Ontario
Ministry of the Environment | Ministère de l'Environnement

O. Reg. 170 SECTION 11 ANNUAL REPORT

Part III Form 2
Section 11. ANNUAL REPORT.

Drinking-Water System Number:	**210000951**
Drinking-Water System Name:	**Verner WTP**
Drinking-Water System Owner:	**The Corporation of the Municipality of West Nipissing**
Drinking-Water System Category:	**Large Municipal Residential**
Period being reported:	**Jan 01, 2008 to Dec 31, 2008**

Complete if your Category is Large Municipal Residential or Small Municipal Residential	***Complete for all other Categories.***
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.** **Municipality of West Nipissing** **Sturgeon Falls Water Treatment Plant** **11 Nipissing Street** **Sturgeon Falls, Ontario P2B 1J4**	**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 [ ]**

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
NA	

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 [ ]

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

[X] Public access/notice via the web http:www.westnipissingouest.ca/pop/dep-utilities.html
[ ] Public access/notice via Government Office
[X] Public access/notice via a newspaper notice given via Sturgeon Falls Tribune newspaper
[ ] Public access/notice via Public Request
[X] Public access/notice via a Public Library copies placed at West Nipissing Library
[ ] Public access/notice via other method

Describe your Drinking-Water System

The Verner WTP was commissioned in 1975 and under went a major upgrade in 2005 which included replacement of all chemical feed system equipment and tanks, replacement of the plant instrumentation and controls, installation of a UV system for primary disinfection, installation of piping and valves to provide treatment-to-waste functionality, new raw water and treated water magnetic flow meters, and the installation of a 125 kW standby diesel generator. Also radio telemetry equipment was installed at the elevated storage tank to permit treatment plant-elevated tank communication and control.

The Verner water works consists of a full surface water treatment facility, designed capacity of 1059 m^3/d, drawing water from the Veuve River that is part of the Nipissing watershed. The intake structure is located 12 km upstream of Lake Nipissing and 48 km downstream of the source. The water treatment plant's intake facility consists of an intake structure located 5 m below the low river level, connected to a raw water wet well by a 42.7 m long, 250 mm ductile iron pipe. The intake structure is approximately 20 m from the riverbank.

The Verner Water Treatment Plant (WTP) is a conventional treatment facility consisting of chemically assisted filtration (through the use of an "Ecodyne Graver Monoplant" package treatment plant), primary disinfection & secondary disinfection. Conventional treatment is comprised of coagulation, flocculation, sedimentation & dual media rapid sand filtration. Furthermore, disinfection is achieved through the use of chlorine dioxide, UV and chlorine gas.

The Ecodyne Graver Monoplant package treatment plant, consisting of a Mixing Zone; Flocculation Zone; Settling Compartment and flock barriers; Blowdown valve and rapid flow by gravity sand and anthracite filters.

Chemical treatment includes the addition of polymer, aluminum sulfate, pre and post soda ash, chlorine for disinfection and chlorine dioxide for iron and manganese removal to control taste and odour.

There are four (4) below grade clear wells connected in series having a total area, total capacity and useable capacity of 134 m2, 269 m^3 and 234 m^3 respectively. The high lift pumping station has a firm capacity of 1,090 m^3/d with three (3) identical vertical turbine high lift pumps each having a capacity of 545 m^3/d at a TDH of 53.3 m. An elevated storage tank of composite steel/concrete construction, having a total storage capacity of 568 m^3 and about 40 m above ground equipped with low level alarm and an overflow is located approximately 23 meters.

Standby emergency power is supplied at this plant by a 125 kW standby diesel generator with automatic switchover controls installed as part of the 2005 plant upgrades.

List all water treatment chemicals used over this reporting period

Chlorine Gas
Sodium Chlorite
Sodium Carbonate
Aluminum Sulfate (ALUM)
Magnafloc LT20 Poly Acrylamide Polymer

Were any significant expenses incurred to?

