

Kincardine Drinking Water System 2015 Summary Report

Required under:
Drinking Water System Regulation O. Reg. 170/03
Schedule 22

Reporting Period Covered by this Report
January 1 – December 31, 2015

Part 1 Issues of Non-Compliance

The following table lists the requirements of the Act, Regulations, Drinking Water Works Permit, Municipal Drinking Water Licence and any Order that the system failed to meet during the reporting period, the duration and the measures taken to correct each failure.

| Drinking Water Legislation | Requirements the System Failed to Meet | Duration | Corrective Actions |
|-----------------------------------|---|-----------------|---------------------------|
| None | None | None | None |

Part 2 Assessment of Flow Rates and Quantities of Water Supplied

The following tables list the quantities and flow rates of the water supplied to the distribution system during the reporting period covered by this report, including monthly average and maximum daily flows, and a comparison to the rated capacity specified in the system Municipal Drinking Water Licence. The rated capacity is 11,563 m³/day. There is no maximum flow rate specified for water supplied to the distribution system.

| Month | Average Daily Flow (m ³ /day) | % Average Day Flow/ Rated Capacity | Maximum Daily Flow (m ³ /day) | % Maximum Day Flow/ Rated Capacity |
|---------------|--|------------------------------------|--|------------------------------------|
| January | 2,402 | 21 % | 3,126 | 27 % |
| February | 2,752 | 24 % | 3,310 | 29 % |
| March | 3,558 | 31 % | 3,892 | 34 % |
| April | 3,316 | 29 % | 3,737 | 32 % |
| May | 3,843 | 33 % | 4,554 | 39 % |
| June | 4,082 | 35 % | 5,192 | 45 % |
| July | 5,009 | 43 % | 6,965 | 60 % |
| August | 4,500 | 39 % | 5,846 | 51 % |
| September | 4,104 | 35 % | 4,992 | 43 % |
| October | 3,202 | 28 % | 3,555 | 31 % |
| November | 2,832 | 24 % | 3,223 | 28 % |
| December | 2,770 | 24 % | 3,348 | 29 % |
| Annual | 3,531 | 31 % | 6,965 | 60 % |

| Month | Average Daily Flow Rate (L/s) | Maximum Daily Flow Rate (L/s) |
|---------------|-------------------------------|-------------------------------|
| January | 32.4 | 146 |
| February | 38.2 | 145 |
| March | 63.0 | 142 |
| April | 64.0 | 144 |
| May | 61.8 | 148 |
| June | 47.8 | 146 |
| July | 58.4 | 152 |
| August | 53.0 | 145 |
| September | 47.0 | 146 |
| October | 37.2 | 146 |
| November | 33.7 | 145 |
| December | 34.2 | 142 |
| Annual | 47.6 | 152 |

Part III Form 2

Section 11. ANNUAL REPORT.

| | |
|---------------------------------|----------------------------------|
| Drinking-Water System Number: | 220002716 |
| Drinking-Water System Name: | Kincardine Drinking Water System |
| Drinking-Water System Owner: | Municipality of Kincardine |
| Drinking-Water System Category: | Large Municipal Residential |
| Period being reported: | Year 2015 |

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:

Municipal Administration Centre
1475 Concession 5, RR #5
Kincardine, Ontario
N2Z 2X6

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

Huronville Subdivision Distribution System, WW #260046709

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 [] NA []

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

[X] Public access/notice via other method _____ Notification by mail _____

Describe your Drinking-Water System

The Kincardine Water System consists of a surface water treatment plant that receives water from Lake Huron. The water treatment plant provides conventional filtration and consists of 2 Actiflo clarifiers, 4 filters, chlorination system and underground reservoir. The intake capacity is 18,750 m³/d. The distribution system serves the town of Kincardine and residents north of the town via a pipeline, plus the Huronville subdivision, with a total of approximately 3600 connections.

List all water treatment chemicals used over this reporting period

Chlorine Gas
 Clarion A5
 Magnafloc (Polymer)

Were any significant expenses incurred to?

