

Part III Form 2  
Section 11. ANNUAL REPORT.

<b>Drinking-Water System Number:</b>	220001156
<b>Drinking-Water System Name:</b>	MIDLAND WELL SUPPLY
<b>Drinking-Water System Owner:</b>	TOWN OF MIDLAND
<b>Drinking-Water System Category:</b>	CLASS 3 WATER DISTRIBUTION AND SUPPLY SYSTEM, CLASS 1 WATER TREATMENT SYSTEM
<b>Period being reported:</b>	JANUARY 01 2013 TO DECEMBER 31 2013

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></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 2- Water and Wastewater Operations 200 Bay Street Midland Ontario 3- <a href="http://www.town.midland.on.ca">www.town.midland.on.ca</a></p> </div>	<p><b><u>Complete for all other Categories.</u></b></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>
---	---

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
- [ 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**

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 17,000. All P.O.E. are connected together throughout the distribution system including four (4) pressure zones and five (5) above ground storage facilities. The groundwater system produced 2,038,462m<sup>3</sup> of drinking water for the reporting year of 2013.

**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
No AWQI's to Report					

**#2 Highway 12 Treatment System**
**Highway 12 Groundwater Supply System**

Consisting of two (2) active wells:

Well 7A is equipped with a submersible well water pump, raw water flow meter and isolation valve. Pump speed is controlled by variable frequency drive.

Well 7B is equipped with a submersible well water pump, raw water flow meter, pitless adaptor and isolation valve. Pump speed is controlled by variable frequency drive.

**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/cm<sup>2</sup>), 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 m<sup>3</sup>/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

-Well 7A and Well 7B, were both retrofitted with new variable frequency drives (VFD).

The variable frequency drives (VFD), are to reduce operating costs, as well as provide easier pump start up. Subsequently easier pump starts result in less maintenance costs.

Repair required equipment

-Well 7A had repairs done with respect to the screening near the base of the well; a licensed well contractor was hired to complete the repairs.

Replace required equipment

-7A was also upgraded to a submersible pump design, to improve pump capability and reliability.

**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 #)
<b>Raw</b>	87	Min 0 Max 10	Min 0 Max >80	0	N/A
<b>Treated</b>	53	Min 0 Max 0	Min 0 Max 0	53	< 10 cfu/mL – 70 cfu/mL
<b>Distribution</b>	314	Min 0 Max 0	Min 0 Max 0	171	< 10 cfu/mL- >420 cfu/mL

*NOTE: E.Coli and Total Coliform results were during the well repair and rehab process. The well was offline system was not affected.*

**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 #)
<b>Turbidity</b>	8760	Min 0.29 NTU Max 1.02 NTU
<b>Chlorine</b>	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/cm<sup>2</sup>), 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 m<sup>3</sup>/d

Where any significant expenses incurred during this reporting period to?

Install required equipment **NO**

Repair required equipment **NO**

Replace required equipment **NO**

-Licensed Well Contractor was hired for Well and pump maintenance/rehabilitation

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	300	Min 0 Max 0	Min 0 Max 14	0	N/A
Treated	53	Min 0 Max 0	Min 0 Max 0	52	< 10 cfu/mL – 10 cfu/mL
Distribution	314	Min 0 Max 0	Min 0 Max 0	171	< 10 cfu/mL- >420 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 0.02 NTU Max 0.6 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	03-Jan-13	<0.001	<0.001	mg/L
Arsenic	03-Jan-13	0.0004	0.0005	mg/L
Barium	03-Jan-13	0.104	0.117	mg/L
Boron	03-Jan-13	ND	ND	mg/L
Cadmium	03-Jan-13	<0.00002	<0.00002	mg/L
Chromium	03-Jan-13	<0.002	<0.002	mg/L
Lead	03-Jan-13	-	-	mg/L
Mercury	03-Jan-13	<0.00002	<0.00002	mg/L
Selenium	03-Jan-13	<0.001	<0.001	mg/L
Sodium	22-Nov-13	25.9	23.9	mg/L
Uranium	03-Jan-13	.00159	0.00125	mg/L
Fluoride	07-Jan-09	-	-	mg/L
Nitrite	11-Oct-13	<0.1	<0.1	mg/L
Nitrate	11-Oct-13	1.0	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	03-Jan-13	<0.3	<0.3	ug/L
Aldicarb	03-Jan-13	<3	<3	ug/L
Aldrin + Dieldrin	03-Jan-13	<0.02	<0.02	ug/L
Atrazine + N-dealkylated metabolites	03-Jan-13	<0.5	<0.5	ug/L
Azinphos-methyl	03-Jan-13	<1	<1	ug/L
Bendiocarb	03-Jan-13	<3	<3	ug/L
Benzene	03-Jan-13	<0.5	<0.5	ug/L
Benzo(a)pyrene	03-Jan-13	<0.005	<0.005	ug/L
Bromoxynil	03-Jan-13	<0.03	<0.03	ug/L
Carbaryl	03-Jan-13	<3	<3	ug/L
Carbofuran	03-Jan-13	<1	<1	ug/L
Carbon Tetrachloride	03-Jan-13	<0.2	<0.2	ug/L
Chlordane (Total)	03-Jan-13	<0.04	<0.04	ug/L
Chlorpyrifos	03-Jan-13	<0.5	<0.5	ug/L
Cyanazine	03-Jan-13	<0.5	<0.5	ug/L
Diazinon	03-Jan-13	<1	<1	ug/L
Dicamba	03-Jan-13	<5	<5	ug/L
1,2-Dichlorobenzene	03-Jan-13	<0.1	<0.1	ug/L

