

COCHRANE WELL SUPPLY

2012 ANNUAL REPORT

WATERWORKS # 22 000 3047

As per Section 11 and schedule 22 of O. Reg. 170/03



OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	22 000 3047
Drinking-Water System Name:	Cochrane Well Supply
Drinking-Water System Owner:	The Corporation of the Town of Cochrane
Drinking-Water System Category:	Large Municipal Residential System
Period being reported:	January 1, 2012 to December 31, 2012

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></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; text-align: center;"> <p>Cochrane Water & Wastewater Office 92 2nd St Cochrane, Ontario POL 1C0</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; display: inline-block; padding: 2px 10px;">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; display: inline-block; width: 60px; height: 20px; vertical-align: middle;"></div></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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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 settling tanks. 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

None

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 #)
Raw	151	<1- <1	<1-8	0	0
Treated	53	<1 - <1	<1 -<1	52	<1-310
Distribution	267	<1 - <1	<1 - <1	267	<1 - 1990

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

	Number of Grab Samples	Range of Results (min #)-(max #)

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



Turbidity	8760	0.03-1.00
Chlorine	8760	0.27-1.46
Fluoride (If the DWS provides fluoridation)		

*NOTE: Record the unit of measure if it is **not** milligrams per litre.*

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	May 2, 2012	< 0.5	mg/L	No
Arsenic	May 2, 2012	< 1	mg/L	No
Barium	May 2, 2012	12.9	mg/L	No
Boron	May 2, 2012	12	mg/L	No
Cadmium	May 2, 2012	< 0.1	mg/L	No
Chromium	May 2, 2012	1.6	mg/L	No
*Lead (NOTE: show latest annual distribution average)	On Reduced lead sampling schedule			
	2012	0.56	ug/L	No
Mercury	May 2, 2012	< 0.01	mg/L	No
Selenium	May 2, 2012	< 1	mg/L	No
Sodium	April 22, 2010	21.4	mg/L	Yes
Uranium	May 2, 2012	< 1	mg/L	No
Fluoride	April 14, 2010	< 0.1	mg/L	No
Nitrite	Nov. 20, 2012	< 0.05	mg/L	No
Nitrate	Nov. 20, 2012	< 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)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances



Plumbing	Exempt		
Distribution	3	< 1 -0.74	None

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)	2012	35.41	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

COMPLIANCE

To the best of our knowledge, the Cochrane Water Treatment Plant is in compliance with all regulatory issues and requirements as outlined in the Drinking Water Works Permit, Municipal Drinking Water License, Permit to Take Water and Ontario Regulation 170/03.

In 2012, the Cochrane Water Treatment Plant underwent one Ministry of Environment annual inspections.

Inspection 1-9ZG7K on September 25, 2012,

1. The secondary disinfection residual was not measured as required for the distribution system. Secondary disinfection free chlorine residual is conducted on a daily basis. On June 26, 2012 there was no sample taken and tested for free chlorine. This is a violation of Schedule 7 of Ontario Regulation 170/03 which requires secondary disinfection residual testing to be conducted on a daily basis or seven samples taken weekly with four samples taken on the first day and three samples taken on the second day at least 48 hour apart. It was required that within 10 days of the issuance of this inspection report that operators receive training on the requirements of secondary disinfection water quality monitoring. This training was held on October 23, 2012 for all staff. The results of the inspection were reported to council at the regular council meeting held December 11, 2012.

Summary of Flows

This report is prepared to comply with Schedule 22 section 3(1) of Reg 170/03 of the SDWA

- (3) 1. A Summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.

TREATED WATER

Month	Monthly Average In m ³	Maximum Daily In m ³	Max 1 Hour Rate M ³ / D
January	2681.665	3051.436	70.239
February	2823.395	4628.623	76.377
March	2802.241	3144.950	74.260
April	2827.840	3068.648	71.447
May	2849.294	3677.838	76.352
June	3055.095	3524.927	89.912
July	3038.313	3583.073	75.497
August	2803.770	3179.092	78.038
September	2684.781	3103.677	74.314
October	2695.248	3101.927	75.447
November	2564.610	2927.175	71.472
December	2536.344	2989.803	74.616
Total Average	2780.22	3331.76	75.66

RAW WATER

Month	Monthly Average In m ³	Maximum Daily In m ³
January	2884.728	3627.602
February	3035.406	5522.513
March	3058.724	4342.330
April	3078.747	4003.813
May	3070.834	4281.576
June	3359.934	4299.368
July	3267.931	4048.340
August	3047.013	4350.561
September	2966.318	3963.545
October	2905.877	3821.440
November	2786.803	3394.377
December	2702.907	2939.495
Total Average	3013.77	4049.58

Comparison of the Summary of Flows

This report is prepared to comply with Schedule 22 section 3(2) of Reg 170/03 of the SDWA

- (3) 2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence.

2012 Total Flow

Month	Raw Water Total Monthly Flow In m ³	Treated Water Total Monthly Flow In m ³
January	89426.563	83131.616
February	88026.778	81878.469
March	94820.452	86869.483
April	92362.408	84835.214
May	95195.863	88328.124
June	100798.017	91652.862
July	101305.876	94187.701
August	94457.394	86916.872
September	88989.533	80543.436
October	90082.174	83552.698
November	83604.077	76938.308
December	83790.107	78626.667
Total Average	1,102,859.242	1,017,461.45

Item	2012	2011	2010
Avg. Raw Water Day Flow m ³ /day	3013.77	3156.62	3,317
Max Raw Water Day Flow m ³ /day	4049.58	4256.50	4,473
Design Capacity m ³ /day	7,856.60	7,856.60	7,856.6
% (Avg. day/design capacity)	38.36%	40.00%	42.00%

Comparison of the Summary of Flows continued

The Total Flow in 2012 was 1,107,859.242 m³, which represents 38.36% of the total capacity for the year. The average daily flow in 2012 was 3013.77m³ which is only 38.36 % of design. The approved plant treatment capacity of 7,856m³/day was not exceeded during this period. The daily peak flow of 6,000L/s was not exceeded. The operating level of the plant is set at approximately 95L/s with all three wells operating together.

The aquifer continues to perform within expectations and there is no concern at this time on the continued performance. Each of the wells #5,6 and 7 are drilled to a depth of 45 to 50 meters and equipped with a submersible well water pump with a rated capacity of 50L/s at a TDH of 32.3 meters, pitless adapter, sanitary well seal, air line and supply line to the water treatment plant.

Based on available records the draw downs of each well is measured monthly and documented. Draw downs were reported as being between 5.3 and 18.3 meters.

SPECIAL COMMITTEE OF THE WHOLE MEETING

DATE: January 14, 2013

RESOLUTION NO.: 02-2013

AGENDA ITEM NO.: 4.1

MOVED BY: JANE SKIDMORE FOX

SECONDED BY: GILLES CHARTRAND

THAT we hereby accept the 2012 Annual Water Report.

DECLARED THE MOTION

- CARRIED
- DEFEATED
- TABLED
- RECORDED VOTE – Requested by: _____



 MAYOR (Acting Mayor)

	FOR	AGAINST
Reynald Brisson		
Gilles Chartrand		
Fernand Gravel		
Robert Hutchinson		
Darryl J. Owens		
Peter Politis		
Jane Skidmore – Fox		

DECLARATION OF CONFLICT OF INTEREST

DISCLOSED HIS/HER INTEREST(S)

VACATED HIS/HER SEAT

ABSTAINED FROM DISCUSSION AND DID NOT VOTE ON THIS QUESTION