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

Describe

Distribution repairs and replacements \$1,480,972.50
 Water Meter Replacement Program - \$22,621.76
 Treatment and Monitoring Systems - \$8,178.51
 Bulk Water Station - \$16,121.32

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 |
|-------------------------------|----------------|--------|-----------------|-------------------|------------------------|
| May 21, 2015 AWQI # 123678 | Total Coliform | 167 | cfu | Resample | May 21, 2015 |

Microbiological testing done under Schedule 10 during this reporting period

| Water Source | Number of Samples | Range of Total Coliform Results (#-#) | Range of E. coli Results (#-#) | Number of HPC Samples | Range of HPC Results (#-#) |
|--------------|-------------------|---------------------------------------|--------------------------------|-----------------------|----------------------------|
| Raw | 52 | 0 – 1200 | 0 – 12 | 52 | 2 – 680 |
| Treated | 52 | 0 – 0 | 0 – 0 | 52 | 0 – 1 |
| Distribution | 260 | 0 – 167 | 0 – 0 | 260 | 0 – 420 |

Operational testing done under Schedule 7 during the period covered by this Annual Report.

| Treated Water | Number of Grab Samples | Range of Results (#-#) |
|---------------|------------------------|------------------------|
| Turbidity | Continuous monitoring | 0.061 – 1.18 |
| Chlorine | Continuous monitoring | 0.88 – 1.86 |

| Distribution Water | Number of Grab Samples | Range of Results (#-#) |
|------------------------|------------------------|------------------------|
| Free Chlorine Residual | 365 | 0.47 – 1.16 |

Summary of additional testing and sampling carried out in accordance with the requirement of a Licence or Order.

| Date of Legal Document | Parameter | Date Sampled | Result | Unit of Measure |
|------------------------|-----------|--------------|--------|-----------------|
| None | None | None | None | None |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|-----------|-------------|--------------|-----------------|------------|
| Antimony | Oct 19/15 | 0.13 | ug/L | No |
| Arsenic | Oct 19/15 | 0.3 | ug/L | No |
| Barium | Oct 19/15 | 13.3 | ug/L | No |
| Boron | Oct 19/15 | 14.3 | ug/L | No |
| Cadmium | Oct 19/15 | 0.003 | ug/L | No |
| Chromium | Oct 19/15 | 0.10 | ug/L | No |
| Mercury | Oct 19/15 | < 0.01 | ug/L | No |
| Selenium | Oct 19/15 | 0.12 | ug/L | No |
| Sodium | Jan14/14 | 5.27 | mg/L | No |
| Uranium | Oct 19/15 | 0.028 | ug/L | No |
| Fluoride | Oct 8/13 | 0.14 | mg/L | No |
| Nitrite | Jan 13/15 | <0.003 | mg/L | No |
| | April 13/15 | <0.003 | | |
| | July 13/15 | <0.003 | | |
| | Oct 19/15 | <0.003 | | |
| Nitrate | Jan 13/15 | 0.507 | mg/L | No |
| | April 13/15 | 0.63 | | |
| | July 13/15 | 0.281 | | |
| | Oct 19/15 | 0.282 | | |

