



ANNUAL REPORT

| | |
|--|---------------------------------|
| Drinking-Water System Number: | 220003369 |
| Drinking-Water System Name: | Ridgetown Drinking Water System |
| Drinking-Water System Owner: | Municipality of Chatham-Kent |
| Drinking-Water System Category: | Large Municipal Residential |
| Period being reported: | January - December 2022 |

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.

| |
|---|
| Chatham-Kent PUC Office 325 Grand Ave E Box 1191 Chatham, ON N7M 5L8 |
|---|

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 |
|----------------------------|------------------------------|
| None | |

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 []



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

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

Ground water for the Ridgetown Drinking Water System is obtained through seven deep wells. The drinking water system is comprised of two treatment facilities, one located on Erie Street South and the other located on Scane Road.

The three wells, Well #1- Colby, Well #2 - Hitch, and Well #3A- Harris, supply raw water from submersible well pumps through a common pipe to the treatment system at the Erie Street site. Water from these wells is disinfected with sodium hypochlorite and then passed through a cascade aerator for methane gas reduction before being discharged into reservoirs on site. Treated water from the North and South reservoirs is subsequently discharged to the distribution system by high lift pumps.

The five Scane Wells, S1, S2, S4, S5, and S7, supply raw water from submersible well pumps through a common pipe to the treatment system at the Scane Road site. Water from these wells is disinfected with sodium hypochlorite and then passed through a cascade aerator for methane gas reduction before being discharged into the reservoir on site. Treated water from the reservoir is subsequently discharged to the distribution system by high lift pumps.

Ridgetown Drinking Water System serves the community of Ridgetown, with the Ridgetown Elevated Tank providing storage, and serves the community of Highgate, with the Highgate Reservoir and Booster Pumping Station providing storage.

Fluoride is naturally occurring in the source water in concentrations greater than the 1.5 mg/L Ontario Drinking Water Quality Standard. Sodium is also naturally occurring in the source water in concentrations greater than the 20 mg/L aesthetic objective.

List all water treatment chemicals used over this reporting period

1. Sodium Hypochlorite

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

| | |
|--|-----------|
| Chemical Feed Panels | \$ 31,000 |
| Scane Well #2 Pump and Motor | 13,828 |
| Scane Wells High Lift Singer Valve | 7,500 |
| Scane Well 1 Camera Inspection | 7,460 |
| Reservoir Rov Inspections | 5,000 |
| Asbestos Testing (buildings) | 4,900 |
| Annual Genset Inspection | 2,500 |
| Asbestos Remediation | 2,200 |
| Portable Turbidity Analyzer | 2,100 |
| Scane Well #2 Pump/Motor Commissioning | 1,962 |
| Annual Flowmeter Calibration | 1,859 |
| Chemical Feed Panel Line, Fittings, etc. | 1,500 |
| Backflow Prevention Annual Verification | 1,400 |
| Sodium Hypochlorite | 1,300 |
| ASCO Valves | 1,215 |
| Scane Well #2 Flowmeter Commissioning | 1,200 |
| Annual Flowmeter Verification | 1,200 |

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 & AWQI No. | Parameter | Result | Unit of Measure | Corrective Action | Corrective Action Date |
|--------------------------|-----------|--------|-----------------|-------------------|------------------------|
| | | | | | |

Microbiological testing done under the Schedule 10 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 Each Well | 250 | 0 – 1 | 0 – 48 | - | - |
| Treated POE (Scane & Erie) | 104 | 0 – 0 | 0 – 0 | 104 | <10 - 10 |
| Distribution | 299 | 0 – 0 | 0 – 0 | 294 | <10 - 30 |

****NDOGT – No Data Overgrown with Target Organisms**

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

| | Number of Grab Samples | Range of Results (min #) - (max #) |
|-------------------------------------|------------------------|------------------------------------|
| Turbidity Raw (Each Well) | 182 | 0.070 – 1.980 NTU |

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

| | | |
|---------------------------------------|------------------------------------|------------------|
| Chlorine POE (Scane & Erie) | 8760 | 0.72 – 2.80 mg/L |
| Fluoride | Fluoride Naturally Occurring | |

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 2022 | Result Erie | Result Scane | Unit of Measure |
|--|--|-------------------|-------------|--------------|-----------------|
| June 26, 2003, letter from C-K Health Unit | Point of Entry - Fluoride H.U. Frequency: Annually | January 17 | 1.9 | 1.8 | mg/L |

Summary of Inorganic parameters tested during this reporting period or the most recent sample results. Sampled every 3 years under Schedule 13-2(1)(b).

