



ANNUAL REPORT

|  |                              |
|--|------------------------------|
| <b>Drinking-Water System Number:</b>   | 220003421                    |
| <b>Drinking-Water System Name:</b>     | Windsor Utilities Commission |
| <b>Drinking-Water System Owner:</b>    | City of Windsor              |
| <b>Drinking-Water System Category:</b> | Large Municipal Residential  |
| <b>Period being reported:</b>          | Calendar Year 2008           |

|   |   |
|---|---|
| <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>City of Windsor – City Hall<br/>350 City Hall Square<br/>Windsor ON N9A 6S1</p> </div> | <p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served:<br/><input 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 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> |
|---|---|

**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 |
|----------------------------|------------------------------|
| Town of LaSalle, Ontario   | 220004402                    |
| Town of Tecumseh, Ontario  | 260004969                    |

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.

- 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 Windsor Utilities Commission water treatment facilities employs screening, pre-chlorination (on an as needed basis), pH adjustment (utilizing CO<sub>2</sub>), primary disinfection (utilizing ozone), coagulation, flocculation, sedimentation, dual-media filtration with post chlorination and fluoridation to treat raw water obtained from the Detroit River. The water treatment plant also treats sedimentation sludge and backwash water utilizing coagulation, flocculation and sedimentation followed by centrifugal dewatering with the cake being shipped to landfill for disposal.

Treated water from the plant is routed to an on-site reservoir and subsequently pumped into the distribution system from two pumping stations that are co-located nearby the water treatment facilities. Water from the pumping stations satisfies demand for the greater Windsor area including the communities of Tecumseh and LaSalle. A remote reservoir and pumping station provides a re-chlorination facility (using sodium hypochlorite) to provide system pressure and flow to the south-west portion of the city, while a centrally located water tower, provides pressure and flow control to the downtown core.

The drinking water system is monitored at various locations, both at the water treatment and pumping stations as well as throughout the transmission system via a Supervisory Control and Data Acquisition (SCADA) system.

**List all water treatment chemicals used over this reporting period**

Chlorine gas  
Carbon dioxide (CO<sub>2</sub>)  
Ozone  
Aluminum sulphate (alum)  
Polyaluminum chloride (PaCl)  
Hydrofluosilicic acid  
Filter aid cationic polymer



**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**

**Maintenance of ozone system power supplies and installation of new fuses.**

**Maintenance on two motor drives at the AJ Brian Station including the installation of inverter SCR's as well as the installation and calibration of new converter boards.**

**Installation of a new 700HP US motor on high lift pump #2 at the George Ave pumping station.**

**Rebuild of George Ave. pumping station high lift pump #2 control and check valve assembly.**

**Removal and replacement of east and west plate settlers at AH Weeks filtration plant.**

**Refurbishment of chlorine pump and piping system at Howard Ave. Cook Station.**

**Refurbishment of AH Weeks north centrifuge to factory specifications.**

**Installation of a new Foxboro controller for AH Weeks north centrifuge.**

**Roof repairs/replacement at AH Weeks Plant, George Ave, pumping station, AJ Brian pumping station and old treatment plant.**

