



Town of Petrolia  
Bright's Grove  
Water Treatment Plant

2011

Annual Report

Prepared for the Town of Petrolia  
By the Ontario Clean Water Agency

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## **1. INTRODUCTION**

### **1.1 BACKGROUND**

The Petrolia WTP is located in the City of Sarnia at Bright's Grove, approximately 20 km from the Town of Petrolia. The municipal street address of the plant is 2701 Lakeshore Road.

The Petrolia Water Treatment Plant (WTP) currently supplies potable water to the Town of Petrolia and other service area municipalities including the Township of Enniskillen, Village of Oil Springs and Township of Dawn-Euphemia. The plant also supplies water to portions of Brooke-Alvinston, Sarnia, St. Clair and Plympton-Wyoming. The total population presently served by the Petrolia WTP is reported at 9,639.

The Petrolia WTP provides treatment for water drawn from Lake Huron. The main treatment processes in the plant in 2011 were membrane filtration, fluoridation and chlorination. The permitted capacity for the plant to take water from Lake Huron is 15,586 m<sup>3</sup>/d, although the plant is approved for a treatment capacity of 12,000 m<sup>3</sup>/d.

This Report is the 2011 Annual Report for the Town of Petrolia Bright's Grove WTP and follows the format presented in Safe Drinking Water Act, O Reg. 170/03.

### **1.2 MAINTENANCE COSTS**

Operation and Maintenance costs referred to in this table are costs incurred throughout the calendar year of 2011.

Table 1-2 lists the maintenance costs of the Petrolia Water Treatment Plant.

**Table 1-2 Petrolia Water Treatment Plant Maintenance Costs**

| Item                                              | Cost (\$)         |
|---------------------------------------------------|-------------------|
| Repair and maintenance                            | 15,872.76         |
| Grounds and Janitorial Maintenance                | 3,837.90          |
| Sludge haulage                                    | 5,690.21          |
| H&S upgrades                                      | 2,064.00          |
| Solids Residual cleanout                          | 3,186.60          |
| WTP & Booster Stn. Equipment Repair & Maintenance | 91,305.00         |
|                                                   |                   |
| <b>Total</b>                                      | <b>124,703.38</b> |

### 1.3 TERMS AND CONDITIONS OF THE CERTIFICATE OF APPROVAL

Table 1-3 lists the headings of the Terms and Conditions of the CofA.

**Table 1-3 Terms and Conditions of the CofA**

| Section No.  | Heading                                |
|--------------|----------------------------------------|
| 1            | Facility description                   |
| 2            | Definitions & information              |
| 3.1 to 3.4   | Compliance                             |
| 3.5          | Build operate & maintain in accordance |
| 3.6 to 3.8   | Interpretation                         |
| 3.9 to 3.10  | Other legal obligations                |
| 3.11 to 3.13 | Adverse effects                        |
| 3.14 to 3.15 | Change of Owner                        |
| 4            | Performance                            |
| 5            | Monitoring & recording                 |
| 6            | Operations & maintenance               |

## 2. CERTIFICATIONS

This section covers all certifications related to Petrolia WTP and distribution system, including:

- ♦ Certificates of approval;
- ♦ Permits to take water;
- ♦ Facility/distribution system classification; and,
- ♦ Operator classification.

### 2.1 CERTIFICATES OF APPROVAL

**Table 2-1 Municipal Drinking Water License and Works Permit**

| Certificate Type      | License Number | Date Issued     | Brief Description of Works Approved                                                                                                |
|-----------------------|----------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| Water Treatment Plant | 034-101        | August 23, 2011 | Contains several conditions relating to upgrades to plant performance, existing operations, maintenance, monitoring and recording. |
| Water Treatment Plant | 034-201        | August 4, 2011  | Drinking water works permit number                                                                                                 |

### 2.2 PERMIT TO TAKE WATER

The Permit to Take Water (PTTW) for the Petrolia WTP is summarized in Table 2-2 and attached in **Appendix B**.

**Table 2-2 Permit To Take Water (PTTW)**

| Permit Number | Source     | Issued Date   | Expiry Date    | Permitted Amount of Taking |
|---------------|------------|---------------|----------------|----------------------------|
| 5412-6RNNF5   | Lake Huron | Sept 29, 2007 | April 30, 2013 | 15,586 m <sup>3</sup> /day |

### 2.3 FACILITY CLASSIFICATION

Details of Petrolia facility certifications are presented in Table 2-3.

**Table 2-3 Facility Classification**

| Facility Type | Facility Name                      | Facility Level | Certificate No. | Date of Issue    |
|---------------|------------------------------------|----------------|-----------------|------------------|
| Plant         | Petrolia Water Treatment Plant     | II             | WT #805         | November 9, 2005 |
| Distribution  | Petrolia Water Distribution System | II             | WD #2908        | November 1994    |

## 2.4 OPERATOR CERTIFICATION

The Petrolia Water Supply System (PWSS) was operated by the Town of Petrolia & The Ontario Clean Water Agency. Effective November 15, 2010 Ontario Clean Water Agency became the operating authority for the Petrolia Water Treatment Plant and the main transmission line. Staff members responsible for the water supply and distribution system are licensed operators with their certifications presented in Table 2-4.

**Table 2-4 Operator Certification**

| Name         | Position                | Certificate Level |       | Certification Number |       | Expiry Date |       |
|--------------|-------------------------|-------------------|-------|----------------------|-------|-------------|-------|
|              |                         | Plant             | Dist. | Plant                | Dist. | Plant       | Dist. |
| Mike Weber   | WTP Senior Operator ORO | III               | III   | 12011                | 56617 | 02/12       | 02/12 |
| Terry Bender | WTP ORO backup          | IV                | IV    | 1011                 | 1512  | 02/14       | 05/14 |
| Troy Simpson | WTP Operator            | I                 | I     | 73949                | 73407 | 11/14       | 11/14 |
| Dave Hunt    | WTP ORO backup          | IV                | IV    | 3082                 | 3083  | 08/14       | 08/14 |

### **3. WATER FLOWS**

This section gives a summary of records made under the permit to take water.

