Mercury				
Selenium				
Sodium				
Uranium				
Fluoride				
Nitrite				
Nitrate				

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			
Distribution			

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

Note: See attached results for Organic parameters (THM values in table below)

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor				

Aldicarb				
Aldrin + Dieldrin				
Atrazine + N-dealkylated metobolites				
Azinphos-methyl				
Bendiocarb				
Benzene				
Benzo(a)pyrene				
Bromoxynil				
Carbaryl				
Carbofuran				
Carbon Tetrachloride				
Chlordane (Total)				
Chlorpyrifos				
Cyanazine				
Diazinon				
Dicamba				
1,2-Dichlorobenzene				
1,4-Dichlorobenzene				
Dichlorodiphenyltrichloroethane (DDT) + metabolites				
1,2-Dichloroethane				
1,1-Dichloroethylene (vinylidene chloride)				
Dichloromethane				
2-4 Dichlorophenol				
2,4-Dichlorophenoxy acetic acid (2,4-D)				
Diclofop-methyl				
Dimethoate				
Dinoseb				
Diquat				
Diuron				
Glyphosate				
Heptachlor + Heptachlor Epoxide				
Lindane (Total)				
Malathion				
Methoxychlor				
Metolachlor				
Metribuzin				
Monochlorobenzene				
Paraquat				
Parathion				
Pentachlorophenol				
Phorate				
Picloram				

Polychlorinated Biphenyls(PCB)				
Prometryne				
Simazine				
THM **(**NOTE**:** show latest annual average**)** **Well #1** **Well #2**		 0.014 0.014	 Mg/L Mg/L	
Temephos				
Terbufos				
Tetrachloroethylene				
2,3,4,6-Tetrachlorophenol				
Triallate				
Trichloroethylene				
2,4,6-Trichlorophenol				
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)				
Trifluralin				
Vinyl Chloride				

York Region monitors another group of disinfection by-products called haloacetic acids (HAAs). There are no limits set for HAAs in Ontario Drinking Water Standards.

Haloacetic acid	Well #1 Mg/L June 30	Well #2 Mg/L June 30
Bromochloroacetic acid	0.004	0.004
Dibromoacetic acid	0.004	0.004
Dichloroacetic acid	0.004	0.007
Monobromoacetic acid	0.004	0.004
Monochloroacetic acid	0.02	0.02
Trichloroacetic acid	0.004	0.006

"<" indicates the result is below the Method Detection Limit

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
Lead as Pb	**0.0078**	**Mg/L**	**July 13, 2009**

(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)

Holland Landing Water Supply System
Holland Landing Well 1 Treated
WW220004046

Inorganics Test Results

Reading	Units	ODWS		21/01/2009	27/04/2009	13/07/2009	26/10/2009	03/11/2009
Antimony as Sb	mg/L	0.006	IMAC	0.0009	0.0003	0.0003	< 0.0001	
Arsenic as As	mg/L	0.025	IMAC	0.0004	0.0003	0.0003	0.0004	
Barium as Ba	mg/L	1	MAC		0.145			
Boron as B	mg/L	5	IMAC		0.057			
Cadmium as Cd	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001	
Chromium as Cr	mg/L	0.05	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001	
Fluoride as F	mg/L	0.8	MAC	0.18	0.19	0.213	0.19	
Lead as Pb	mg/L	0.01	MAC	< 0.0001	0.0001	< 0.0001	< 0.0001	
Mercury as Hg	mg/L	0.001	MAC		< 0.00002			
Nitrate + Nitrite as N	mg/L	10	MAC	0.02	0.03	0.05	0.02	
Nitrate as N	mg/L	10	MAC	0.01	0.02	0.043	0.012	
Nitrite	mg/L	1	MAC	0.01	0.01	0.007	0.008	
Selenium as Se	mg/L	0.01	MAC	0.0011	0.0001	0.0004	0.0013	
Sodium as Na	mg/L	200	AO	21.9	21.5	20.4	21.7	21.7
Uranium as U	mg/L	0.02	MAC		< 0.0001			

"<": indicats the result is below Method Detection Limit
ODWS: Ontario Drinking Water Standard
MAC: Ontario Drinking Water Standard - Health Related (Maximum Acceptable Concentration)
AO: Ontario Drining Water Standard - Non Health Related (Aesthetic Objective)
mg/L: milligrams per litre, parts permillion (ppm)