**New SMC soft start drives for backwash pumps and air blowers at AH Weeks Plant.**

**Installation of 33 fire hydrants and associated appurtenances.**

**Installation of approximately 13.5 km of watermains <300mm and 1.5 km of watermains >300 mm.**

**Structural relining of approximately 7 km of 150 mm watermain.**

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 |
|---------------|--|--------|-----------------|---|------------------------|
| Jan 22        | None - AWQI 77532 broken main affecting one customer |        |                 | Health Unit issued BWA, Repaired, re-sampled      | Jan 28                 |
| Feb 05        | Total Coliform – AWQI 77795                          | 1      | CFU/mL          | Re-sampled  | Feb 11                 |
| Feb 11        | None – AWQI 77834 – watermain failure                |        |                 | MOH issued BWA, repaired, resampled               | Feb 15                 |
| Apr 3         | None – AWQI 78640 – damaged water service            |        |                 | MOH issued BWA, repaired, resampled               | Apr 9                  |
| Apr 11        | None – AWQI 78843 – damaged water service            |        |                 | MOH issued BWA, repaired, flushed, resampled      | Apr 18                 |
| Apr 14        | None – AWQI 78881 – damaged water service line       |        |                 | MOH issued BWA, repaired, flushed, resampled      | Apr 18                 |
| May 2         | None – AWQI 79201 – water service break              |        |                 | MOH issued BWA, repaired, flushed, resampled      | May 7                  |
| May 14        | None – AWQI 79356 – water service damaged            |        |                 | MOH issued BWA, repaired, flushed, resampled      | May 26                 |
| May 15        | None – AWQI 79373 – broken water service             |        |                 | MoH issued BWA, repaired, flushed, resampled      | May 26                 |
| May 28        | None – AWQI 79541 – damaged water service            |        |                 | MoH issued BWA, repaired, flushed, resampled      | June 5                 |
| June 5        | None – AWQI 79681 – broken watermain                 |        |                 | MoH issued BWA, repaired, flushed, resampled      | June 9                 |
| June 19       | None – AWQI 80017 – damaged water services           |        |                 | MoH issued BWA, repaired, flushed, resampled      | June 27                |
| Aug 1         | None – AWQI 82093 – water service break              |        |                 | MoH issued BWA, repaired, flushed, resampled      | Aug 8                  |
| Aug 8         | Lead – AWQI 82386 – single residence                 | 54.4   | Ug/L            | resampled   | Aug 20                 |
| Aug 15        | Lead – AWQI 82713                                    | 20.5   | Ug/L            | Resampled   | Aug 26                 |
| Aug 26        | None – AWQI 83180 broken water service               |        |                 | MoH issued BWA, repaired, flushed, resampled      | Sep 2                  |
| Aug 28        | None – AWQI 83241 broken water service               |        |                 | MoH issued BWA, repaired, flushed, resampled      | Sep 2                  |
| Sep 2         | None – AWQI 83385 damaged water service              |        |                 | MoH issued BWA, repaired, flushed, resampled      | Sep 8                  |
| Sep 3         | None – AWQI 83444 broken water service               |        |                 | MoH issued BWA, new service installed and sampled | Sep 8                  |
| Sept 11       | Free Chlorine – AWQI 83702                           | 0.01   | mg/L            | Flushed & resampled                               | Sep 12                 |
| Sept 12       | None – AWQI 83729 – broken water service             |        |                 | MoH issued BWA, repaired, flushed & resampled     | Sep 18                 |
| Sep 15        | Free chlorine – AWQI 83789                           | 0.03   | mg/L            | Flushed & resampled                               | Sep 16                 |
| Sep 15        | Free chlorine – AWQI 83795                           | 0.02   | mg/L            | Flushed & resampled                               | Sep 16                 |
| Oct 3         | Free chlorine – AWQI 84399                           | 0.01   | mg/L            | Flushed & resampled                               | Oct 3                  |
| Oct 9         | Free chlorine – AWQI 84516                           | 0.03   | mg/L            | Flushed & resampled                               | Oct 9                  |
| Oct 9         | None – AWQI 84521 – broken water service             |        |                 | MoH issued BWA, repaired, flushed, resampled      | Nov 7                  |

|        |   |      |      |   |        |
|--------|---|------|------|---|--------|
| Oct 17 | None – AWQI 84771 – broken main           |      |      | MoH issued BWA, repaired, flushed, resampled  | Oct 23 |
| Oct 24 | Free chlorine – AWQI 84928                | 0.00 | mg/L | Flushed & resampled                           | Oct 24 |
| Oct 30 | Free chlorine – AWQI 85101                | 0.00 | mg/L | Flushed & resampled                           | Oct 30 |
| Nov 6  | Free chlorine – AWQI 85245                | 0.00 | mg/L | Flushed & resampled                           | Nov 6  |
| Nov 7  | Free chlorine – AWQI 85284                | 0.01 | mg/L | Flushed & resampled                           | Nov 7  |
| Nov 19 | None – AWQI 85463 – damaged water service |      |      | MoH issued BWA, repaired, flushed & resampled | Nov 24 |
| Nov 20 | None – AWQI 85486 – damaged water service |      |      | MoH issued BWA, repaired, flushed & resampled | Nov 24 |
| Nov 25 | None – watermain break                    |      |      | MoH issued BWA, repaired, flushed & resampled | Nov 27 |
| Dec 3  | None – AWQI 85676 – damaged service       |      |      | MoH issued BWA, repaired, flushed & resampled | Dec 19 |
| Dec 4  | Free chlorine – AWQI 85680                | 0.03 | mg/L | Flushed & resampled                           | Dec 4  |
| Dec 17 | None – AWQI 85824 – water service break   |      |      | MoH issued BWA, repaired, flushed & resampled | Dec 22 |