This section also gives a summary and discussion of the quantity of treated water supplied in 2011 compared to the rated capacity specified in the CofA, including monthly average and maximum daily flows.

Finally, this section accounts for the wastewater production from the water treatment process.

#### **3.1 RAW WATER FLOWS**

A summary of the daily quantities of water being taken from Lake Huron (i.e., raw water flow rates) are shown in Table 3-1.

The permitted capacity for the plant to take water from Lake Huron is 15,586 m<sup>3</sup>/d. The raw water supplied to the treatment system should not exceed this value at anytime.

Table 3-1 shows that the highest maximum day demand of 8382 m<sup>3</sup>/d has not exceeded the flow allowed in the PTTW of 15,586 m<sup>3</sup>/d.

**Table 3-1 Raw Water Flows for 2011**

| Date                  | Total (m <sup>3</sup> ) | Max. Day (m <sup>3</sup> /d) |
|-----------------------|-------------------------|------------------------------|
| January               | 145,962                 | 5,333                        |
| February              | 128,311                 | 4,817                        |
| March                 | 147,744                 | 6,111                        |
| April                 | 145,957                 | 5,578                        |
| May                   | 164,381                 | 6,454                        |
| June                  | 185,070                 | 6,412                        |
| July                  | 204,029                 | 8,382                        |
| August                | 176,230                 | 7,607                        |
| September             | 159,919                 | 6,918                        |
| October               | 155,663                 | 5,766                        |
| November              | 135,475                 | 4,732                        |
| December              | 141,921                 | 6,717                        |
| <b>2011 Total/Max</b> | <b>1,890,662</b>        | <b>8,382</b>                 |

### 3.2 TREATED WATER FLOWS

The treated water flows for 2011 are shown in Table 3-2.

Table 3-2 shows that the plant's rated capacity of 12,000 m<sup>3</sup>/d has not been exceeded in 2011. The maximum daily flow was 6,840 m<sup>3</sup> or 57% of rated capacity.

**Table 3-2 Treated Water Flows for 2011**

| Date                  | Total(m <sup>3</sup> ) | Max. Day<br>(m <sup>3</sup> /d) | % Max of Rated<br>Capacity |
|-----------------------|------------------------|---------------------------------|----------------------------|
| January               | 116,893                | 4,175                           | 35                         |
| February              | 102,026                | 3,828                           | 32                         |
| March                 | 89,731                 | 3,831                           | 32                         |
| April                 | 116,866                | 4,668                           | 39                         |
| May                   | 132,254                | 5,234                           | 43                         |
| June                  | 148,950                | 6,065                           | 50                         |
| July                  | 165,224                | 6,840                           | 57                         |
| August                | 140,057                | 6,164                           | 51                         |
| September             | 126,707                | 5,562                           | 46                         |
| October               | 122,559                | 4,569                           | 38                         |
| November              | 106,146                | 3,758                           | 31                         |
| December              | 111,821                | 5,421                           | 45                         |
| <b>2011 Total/Max</b> | <b>1,479,234</b>       | <b>6,840</b>                    | <b>58</b>                  |

### 3.3 WASTEWATER FLOWS

Wastewater is generated from flushing & cleaning the strainers & racks. Table 3-3 shows that wastewater production in any given month reached up to 11% of the raw water flows.

**Table 3-3 Wastewater Flows for 2011**

| Date                   | Total Monthly Wastewater Volume (m <sup>3</sup> ) | % Wastewater to Raw Flow |
|------------------------|---------------------------------------------------|--------------------------|
| January                | 13,354                                            | 9                        |
| February               | 11,320                                            | 8                        |
| March                  | 13,040                                            | 8                        |
| April                  | 12,992                                            | 8                        |
| May                    | 14,969                                            | 9                        |
| June                   | 16,487                                            | 8                        |
| July                   | 18,305                                            | 8                        |
| August                 | 15,566                                            | 8                        |
| September              | 14,032                                            | 8                        |
| October                | 13,582                                            | 8                        |
| November               | 11,764                                            | 8                        |
| December               | 12,340                                            | 8                        |
| <b>2011 Total/Max.</b> | <b>167,751</b>                                    | <b>8</b>                 |

#### 4. **CHEMICALS**

This section gives a summary of listing treatment chemicals used, including average dosage rates with special reference to any abnormal usage.

##### 4.1 **PROPERTIES**

Table 4-1 shows the properties of the chemicals used at Petrolia WTP.

**Table 4-1 Properties of Chemical Feed Systems**

| Chemical                | Purpose               | Concentration (%) | Specific Gravity (g/mL) | Target Dosage (mg/L) |
|-------------------------|-----------------------|-------------------|-------------------------|----------------------|
| Chlorine gas            | ❖ Pre-chlorination    | 100               | ❖ -                     | ❖ 1.3-2.5 mg/L       |
| Liquid Polymer          | ❖ Wastewater settling | 50                | ❖ 1.10                  | ❖ 4-25 mg/L          |
| Hydrofluorosilicic acid | ❖ Fluoridation        | 25                | ❖ 1.204                 | ❖ 0.4 - 0.8 mg/L     |

##### 4.2 **USAGE**

Table 4-2 summarizes the annual chemical usage and monthly average dosages.

**Table 4-2 Annual Chemical Usage at Petrolia WTP for 2011**

| Chemical                | Volume (L) or Weight (kg) | Range of Monthly Avg. Dosages (mg/L) | Comments of Any Abnormal Usage         |
|-------------------------|---------------------------|--------------------------------------|----------------------------------------|
| Chlorine gas            | 3110.2 kg                 | 1.6 to 2.0                           | Varies with raw turbidity              |
| Liquid Polymer          | 897.8 kg                  | 5.4 to 16.0                          | Varies with raw turbidity              |
| Hydrofluorosilicic acid | 2271.5 kg                 | 0.3 to 0.4                           | 0.2 mg/l exists naturally in feedwater |

## **5. SAMPLING ANALYTICAL RESULTS**

### **5.1 SAMPLING PROGRAM**

### **5.2 SAMPLING RESULTS**

#### **5.2.1 Introduction**

**Appendix A** contains the sampling results for 2011, which are summarized in tables.

#### **5.2.2 Turbidity/Disinfection**

Raw water turbidity is greatest during the spring run-off and fall turnover when temperatures and flows are low. Based on the online surface scatter turbidity meter data, the raw water turbidity reached as high as 406 NTU, and had an average of 11 NTU.