1,4-Dichlorobenzene	03-Jan-13	<0.2	<0.2	ug/L
Dichlorodiphenyltrichloroethane (DDT) + metabolites	03-Jan-13	<0.1	<0.1	ug/L
1,2-Dichloroethane	03-Jan-13	<0.1	<0.1	ug/L
1,1-Dichloroethylene (vinylidene chloride)	03-Jan-13	<0.1	<0.1	ug/L
Dichloromethane	03-Jan-13	<0.3	<0.3	ug/L
2,4-Dichlorophenol	03-Jan-13	<0.1	<0.1	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	03-Jan-13	<5	<5	ug/L
Diclofop-methyl	03-Jan-13	<0.4	<0.4	ug/L
Dimethoate	03-Jan-13	<1	<1	ug/L
Dinoseb	03-Jan-13	<0.5	<0.5	ug/L
Diquat	03-Jan-13	<5	<5	ug/L
Diuron	03-Jan-13	<5	<5	ug/L
Glyphosate	03-Jan-13	<25	<25	ug/L
Heptachlor + Heptachlor Epoxide	03-Jan-13	<0.1	<0.1	ug/L
Lindane (Total)	03-Jan-13	<0.1	<0.1	ug/L
Malathion	03-Jan-13	<5	<5	ug/L
Methoxychlor	03-Jan-13	<0.1	<0.1	ug/L
Metolachlor	03-Jan-13	<3	<3	ug/L
Metribuzin	03-Jan-13	<3	<3	ug/L
Monochlorobenzene	03-Jan-13	<.02	<.02	ug/L
Paraquat	03-Jan-13	<1	<1	ug/L
Parathion	03-Jan-13	<3	<3	ug/L
Pentachlorophenol	03-Jan-13	<0.1	<0.1	ug/L
Phorate	03-Jan-13	<.03	<.03	ug/L
Picloram	03-Jan-13	<5	<5	ug/L
Polychlorinated Biphenyls(PCB)	03-Jan-13	<0.05	<0.05	ug/L
Prometryne	03-Jan-13	<.01	<.01	ug/L
Simazine	03-Jan-13	<.05	<.05	ug/L
THM	03-Jan-13	-	-	ug/L
Temephos	03-Jan-13	<10	<10	ug/L
Terbufos	03-Jan-13	<.03	<.03	ug/L
Tetrachloroethylene	03-Jan-13			ug/L
2,3,4,6-Tetrachlorophenol	03-Jan-13	<0.1	<0.1	ug/L
Triallate	03-Jan-13	<10	<10	ug/L
Trichloroethylene	03-Jan-13	<0.2	<0.2	ug/L
2,4,6-Trichlorophenol	03-Jan-13	<0.1	<0.1	ug/L
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	03-Jan-13	<10	<10	ug/L
Trifluralin	03-Jan-13	<0.5	<0.5	ug/L
Vinyl Chloride	03-Jan-13	<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 ( $\text{mJ}/\text{cm}^2$ ), 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  $\text{m}^3/\text{d}$

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 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 #)
<b>Raw</b>	53	Min 0 Max 0	Min 0 Max 0	0	N/A
<b>Treated</b>	53	Min 0 Max 0	Min 0 Max 0	53	< 10 cfu/mL – 40cfu/mL
<b>Distribution</b>	314	Min 0 Max 0	Min 0 Max 0	171	< 10 cfu/mL- >420 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 0.57 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/cm<sup>2</sup>), 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 m<sup>3</sup>/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 **NO**

-Licensed Well Contractor was hired for scheduled Well and pump maintenance/rehabilitation

**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 #)
<b>Raw</b>	53	Min 0 Max 0	Min 0 Max 0	0	N/A
<b>Treated</b>	53	Min 0 Max 0	Min 0 Max 0	53	< 10 cfu/mL –130 cfu/mL
<b>Distribution</b>	314	Min 0 Max 0	Min 0 Max 0	171	< 10 cfu/mL- >420 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 #)
<b>Turbidity</b>	8760	Min 0.06 NTU Max 0.57 NTU
<b>Chlorine</b>	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	24-Apr-13	0.00012	-	mg/L
Mercury	13-Sep-11	ND	ND	mg/L
Selenium	13-Sep-11	0.0020	0.0018	mg/L
Sodium	22-Nov-13	47.5	20.2	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;**

**Pat Leclair, Manager**

**Town of Midland**

**Water and Wastewater Operations**

**Tel. 705 526 4268 ext. 4200**

**Fax. 705 528 6072**

**[pleclair@midland.ca](mailto:pleclair@midland.ca)**