

**Part III Form 2
Section 11. ANNUAL REPORT.**

Drinking-Water System Number:	220001156
Drinking-Water System Name:	MIDLAND WELL SUPPLY
Drinking-Water System Owner:	TOWN OF MIDLAND
Drinking-Water System Category:	CLASS 3 WATER DISTRIBUTION AND SUPPLY SYSTEM, CLASS 1 WATER TREATMENT SYSTEM
Period being reported:	JANUARY 01 2012 TO DECEMBER 31 2012

<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 [X] No []</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;"> <p>1- TOWN HALL 575 Dominion Ave Midland Ontario</p> <p>2- Water and Wastewater Operations 200 Bay Street Midland Ontario</p> <p>3- www.town.midland.on.ca</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input style="width: 100px; height: 20px;" type="text"/></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: <input style="width: 100px; height: 20px;" type="text"/></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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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

The Town of Midland receives drinking water from four (4) Point of Entry well field areas, which utilize a total of ten (10) active groundwater wells throughout the municipality. Of these four (4) P.O.E. stations two (2) are GUDI sites, Hwy #12 Treatment System and Vindin Treatment System.

The distribution system consists of approximately 115 km of water main including 5375 customer connections serving a population of 16,700. All P.O.E. are connected together throughout the distribution system including three (3) pressure zones and five (5) above ground storage facilities. The groundwater system produced 2,131,519 m³ of drinking water for the reporting year of 2012.

List all water treatment chemicals used over this reporting period

Sodium Hypo chlorite - 12% Solution

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
20/09/2012	Possible Contamination	N/A	N/A	Sampling Main Isolation Water Service Interruption Notice	21/09/2012
20/01/2012	High Sodium Result	30.4	mg/L	Resample	23/01/2012

#2 Highway 12 Treatment System
Highway 12 Groundwater Supply System

Consisting of two (2) active wells:

Well 7A is equipped with a vertical turbine pump, raw water flow meter and isolation valve.

Well 7B is equipped with a submersible well water pump, raw water flow meter, pitless adaptor and isolation valve.

The Pump house

Located south of Highway #12;

NAD83: UTM Zone 17: 0588713.00m E, 4953133.00m N

housing the following equipment;

-two (2) duty chemical metering pumps, and one (1) 550 L sodium hypo chlorite storage tank and discharge feed connections;

- two (2) ultraviolet reactor systems having a design dosage rate of 40 milli Joules per centimeter squared (mJ/cm²), with automatic cleaning apparatus monitoring and alarm system;

Discharge piping from the pump house to the Highway #12 existing water main, pump control valves, treated water flow meter, chlorine analyzer, turbidity analyzer and full S.C.A.D.A. control.

- one 330 kW Stand-by diesel generator supplying stand-by power for all pumps, analyzers, ultraviolet reactors and SCADA;

Well field Flow Capacity

- Maximum flow rate = 106 L/sec

- Maximum daily volume = 9,158.4 m³/d

Well 7A is the firm well for the Midland Well Supply.

Where any significant expenses incurred during this reporting period to?

Install required equipment

Repair required equipment **Well Rehab - \$45 0000**

Replace required equipment

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	Min 0 Max 0	Min 0 Max 0	0	N/A
Treated	51	Min 0 Max 0	Min 0 Max 0	51	< 10 cfu/mL – 10 cfu/mL
Distribution	330	Min 0 Max 0	Min 0 Max 0	171	< 10 cfu/mL- >2000 cfu/mL

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	8760	Min 0.10 NTU Max 0.91 NTU
Chlorine	8760	

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

#1 Vindin Treatment System

Vindin Groundwater Supply System -G.U.D.I. Site

Consisting of six (6) active wells. Each well equipped with a submersible well water pump, pitless adaptor, raw water flow meter and isolation valve.