Filtrate turbidity at Petrolia WTP is measured continuously on the each rack using three separate on-line HACH laser turbidity meters. Grab samples results are recorded on log sheets daily. SCADA captures data every 1 minute. Treated turbidity grab samples ranged from 0.019 to 0.032 with an average of 0.022 NTU.

#### **5.2.3 Distribution Chlorine Residuals**

O Reg 170/03 states that a minimum free chlorine residual of 0.2 mg/L or a minimum combined chlorine residual of 1.0 mg/L should be maintained in the water distribution system.

O Reg 170/03 requires and states that the distribution water quality is considered to be adverse if the free chlorine residual is measured to be less than 0.05 mg/L. The corrective action is to restore chlorination immediately and follow the instructions as directed by the Medical Officer of Health.

A statistical analysis of the free chlorine residuals measured in the distribution system is presented in Table 5-2.

**Table 5-2      Distribution Free Chlorine Residuals**

| Location            | Sample Count | Minimum | Maximum | Average |
|---------------------|--------------|---------|---------|---------|
| Distribution System | 260          | 0.42    | 1.77    | 1.27    |

**6. NON-COMPLIANCE WITH TERMS AND CONDITIONS OF THE CERTIFICATE OF APPROVAL (COFA)**

This section provides details of any non-compliance in 2011 with the Terms and Conditions of the latest Certificate of Approval (CofA), as well as details of how and when the non-compliance was corrected.

**Table 6-1 Non-Compliance Items in the Terms and Conditions of the CofA**

|   | Description                                                                                                                                                                                                                             | Resolution                                                                                                                                                    |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Data review (Log book documentation) indicated that there were instances when the data generated by the prescribed continuous monitoring equipment was reviewed by a certified operator more than 72 hours after the test was conducted | Met with inspector, reviewed the requirements and notified staff of the 72 hour review and documentation required.                                            |
| 2 | Section 6-5 (1) 10 of O.REG.170/03 required the continuous monitoring equipment to be checked and calibrated as often as necessary to ensure that test results are within 5% margin of error.                                           | Met with inspector and described instrumentation issues and calibration procedures. All parties working together to develop a monthly verification procedure. |

## 7. DECLARATION OF COUNCIL RESOLUTION

### 7.1 DECLARATION

| DECLARATION                                                                                                                                                                                         |                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I, the undersigned, hereby declare that, to the best of my knowledge, the information contained in this report and the information in support of this report is complete and accurate in every way. |                                                                                                                                                                                          |
| <div style="text-align: center; font-weight: bold; font-size: small;">Name</div> <div style="border: 1px solid black; padding: 5px; min-height: 30px;">Dave Hunt</div>                              | <div style="text-align: center; font-weight: bold; font-size: small;">Title</div> <div style="border: 1px solid black; padding: 5px; min-height: 30px;">Ontario Clean Water Agency</div> |
| <div style="border: 1px solid black; padding: 5px; min-height: 40px;">2701 Lakeshore Road<br/>Bright's Grove, Ontario<br/>N0N 1C0</div>                                                             | <div style="border: 1px solid black; padding: 5px; min-height: 40px;">Tel: (519) 344-7429<br/>Fax: (519) 344-4337<br/>E-mail: dhunt@ocwa.com</div>                                       |
| <div style="border: 1px solid black; padding: 5px; min-height: 30px;">February 28, 2012</div>                                                                                                       | <div style="border: 1px solid black; padding: 5px; min-height: 30px;"></div>                                                                                                             |

### 7.2 COUNCIL RESOLUTION

Note: The author of this report requests that this report be presented to council & a motion to accept the report is included in the official minutes. Please sign this declaration & return a copy to the WTP ORO.

| COUNCIL RESOLUTION                                                                                                                                                                                                                           |                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I, the undersigned, hereby declare that this report has been presented to council.                                                                                                                                                           |                                                                                                                                                                                                                     |
| <div style="text-align: center; font-weight: bold; font-size: small;">Name</div> <div style="border: 1px solid black; padding: 5px; min-height: 30px;"></div>                                                                                | <div style="text-align: center; font-weight: bold; font-size: small;">Title</div> <div style="border: 1px solid black; padding: 5px; min-height: 30px;"></div>                                                      |
| <div style="text-align: center; font-weight: bold; font-size: small;">Address</div> <div style="border: 1px solid black; padding: 5px; min-height: 40px;">Town of Petrolia<br/>411 Greenfield Street<br/>Petrolia, Ontario<br/>N0N 1R0</div> | <div style="text-align: center; font-weight: bold; font-size: small;">Contact Numbers</div> <div style="border: 1px solid black; padding: 5px; min-height: 40px;">Tel: (519) 882-2350<br/>Fax: (519) 882-3373</div> |
| <div style="text-align: center; font-weight: bold; font-size: small;">Date</div> <div style="border: 1px solid black; padding: 5px; min-height: 30px;"></div>                                                                                | <div style="text-align: center; font-weight: bold; font-size: small;">Signature</div> <div style="border: 1px solid black; padding: 5px; min-height: 30px;"></div>                                                  |

**8. REFERENCES**

- |           |                                                                                                                                                                                     |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MOE, 2002 | Ministry of the Environment. 2002. Safe Drinking Water Act.                                                                                                                         |
| KMK, 2001 | KMK Consultants Limited. February 2001. Petrolia Water Treatment Plant, First Engineers' Report.                                                                                    |
| KMK, 2004 | KMK Consultants Limited. January 2004. Town of Petrolia, Petrolia Water Treatment Plant Design Report. Membrane Filtration Option to Meet Ontario's New Drinking Water Regulations. |
| MOE, 2010 | Ministry of the Environment. 2010. Ontario Drinking Water Systems Regulations.                                                                                                      |