**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>          | 238               | 0 – 900  | 2 – 24800                                       | 238                   | 10 - >2000                           |
| <b>Treated</b>      | 2773              | 0 – 0  | 0 – 1   | 1373                  | <10 - 570                            |
| <b>Distribution</b> | 2094              | 0 – 0  | 0 - 0   | 1273                  | <10 - 960                            |

**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>                                   | <b>8760</b>            | <b>0.05 – 0.51</b>               |
| <b>Chlorine</b>                                    | <b>8760</b>            | <b>1.17 – 1.46</b>               |
| <b>Fluoride (If the DWS provides fluoridation)</b> | <b>8760</b>            | <b>0.57 – 0.72</b>               |

*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 |
|---------------------------------|--------------------------------|--------------|---------|-----------------|
| 5129-64CP7J                     | Bromate – Treated              | Jan – Dec    | <3 – 6  | ppb             |
| 5129-64CP7J                     | Bromate – Distribution         | Jan – Dec    | <3 – 7  | ppb             |
| 5129-64CP7J                     | Suspended Solids – (composite) | Jan – Dec    | <2 – 29 | mg/L            |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|-----------|-------------|--------------|-----------------|------------|
| Antimony  | Oct 1 2008  | 0.00019      | mg/L            |            |
| Arsenic   | Oct 1 2008  | 0.0006       | mg/L            |            |
| Barium    | Oct 1 2008  | 0.0167       | mg/L            |            |
| Boron     | Oct 1 2008  | 0.0181       | mg/L            |            |
| Cadmium   | Oct 1 2008  | <0.000003    | mg/L            |            |
| Chromium  | Oct 1 2008  | 0.0009       | mg/L            |            |
| *Lead     | Oct 1 2008  | <0.00002     | mg/L            |            |
| Mercury   | Oct 1 2008  | <0.00002     | mg/L            |            |
| Selenium  | Oct 1 2008  | <0.001       | mg/L            |            |
| Sodium    | Feb 10 2006 | 12.1         | mg/L            |            |
| Uranium   | Oct 1 2008  | 0.000113     | mg/L            |            |
| Fluoride  | Oct 1 2008  | 0.62         | mg/L            |            |
| Nitrite   | Oct 1 2008  | <0.005       | mg/L            |            |
| Nitrate   | Oct 1 2008  | 0.339        | mg/L            |            |

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

**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      | 273               | <0.02 – 62.7                           | 50                    |
| Distribution  | 83                | <0.02 – 54.4                           | 2                     |

