Ontario Clean Water Agency
Agence Ontarienne Des Eaux

FOREMAN
WATER TREATMENT PLANT

Small Municipal Residential Drinking Water System

SCHEDULE 22
SUMMARY REPORT

For the period of
JANUARY 1, 2014 TO DECEMBER 31, 2014

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

SUMMARY

This report is a summary of water quality and quantity information submitted in accordance with Schedule 22 of Ontario's Drinking Water System Regulation for the reporting period of January 1, 2014 to December 31, 2014 for the Foreman Water Treatment Plant located in the Town of South Bruce Peninsula.

The summary includes:

1. Any requirements of the Act and Regulation, Orders or System Approval (s) that the system failed to meet during the reporting period and the measures taken to correct each failure.

2. A summary of the quantities and flow rates of water supplied during the reporting period, including monthly averages and maximum daily flows.

3. A comparison of the average and monthly maximum daily flows to the approved capacity specified in the System Approval.

ISSUES OF NON-COMPLIANCE

The following table lists the requirements of the Act, Regulations, System Approval(s) and any Order that the system failed to meet during the reporting period and the measures taken to correct each failure:

MOE Inspection commencing June 25, 2014 which was routine and unannounced resulted in an Inspection Report Rating 100%

No Actions Required

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:

Forman Water Treatment Plant

Month	Average Day Flow	% of Rated Capacity 165 m3/d	Maximum Day Flow	% of Rated Capacity 165 m3/d
January	17.662	10.70	21.1	12.79
February	17.743	10.75	19.6	11.88
March	18.214	11.04	26.9	16.30
April	16.275	9.86	19.3	11.70
May	18.90	11.45	20.1	12.18
June	15.74	9.54	20.0	12.12
July	14.721	8.92	21.4	12.97
August	14.65	8.88	21.8	13.21
September	15.375	9.32	19.9	12.06
October	18.233	11.05	19.4	11.76
November	16.283	9.87	19.1	11.58
December	13.244	8.03	22.8	13.82

O.Reg 170 SECTION 11 ANNUAL REPORT

Drinking-Water System Number:	220007711
Drinking-Water System Name:	Foreman Water Works
Drinking-Water System Owner:	Town of South Bruce Peninsula
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	January 1, 2014 to December 31, 2014

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 ll
Water Treatment
Class 1 Water Distribution

The Foreman Water Works Drinking-Water System has a 125 mm diameter, 73 meter deep drilled well equipped with a submersible deep well pump, with a nominal rating at 1.9 L/s. The Well Pumphouse houses the treatment and control facilities including:

1 Iron/Manganese Removal
2 Cartridge Filter System
3 Ultraviolet Disinfection System
4 Chlorination System
5 Clearwell/Storage Tank
6 Filter Backwash Tank
7 Hydro pneumatic Tanks

The Iron/Manganese Removal consists of a potassium permanganate system with chemical feed pumps, storage tanks, spill containment and all necessary controls and alarms.

The Cartridge Filter system is a cartridge filter unit located downstream of the greensand filters and rated at 3.15 L/s

The Ultraviolet Disinfection system consists of two UV disinfection reactors (one duty, one standby) located after the cartridge filter unit. Both are capable of providing a minimum dose of 40 mJ/cm^2 at the end of lamp life and each rated at 1.9 L/s

The Chlorination System is a sodium hypochlorite pre-chlorination disinfection system capable of injecting sodium hypochlorite before filtration or after the UV disinfection system. It consists of one duty and one standby metering pump with auto switchover, complete with a storage tank with spill containment. A post-chlorination sodium hypochlorite disinfection system with injection point is located at the high lift header. It consists of one duty metering pump which is complete with a storage tank with spill containment.

The Clearwell/Storage Tank is an 86 m^3 below the ground clearwell that is complete with all associated piping and controls. There are two submersible pumps (one duty, one standby) located in the clearwell each rated at 6.4 L/s at 31 m TDH. They are used to backwash the greensand filters. There are also two high lift submersible pumps each rated at 4.94 L/s at 50.6 m TDH.

The Filter Backwash Tank is a backwash waste holding tank which is approximately 2.6 m by 4.9 m by 2.3 m deep with clarified supernatant discharged by gravity to an existing ditch.

The Hydro pneumatic Tanks consists of two 454 L hydro pneumatic tanks located on the high lift discharge header and one 100 L hydro pneumatic tank for greensand filters.

There is a 30 kW diesel generator set, 240/120 Volts, with 450 L double walled sub-base fuel tank with level gauge, low level float switch and leak sensor, housed in a weatherproof enclosure.

There is also:
- One programmable logic controller and associated SCADA system for control of plant operations
- One colour analyzer on the downstream piping of the filters.
- One chlorine residual analyzer complete with alarm
- One treated water turbidity analyzer

List all water treatment chemicals used over this reporting period

- Sodium Hypochlorite 12%
- Potassium Permanganate

Were any significant expenses incurred to?

