



**OPTIONAL ANNUAL REPORT TEMPLATE**

<b>Drinking-Water System Number:</b>	22 000 3047
<b>Drinking-Water System Name:</b>	Cochrane Well Supply
<b>Drinking-Water System Owner:</b>	The Corporation of the Town of Cochrane
<b>Drinking-Water System Category:</b>	Large Municipal Residential System
<b>Period being reported:</b>	January 1, 2013 to December 31, 2013

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [x]</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; margin: 5px;"> <p style="text-align: center;">Cochrane Water &amp; Wastewater Office 92 2<sup>nd</sup> St Cochrane, Ontario P0L 1C0</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served:  <div style="border: 1px solid black; width: 40px; text-align: center; margin: 5px;">4</div> </p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve?          Yes [ x ] No [ ]</p> <p>Number of Interested Authorities you report to:  <div style="border: 1px solid black; width: 40px; text-align: center; margin: 5px;">0</div> </p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?          Yes [ x ] No [ ]</p>
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**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
Cochrane Well Supply	22 000 3047

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?  
 Yes [ ] No [ ]



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   A note on their bills

**Describe your Drinking-Water System**

The water treatment works relies on groundwater from 3 wells, each with a capacity of 45.3 litres per second. The maximum flow for each well cannot exceed 50 liters per second. The wells are located at the east side of Water Plant Road, Lot 19, Concession 1, in the Town of Cochrane, next to the Plant. While the population of Cochrane is about 5,500, the Plant has the capacity of delivering 8,000 cubic meters per day.

The treatment process was designed to remove high iron content, manganese and hardness present in the raw water supplied that is produced by the three wells. "Lime Softening" is the process that is used. First, hydrated lime (calcium hydroxide) is added to the water. This increases the pH of the water causing the calcium carbonate, iron and manganese to precipitate out of the water. Most of the precipitated particles settle out in the two clarifiers. Then carbon dioxide is added in re-carbonation tanks to reduce the pH to normal levels with the dual media filters used to filter out any remaining particles. The finished water is now stored in an interconnected twin-celled in-ground clear well/reservoir that has a capacity of 2,300 cubic meters. Three high-lift pumps, each rated at 83.4 liters per second are used to pump the water into the Town's distribution system. On the other side of town, a 2,700 cubic meters elevated storage tank provides gravity flow to the town. This storage is used during peak demand times in the day, and is available to provide the very high flow rates that could be required by the fire department in case of a large fire. The plan and storage tank (tower) have complete automatic control and alarm systems that notify the operator of any problems. The plant also has an emergency diesel generator that allows water to be treated and pumped in the event of a power outage. Cochrane Water & Wastewater Services employs the services of Accuracy Environmental Laboratories Ltd. for all testing of water samples. Accuracy also sub-contracts some of these samples to other laboratories who provide the required testing as per Regulation 170/03. All laboratories employed for Cochrane Water & Wastewater Services' water testing are accredited:

Accuracy Environmental Labs Ltd.  
1470 Government Rd. W. Box 426  
Kirkland Lake, ON P2N 3J1  
(705) 642-3361

Caduceon Environmental Labs  
40 Camelot Drive  
Ottawa, ON K2G 5X1



**(613) 228-1145**

**Maxxam Analytics  
6740 Campobello Rd.  
Mississauga, ON L5N 2L8  
(905) 817-5751**

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

**Chlorine Gas – Disinfection  
Sodium Bicarbonate – Flocculation/ Coagulation  
Hydrated Lime – Softening process  
Sodium Silicate – Flocculation / Coagulation  
Carbon Dioxide – pH Adjustment**

**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**

**Replaced Rotork Valve  
Replaced Pressure Relief Valve  
Replaced High Lift Motor**

**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

**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>	159	<1- <1	<1-<1	0	0
<b>Treated</b>	53	<1 - <1	<1 -<1	53	<10-20
<b>Distribution</b>	265	<1 - <1	<1 - <1	265	<10 - 110

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**



	<b>Number of Grab Samples</b>	<b>Range of Results (min #)-(max #)</b>
<b>Turbidity</b>	<b>8760</b>	<b>0.04-1.01</b>
<b>Chlorine</b>	<b>8760</b>	<b>0.28-1.40</b>
<b>Fluoride</b> (If the DWS provides fluoridation)		

***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.**

<b>Date of legal instrument issued</b>	<b>Parameter</b>	<b>Date Sampled</b>	<b>Result</b>	<b>Unit of Measure</b>

