Ontario Clean Water Agency
Agence Ontarienne Des Eaux

HURON WOODS
WATER TREATMENT PLANT

Small Municipal Residential Drinking Water System

SCHEDULE 22
SUMMARY REPORT

For the period of
JANUARY 1, 2012 TO DECEMBER 31, 2012

Prepared by the Ontario Clean Water Agency
For The Corporation of the Town of South Bruce Peninsula

ASSESSMENT OF FLOW RATES AND QUANTITIES OF WATER SUPPLIED

The following table lists the quantities and flow rates of the water supplied during the reporting period covered by this report, including monthly average and maximum daily flows and a comparison to the rated capacity and flow rates specified in the system approval:

Huron Woods Water Treatment Plant

Month	Average Day Flow	% of Rated Capacity 743 m3/d	Maximum Day Flow	% of Rated Capacity 743 m3/d
January	47.9	6.45	70.0	9.42
February	52.59	7.08	70.0	9.42
March	57.74	7.77	124.0	16.69
April	34.43	4.63	66.0	8.88
May	44.39	5.97	88.0	11.84
June	40.63	5.47	92.0	12.38
July	64.23	8.64	117.0	15.75
August	51.42	6.92	131.0	17.63
September	36.03	4.85	67.0	9.02
October	30.9	4.16	75.0	10.09
November	29.5	3.97	69.0	9.29
December	32.54	4.38	90.2	12.14

O.Reg 170 SECTION 11 ANNUAL REPORT

Drinking-Water System Number:	220007775
Drinking-Water System Name:	Huron Woods Water Supply Works
Drinking-Water System Owner:	Town of South Bruce Peninsula
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	January 1, 2012 to December 31, 2012

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [X]

Is your annual report available to the public at no charge on a web site on the Internet?
Yes [X] No [ ]

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

Town of South Bruce Peninsula
315 George Street
Wiarton, Ontario
N0H 2T0
519-534-1400

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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

N/A

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 [ ] N/A [X]

Indicate how you notified system users that your annual report is available, and is free of charge.

[X] Public access/notice via the web
[X] Public access/notice via Government Office
[ ] Public access/notice via a newspaper
[ ] Public access/notice via Public Request
[ ] Public access/notice via a Public Library
[ ] Public access/notice via other method _____

Describe your Drinking-Water System

Class II Water Treatment
Class 1 Water Distribution

The Huron Woods drinking-water system in the Town of South Bruce Peninsula consists of four wells:

- Well No. W1 and old disused Pumphouse
- Well No. W2
- Well No. W3
- Well No. W6 and existing Pumphouse

The Well No. W1 is rated at 1.21 L/s at a TDH of 83.3 m. The Well No. W2 is rated at 0.6 L/s at a TDH of 74.2 m.. The Well No. W3 is rated at 1.51 L/s at a TDH of 105 m and the Well No. W6 is rates at 5.3 L/s at a TDH of 47.6 m.

The existing Pumphouse consists of a Ferrosand Filter system, cartridge filter system, ultraviolet (UV) disinfection system, chlorination system, filter backwash tank, jockey pump, flow control valves (hydraulic), and water meters.

The Ferrosand Filter system consists of two Ferrosand Filter units (one duty, one standby) connected to the common well discharge header, complete with PLC to control backwash cycles, hydropneumatic tank to drive hydropneumatic valves, and all necessary piping and appurtenances. An iron-oxidizing sodium hypochlorite feed system with injection point located prior to the Ferrosand Filter units, consisting of two feed pumps (one duty, one standby) with auto switchover. There are two submersible well pumps (one duty, one standby) each rated at 20.3 L/s at a TDH of 19.5 m for the purpose of backwashing Ferrosand Filter units.

The Cartridge Filter system located after the Ferrosand Filter units has a treatment capacity of 9.55 L/s, equipped with a 5-micron size cartridge.

The UV disinfection system has two UV disinfection reactors (one duty, one standby) located after the cartridge filter unit, capable of providing a minimum dose of 40 mJ/cm2 at end of lamp life and each rated at 9.55 L/s. Each UV reactor has an automatic cleaning system and an on-line UV intensity monitor with alarm.

The Chlorination System has a secondary-chlorination sodium hypochlorite disinfection system with injection point located prior to the treated water entering the reservoir cells, consisting of two metering pumps (one duty, one standby) with auto switchover. There is also a post-chlorination sodium hypochlorite disinfection system with injection point located at the high lift header. It consists of two metering pumps (one duty, one standby) complete with all associated piping and alarms.