# APPENDICES

## ***SAMPLING PROGRAM***

**Table C-1 Sampling Protocol**

| Parameter                                                                                                                                                                                                                  | Frequency Required                                                                       | Additional Frequency                             | Chemicals Analyzed             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------|
| <b>Raw Water</b>                                                                                                                                                                                                           |                                                                                          |                                                  |                                |
| Microbiological                                                                                                                                                                                                            | Weekly                                                                                   | -                                                | Table A (excluding HPC or BKG) |
| Turbidity                                                                                                                                                                                                                  | Continuous                                                                               | Daily (On-line Reading)                          | Turbidity                      |
| pH                                                                                                                                                                                                                         | Continuous                                                                               | Daily (Grab sample measurement)                  | pH                             |
| Temperature                                                                                                                                                                                                                | Continuous                                                                               | Daily (Grab sample)                              | Temperature                    |
| <b>Treated Water</b>                                                                                                                                                                                                       |                                                                                          |                                                  |                                |
| Microbiological                                                                                                                                                                                                            | Weekly                                                                                   | -                                                | Table A                        |
| Turbidity                                                                                                                                                                                                                  | Continuous                                                                               | Daily (On-line Reading)                          | Turbidity                      |
| Chlorine                                                                                                                                                                                                                   | Continuous                                                                               | Daily (Grab sample measurement – free and total) | Free Chlorine                  |
| Volatile Organics                                                                                                                                                                                                          | Quarterly                                                                                | -                                                | Table B                        |
| Inorganics                                                                                                                                                                                                                 | Annually                                                                                 | -                                                | Table C                        |
| Nitrates/Nitrites                                                                                                                                                                                                          | Quarterly                                                                                | -                                                | Nitrates/Nitrites              |
| Pesticides & PCB                                                                                                                                                                                                           | Quarterly                                                                                | -                                                | Table D                        |
| Fluoride                                                                                                                                                                                                                   | Continuous                                                                               | Daily (Grab sample measurement)                  | Fluoride                       |
| pH                                                                                                                                                                                                                         | Continuous                                                                               | Daily (Grab sample measurement)                  | pH                             |
| <b>Distribution Water</b>                                                                                                                                                                                                  |                                                                                          |                                                  |                                |
| Microbiological                                                                                                                                                                                                            | Weekly of 15 Monthly) <sup>1</sup> (Total                                                | Weekly (Total of 24 Monthly) <sup>1</sup>        | Table A                        |
| Chlorine                                                                                                                                                                                                                   | Grab samples simultaneous to microbiological samples                                     | -                                                | Free Chlorine                  |
| Volatile Organics                                                                                                                                                                                                          | Quarterly (THMs at a point reflecting maximum residence time in the distribution system) | -                                                | Only THMs                      |
| Inorganics                                                                                                                                                                                                                 | Annually (Lead at a point reflecting maximum residence time in the distribution system)  | -                                                | Only Lead                      |
| <b>Backwash/Wastewater Effluent to Lake Huron</b>                                                                                                                                                                          |                                                                                          |                                                  |                                |
| Total Suspended Solids                                                                                                                                                                                                     | Monthly (Composite)                                                                      | -                                                | Total Suspended Solids         |
| Note:<br>1. A minimum of 8 samples, plus an additional 1 sample per 1,000 population, shall be taken monthly, with at least 1 sample taken every week. Given a population of 7,000 this equals to a minimum of 15 samples. |                                                                                          |                                                  |                                |

**Table C-2 Tables 1 & 2, Schedules 23 & 24 Ontario Drinking Water O.Reg 170/03**

| Table 1 - Microbiological                                                                                                                                                                                                  |                                                                                                                                                                                                         |                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total Coliforms                                                                                                                                                                                                            | <i>Escherichia coli</i> or fecal coliforms                                                                                                                                                              | Heterotrophic plate count or total coliform background count by membrane filter analysis.                                                                                                                            |
| Table 2 Schedule 24 – Volatile Organics                                                                                                                                                                                    |                                                                                                                                                                                                         |                                                                                                                                                                                                                      |
| Benzene<br>Carbon Tetrachloride<br>1,2-Dichlorobenzene<br>1,4-Dichlorobenzene<br>1,2-Dichloroethane                                                                                                                        | 1,1-Dichloroethylene<br>Dichloromethane<br>Ethylbenzene<br>Monochlorobenzene<br>Tetrachloroethylene                                                                                                     | Toluene<br>Trihalomethanes<br>Trichloroethylene<br>Vinyl chloride<br>Xylene                                                                                                                                          |
| Table 2 Schedule 23 – Inorganics                                                                                                                                                                                           |                                                                                                                                                                                                         |                                                                                                                                                                                                                      |
| Arsenic<br>Barium<br>Boron<br>Cadmium<br>Chromium                                                                                                                                                                          | Copper<br>Fluoride<br>Iron<br>Lead- O.Reg 170/03 (Sched 15.1)<br>Manganese                                                                                                                              | Mercury<br>Nitrite<br>Nitrate<br>Selenium<br>Uranium                                                                                                                                                                 |
| Table 2 Schedule 24 – Pesticides and PCBs                                                                                                                                                                                  |                                                                                                                                                                                                         |                                                                                                                                                                                                                      |
| Alachlor<br>Aldicarb<br>Aldrin+Dieldrin<br>Atrazine<br>Azinphos-methyl<br>Bendiocarb<br>Bromoxynil<br>Carbaryl<br>Carbofuran<br>Chlordane(Total)<br>Chlorpyrifos<br>Cyanazine<br>Diazinon<br>Dicamba<br>2,4-Dichlorophenol | DDT<br>2,4-D<br>Diclofop-methyl<br>Dimethoate<br>Dinoseb<br>Diquat<br>Diuron<br>Glyphosate<br>Heptachlor+Heptachlor epoxide<br>Lindane(Total)<br>Malathion<br>Methoxychlor<br>Metolachlor<br>Metribuzin | Paraquat<br>Parathion<br>Pentachlorophenol Phorate<br>Picloram<br>PCB<br>Prometryne<br>Simazine<br>Temephos<br>Terbufos<br>2,3,4,6-Tetrachlorophenol<br>Triallate<br>2,4,6-Trichlorophenol<br>Trifluralin<br>2,4,5-T |