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

| Parameter   | Sample Date | Result Value | Unit of Measure | Exceedance |
|---|-------------|--------------|-----------------|------------|
| Alachlor  | Oct 1 08    | <0.00011     | mg/L            |            |
| Aldicarb  | Oct 1 08    | <0.0003      | mg/L            |            |
| Aldrin + Dieldrin                                   | Oct 1 08    | <0.000067    | mg/L            |            |
| Atrazine + N-dealkylated metabolites                | Oct 1 08    | <0.00012     | mg/L            |            |
| Azinphos-methyl                                     | Oct 1 08    | <0.00021     | mg/L            |            |
| Bendiocarb  | Oct 1 08    | <0.00013     | mg/L            |            |
| Benzene   | Oct 1 08    | <0.00037     | mg/L            |            |
| Benzo(a)pyrene                                      | Oct 1 08    | <0.000004    | mg/L            |            |
| Bromoxynil  | Oct 1 08    | <0.00033     | mg/L            |            |
| Carbaryl  | Oct 1 08    | <0.00016     | mg/L            |            |
| Carbofuran  | Oct 1 08    | <0.00037     | mg/L            |            |
| Carbon Tetrachloride                                | Oct 1 08    | <0.00041     | mg/L            |            |
| Chlordane (Total)                                   | Oct 1 08    | <0.00011     | mg/L            |            |
| Chlorpyrifos  | Oct 1 08    | <0.00018     | mg/L            |            |
| Cyanazine   | Oct 1 08    | <0.00018     | mg/L            |            |
| Diazinon  | Oct 1 08    | <0.000081    | mg/L            |            |
| Dicamba   | Oct 1 08    | <0.0002      | mg/L            |            |
| 1,2-Dichlorobenzene                                 | Oct 1 08    | <0.0005      | mg/L            |            |
| 1,4-Dichlorobenzene                                 | Oct 1 08    | <0.00021     | mg/L            |            |
| Dichlorodiphenyltrichloroethane (DDT) + metabolites | Oct 1 08    | <0.00014     | mg/L            |            |
| 1,2-Dichloroethane                                  | Oct 1 08    | <0.00043     | mg/L            |            |
| 1,1-Dichloroethylene (vinylidene chloride)          | Oct 1 08    | <0.00041     | mg/L            |            |
| Dichloromethane                                     | Oct 1 08    | <0.00034     | mg/L            |            |
| 2,4-Dichlorophenol                                  | Oct 1 08    | <0.00015     | mg/L            |            |
| 2,4-Dichlorophenoxy acetic acid (2,4-D)             | Oct 1 08    | <0.00019     | mg/L            |            |
| Diclofop-methyl                                     | Oct 1 08    | <0.00040     | mg/L            |            |
| Dimethoate  | Oct 1 08    | <0.00012     | mg/L            |            |
| Dinoseb   | Oct 1 08    | <0.00036     | mg/L            |            |
| Diquat  | Oct 1 08    | <0.001       | mg/L            |            |
| Diuron  | Oct 1 08    | <0.000087    | mg/L            |            |
| Glyphosate  | Oct 1 08    | <0.006       | mg/L            |            |
| Heptachlor + Heptachlor Epoxide                     | Oct 1 08    | <0.00011     | mg/L            |            |
| Lindane (Total)                                     | Oct 1 08    | <0.000056    | mg/L            |            |
| Malathion   | Oct 1 08    | <0.000091    | mg/L            |            |
| Methoxychlor  | Oct 1 08    | <0.00014     | mg/L            |            |
| Metolachlor   | Oct 1 08    | <0.000092    | mg/L            |            |
| Metribuzin  | Oct 1 08    | <0.00012     | mg/L            |            |
| Monochlorobenzene                                   | Oct 1 08    | <0.00058     | mg/L            |            |

|  |          |          |      |  |
|--|----------|----------|------|--|
| Paraquat   | Oct 1 08 | <0.001   | mg/L |  |
| Parathion  | Oct 1 08 | <0.00018 | mg/L |  |
| Pentachlorophenol  | Oct 1 08 | <0.00015 | mg/L |  |
| Phorate  | Oct 1 08 | <0.00011 | mg/L |  |
| Picloram   | Oct 1 08 | <0.00025 | mg/L |  |
| Polychlorinated Biphenyls(PCB)   | Oct 1 08 | <0.00004 | mg/L |  |
| Prometryne   | Oct 1 08 | <0.00023 | mg/L |  |
| Simazine   | Oct 1 08 | <0.00015 | mg/L |  |
| THM<br>(NOTE: show latest annual average)<br>Q1 08 0.0077<br>Q2 08 0.014<br>Q3 08 0.012<br>Q4 08 0.015 |          | 0.0122   | mg/L |  |
| Temephos   | Oct 1 08 | <0.00031 | mg/L |  |
| Terbufos   | Oct 1 08 | <0.00012 | mg/L |  |
| Tetrachloroethylene  | Oct 1 08 | <0.00045 | mg/L |  |
| 2,3,4,6-Tetrachlorophenol  | Oct 1 08 | <0.00014 | mg/L |  |
| Triallate  | Oct 1 08 | <0.0001  | mg/L |  |
| Trichloroethylene  | Oct 1 08 | <0.00038 | mg/L |  |
| 2,4,6-Trichlorophenol  | Oct 1 08 | <0.00025 | mg/L |  |
| 2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)   | Oct 1 08 | <0.00022 | mg/L |  |
| Trifluralin  | Oct 1 08 | <0.00012 | mg/L |  |
| Vinyl Chloride   | Oct 1 08 | <0.00017 | mg/L |  |

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 |
|------------------------|--------------|-----------------|----------------|
| Bromate (Distribution) | 7            | ppb             | Jan 08 08      |
| Bromate (Distribution) | 6            | ppb             | Jan 08 08      |
| Bromate (Distribution) | 6            | ppb             | Jan 08 08      |
| Bromate (Treated)      | 6            | ppb             | Oct 02 08      |
| Bromate (Distribution) | 6            | ppb             | Nov 04 08      |
| Bromate (Distribution) | 6            | ppb             | Nov 04 08      |
| Bromate (Treated)      | 6            | ppb             | Nov 04 08      |