The Pump house

- one (1) split case centrifugal high lift pump rated for 37.9 L/s vs 85.3 m TDH;

- one (1) split case centrifugal high lift pump rated for 45.5 L/s vs 79.3 m TDH;

- one (1) in-line centrifugal high lift pump rated for 37.9 L/s vs 79.3 m TDH;

- two (2) ultraviolet reactor systems having a design dosage rate of 40 milli Joules per centimeter squared (mJ/cm²), with automatic cleaning apparatus monitoring and alarm system;
 - two (2) duty chemical metering pumps and one (1) 550 L sodium hypo chlorite storage tank;
 - one (1) 330 kW Stand-by diesel generator supplying standby power for all pumps, analyzers, ultraviolet reactors and SCADA;
- Discharge piping from the pump house to the existing water main, pump control valves, treated water flow meter, chlorine analyzer, turbidity analyzer and full S.C.A.D.A. control.

Standby Generator

- 45 kW standby natural gas generator in separate building beside Well house #6 supplying standby power for four (4) wells.

Flow Capacity

- Maximum flow rate = 90.1 L/sec
- Maximum daily volume = 7,785 m³/d

Where any significant expenses incurred during this reporting period to?

- Install required equipment NO
- Repair required equipment NO
- Replace required equipment NO

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	306	Min 0 Max 0	Min 0 Max 0	0	N/A
Treated	52	Min 0 Max 0	Min 0 Max 0	52	< 10 cfu/mL – 20 cfu/mL
Distribution	330	Min 0 Max 0	Min 0 Max 0	171	< 10 cfu/mL- >2000 cfu/mL

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	8760	Min 0.00 NTU Max .96 NTU
Chlorine	8760	

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

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

Parameter	Sample Date	Result Value Flume	Result Value Well # 7	Unit of Measure
Antimony	16-Jan-12	<0.001	<0.001	mg/L
Arsenic	16-Jan-12	0.0004	0.0005	mg/L
Barium	16-Jan-12	0.104	0.117	mg/L
Boron	16-Jan-12	ND	ND	mg/L
Cadmium	16-Jan-12	<0.00002	<0.00002	mg/L
Chromium	16-Jan-12	<0.002	<0.002	mg/L
Lead	16-Jan-12	-	-	mg/L
Mercury	16-Jan-12	<0.00002	<0.00002	mg/L
Selenium	16-Jan-12	<0.001	<0.001	mg/L
Sodium	22-Jan-12 (Re-Sample)	30.4	25.1 (12-Jan-2012)	mg/L
Uranium	03-Jan-11	0.00130	0.00128	mg/L
Fluoride	07-Jan-09	-	-	mg/L
Nitrite	16-Oct-12	<0.1	<0.1	mg/L
Nitrate	16-Oct-12	1.3	0.4	mg/L

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

Parameter	Sample Date	Result Value Flume	Result Value Well # 7	Unit of Measure
Alachlor	19-Jan-12	<0.3	<0.3	ug/L
Aldicarb	19-Jan-12	<3	<3	ug/L
Aldrin + Dieldrin	19-Jan-12	<0.02	<0.02	ug/L
Atrazine + N-dealkylated metabolites	19-Jan-12	<0.5	<0.5	ug/L
Azinphos-methyl	19-Jan-12	<1	<1	ug/L
Bendiocarb	19-Jan-12	<3	<3	ug/L
Benzene	19-Jan-12	<0.5	<0.5	ug/L
Benzo(a)pyrene	19-Jan-12	<0.005	<0.005	ug/L
Bromoxynil	19-Jan-12	<0.03	<0.03	ug/L
Carbaryl	19-Jan-12	<3	<3	ug/L
Carbofuran	19-Jan-12	<1	<1	ug/L
Carbon Tetrachloride	19-Jan-12	<0.2	<0.2	ug/L
Chlordane (Total)	19-Jan-12	<0.04	<0.04	ug/L
Chlorpyrifos	19-Jan-12	<0.5	<0.5	ug/L
Cyanazine	19-Jan-12	<0.5	<0.5	ug/L
Diazinon	19-Jan-12	<1	<1	ug/L
Dicamba	19-Jan-12	<5	<5	ug/L
1,2-Dichlorobenzene	19-Jan-12	<0.1	<0.1	ug/L
1,4-Dichlorobenzene	19-Jan-12	<0.2	<0.2	ug/L
Dichlorodiphenyltrichloroethane (DDT) + metabolites	19-Jan-12	<0.1	<0.1	ug/L