## ***SAMPLING RESULTS***



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**OCWA-Petrolia (Town of Petrolia-Bright's Grove)**

Attn : Renee Hornick

Box 790, 1215 Fort St.  
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Works #: 220002903

Thursday, February 17, 2011

Date Rec. : 03 February 2011

LR Report: CA15954-FEB11

Copy: #1

## CERTIFICATE OF ANALYSIS

### Final Report

| Analysis                                | 1:<br>Analysis<br>Start Date | 2:<br>Analysis<br>Start Time | 3:<br>Analysis<br>Approval<br>Date | 4:<br>Analysis<br>Approval<br>Time | 5:<br>MAC | 6:<br>Half MAC | 7:<br>AO/OG | 8:<br>RDL | 9:<br>MDL | 10:<br>RW RW-raw Water | 11:<br>TW TW-Treated Water |
|-----------------------------------------|------------------------------|------------------------------|------------------------------------|------------------------------------|-----------|----------------|-------------|-----------|-----------|------------------------|----------------------------|
| Sample Date & Time                      |                              |                              |                                    |                                    |           |                |             |           |           | 01-Feb-11 10:30-11:13  | 01-Feb-11 11:35-11:58      |
| Temperature Upon Receipt [°C]           |                              |                              |                                    |                                    |           |                |             |           |           | 4.0                    | 4.0                        |
| Free Chlorine [mg/L]                    |                              |                              |                                    |                                    |           |                |             |           |           |                        | 1.59                       |
| Alkalinity [mg/L as CaCO <sub>3</sub> ] | 04-Feb-11                    | 07:00                        | 07-Feb-11                          | 08:08                              |           |                | 30-500      |           | 2         | 87                     | 81                         |
| pH [no unit]                            | 04-Feb-11                    | 07:00                        | 07-Feb-11                          | 08:08                              |           |                | 6.5-8.5     |           | 0.05      | 8.04                   | 7.86                       |
| Colour [TCU]                            | 03-Feb-11                    | 15:44                        | 04-Feb-11                          | 09:09                              |           |                | 5           | 5         | 3         | 3 <MDL                 | 3 <MDL                     |
| Turbidity [NTU]                         | 03-Feb-11                    | 15:14                        | 04-Feb-11                          | 10:52                              | 1         | 0.5            | 5           | 0.25      | 0.13      | 1.11 UAL               | 0.13 <MDL UAL              |
| Total Dissolved Solids [mg/L]           | 08-Feb-11                    | 18:30                        | 11-Feb-11                          | 12:53                              |           |                | 500         |           | 30        | 129                    | 134                        |
| Fluoride [mg/L]                         | 04-Feb-11                    | 01:31                        | 07-Feb-11                          | 13:09                              | 1.5       | 0.75           |             | 0.15      | 0.06      | 0.11                   | 0.38                       |
| Organic Nitrogen [mg/L]                 | 07-Feb-11                    | 12:27                        | 09-Feb-11                          | 10:50                              |           |                | 0.15        |           | 0.05      | 0.22                   | 0.22                       |
| Total Kjeldahl Nitrogen [mg/L]          | 04-Feb-11                    | 09:19                        | 07-Feb-11                          | 14:59                              |           |                |             |           | 0.05      | 0.22                   | 0.22                       |
| Ammonia+Ammonium (N) [mg/L]             | 07-Feb-11                    | 12:27                        | 09-Feb-11                          | 10:50                              |           |                |             |           | 0.04      | 0.04 <MDL              | 0.04 <MDL                  |
| Chloride [mg/L]                         | 07-Feb-11                    | 21:08                        | 10-Feb-11                          | 10:01                              |           |                | 250         |           | 0.03      | 8.9                    | 11                         |
| Sulphate [mg/L]                         | 07-Feb-11                    | 21:08                        | 11-Feb-11                          | 15:37                              |           |                | 500         |           | 0.06      | 18                     | 17                         |
| Nitrite (as N) [mg/L]                   | 04-Feb-11                    | 19:41                        | 09-Feb-11                          | 14:36                              | 1         | 0.5            |             | 0.1       | 0.005     | 0.005 <MDL             | 0.005 <MDL                 |
| Nitrate (as N) [mg/L]                   | 04-Feb-11                    | 19:41                        | 09-Feb-11                          | 14:36                              | 10        | 5              |             | 1         | 0.013     | 0.448                  | 0.454                      |
| Nitrate + Nitrite (as N) [mg/L]         | 04-Feb-11                    | 19:41                        | 09-Feb-11                          | 14:36                              | 10        | 5              |             | 1         | 0.013     | 0.448                  | 0.454                      |
| Dissolved Organic Carbon [mg/L]         | 04-Feb-11                    | 07:20                        | 17-Feb-11                          | 10:31                              |           |                | 5           |           | 0.2       | 2.4                    | 1.4                        |
| Sulphide [mg/L]                         | 03-Feb-11                    | 14:12                        | 07-Feb-11                          | 19:52                              |           |                | 0.05        |           | 0.004     | 0.004 <MDL             | 0.004 <MDL                 |
| Hardness [mg/L as CaCO <sub>3</sub> ]   | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              |           |                | 80-100      |           | 0.05      | 98.2                   | 97.0                       |
| Aluminum [µg/L]                         | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              |           |                | 100         | 50        | 0.2       | 41.1                   | 1.8                        |
| Copper [µg/L]                           | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              |           |                | 1000        | 500       | 0.5       | 1.5                    | 1.4                        |
| Iron [µg/L]                             | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              |           |                | 300         | 150       | 0.1       | 130                    | 94                         |
| Manganese [µg/L]                        | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              |           |                | 50          | 25        | 0.01      | 3.69                   | 1.36                       |