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

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
<b>Antimony</b>	May 2, 2012	< 0.5	mg/L	No
<b>Arsenic</b>	May 2, 2012	< 1	mg/L	No
<b>Barium</b>	May 2, 2012	12.9	mg/L	No
<b>Boron</b>	May 2, 2012	12	mg/L	No
<b>Cadmium</b>	May 2, 2012	< 0.1	mg/L	No
<b>Chromium</b>	May 2, 2012	1.6	mg/L	No
<b>*Lead</b> (NOTE: show latest annual distribution average)	On Reduced lead sampling schedule			
	2012	0.56	ug/L	No
<b>Mercury</b>	May 2, 2012	< 0.01	mg/L	No
<b>Selenium</b>	May 2, 2012	< 1	mg/L	No
<b>Sodium</b>	April 22, 2010	21.4	mg/L	Yes
<b>Uranium</b>	May 2, 2012	< 1	mg/L	No
<b>Fluoride</b>	April 14, 2010	< 0.1	mg/L	No
<b>Nitrite</b>	Nov. 5, 2013	< 0.05	mg/L	No
<b>Nitrate</b>	Nov. 5, 2013	< 0.1	mg/L	No

\*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)

<b>Location Type</b>	<b>Number of</b>	<b>Range of Lead</b>	<b>Number of</b>
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	Samples	Results (min#) – (max #)	Exceedances
Plumbing	Exempt		
Distribution	Exempt		

**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	May 2, 2012	< 0.49	ug/L	No
Aldicarb	May 2, 2012	< 0.63	ug/L	No
Aldrin + Dieldrin	May 2, 2012	< 0.004	ug/L	No
Atrazine + N-dealkylated metabolites	May 2, 2012	< 0.9	ug/L	No
Azinphos-methyl	May 2, 2012	< 0.37	ug/L	No
Bendiocarb	May 2, 2012	< 1.3	ug/L	No
Benzene	May 2, 2012	< 0.25	ug/L	No
Benzo(a)pyrene	May 2, 2012	< 0.0095	ug/L	No
Bromoxynil	May 2, 2012	< 0.55	ug/L	No
Carbaryl	May 2, 2012	< 1.3	ug/L	No
Carbofuran	May 2, 2012	< 1.3	ug/L	No
Carbon Tetrachloride	May 2, 2012	< 0.25	ug/L	No
Chlordane (Total)	May 2, 2012	< 0.004	ug/L	No
Chlorpyrifos	May 2, 2012	< 0.37	ug/L	No
Cyanazine	May 2, 2012	< 0.37	ug/L	No
Diazinon	May 2, 2012	< 0.37	ug/L	No
Dicamba	May 2, 2012	< 0.22	ug/L	No
1,2-Dichlorobenzene	May 2, 2012	< 0.25	ug/L	No

1,4-Dichlorobenzene	May 2, 2012	< 0.25	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	May 2, 2012	< 0.005	ug/L	No
1,2-Dichloroethane	May 2, 2012	< 0.25	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	May 2, 2012	< 0.25	ug/L	No
Dichloromethane	May 2, 2012	< 4.5	ug/L	No
2-4 Dichlorophenol	May 2, 2012	< 0.61	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	May 2, 2012	< 0.22	ug/L	No
Diclofop-methyl	May 2, 2012	< 0.22	ug/L	No
Dimethoate	May 2, 2012	< 0.37	ug/L	No
Dinoseb	May 2, 2012	< 0.055	ug/L	No
Diquat	May 2, 2012	< 7	ug/L	No
Diuron	May 2, 2012	< 6.3	ug/L	No
Glyphosate	May 2, 2012	< 20	ug/L	No
Heptachlor + Heptachlor Epoxide	May 2, 2012	< 0.004	ug/L	No
Lindane (Total)	May 2, 2012	< 0.00067 - < 0.00072	ug/L	No
Malathion	May 2, 2012	< 0.37	ug/L	No
Methoxychlor	May 2, 2012	< 0.00096	ug/L	No
Metolachlor	May 2, 2012	< 0.24	ug/L	No
Metribuzin	May 2, 2012	< 0.24	ug/L	No
Monochlorobenzene			ug/L	
Paraquat	May 2, 2012	< 1	ug/L	No

Parathion	May 2, 2012	< 0.24	ug/L	No
Pentachlorophenol	May 2, 2012	< 0.61	ug/L	No
Phorate	May 2, 2012	< 0.37	ug/L	No
Picloram	May 2, 2012	< 0.055	ug/L	No
Polychlorinated Biphenyls(PCB)	May 2, 2012	< 0.006	ug/L	No
Prometryne	May 2, 2012	< 0.24	ug/L	No
Simazine	May 2, 2012	< 0.37	ug/L	No
THM (NOTE: show latest annual average)	2013	40.0	ug/L	No
Temephos	May 2, 2012	< 18	ug/L	No
Terbufos	May 2, 2012	< 0.24	ug/L	No
Tetrachloroethylene	May 2, 2012	< 0.25	ug/L	No
2,3,4,6-Tetrachlorophenol	May 2, 2012	< 0.61	ug/L	No
Triallate	May 2, 2012	< 0.24	ug/L	No
Trichloroethylene	May 2, 2012	< 0.25	ug/L	No
2,4,6-Trichlorophenol	May 2, 2012	< 0.61	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	May 2, 2012	< 0.055	ug/L	No
Trifluralin	May 2, 2012	< 0.24	ug/L	No
Vinyl Chloride	May 2, 2012	< 0.25	ug/L	No

**List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.**

Parameter	Result Value	Unit of Measure	Date of Sample