The Filter Backwash Tank is one in-ground cast-in-place concrete tank to clarify filter backwash waste with clarified supernatant discharged by gravity to an existing ditch.

The jockey pump is a submersible well pump rated at 5.67 L/s at a TDH of 56 m within Reservoir Cell No. 2.

One of the hydraulic flow control valves is located on the inlet piping from Well No. W1 and Well No. W2 set at 1.21 L/s. Another flow control valve is located in the inlet piping from Well No. W3 set at 1.51 L/s. One flow control valve is located on the inlet piping from Well No. W6 set at 5.3 L/s.

The last flow control valve is located on the combined piping from the two backwash pumps set at 20.3 L/s.

There are three water meters:
- One raw water meter for the raw water header
- One total raw water meter located after the common header from all four production wells
- One treated water meter prior to treated water exiting the pumphouse

The 80 kW diesel generator is set with a double-walled sub-base fuel tank with level gauge, low level float switch and leak sensor, all to be housed in the diesel generator building.

The Huron Woods system also contains one programmable logic controller (PLC) and associated SCADA system for control of plant operations.

List all water treatment chemicals used over this reporting period

- Sodium Hypochlorite 12%

Were any significant expenses incurred to?

[ ] Install required equipment
[X] Repair required equipment
[X] Replace required equipment

Describe:

- Replaced/Upgrade SCADA control system.
- Repair/Replace emergency power components.
- Purchase spare well pump.

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
NA					.

Microbiological testing done under Schedule 10, 11 or 12 of Regulation 170/03 during this reporting Period

Location	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 - RW1	12	0 - 0	0 - 125		
Raw - RW2	12	0 - 0	0 - 0		
Raw - RW3	12	0 - 0	0 - 0		
Raw - RW6	12	0 - 0	0 - 0		
Distribution - DW	52	0 - 0	0 - 0	52	0 - 3

Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (#-#)
Turbidity	8760	0.00-0.46
Chlorine	8760	0.80-1.56
Chlorine Residual Distribution System	105	0.69-1.28

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 or order.

Date of order or C of A	Parameter	Date Sampled	Result	C of A Limit	Unit of Measure
C of A 6008-76YK84	Suspended Solids (composite)	Quarterly	Annual Average < 2.0	25	mg/L

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

Parameter	Sample Date	Sample Result	Exceedance
Antimony: Sb (ug/L) - TW	2011/01/10	< 0.02	No
Arsenic: As (ug/L) - TW	2011/01/10	0.2	No
Barium: Ba (ug/L) - TW	2011/01/10	21.6	No
Boron: B (ug/L) - TW	2011/01/10	14.00	No
Cadmium: Cd (ug/L) - TW	2011/01/10	< 0.003	No
Chromium: Cr (ug/L) - TW	2011/01/10	< 0.5	No
Lead: Pb (ug/L) – DW			
Mercury: Hg (ug/L) - TW	2011/01/10	< 0.020	No
Selenium: Se (ug/L) - TW	2011/01/10	< 1.0	No
Sodium: Na (mg/L) -	2012/01/16	5.72	No
Uranium: U (ug/L) - TW	2011/01/10	0.034	No
Fluoride: (mg/L) -	2012/01/16	0.17	No
Nitrite (mg/L) - TW	2012/01/16	< 0.0050	No
Nitrite (mg/L) - TW	2012/04/02	< 0.0050	No
Nitrite (mg/L) - TW	2012/07/09	< 0.0050	No
Nitrite (mg/L) - TW	2012/10/16	< 0.0050	No
Nitrate (mg/L) - TW	2012/01/16	< 0.013	No
Nitrate (mg/L) - TW	2012/04/02	< 0.013	No
Nitrate (mg/L) - TW	2012/07/09	< 0.013	No
Nitrate (mg/L) - TW	2012/10/16	< 0.013	No

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

Parameter	Sample Date	Result Value	Exceedance
Alachlor (ug/L) – TW	2011/01/10	< 0.02	No
Aldicarb (ug/L) – TW	2011/01/10	< 0.01	No
Aldrin + Dieldrin (ug/L) -	2011/01/10	< 0.01	No
Atrazine + N-dealkylated metabolites (ug/L) – TW	2011/01/10	< 0.01	No
Azinphos-methyl (ug/L) – TW	2011/01/10	< 0.02	No
Bendiocarb (ug/L) – TW	2011/01/10	< 0.01	No
Benzene (ug/L) – TW	2011/01/10	< 0.32	No
Benzo(a)pyrene (ug/L) – TW	2011/01/10	< 0.0040	No