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

Describe

- **All lamps and quartz sleeves in both UV reactor units were changed**
- **High lift Pump #3 was overhauled**

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
22-Jun-2008	UV Dosage	< 40	mJ/cm²	UV Dose was less than 40 mJ/cm² at approximately 11:20 am. Post Filter turb was 0.15, POE turb was 0.20, Raw UV %T is 18, post filter UV % T is 72 and POE free chlorine residual is 1.3 mg/L. NO further actions are required as per Mike Morrisson of MOH. AWQI # 80066	22-Jun-2008
26-Jun-2008	Soda Ash			Process loss of soda ash, pH dropped to 6.1, treated turb to 3.3 post filter turb 0.8 NTU, POE free chlorine at 1.42 mg/L. The post filtration soda ash supply was re-established. The dosage rates were increased to raise pH ASAP. pH 6.59 achieved by 8:55 am. Filter effluent turbidity was maintained below 0.2 NTU. Treated water turb decreased from 3.3 NTU to 2.7 NTU. Measured distribution turb is at 0.84 NTU. Measured distribution free chlorine residual is at .53 mg/L. AWQI # 80161	26-Jun-2008
13-Aug-2008	UV Dosage	< 40	mJ/cm²	Primary disinfection not met. UV dose <40 mJ/cm². Secondary Disinfection maintained 2.00mg/L	13-Aug-2008

				free chlorine. UV dosage above 40 mJ/cm^2 with two UV reactors operating continuously. AWQI #82550	
10-Nov-08	UV Dose	< 40	mJ/cm²	UV dosage slightly below 40 mJ/cm² with two UV reactors operating continuously. Temporary relief for operating below 40 mJ/cm² granted by local MOE office pending engineering study undertaken by owner. AWQI #85314	13-Nov-2008
9-Dec-2008	Sodium	> 20	mg/L	Re-sampling and notification of the elevated sodium level made to the MOH and MOE as required. AWQI # 85816. Re-sample collected 17 Dec 08. Resample result 44 mg/L. Re-sample results received on 29 Dec 08 were sent to the MOH, MOE & Owner on 05 Jan 2009.	5-Jan-2009

Microbiological testing done under section 8-2during this reporting period.

	Number of EC & TC Samples	Range of E.Coli Results (min #)-(max #)	Range of Total Coli form Results (min #)-(max #)	Number of GBP Background Samples	Range of GBP Background Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	**53**	**10 - 520**	**>40 - >2000**	**53**	**>200 - >2000**	**NA**	**NA**
Treated	**53**	**0 - 0**	**0 - 0**	**53**	**0 - 1**	**53**	**0 - 18**
Distribution	**161**	**0 – 0**	**0- 0**	**161**	**0 – 4**	**54**	**0 - 5**

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

Filter Grabs

	Number of Grab Samples	Range of Results (min #)-(max #)
Post Filter Turbidity	**315**	**0.09– 0.28 NTU**

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

POE Grabs

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	**366**	**0.1– 2.0 NTU**
Free Chlorine	**347**	**0.89 – 2.4 mg/L**

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

Distribution Grabs

	Number of Grab Samples	Range of Results (min #)-(max #)
Free Chlorine	471	0.25 – 2.44 mg/L

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

Filter On-line Continuous Analyzers

	Number of Samples	Range of Results (min #)-(max #)
Post Filter Turbidity	8760	0.01– 2.00 NTU

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

POE On-line Continuous Analyzers

	Number of Samples	Range of Results (min #)-(max #)
POE Free Chlorine	8760	0.00 – 3.95 mg/L

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

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

Date of legal instrument issued	Parameter	Sampling Frequency	Range of Result	Unit of Measure
C of A 7938-6T4JLY issued 28 Aug 2006	UV Intensity	continuous when units operating	plant shut down interlock activates if dosage <22 mJ/cm^2	mJ/cm^2
	Flow Rate	continuous	min 217 – max 613	m^3/d
	UV Transmittance	daily 5 days per wk	min 16 - max 45	% UVT
	UV Lamp Status	continuous	plant shut down interlock on lamp failure	on or off