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

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Lakefield - Ontario - K0L 2H0  
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 220002903

LR Report : CA15954-FEB11

| Analysis                                          | 1:<br>Analysis<br>Start Date | 2:<br>Analysis<br>Start Time | 3:<br>Analysis<br>Approval<br>Date | 4:<br>Analysis<br>Approval<br>Time | 5:<br>MAC | 6:<br>Half MAC | 7:<br>AO/OG | 8:<br>RDL | 9:<br>MDL | 10:<br>RW RW-raw Water | 11:<br>TW TW-Treated Water |
|---------------------------------------------------|------------------------------|------------------------------|------------------------------------|------------------------------------|-----------|----------------|-------------|-----------|-----------|------------------------|----------------------------|
| Zinc [ug/L]                                       | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | —         | —              | 5000        | 250       | 1         | 2                      | 1 <MDL                     |
| Antimony [ug/L]                                   | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | 6         | 3              | —           | —         | 0.02      | 0.09                   | 0.11                       |
| Arsenic [ug/L]                                    | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | 25        | 12.5           | —           | 2.5       | 0.2       | 0.6                    | 1.3                        |
| Barium [ug/L]                                     | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | 1000      | 500            | —           | 100       | 0.01      | 19.0                   | 16.0                       |
| Boron [ug/L]                                      | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | 5000      | 2500           | —           | 500       | 0.2       | 19                     | 17                         |
| Cadmium [ug/L]                                    | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | 5         | 2.5            | —           | 1         | 0.003     | 0.022                  | 0.009                      |
| Chromium [ug/L]                                   | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | 50        | 25             | —           | 5         | 0.5       | 0.5 <MDL               | 4.8                        |
| Mercury [ug/L]                                    | 04-Feb-11                    | 13:14                        | 04-Feb-11                          | 14:36                              | 1         | 0.5            | —           | 0.1       | 0.02      | 0.02 <MDL              | 0.02 <MDL                  |
| Sodium [mg/L]                                     | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | 20*       | —              | 200         | 2         | 0.01      | 5.66                   | 5.52                       |
| Selenium [ug/L]                                   | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | 10        | 5              | —           | 5         | 1         | 1 <MDL                 | 1 <MDL                     |
| Uranium [ug/L]                                    | 04-Feb-11                    | 14:09                        | 07-Feb-11                          | 11:05                              | 20        | 10             | —           | 10        | 0.001     | 0.286                  | 0.280                      |
| MTB [ng/L]                                        | 07-Feb-11                    | 13:56                        | 09-Feb-11                          | 15:32                              | —         | —              | —           | —         | 3         | 3 <MDL                 | 3 <MDL                     |
| Geosmin [ng/L]                                    | 07-Feb-11                    | 13:56                        | 09-Feb-11                          | 15:32                              | —         | —              | —           | —         | 3         | 3 <MDL                 | 3 <MDL                     |
| Methane [L/m3]                                    | 07-Feb-11                    | 09:15                        | 09-Feb-11                          | 15:18                              | —         | —              | 3           | 1.5       | 0.006     | 0.009                  | 0.009                      |
| Ethylbenzene [ug/L]                               | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | —         | —              | 2.4         | 1.2       | 0.33      | 0.33 <MDL              | 0.33 <MDL                  |
| Toluene [ug/L]                                    | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | —         | —              | 2.4         | 2.4       | 0.36      | 0.36 <MDL              | 0.36 <MDL                  |
| Xylene (total) [ug/L]                             | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | —         | —              | 300         | 150       | 0.39      | 0.39 <MDL              | 0.39 <MDL                  |
| o-xylene [ug/L]                                   | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | —         | —              | —           | —         | 0.17      | 0.17 <MDL              | 0.17 <MDL                  |
| m/p-xylene [ug/L]                                 | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | —         | —              | —           | —         | 0.39      | 0.39 <MDL              | 0.39 <MDL                  |
| Benzene [ug/L]                                    | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 5         | 2.5            | —           | 0.5       | 0.32      | 0.32 <MDL              | 0.32 <MDL                  |
| Carbon tetrachloride [ug/L]                       | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 5         | 2.5            | —           | 0.5       | 0.16      | 0.16 <MDL              | 0.16 <MDL                  |
| 1,2-Dichlorobenzene [ug/L]                        | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 200       | 100            | 3           | 20        | 0.41      | 0.41 <MDL              | 0.41 <MDL                  |
| 1,4-Dichlorobenzene [ug/L]                        | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 5         | 2.5            | 1           | 0.5       | 0.36      | 0.36 <MDL              | 0.36 <MDL                  |
| 1,1-Dichloroethylene (vinylidene chloride) [ug/L] | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 14        | 7              | —           | 1.4       | 0.33      | 0.33 <MDL              | 0.33 <MDL                  |
| 1,2-Dichloroethane [ug/L]                         | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 5         | 2.5            | —           | 0.5       | 0.35      | 0.35 <MDL              | 0.35 <MDL                  |
| Dichloromethane [ug/L]                            | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 50        | 25             | —           | 5         | 0.35      | 0.35 <MDL              | 0.35 <MDL                  |
| Monochlorobenzene [ug/L]                          | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 80        | 40             | 30          | 8         | 0.30      | 0.30 <MDL              | 0.30 <MDL                  |
| Tetrachloroethylene (perchloroethylene) [ug/L]    | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 30        | 15             | —           | 3         | 0.35      | 0.35 <MDL              | 0.35 <MDL                  |
| Trichloroethylene [ug/L]                          | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 5         | 2.5            | —           | 5         | 0.43      | 0.43 <MDL              | 0.43 <MDL                  |
| Vinyl Chloride [ug/L]                             | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 2         | 1              | —           | 0.2       | 0.17      | 0.17 <MDL              | 0.17 <MDL                  |
| Trihalomethanes (total) [ug/L]                    | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | 100       | 50             | —           | 10        | 0.37      | 0.37 <MDL              | 11                         |
| Bromoform [ug/L]                                  | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | —         | —              | —           | —         | 0.34      | 0.34 <MDL              | 0.34 <MDL                  |
| Bromodichloromethane [ug/L]                       | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | —         | —              | —           | —         | 0.26      | 0.26 <MDL              | 3.5                        |
| Chloroform [ug/L]                                 | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | —         | —              | —           | —         | 0.29      | 0.29 <MDL              | 5.8                        |
| Dibromochloromethane [ug/L]                       | 03-Feb-11                    | 15:56                        | 10-Feb-11                          | 09:34                              | —         | —              | —           | —         | 0.37      | 0.37 <MDL              | 1.7                        |
| Diquat [ug/L]                                     | 10-Feb-11                    | 09:15                        | 11-Feb-11                          | 10:02                              | 70        | 35             | —           | 7         | 1         | 1 <MDL                 | 1 <MDL                     |
| Paraquat [ug/L]                                   | 10-Feb-11                    | 09:15                        | 11-Feb-11                          | 10:02                              | 10        | 5              | —           | 1         | 1         | 1 <MDL                 | 1 <MDL                     |
| Glyphosate [ug/L]                                 | 10-Feb-11                    | 16:20                        | 11-Feb-11                          | 10:02                              | 280       | 140            | —           | 28        | 6         | 6 <MDL                 | 6 <MDL                     |
| Polychlorinated Biphenyls (PCBs) - Total [ug/L]   | 03-Feb-11                    | 16:51                        | 08-Feb-11                          | 16:10                              | 3         | 1.5            | —           | 0.3       | 0.04      | 0.04 <MDL              | 0.04 <MDL                  |