Polychlorinated Bichenysl(PCB) (ug/L) – TW	2011/01/10	< 0.040	No
Prometryne (ug/L) – TW	2011/01/10	< 0.03	No
Bromoxynil (ug/L) – TW	2011/01/10	< 0.33	No
Carbaryl (ug/L) – TW	2011/01/10	< 0.01	No
Carbofuran (ug/L) - TW	2011/01/10	< 0.01	No
Carbon Tetrachloride (ug/L) - TW	2011/01/10	< 0.16	No
Chlordane:Total (ug/L) - TW	2011/01/10	< 0.01	No
Chlorpyrifos (ug/L) - TW	2011/01/10	< 0.02	No
Cyanazine (ug/L) - TW	2011/01/10	< 0.03	No
Diazinon (ug/L) - TW	2011/01/10	< 0.02	No
Dicamba (ug/L) - TW	2011/01/10	< 0.2	No
1,2-Dichlorobenzene (ug/L) - TW	2011/01/10	< 0.41	No
1,4-Dichlorobenzene (ug/L) - TW	2011/01/10	< 0.36	No
Dichlorodiphenyltrichloroethane(DDT) + metabolites (ug/L) - TW	2011/01/10	< 0.01	No
1,2-Dichloroethane (ug/L) - TW	2011/01/10	< 0.35	No
1,1-Dichloroethylene (ug/L) - TW	2011/01/10	< 0.33	No
Dichloromethane (ug/L) - TW	2011/01/10	< 0.35	No
2,4-Dichlorophenol (ug/L) - TW	2011/01/10	< 0.15	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2011/01/10	< 0.19	No
Diclofop-methyl (ug/L) - TW	2011/01/10	< 0.40	No
Dimethoate (ug/L) - TW	2011/01/10	< 0.03	No
Dinoseb (ug/L) - TW	2011/01/10	< 0.36	No
Diquat (ug/L) - TW	2011/01/10	< 1.00	No
Diuron (ug/L) - TW	2011/01/10	< 0.03	No
Glyphosate (ug/L) - TW	2011/01/10	< 6.00	No
Heptachlor+Hepachlor Epoxide (ug/L) - TW	2011/01/10	< 0.01	No
Lindane: (ug/L) - TW	2011/01/10	< 0.01	No
Malathion (ug/L) - TW	2011/01/10	< 0.02	No
Methoxychlor (ug/L) - TW	2011/01/10	< 0.01	No
Metolachlor (ug/L) - TW	2011/01/10	< 0.01	No
Metribuzin (ug/L) - TW	2011/01/10	< 0.02	No
Monochlorobenzene (ug/L) - TW	2011/01/10	< 0.30	No
Paraquat (ug/L) - TW	2011/01/10	< 1.00	No

Parathion (ug/L) - TW	2011/01/10	< 0.02	No
Pentachlorophenol (ug/L) - TW	2011/01/10	< 0.15	No
Phorate (ug/L) - TW	2011/01/10	< 0.01	No
Picloram (ug/L) - TW	2011/01/10	< 0.25	No
Simazine (ug/L) - TW	2011/01/10	< 0.01	No
****THM (ug/L) - DW**	2012	61.8	No
Temephos (ug/L) - TW	2011/01/10	< 0.01	No
Terbufos (ug/L) - TW	2011/01/10	< 0.01	No
Tetrachloroethylene (ug/L) - TW	2011/01/10	< 0.35	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2011/01/10	< 0.14	No
Triallate (ug/L) - TW	2011/01/10	< 0.01	No
Trichloroethylene (ug/L) - TW	2011/01/10	< 0.43	No
2,4,6-Trichlorophenol (ug/L) - TW	2011/01/10	0.90	No
2,4,5-Trichlorophenoxy acetic acid (ug/L) - TW	2011/01/10	< 0.22	No
Trifluralin (ug/L) - TW	2011/01/10	< 0.02	No
Vinyl Chloride (ug/L) - TW	2011/01/10	< 0.17	No

** Annual average (THMs)

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
THM	60	Ug/L	01/16/2012
THM	56	Ug/L	04/02/2012
THM	61	Ug/L	07/09/2012
THM	70	Ug/L	10/16/2012

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, small municipal non residential, large non municipal non residential)

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 (ug/L) (min#) – (max #)	Number of Exceedances
Distribution	**2**	**0.24 – 0.33**	**0**

*****The Huron Woods Drinking Water System has qualified for the plumbing exemption in Accordance with O. Reg. 170/03 schedule 15.1-5 (9) and (10). The next distribution lead sampling is scheduled for the winter sampling period of 2015.**