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

Describe

N/A

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 - RW	13	0 - 0	0 - 13		
Distribution - DW	48	0 - 0	0 - 0	48	0 - 10

O.Reg 170 SECTION 11 ANNUAL REPORT

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

	Number of Grab Samples	Range of Results (#-#)
Filter Turbidity	8760	0.02- 0.16
Chlorine	8760	0.66-1.58
Chlorine Residual Distribution System	108	0.45-1.48

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 9049-6VURYU	Suspended Solids (composite)	Monthly	Annual Average < 2.83	25	mg/L

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Sodium	01/16/12	10.8	mg/L	No
Fluoride	01/16/12	1.29	mg/L	No
Nitrite	01/20/14	<0.003	mg/L	No
	04/14/14	<0.003	mg/L	No
	07/14/14	<0.003	mg/L	No
	10/20/14	<0.003	mg/L	No
Nitrate	01/20/14	0.009	mg/L	No
	04/14/14	<0.006	mg/L	No
	07/14/14	0.007	mg/L	No
	10/20/14	0.008	mg/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
***THM	2014 average	7.25	ug/L	No

*** Annual average

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	01/10/11	<0.02	ug/L	No
Arsenic	01/10/11	0.2	ug/L	No
Barium	01/10/11	11.1	ug/L	No
Boron	01/10/11	78	ug/L	No
Cadmium	01/10/11	<0.003	ug/L	No
Chromium	01/10/11	0.6	ug/L	No
Lead				
Mercury	01/10/11	<0.02	ug/L	No
Selenium	01/10/11	<1	ug/L	No
Uranium	01/10/11	0.101	ug/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	01/10/11	<0.02	ug/L	No
Aldicarb	01/10/11	<0.01	ug/L	No
Aldrin + Dieldrin	01/10/11	<0.01	ug/L	No
Atrazine + N-dealkylated metobolites	01/10/11	<0.01	ug/L	No
Azinphos-methyl	01/10/11	<0.02	ug/L	No
Bendiocarb	01/10/11	<0.01	ug/L	No
Benzene	01/10/11	<0.32	ug/L	No
Benzo(a)pyrene	01/10/11	<0.004	ug/L	No
Bromoxynil	01/10/11	<0.33	ug/L	No
Carbaryl	01/10/11	<0.01	ug/L	No
Carbofuran	01/10/11	<0.01	ug/L	No
Carbon Tetrachloride	01/10/11	<0.16	ug/L	No
Chlordane (Total)	01/10/11	<0.01	ug/L	No
Chlorpyrifos	01/10/11	<0.02	ug/L	No
Cyanazine	01/10/11	<0.03	ug/L	No
Diazinon	01/10/11	<0.02	ug/L	No
Dicamba	01/10/11	<0.2	ug/L	No
1,2-Dichlorobenzene	01/10/11	<0.41	ug/L	No
1,4-Dichlorobenzene	01/10/11	<0.36	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	01/10/11	<0.01	ug/L	No
1,2-Dichloroethane	01/10/11	<0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	01/10/11	<0.33	ug/L	No
Dichloromethane	01/10/11	<0.35	ug/L	No
2-4 Dichlorophenol	01/10/11	<0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/10/11	<0.19	ug/L	No

Diclofop-methyl	01/10/11	<0.40	ug/L	No
Dimethoate	01/10/11	<0.03	ug/L	No
Dinoseb	01/10/11	<0.36	ug/L	No
Diquat	01/10/11	<1	ug/L	No
Diuron	01/10/11	<0.03	ug/L	No
Glyphosate	01/10/11	<6	ug/L	No
Heptachlor + Heptachlor Epoxide	01/10/11	<0.01	ug/L	No
Lindane (Total)	01/10/11	<0.01	ug/L	No
Malathion	01/10/11	<0.02	ug/L	No
Methoxychlor	01/10/11	<0.01	ug/L	No
Metolachlor	01/10/11	<0.01	ug/L	No
Metribuzin	01/10/11	<0.02	ug/L	No
Monochlorobenzene	01/10/11	<0.3	ug/L	No
Paraquat	01/10/11	<1	ug/L	No
Parathion	01/10/11	<0.02	ug/L	No
Pentachlorophenol	01/10/11	<0.15	ug/L	No
Phorate	01/10/11	<0.01	ug/L	No
Picloram	01/10/11	<0.25	ug/L	No
Polychlorinated Biphenyls(PCB)	01/10/11	<0.04	ug/L	No
Prometryne	01/10/11	<0.03	ug/L	No
Simazine	01/10/11	<0.01	ug/L	No
Temephos	01/10/11	<0.01	ug/L	No
Terbufos	01/10/11	<0.01	ug/L	No
Tetrachloroethylene	01/10/11	<0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	01/10/11	<0.14	ug/L	No
Triallate	01/10/11	<0.01	ug/L	No
Trichloroethylene	01/10/11	<0.43	ug/L	No
2,4,6-Trichlorophenol	01/10/11	<0.25	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	01/10/11	<0.22	ug/L	No
Trifluralin	01/10/11	<0.02	ug/L	No
Vinyl Chloride	01/10/11	<0.17	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
Fluoride	1.29	mg/L	01/16/12

(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	**0**	**N/A**	**N/A**

*****The Foreman 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.**