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|---------------------------------------------|------------------------------|------------------------------|------------------------------------|------------------------------------|-----------|----------------|-------------|-----------|-----------|------------------------|----------------------------|
| Benzo(a)pyrene [ug/L]                       | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 0.01      | 0.005          | —           | 0.01      | 0.004     | 0.004 <MDL             | 0.004 <MDL                 |
| Alechlor [ug/L]                             | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 5         | 2.5            | —           | 0.5       | 0.02      | 0.02 <MDL              | 0.02 <MDL                  |
| Aldicarb [ug/L]                             | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 9         | 4.5            | —           | 9         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Aldrin + Dieldrin [ug/L]                    | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 0.7       | 0.35           | —           | 0.07      | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Aldrin [ug/L]                               | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Dieldrin [ug/L]                             | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Atrazine + N-dealkylated metabolites [ug/L] | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 5         | 2.5            | —           | 1         | 0.01      | 0.03                   | 0.03                       |
| Atrazine [ug/L]                             | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.02                   | 0.02                       |
| Desethyl atrazine [ug/L]                    | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01                   | 0.01                       |
| Azinphos-methyl [ug/L]                      | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 20        | 10             | —           | 2         | 0.02      | 0.02 <MDL              | 0.02 <MDL                  |
| Bendiocarb [ug/L]                           | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 40        | 20             | —           | 7.5       | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Carbaryl [ug/L]                             | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 90        | 45             | —           | 9         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Carbofuran [ug/L]                           | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 90        | 45             | —           | 12.5      | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Chlordane (total) [ug/L]                    | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 7         | 3.5            | —           | 0.7       | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| a-chlordane [ug/L]                          | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| g-chlordane [ug/L]                          | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Oxychlordane [ug/L]                         | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Chlorpyrifos [ug/L]                         | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 90        | 45             | —           | 9         | 0.02      | 0.02 <MDL              | 0.02 <MDL                  |
| Cyanazine [ug/L]                            | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 10        | 5              | —           | 1         | 0.03      | 0.03 <MDL              | 0.03 <MDL                  |
| Diazinon [ug/L]                             | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 20        | 10             | —           | 2         | 0.02      | 0.02 <MDL              | 0.02 <MDL                  |
| (DDT) + Metabolites [ug/L]                  | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 30        | 15             | —           | 3         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| op-DDT [ug/L]                               | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| pp-DDD [ug/L]                               | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| pp-DDE [ug/L]                               | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| pp-DDT [ug/L]                               | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Dimethoate [ug/L]                           | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 20        | 10             | —           | 2.5       | 0.03      | 0.03 <MDL              | 0.03 <MDL                  |
| Diuron [ug/L]                               | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 150       | 75             | —           | 1         | 0.03      | 0.03 <MDL              | 0.03 <MDL                  |
| Heptachlor + Heptachlor Epoxide [ug/L]      | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 3         | 1.5            | —           | 0.3       | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Heptachlor [ug/L]                           | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Heptachlor epoxide [ug/L]                   | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | —         | —              | —           | —         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Lindane [ug/L]                              | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 4         | 2              | —           | 0.4       | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Malathion [ug/L]                            | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 150       | 95             | —           | 19        | 0.02      | 0.02 <MDL              | 0.02 <MDL                  |
| Methoxychlor [ug/L]                         | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 900       | 450            | —           | 90        | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Metolachlor [ug/L]                          | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 50        | 25             | —           | 5         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Metribuzin [ug/L]                           | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 60        | 40             | —           | 8         | 0.02      | 0.02 <MDL              | 0.02 <MDL                  |
| Parathion [ug/L]                            | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 50        | 25             | —           | 5         | 0.02      | 0.02 <MDL              | 0.02 <MDL                  |
| Phorate [ug/L]                              | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 2         | 1              | —           | 0.5       | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Prometryne [ug/L]                           | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 1         | 0.5            | —           | 0.25      | 0.03      | 0.03 <MDL              | 0.03 <MDL                  |
| Simazine [ug/L]                             | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 10        | 5              | —           | 1         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.