1,2-Dichloroethane	19-Jan-12	<0.1	<0.1	ug/L
1,1-Dichloroethylene (vinylidene chloride)	19-Jan-12	<0.1	<0.1	ug/L
Dichloromethane	19-Jan-12	<0.3	<0.3	ug/L
2-4 Dichlorophenol	19-Jan-12	<0.1	<0.1	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	19-Jan-12	<5	<5	ug/L
Diclofop-methyl	19-Jan-12	<0.4	<0.4	ug/L
Dimethoate	19-Jan-12	<1	<1	ug/L
Dinoseb	19-Jan-12	<0.5	<0.5	ug/L
Diquat	19-Jan-12	<5	<5	ug/L
Diuron	19-Jan-12	<5	<5	ug/L
Glyphosate	19-Jan-12	<25	<25	ug/L
Heptachlor + Heptachlor Epoxide	19-Jan-12	<0.1	<0.1	ug/L
Lindane (Total)	19-Jan-12	<0.1	<0.1	ug/L
Malathion	19-Jan-12	<5	<5	ug/L
Methoxychlor	19-Jan-12	<0.1	<0.1	ug/L
Metolachlor	19-Jan-12	<3	<3	ug/L
Metribuzin	19-Jan-12	<3	<3	ug/L
Monochlorobenzene	19-Jan-12	<.02	<.02	ug/L
Paraquat	19-Jan-12	<1	<1	ug/L
Parathion	19-Jan-12	<3	<3	ug/L
Pentachlorophenol	19-Jan-12	<0.1	<0.1	ug/L
Phorate	19-Jan-12	<.03	<.03	ug/L
Picloram	19-Jan-12	<5	<5	ug/L
Polychlorinated Biphenyls(PCB)	19-Jan-12	<0.05	<0.05	ug/L
Prometryne	19-Jan-12	<.01	<.01	ug/L
Simazine	19-Jan-12	<.05	<.05	ug/L
THM	19-Jan-12	-	-	ug/L
Temephos	19-Jan-12	<10	<10	ug/L
Terbufos	19-Jan-12	<.03	<.03	ug/L
Tetrachloroethylene	19-Jan-12			ug/L
2,3,4,6-Tetrachlorophenol	19-Jan-12	<0.1	<0.1	ug/L
Triallate	19-Jan-12	<10	<10	ug/L
Trichloroethylene	19-Jan-12	<0.2	<0.2	ug/L
2,4,6-Trichlorophenol	19-Jan-12	<0.1	<0.1	ug/L
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	19-Jan-12	<10	<10	ug/L
Trifluralin	19-Jan-12	<0.5	<0.5	ug/L
Vinyl Chloride	19-Jan-12	<0.2	<0.2	ug/L

#4 Hanly Treatment System
Hanly Groundwater Supply System

Consisting of one (1) active well, equipped with a submersible well water pump, pitless adaptor and isolation valve.

The Pump house

Located at the southwest corner of Hanly Street and Russell Street;

NAD83: UTM Zone 17: 0589280.00m E, 4955008.00m N

- one (1) ultraviolet reactor system having a design dosage rate of 38 milli-Joules per centimeter squared (mJ/cm²), with automatic cleaning apparatus, monitoring and alarm systems;

two (2) chemical metering pumps (one duty and one standby) and one (1) 200 L sodium hypo chlorite storage tank and discharge feed connections;

Discharge piping from the pump house to the Hanly Street existing water main, pump control valves, treated water flow meter, chlorine analyzer, turbidity analyzer and full S.C.A.D.A. control.