| Parameter | Sample Date | Result Value Erie | Result Value Scane | MAC Limit | Unit of Measure | Exceedance |
|-----------------|---------------------------|-------------------|--------------------|-----------|-----------------|---|
| Antimony | Jan 17, 2022 | <0.50 | <0.50 | 6 | ug/L | No |
| Arsenic | Jan 17, 2022 | <1.0 | <1.0 | 10 | ug/L | No |
| Barium | Jan 17, 2022 | 110 | 180 | 1000 | ug/L | No |
| Boron | Jan 17, 2022 | 870 | 840 | 5000 | ug/L | No |
| Cadmium | Jan 17, 2022 | <0.090 | <0.090 | 5 | ug/L | No |
| Chromium | Jan 17, 2022 | <5.0 | <5.0 | 50 | ug/L | No |
| *Lead | See Schedule 15.1 Summary | | | | | |
| Mercury | Jan 17, 2022 | <0.1 | <0.1 | 1.0 | ug/L | No |
| Selenium | Jan 17, 2022 | <2.0 | <2.0 | 50 | ug/L | No |
| Sodium | Jan 17, 2022 | 70 | 70 | 20 | mg/L | Yes - Reported Dec 19, 2019 AWQI # 149305, 149306, 149307, and 149308 |
| Uranium | Jan 17, 2022 | <0.10 | <0.10 | 20 | ug/L | No |
| Fluoride | Jan 17, 2022 | 1.9 | 1.8 | 1.5 | mg/L | Yes - Reported Jan 18, 2019 AWQI # 144561 & 144562 |
| Nitrite | Oct 17, 2022 | <0.010 | <0.010 | 1 | mg/L | No |
| Nitrate | Oct 17, 2022 | <0.10 | <0.10 | 10 | mg/L | No |

Summary of lead testing under Schedule 15.1 during this reporting period

| Location Type | Number of Samples | Range of Lead Results ug/L (min#) – (max #) | MAC Limit ug/L | Number of Exceedances / Adverses |
|-----------------|-------------------|---|----------------|----------------------------------|
| Residential | 0 | | | |
| Non-Residential | 0 | | | |
| Distribution | 8 | <0.50 – <0.50 | 10 | 0 |



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

Summary of Organic parameters sampled during this reporting period or the most recent sample results. Sampled every 3 years under Schedule 13-4(1)(b).

| Parameter | Sample Date | Result Value Erie | Result Value Scane | MAC Limits | Unit of Measure | Exceedance |
|--|--------------------------------------|----------------------------|--------------------|------------|-----------------|------------|
| Alachlor | Jan 17, 2022 | <0.5 | <0.5 | 5 | ug/L | No |
| Atrazine + N-dealkylated metabolites | Jan 17, 2022 | <1.0 | <1.0 | 5 | ug/L | No |
| Azinphos-methyl | Jan 17, 2022 | <2.0 | <2.0 | 20 | ug/L | No |
| Benzene | Jan 17, 2022 | <0.10 | <0.10 | 1 | ug/L | No |
| Benzo(a)pyrene | Jan 17, 2022 | <0.0050 | <0.0050 | 0.01 | ug/L | No |
| Bromoxynil | Jan 17, 2022 | <0.5 | <0.5 | 5 | ug/L | No |
| Carbaryl | Jan 17, 2022 | <5.0 | <5.0 | 90 | ug/L | No |
| Carbofuran | Jan 17, 2022 | <5.0 | <5.0 | 90 | ug/L | No |
| Carbon Tetrachloride | Jan 17, 2022 | <0.10 | <0.10 | 2 | ug/L | No |
| Chlorpyrifos (Dursban) | Jan 17, 2022 | <1.0 | <1.0 | 90 | ug/L | No |
| Diazinon | Jan 17, 2022 | <1.0 | <1.0 | 20 | ug/L | No |
| Dicamba | Jan 17, 2022 | <1.0 | <1.0 | 120 | ug/L | No |
| 1,2-Dichlorobenzene | Jan 17, 2022 | <0.20 | <0.20 | 200 | ug/L | No |
| 1,4-Dichlorobenzene | Jan 17, 2022 | <0.20 | <0.20 | 5 | ug/L | No |
| 1,2-Dichloroethane | Jan 17, 2022 | <0.20 | <0.20 | 5 | ug/L | No |
| 1,1-Dichloroethylene (vinylidene chloride) | Jan 17, 2022 | <0.10 | <0.10 | 14 | ug/L | No |
| Dichloromethane | Jan 17, 2022 | <0.50 | <0.50 | 50 | ug/L | No |
| 2-4 Dichlorophenol | Jan 17, 2022 | <0.25 | <0.25 | 900 | ug/L | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | Jan 17, 2022 | <1.0 | <1.0 | 100 | ug/L | No |
| Dicofop-methyl | Jan 17, 2022 | <0.90 | <0.90 | 9 | ug/L | No |
| Dimethoate | Jan 17, 2022 | <2.5 | <2.5 | 20 | ug/L | No |
| Diquat | Jan 17, 2022 | <7.0 | <7.0 | 70 | ug/L | No |
| Diuron | Jan 17, 2022 | <10 | <10 | 150 | ug/L | No |
| Ethylbenzene | Jan 17, 2022 | <0.10 | <0.10 | 140 | ug/L | No |
| Glyphosate | Jan 17, 2022 | <10 | <10 | 280 | ug/L | No |
| Haloacetic Acids (HAA) (221 Main St. Highgate) | Jan 17 Apr 11 Jul 11 Oct 17 | <5.0 <5.0 5.4 6.2 | | 80 | ug/L | No |
| Running Annual Average: | | 5.4 | | | | |
| Malathion | Jan 17, 2022 | <5.0 | <5.0 | 190 | ug/L | No |
| 2 Methal-4-chlorophenoxyacetic acid (MCPA) | Jan 17, 2022 | <10 | <10 | 100 | ug/L | No |
| Metolachlor | Jan 17, 2022 | <0.5 | <0.5 | 50 | ug/L | No |
| Metribuzin (Sencor) | Jan 17, 2022 | <5.0 | <5.0 | 80 | ug/L | No |
| Monochlorobenzene | Jan 17, 2022 | <0.10 | <0.10 | 80 | ug/L | No |
| Paraquat | Jan 17, 2022 | <1.0 | <1.0 | 10 | ug/L | No |
| Pentachlorophenol | Jan 17, 2022 | <0.50 | <0.50 | 60 | ug/L | No |
| Phorate | Jan 17, 2022 | <0.50 | <0.50 | 2 | ug/L | No |
| Picloram | Jan 17, 2022 | <5.0 | <5.0 | 190 | ug/L | No |
| Polychlorinated Biphenyls (PCB) | Jan 17, 2022 | <0.05 | <0.05 | 3 | ug/L | No |