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LR Report : CA15954-FEB11

| Analysis                                           | 1:<br>Analysis<br>Start Date | 2:<br>Analysis<br>Start Time | 3:<br>Analysis<br>Approval<br>Date | 4:<br>Analysis<br>Approval<br>Time | 5:<br>MAC | 6:<br>Half MAC | 7:<br>AO/OG | 8:<br>RDL | 9:<br>MDL | 10:<br>RW RW-Raw Water | 11:<br>TW TW-Treated Water |
|----------------------------------------------------|------------------------------|------------------------------|------------------------------------|------------------------------------|-----------|----------------|-------------|-----------|-----------|------------------------|----------------------------|
| Temephos [ug/L]                                    | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 280       | 140            | ---         | 28        | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Terbufos [ug/L]                                    | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 1         | 0.5            | ---         | 1         | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Triallate [ug/L]                                   | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 230       | 115            | ---         | 23        | 0.01      | 0.01 <MDL              | 0.01 <MDL                  |
| Trifluralin [ug/L]                                 | 08-Feb-11                    | 09:57                        | 09-Feb-11                          | 12:03                              | 45        | 22.5           | ---         | 4.5       | 0.02      | 0.02 <MDL              | 0.02 <MDL                  |
| 2,4-dichlorophenoxyacetic acid (2,4-D) [ug/L]      | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 100       | 50             | ---         | 10        | 0.19      | 0.19 <MDL              | 0.19 <MDL                  |
| 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) [ug/L] | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 280       | 140            | 20          | 28        | 0.22      | 0.22 <MDL              | 0.22 <MDL                  |
| Bromoxynil [ug/L]                                  | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 5         | 2.5            | ---         | 0.5       | 0.33      | 0.33 <MDL              | 0.33 <MDL                  |
| Dicamba [ug/L]                                     | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 120       | 60             | ---         | 12        | 0.20      | 0.20 <MDL              | 0.20 <MDL                  |
| Diclofop-methyl [ug/L]                             | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 9         | 4.5            | ---         | 0.9       | 0.40      | 0.40 <MDL              | 0.40 <MDL                  |
| Dinoseb [ug/L]                                     | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 10        | 5              | ---         | 1         | 0.36      | 0.36 <MDL              | 0.36 <MDL                  |
| Picloram [ug/L]                                    | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 190       | 95             | ---         | 19        | 0.25      | 0.25 <MDL              | 0.25 <MDL                  |
| 2,4-dichlorophenol [ug/L]                          | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 900       | 450            | 0.3         | 90        | 0.15      | 0.15 <MDL              | 0.15 <MDL                  |
| 2,4,6-trichlorophenol [ug/L]                       | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 5         | 2.5            | 2           | 0.5       | 0.25      | 0.25 <MDL              | 0.25 <MDL                  |
| 2,3,4,6-tetrachlorophenol [ug/L]                   | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 100       | 50             | 1           | 10        | 0.14      | 0.14 <MDL              | 0.14 <MDL                  |
| Pentachlorophenol [ug/L]                           | 08-Feb-11                    | 07:57                        | 09-Feb-11                          | 15:28                              | 60        | 30             | 30          | 6         | 0.15      | 0.15 <MDL              | 0.15 <MDL                  |

Total and / or Free Residual Chlorine was not analyzed by the analytical laboratory at SGS.

MAC - Maximum Acceptable Concentration

Half MAC - Half of the Maximum Acceptable Concentration

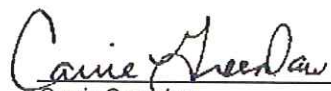
AO/OG - Aesthetic Objective / Operational Guideline

RDL - MOE Required Reporting Detection Limit

MDL - SGS Method Detection Limit

\*Sodium > 20mg/L is an indicator of adverse water quality.

UAL - Unreliable: Sample Age Exceeds Normal Limit-Turbidity analysis was able to be completed within the 48 hour holding time.

  
Carrie Greenlaw  
Project Specialist  
Environmental Services, Analytical

OnLine LIMS

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

**Table B-1 Chemical/Physical Characteristics of the Distribution Water**

| Parameter       | Units | Criteria  | 2011 |         |         |         |         |
|-----------------|-------|-----------|------|---------|---------|---------|---------|
|                 |       |           | SC   | Minimum | Maximum | Average | Exceeds |
| Lead            | ug/L  | 10        | 107  | .10     | 28      | .58     |         |
| Trihalomethanes | ug/L  | 100 (MAC) | 12   | 23      | 49      | 37.1    |         |

**Table B-2 Raw Water Bacteriological Data**

|              | Number of Samples | Range of E.Coli or Fecal Results (min#)-(max#) | Range of Total of HPC Samples | Number of HPC Samples | Range of HPC Results (min#)-(max#) |
|--------------|-------------------|------------------------------------------------|-------------------------------|-----------------------|------------------------------------|
| Raw          | 52                | 0-10c fu/100ml                                 |                               | 10                    | 0-210 cfu/1ml                      |
| Treated      | 52                | 0-10 cfu/100ml                                 | 0-0 cfu/100ml                 | 51                    | <10 cfu/100ml                      |
| Distribution | 260               | 0-10c fu/100ml                                 | 0-0 cfu/100ml                 | 260                   | <10 cfu/100ml                      |

**Table B-3 Operational testing done under Schedule 7, 8 or 9 Regulation 170/03 during the period covered by this annual report**

|                                             | Number of Grab Samples | Range of Results (min#)-(max#) | Unit of Measure |
|---------------------------------------------|------------------------|--------------------------------|-----------------|
| Turbidity                                   | 8760                   | 0.019-0.902                    | NTU             |
| Chlorine                                    | 8760                   | 0.42-1.77                      | mg/l            |
| Fluoride (If the DWS provides fluoridation) | 8760                   | Ave 0.38                       | mg/l            |

**Table B-4 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 |
|---------------------------------|-----------|--------------|--------|-----------------|
|                                 |           |              |        |                 |
|                                 |           |              |        |                 |
|                                 |           |              |        |                 |

**Table B-5 Summary of lead testing under Schedule 15.1 during this reporting period**

| Location Type | Number of Samples | Range of Lead Results | Units of Measure | Number of Exceedences  |
|---------------|-------------------|-----------------------|------------------|------------------------|
| Plumbing      | 44                | 0.1-28.4              | Ug/L             | 1 location resample OK |
| Distribution  | 5                 | 0.06-17.2             | Ug/L             | 1 location             |
|               |                   |                       |                  | Re-sample OK           |