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	**14 Feb 08**	**<0.5**	**ug/L**	
Arsenic	**14 Feb 08**	**<1**	**ug/L**	
Barium	**14 Feb 08**	**11**	**ug/L**	
Boron	**14 Feb 08**	**<10**	**ug/L**	
Cadmium	**14 Feb 08**	**<0. 1**	**ug/L**	
Chromium	**14 Feb 08**	**<5**	**ug/L**	
Lead Dist Sample 80 Principal St. E	**14 Feb 08**	**<0. 5**	**ug/L**	**Special Note: Community Lead Testing** Lead Testing was completed during two sample periods in 2008 as per Schedule 15.1. Results indicated that the concentrations of all residential lead samples were within the Ontario Drinking Water Quality Standard of 10 micrograms per liter. However one lead sample was above the ½ MAC concentration. Refer to separate community lead sampling results summary table following.
Mercury	**14 Feb 08**	**<0.0001**	**mg/L**	
Selenium	**14 Feb 08**	**<2**	**ug/L**	
Sodium	**14 Feb 08** **16 Dec 08** **17 Dec 08**	**43000** **38000** **44000**	**ug/L** **ug/L** **ug/L**	**>20,000 notification to MOH - re-sample result**
Uranium	**14 Feb 08**	**<0.1**	**ug/L**	
Fluoride	**01 Feb 2006**	**<0.1**	**mg/L**	
Nitrite	**14 Feb 08** **13 May 08** **13 Aug 08** **13 Nov 08**	**<0.01** **0.02** **<0.01** **<0.01**	**mg/L** **mg/L** **mg/L** **mg/L**	
Nitrate	**14 Feb 08** **13 May 08** **13 Aug 08** **13 Nov 08**	**0.1** **<0.1** **0.1** **0.1**	**mg/L** **mg/L** **mg/L** **mg/L**	

Summary of lead testing under O. Reg. 170/03 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)

Round 1	Number of Lead Samples	Number of Adverse Results	Range of Lead Samples (ug/L)		Range of PH Sample Results		Range of Alkalinity Sample Results (mg/L as $CaCO_3$)	
			MIN #	MAX #	MIN #	MAX #	MIN #	MAX #
Distribution	4	0	< 1	< 1	7.25	7.46	55	66
Non-Residential	2	0	< 1	< 1	7.26	7.27	NA	NA
Residential	20	0	< 1	6	7.01	7.38	NA	NA
Round 2	**Number of Lead Samples**	**Number of Adverse Results**	**Range of Lead Samples (ug/L)**		**Range of PH Sample Results**		**Range of Alkalinity Sample Results (mg/L as $CaCO_3$)**	
			MIN #	MAX #	MIN #	MAX #	MIN #	MAX #
Distribution	4	0	< 1	3	7.21	7.43	64	68
Non-Residential	2	0	< 1	2	6.87	6.87	NA	NA
Residential	20	0	< 1	4	7.02	7.68	NA	NA

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	14 Feb 08	<0.5	ug/L	
Aldicarb	14 Feb 08	<5	ug/L	DL > ½ MAC
Aldrin + Dieldrin	14 Feb 08	<0.01	ug/L	
Atrazine + N-dealkylated metobolites	14 Feb 08	<1	ug/L	
Azinphos-methyl (Guthion)	14 Feb 08	<2	ug/L	
Bendiocarb	14 Feb 08	<2	ug/L	
Benzene	14 Feb 08	<0.1	ug/L	
Benzo(a)pyrene	14 Feb 08	<0.009	ug/L	DL > ½ MAC
Bromoxynil	14 Feb 08	<0.5	ug/L	
Carbaryl	14 Feb 08	<5	ug/L	
Carbofuran	14 Feb 08	<5	ug/L	
Carbon Tetrachloride	14 Feb 08	<0.1	ug/L	
Chlordane (Total)	14 Feb 08	<0.01	ug/L	
Chlorpyrifos	14 Feb 08	<1	ug/L	
Cyanazine	14 Feb 08	<1	ug/L	