Flow Capacity

- Maximum flow rate = 15.2 L/sec

- Maximum daily volume = 1,313 m³/d

Well 15 Point of Entry supplies treated water to the Lescaut Pressure Zone.

List all water treatment chemicals used over the reporting period.

Sodium Hypo chlorite - 12% Solution

Where any significant expenses incurred during this reporting period to?

Install required equipment - Pump Replacement – Russell Street Station - \$85 000

Repair required equipment NO

Replace required equipment NO

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	52	Min 0 Max 0	Min 0 Max 3	0	N/A
Treated	52	Min 0 Max 0	Min 0 Max 0	52	< 10 cfu/mL – 40cfu/mL
Distribution	330	Min 0 Max 0	Min 0 Max 0	171	< 10 cfu/mL- >2000 cfu/mL

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	8760	Min 0.06 NTU Max 0.40 NTU
Chlorine	8760	

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

#3 Dominion Treatment System

Dominion Groundwater Supply System

Consisting of one (1) active well, equipped with a submersible well water pump, pitless adaptor and isolation valve.

The Pump house

Located at the southeast corner of Dominion Avenue and Old Penetanguishene Road
 NAD83: UTM Zone 17: 0586348.00m E, 4954757.00m N

- one (1) ultraviolet reactor system having a design dosage rate of 38 milli-Joules per centimeter squared (mJ/cm²), with automatic cleaning apparatus, monitoring and alarm systems;

two (2) chemical metering pumps (one duty and one standby) and one (1) 140 L sodium hypo chlorite storage tank and discharge feed connections;

- one (1) electric booster fire pump, fully alarmed and monitored, to supply a fire flow capacity of 91.4 L/sec vs 33.5 m TDH to the County Road #93 commercial distribution grid due west of the Pumping Station.

Discharge piping from the pump house to the existing water main, pump control valves, treated water flow meter, chlorine analyzer, turbidity analyzer and full S.C.A.D.A. control.

Flow Capacity

- Maximum flow rate = 23 L/sec

- Maximum daily volume = 1,987 m³/d

Well 9 Point of Entry supplies treated water to the West Pressure Zone.

List all water treatment chemicals used over the reporting period.

Sodium Hypo chlorite - 12% Solution

Where any significant expenses incurred during this reporting period to?

Install required equipment **NO**

Repair required equipment **NO**

Replace required equipment - \$25 000 for screens etc on Dominion Tank

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	50	Min 0 Max 0	Min 0 Max 0	0	N/A

Treated	51	Min 0 Max 0	Min 0 Max 0	51	< 10 cfu/mL –20 cfu/mL
Distribution	330	Min 0 Max 0	Min 0 Max 0	171	< 10 cfu/mL- >2000 cfu/mL

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	8760	Min 0.06 NTU Max 0.70 NTU
Chlorine	8760	

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

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

Parameter	Sample Date	Result Value Well #9	Result Value Well # 15	Unit of Measure
Antimony	13-Sep-11	ND	ND	mg/L
Arsenic	13-Sep-11	0.0006	0.0005	mg/L
Barium	13-Sep-11	0.168	.151	mg/L
Boron	13-Sep-11	0.015	0.014	mg/L
Cadmium	13-Sep-11	ND	ND	mg/L
Chromium	13-Sep-11	ND	ND	mg/L
Lead	09-Jan-08	-	-	mg/L
Mercury	13-Sep-11	ND	ND	mg/L
Selenium	13-Sep-11	0.0020	0.0018	mg/L
Sodium	09-Jan-08	29	18	mg/L
Uranium	13-Sep-11	0.00152	0.00177	mg/L
Fluoride	05-Jan-05	-	-	mg/L
Nitrite	05-Oct-12	ND	ND	mg/L
Nitrate	05-Oct-12	1.6	1.3	mg/L

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

Parameter	Sample Date	Result Value Well #9	Result Value Well # 15	
Alachlor	13-Sep-11	ND	ND	ug/L
Aldicarb	13-Sep-11	ND	ND	ug/L
Aldrin + Dieldrin	13-Sep-11	ND	ND	ug/L
Atrazine + N-dealkylated metabolites	13-Sep-11	ND	ND	ug/L
Azinphos-methyl	13-Sep-11	ND	ND	ug/L
Bendiocarb	13-Sep-11	ND	ND	ug/L