Summary of lead testing under Schedule 15.1 during this reporting period

| Parameter | Location Type | Number of Samples | Range of Results |
|-------------------|---------------|-------------------|------------------|
| pH | Distribution | 6 | 7.03 – 7.45 |
| Alkalinity (mg/L) | Distribution | 6 | 69 – 75 |
| Lead | Distribution | 6 | 0.19 – 1.54 |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|-------------|--------------|-----------------|------------|
| Alachlor | Oct 19/15 | < 0.02 | ug/L | No |
| Aldicarb | Oct 19/15 | < 0.01 | ug/L | No |
| Aldrin + Dieldrin | Oct 19/15 | < 0.01 | ug/L | No |
| Atrazine + N-dealkylated metabolites | Oct 19/15 | 0.03 | ug/L | No |
| Azinphos-methyl | Oct 19/15 | < 0.05 | ug/L | No |
| Bendiocarb | Oct 19/15 | < 0.01 | ug/L | No |
| Benzene | Oct 19/15 | < 0.32 | ug/L | No |
| Benzo(a)pyrene | Oct 19/15 | < 0.004 | ug/L | No |
| Bromoxynil | Oct 19/15 | < 0.33 | ug/L | No |
| Carbaryl | Oct 19/15 | < 0.05 | ug/L | No |
| Carbofuran | Oct 19/15 | < 0.01 | ug/L | No |
| Carbon Tetrachloride | Oct 19/15 | < 0.16 | ug/L | No |
| Chlordane (Total) | Oct 19/15 | < 0.01 | ug/L | No |
| Chlorpyrifos | Oct 19/15 | < 0.02 | ug/L | No |
| Cyanazine | Oct 19/15 | < 0.03 | ug/L | No |
| Diazinon | Oct 19/15 | < 0.02 | ug/L | No |
| Dicamba | Oct 19/15 | < 0.20 | ug/L | No |
| 1,2-Dichlorobenzene | Oct 19/15 | < 0.41 | ug/L | No |
| 1,4-Dichlorobenzene | Oct 19/15 | < 0.36 | ug/L | No |
| Dichlorodiphenyltrichloroethane (DDT) + metabolites | Oct 19/15 | < 0.01 | ug/L | No |
| 1,2-Dichloroethane | Oct 19/15 | < 0.35 | ug/L | No |
| 1,1-Dichloroethylene (vinylidene chloride) | Oct 19/15 | < 0.33 | ug/L | No |
| Dichloromethane | Oct 19/15 | < 0.35 | ug/L | No |
| 2-4 Dichlorophenol | Oct 19/15 | < 0.15 | ug/L | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | Oct 19/15 | < 0.19 | ug/L | No |
| Diclofop-methyl | Oct 19/15 | < 0.40 | ug/L | No |
| Dimethoate | Oct 19/15 | < 0.03 | ug/L | No |
| Dinoseb | Oct 19/15 | < 0.36 | ug/L | No |
| Diquat | Oct 19/15 | < 1 | ug/L | No |
| Diuron | Oct 19/15 | < 0.03 | ug/L | No |
| Glyphosate | Oct 19/15 | < 1 | ug/L | No |
| Heptachlor + Heptachlor Epoxide | Oct 19/15 | < 0.01 | ug/L | No |
| Lindane (Total) | Oct 19/15 | < 0.01 | ug/L | No |
| Malathion | Oct 19/15 | < 0.02 | ug/L | No |

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

| Parameter | Oct 19/15 | Result Value | Unit of Measure | Exceedance |
|--|---|-----------------------|-----------------|------------|
| Methoxychlor | Oct 19/15 | < 0.01 | ug/L | No |
| Metolachlor | Oct 19/15 | < 0.01 | ug/L | No |
| Metribuzin | Oct 19/15 | < 0.02 | ug/L | No |
| Monochlorobenzene | Oct 19/15 | < 0.3 | ug/L | No |
| Paraquat | Oct 19/15 | < 1 | ug/L | No |
| Parathion | Oct 19/15 | < 0.02 | ug/L | No |
| Pentachlorophenol | Oct 19/15 | < 0.15 | ug/L | No |
| Phorate | Oct 19/15 | < 0.01 | ug/L | No |
| Picloram | Oct 19/15 | < 1 | ug/L | No |
| Polychlorinated Biphenyls (PCB) | Oct 19/15 | < 0.04 | ug/L | No |
| Prometryne | Oct 19/15 | < 0.03 | ug/L | No |
| Simazine | Oct 19/15 | < 0.01 | ug/L | No |
| THM (distribution) (2015 annual average = 16.7 ug/L) | Jan 13/15 April 13/15 July 13/15 Oct 19/15 | 21 7.8 17 21 | ug/L | No |
| Temephos | Oct 19/15 | < 0.01 | ug/L | No |
| Terbufos | Oct 19/15 | < 0.01 | ug/L | No |
| Tetrachloroethylene | Oct 19/15 | < 0.35 | ug/L | No |
| 2,3,4,6-Tetrachlorophenol | Oct 19/15 | < 0.20 | ug/L | No |
| Triallate | Oct 19/15 | < 0.01 | ug/L | No |
| Trichloroethylene | Oct 19/15 | < 0.44 | ug/L | No |
| 2,4,6-Trichlorophenol | Oct 19/15 | < 0.25 | ug/L | No |
| 2,4,5-Trichlorophenoxy acetic acid (2,4,5-T) | Oct 19/15 | < 0.22 | ug/L | No |
| Trifluralin | Oct 19/15 | < 0.02 | ug/L | No |
| Vinyl Chloride | Oct 19/15 | < 0.17 | ug/L | No |

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