Diazinon	**14 Feb 08**	**<1**	**ug/L**	
Dicamba	**14 Feb 08**	**<1**	**ug/L**	
1,2-Dichlorobenzene	**14 Feb 08**	**<0.2**	**ug/L**	
1,4-Dichlorobenzene	**14 Feb 08**	**<0.2**	**ug/L**	
Dichlorodiphenyltrichloroethane(DDT)+metabolite	**14 Feb 08**	**<0.02**	**ug/L**	
1,2-Dichloroethane	**14 Feb 08**	**<0.2**	**ug/L**	
1,1-Dichloroethylene (vinylidene chloride)	**14 Feb 08**	**<0.1**	**ug/L**	
Dichloromethane	**14 Feb 08**	**<0.5**	**ug/L**	
2-4 Dichlorophenol	**14 Feb 08**	**<0.5**	**ug/L**	
2,4-Dichlorophenoxy acetic acid (2,4-D)	**14 Feb 08**	**<1**	**ug/L**	
Diclofop-methyl	**14 Feb 08**	**<0.9**	**ug/L**	
Dimethoate	**14 Feb 08**	**<3**	**ug/L**	
Dinoseb	**14 Feb 08**	**<1**	**ug/L**	
Diquat	**14 Feb 08**	**<7**	**ug/L**	
Diuron	**14 Feb 08**	**<10**	**ug/L**	
Glyphosate	**14 Feb 08**	**<10**	**ug/L**	
Heptachlor + Heptachlor Epoxide	**14 Feb 08**	**<0.01**	**ug/L**	
Lindane (Total)	**14 Feb 08**	**<0.006**	**ug/L**	
Malathion	**14 Feb 08**	**<5**	**ug/L**	
Methoxychlor	**14 Feb 08**	**<0.02**	**ug/L**	
Metolachlor	**14 Feb 08**	**<0.5**	**ug/L**	
Metribuzin	**14 Feb 08**	**<5**	**ug/L**	
Monochlorobenzene	**14 Feb 08**	**<0.1**	**ug/L**	
Paraquat	**14 Feb 08**	**<1**	**ug/L**	
Parathion	**14 Feb 08**	**<1**	**ug/L**	
Pentachlorophenol	**14 Feb 08**	**<0.5**	**ug/L**	
Phorate	**14 Feb 08**	**<0.5**	**ug/L**	
Picloram	**14 Feb 08**	**<5**	**ug/L**	
Polychlorinated Biphenyls(PCB)	**14 Feb 08**	**<0.05**	**ug/L**	
Prometryn	**14 Feb 08**	**<0.3**	**ug/L**	
Simazine	**14 Feb 08**	**<1**	**ug/L**	
THM Dist Sample Location 80 Principal St. E	**14 Feb 08** **13 May 08** **13 Aug 08** **13 Nov 08** **Ann Avg.**	**30.8** **59.0** **99.5** **76.9** **66.6**	**ug/L** **ug/L** **ug/L** **ug/L** **ug/L**	
Temephos	**14 Feb 08**	**<10**	**ug/L**	
Terbufos	**14 Feb 08**	**<0.5**	**ug/L**	**DL > ½ MAC**
Tetrachloroethylene	**14 Feb 08**	**<0.1**	**ug/L**	
2,3,4,6-Tetrachlorophenol	**14 Feb 08**	**<0.5**	**ug/L**	
Triallate	**14 Feb 08**	**<1**	**ug/L**	
Trichloroethylene	**14 Feb 08**	**<0.1**	**ug/L**	
2,4,6-Trichlorophenol	**14 Feb 08**	**<0.5**	**ug/L**	
2,4,5-Trichlorophenoxy acetic acid(2,4,5-T)	**14 Feb 08**	**<1**	**ug/L**	

Trifluralin	14 Feb 08	<1	ug/L	
Vinyl Chloride	14 Feb 08	<0.2	ug/L	

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	½ MAC VALUE	MAC Value	Date of Sample
Aldicarb	<5 lab detection level	ug/L	4.5	9	14 Feb 08
Benzo(a)pyrene	<0.009 lab detection level	ug/L	0.005	0.01	14 Feb 08
Lead	6.0	Ug/L	5.0	10.0	Spring 08

Note! **In all of the cases above the analysis result value was less that the lab detection limit. However the lab detection limit is above the ½ MAC value.**