| | | | | | | |
|--|--------------------------------------|------------------------------|-------|-----|------|----|
| Prometryne | Jan 17, 2022 | <0.25 | <0.25 | 1 | ug/L | No |
| Simazine | Jan 17, 2022 | <1.0 | <1.0 | 10 | ug/L | No |
| Terbufos | Jan 17, 2022 | <0.50 | <0.50 | 1 | ug/L | No |
| Tetrachloroethylene | Jan 17, 2022 | <0.10 | <0.10 | 10 | ug/L | No |
| 2,3,4,6-Tetrachlorophenol | Jan 17, 2022 | <0.50 | <0.50 | 100 | ug/L | No |
| Trihalomethanes (THM) (221 Main St. Highgate) | Jan 17 Apr 11 Jul 11 Oct 17 | 57.0 54.8 74.8 64.1 | | 100 | ug/L | No |
| Running Annual Average: | | 62.7 | | | | |
| Toluene | Jan 17, 2022 | <0.20 | <0.20 | 60 | ug/L | No |
| Triallate | Jan 17, 2022 | <1.0 | <1.0 | 230 | ug/L | No |
| Trichloroethylene | Jan 17, 2022 | <0.10 | <0.10 | 5 | ug/L | No |
| 2,4,6-Trichlorophenol | Jan 17, 2022 | <0.50 | <0.50 | 5 | ug/L | No |
| Trifluralin | Jan 17, 2022 | <1.0 | <1.0 | 45 | ug/L | No |
| Vinyl Chloride | Jan 17, 2022 | <0.20 | <0.20 | 1 | ug/L | No |
| Xylenes | Jan 17, 2022 | <0.10 | <0.10 | 90 | ug/L | No |

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 Erie | Result Value Scane | Unit of Measure | Date of Sample |
|--------------------------------|----------------------------------|-----------------------|--------------------|--|
| Fluoride (naturally occurring) | 1.9 | 1.8 | mg/L | Jan 17, 2022 |
| Trihalomethanes (THM) | 62.7 (Running Annual Average) | | µg/L | Jan 17, Apr 11, Jul 11 & Oct 17 of 2022 |

Summary of additional voluntary sampling and testing during this reporting period.

| Date of Sample | Parameter | Unit of Measure | | | | | | | |
|-------------------|---------------|--------------------|---------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|------|
| | | Colby Well #1 | Hitch Well #2 | Harris Well #3A | Scane Well #4 | Scane Well #5 | Scane Well #1 | Scane Well #2 | |
| Jan 17, 2022 | Nitrite - Raw | <0.010 | <0.010 | <0.010 | Not Sampled | <0.010 | <0.010 | Not Sampled | mg/L |
| | Nitrate - Raw | <0.10 | <0.10 | <0.10 | | <0.10 | <0.10 | | |
| Apr 11, 2022 | Nitrite - Raw | <0.010 | <0.010 | <0.010 | Not Sampled | Not Sampled | <0.010 | <0.010 | |
| | Nitrate - Raw | <0.10 | <0.10 | <0.10 | | | <0.10 | <0.10 | |
| Jul 12, 2022 | Nitrite - Raw | <0.010 | <0.010 | <0.010 | Not Sampled | Not Sampled | <0.010 | <0.010 | |
| | Nitrate - Raw | <0.10 | <0.10 | <0.10 | | | <0.10 | <0.10 | |
| Oct 17, 2022 | Nitrite - Raw | <0.010 | <0.010 | <0.010 | Not Sampled | Not Sampled | <0.010 | <0.010 | |
| | Nitrate - Raw | <0.10 | <0.10 | <0.10 | | | <0.10 | <0.10 | |