Organics Test Results

Reading	Units	ODWS		21/01/2009	27/04/2009	13/07/2009	26/10/2009
(DDT) + Metabolites	mg/L	0.03	MAC			< 0.000008	
1,1-dichloroethylene (vinylidene chloride)	mg/L	0.014	MAC	< 0.0003	< 0.0003	< 0.0003	< 0.0003
1,2-(o-dcb) Dichlorobenzene	mg/L	0.2	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
1,2-Dichloroethane	mg/L	0.005	IMAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
1,4-(p-dcb) Dichlorobenzene	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,3,4,6-Tetrachlorophenol	mg/L	0.1	MAC			< 0.0005	
2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	mg/L	0.28	MAC			< 0.0005	
2,4,6-Trichlorophenol	mg/L	0.005	MAC			< 0.0005	
2,4-Dichlorophenol	mg/L	0.9	MAC			< 0.0007	
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	0.1	IMAC			< 0.0008	
Alachlor	mg/L	0.005	IMAC			< 0.0004	
Aldicarb	mg/L	0.009	MAC			< 0.0045	
Aldrin + Dieldrin	mg/L	0.0007	MAC			< 0.000006	
Atrazine + N-dealkylated metabolites	mg/L	0.005	IMAC			< 0.0002	
Azinphos-methyl	mg/L	0.02	MAC			< 0.0003	
Bendiocarb	mg/L	0.04	MAC			< 0.003	
Benzene	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Benzo(a)pyrene	mg/L	0.00001	MAC			< 0.00001	
Bromoxynil	mg/L	0.005	IMAC			< 0.0004	
Carbaryl	mg/L	0.09	MAC			< 0.003	
Carbofuran	mg/L	0.09	MAC			< 0.003	
Carbon Tetrachloride	mg/L	0.005	MAC	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chlordane (Total)	mg/L	0.007	MAC			< 0.000006	
Chlorpyrifos	mg/L	0.09	MAC			< 0.0002	
Cyanazine	mg/L	0.01	IMAC			< 0.0003	
Diazinon	mg/L	0.02	MAC			< 0.0002	
Dicamba	mg/L	0.12	MAC			< 0.0004	
Dichloromethane	mg/L	0.05	MAC	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Diclofop-methyl	mg/L	0.009	MAC			< 0.0004	
Dimethoate	mg/L	0.02	IMAC			< 0.0003	
Dinoseb	mg/L	0.01	MAC			< 0.0005	
Diquat	mg/L	0.07	MAC			< 0.001	
Diuron	mg/L	0.15	MAC			< 0.003	
Glyphosate	mg/L	0.28	IMAC			< 0.025	
Heptachlor + Heptachlor Epoxide	mg/L	0.003	MAC			< 0.000008	
Lindane	mg/L	0.004	MAC			< 0.000005	
Malathion	mg/L	0.19	MAC			< 0.0002	
Methoxychlor	mg/L	0.9	MAC			< 0.000009	
Metolachlor	mg/L	0.05	IMAC			< 0.0002	
Metribuzin	mg/L	0.08	MAC			< 0.0003	
Monochlorobenzene	mg/L	0.08	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Paraquat	mg/L	0.01	IMAC			< 0.001	
Parathion	mg/L	0.05	MAC			< 0.0002	

Organics Test Results

Reading	Units	ODWS		21/01/2009	27/04/2009	13/07/2009	26/10/2009
Pentachlorophenol	mg/L	0.06	MAC			< 0.0004	
Phorate	mg/L	0.002	IMAC			< 0.0002	
Picloram	mg/L	0.19	IMAC			< 0.0007	
Polychlorinated Biphenyls (PCBs)	mg/L	0.003	IMAC			< 0.00002	
Prometryne	mg/L	0.001	IMAC			< 0.0002	
Simazine	mg/L	0.01	IMAC			< 0.0002	
Temephos	mg/L	0.28	IMAC			< 0.003	
Terbufos	mg/L	0.001	IMAC			< 0.0002	
Tetrachloroethylene (perchloroethylene)	mg/L	0.03	MAC	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Triallate	mg/L	0.23	MAC			< 0.004	
Trichloroethene	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Trifluralin	mg/L	0.045	IMAC			< 0.000006	
Vinyl Chloride	mg/L	0.002	MAC	< 0.0002	< 0.0002	< 0.0002	< 0.0002

"<": indicats the result is below Method Detection Limit
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mg/L: milligrams per litre, parts permillion (ppm)

Holland Landing Water Supply System
Holland Landing Well 2 Treated
WW220004046

Inorganics Test Results

Reading	Units	ODWS		21/01/2009	27/04/2009	13/07/2009	26/10/2009	03/11/2009
Antimony as Sb	mg/L	0.006	IMAC	0.0009	0.0003	0.0003	< 0.0001	
Arsenic as As	mg/L	0.025	IMAC	0.0004	0.0003	0.0003	0.0004	
Barium as Ba	mg/L	1	MAC		0.145			
Boron as B	mg/L	5	IMAC		0.057			
Cadmium as Cd	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001	
Chromium as Cr	mg/L	0.05	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001	
Fluoride as F	mg/L	0.8	MAC	0.18	0.19	0.213	0.19	
Lead as Pb	mg/L	0.01	MAC	< 0.0001	0.0001	< 0.0001	< 0.0001	
Mercury as Hg	mg/L	0.001	MAC		< 0.00002			
Nitrate + Nitrite as N	mg/L	10	MAC	0.02	0.03	0.05	0.02	
Nitrate as N	mg/L	10	MAC	0.01	0.02	0.043	0.012	
Nitrite	mg/L	1	MAC	0.01	0.01	0.007	0.008	
Selenium as Se	mg/L	0.01	MAC	0.0011	0.0001	0.0004	0.0013	
Sodium as Na	mg/L	200	AO	21.9	21.5	20.4	21.7	21.7
Uranium as U	mg/L	0.02	MAC		< 0.0001			