Benzene	13-Sep-11	ND	ND	ug/L
Benzo(a)pyrene	13-Sep-11	ND	ND	ug/L
Bromoxynil	13-Sep-11	ND	ND	ug/L
Carbaryl	13-Sep-11	ND	ND	ug/L
Carbofuran	13-Sep-11	ND	ND	ug/L
Carbon Tetrachloride	13-Sep-11	ND	ND	ug/L
Chlordane (Total)	13-Sep-11	ND	ND	ug/L
Chlorpyrifos	13-Sep-11	ND	ND	ug/L
Cyanazine	13-Sep-11	ND	ND	ug/L
Diazinon	13-Sep-11	ND	ND	ug/L
Dicamba	13-Sep-11	ND	ND	ug/L
1,2-Dichlorobenzene	13-Sep-11	ND	ND	ug/L
1,4-Dichlorobenzene	13-Sep-11	ND	ND	ug/L
Dichlorodiphenyltrichloroethane (DDT) + metabolites	13-Sep-11	ND	ND	ug/L
1,2-Dichloroethane	13-Sep-11	ND	ND	ug/L
1,1-Dichloroethylene (vinylidene chloride)	13-Sep-11	ND	ND	ug/L
Dichloromethane	13-Sep-11	ND	ND	ug/L
2,4 Dichlorophenol	13-Sep-11	ND	ND	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	13-Sep-11	ND	ND	ug/L
Diclofop-methyl	13-Sep-11	ND	ND	ug/L
Dimethoate	13-Sep-11	ND	ND	ug/L
Dinoseb	13-Sep-11	ND	ND	ug/L
Diquat	13-Sep-11	ND	ND	ug/L
Diuron	13-Sep-11	ND	ND	ug/L
Glyphosate	13-Sep-11	ND	ND	ug/L
Heptachlor + Heptachlor Epoxide	13-Sep-11	ND	ND	ug/L
Lindane (Total)	13-Sep-11	ND	ND	ug/L
Malathion	13-Sep-11	ND	ND	ug/L
Methoxychlor	13-Sep-11	ND	ND	ug/L
Metolachlor	13-Sep-11	ND	ND	ug/L
Metribuzin	13-Sep-11	ND	ND	ug/L
Monochlorobenzene	13-Sep-11	ND	ND	ug/L
Paraquat	13-Sep-11	ND	ND	ug/L
Parathion	13-Sep-11	ND	ND	ug/L
Pentachlorophenol	13-Sep-11	ND	ND	ug/L
Phorate	13-Sep-11	ND	ND	ug/L
Picloram	13-Sep-11	ND	ND	ug/L

Polychlorinated Biphenyls(PCB)	13-Sep-11	ND	ND	ug/L
Prometryne	13-Sep-11	ND	ND	ug/L
Simazine	13-Sep-11	ND	ND	ug/L
THM	13-Sep-11	ND	ND	ug/L
Temephos	13-Sep-11	ND	ND	ug/L
Terbufos	13-Sep-11	ND	ND	ug/L
Tetrachloroethylene	13-Sep-11	ND	ND	ug/L
2,3,4,6-Tetrachlorophenol	13-Sep-11	ND	ND	ug/L
Triallate	13-Sep-11	ND	ND	ug/L
Trichloroethylene	13-Sep-11	ND	ND	ug/L
2,4,6-Trichlorophenol	13-Sep-11	ND	ND	ug/L
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	13-Sep-11	ND	ND	ug/L
Trifluralin	13-Sep-11	ND	ND	ug/L
Vinyl Chloride	13-Sep-11	ND	ND	ug/L

If you have any questions please direct them to the following contacts;

Tim Toole, Manager

Town of Midland

Water and Wastewater Operations

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Town of Midland

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