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(DDT) + Metabolites	mg/L	0.03	MAC			< 0.000008	
1,1-dichloroethylene (vinylidene chloride)	mg/L	0.014	MAC	< 0.0003	< 0.0003	< 0.0003	< 0.0003
1,2-(o-dcb) Dichlorobenzene	mg/L	0.2	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
1,2-Dichloroethane	mg/L	0.005	IMAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
1,4-(p-dcb) Dichlorobenzene	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
2,3,4,6-Tetrachlorophenol	mg/L	0.1	MAC			< 0.0005	
2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	mg/L	0.28	MAC			< 0.0005	
2,4,6-Trichlorophenol	mg/L	0.005	MAC			< 0.0005	
2,4-Dichlorophenol	mg/L	0.9	MAC			< 0.0007	
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	0.1	IMAC			< 0.0008	
Alachlor	mg/L	0.005	IMAC			< 0.0004	
Aldicarb	mg/L	0.009	MAC			< 0.0045	
Aldrin + Dieldrin	mg/L	0.0007	MAC			< 0.000006	
Atrazine + N-dealkylated metabolites	mg/L	0.005	IMAC			< 0.0002	
Azinphos-methyl	mg/L	0.02	MAC			< 0.0003	
Bendiocarb	mg/L	0.04	MAC			< 0.003	
Benzene	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Benzo(a)pyrene	mg/L	0.00001	MAC			< 0.00001	
Bromoxynil	mg/L	0.005	IMAC			< 0.0004	
Carbaryl	mg/L	0.09	MAC			< 0.003	
Carbofuran	mg/L	0.09	MAC			< 0.003	
Carbon Tetrachloride	mg/L	0.005	MAC	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chlordane (Total)	mg/L	0.007	MAC			< 0.000006	
Chlorpyrifos	mg/L	0.09	MAC			< 0.0002	
Cyanazine	mg/L	0.01	IMAC			< 0.0003	
Diazinon	mg/L	0.02	MAC			< 0.0002	
Dicamba	mg/L	0.12	MAC			< 0.0004	
Dichloromethane	mg/L	0.05	MAC	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Diclofop-methyl	mg/L	0.009	MAC			< 0.0004	
Dimethoate	mg/L	0.02	IMAC			< 0.0003	
Dinoseb	mg/L	0.01	MAC			< 0.0005	
Diquat	mg/L	0.07	MAC			< 0.001	
Diuron	mg/L	0.15	MAC			< 0.003	
Glyphosate	mg/L	0.28	IMAC			< 0.025	
Heptachlor + Heptachlor Epoxide	mg/L	0.003	MAC			< 0.000008	
Lindane	mg/L	0.004	MAC			< 0.000005	
Malathion	mg/L	0.19	MAC			< 0.0002	
Methoxychlor	mg/L	0.9	MAC			< 0.000009	
Metolachlor	mg/L	0.05	IMAC			< 0.0002	
Metribuzin	mg/L	0.08	MAC			< 0.0003	
Monochlorobenzene	mg/L	0.08	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Paraquat	mg/L	0.01	IMAC			< 0.001	
Parathion	mg/L	0.05	MAC			< 0.0002	

Organics Test Results

Reading	Units	ODWS		21/01/2009	27/04/2009	13/07/2009	26/10/2009
Pentachlorophenol	mg/L	0.06	MAC			< 0.0004	
Phorate	mg/L	0.002	IMAC			< 0.0002	
Picloram	mg/L	0.19	IMAC			< 0.0007	
Polychlorinated Biphenyls (PCBs)	mg/L	0.003	IMAC			< 0.00002	
Prometryne	mg/L	0.001	IMAC			< 0.0002	
Simazine	mg/L	0.01	IMAC			< 0.0002	
Temephos	mg/L	0.28	IMAC			< 0.003	
Terbufos	mg/L	0.001	IMAC			< 0.0002	
Tetrachloroethylene (perchloroethylene)	mg/L	0.03	MAC	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Triallate	mg/L	0.23	MAC			< 0.004	
Trichloroethene	mg/L	0.005	MAC	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Trifluralin	mg/L	0.045	IMAC			< 0.000006	
Vinyl Chloride	mg/L	0.002	MAC	< 0.0002	< 0.0002	< 0.0002	< 0.0002

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