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February 24, 2017

Municipality of West Grey  
402813 Grey Road 4  
RR#2  
Durham, ON  
N0G 1R0

**Attention: Brent Glasier, Director of Infrastructure and Public Works**

**RE: Neustadt Drinking Water System  
2016 Annual Report**

**Brent,**

Please find attached the 2016 Annual Operations Report for the Neustadt Drinking Water System, in accordance with Section 11(1) of O. Reg. 170/03. This report covers the period from January 1 to December 31 and meets the requirement of being prepared by February 28 of this year.

Please ensure that a copy of this report is given, without charge, to every person who requests a copy. In addition, please make certain that effective steps are taken to advise residents that copies of the report are available, and of how a copy can be obtained.

Finally, as per Schedule 22 of O. Reg. 170/03, please ensure that at least a copy of the Summary Report is given to the members of municipal council no later than March 31, 2017.

If you have any questions regarding the report, we would be pleased to address them and you should contact the undersigned accordingly.

Sincerely,

AMERICAN WATER CANADA CORP.

Greg Prangley  
Project Manager, Canadian Contract Services Group

## 2016 ANNUAL REPORT FOR WATER SYSTEMS

### Part 1 – ANNUAL REPORT (as required by O. Reg. 170/03, Section 11)

<b>Drinking-Water System Number:</b>	220002147
<b>Drinking-Water System Name:</b>	Neustadt Drinking Water System
<b>Drinking-Water System Owner:</b>	Municipality of West Grey
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1 – December 31, 2016

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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Designated Facilities served: n/a
Is your annual report available to the public at no charge on a web site on the Internet? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Did you provide a copy of your annual report to all Designated Facilities you serve? <input type="checkbox"/> Yes <input type="checkbox"/> No
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection. <b>Municipality of West Grey</b> <b>Grey Road #4</b> <b>Durham, ON N0G 2V0</b>	Number of Designated Facilities served: n/a Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? <input type="checkbox"/> Yes <input type="checkbox"/> No

#### 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
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?

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

<input type="checkbox"/> Public access/notice via the web	<input checked="" type="checkbox"/> Public access/notice via Government Office	<input type="checkbox"/> Public access/notice via a newspaper
<input type="checkbox"/> Public access/notice via Public Request	<input type="checkbox"/> Public access/notice via a Public Library	<input checked="" type="checkbox"/> Public access/notice via other method
INCLUDED WITH TAX NOTICE		

#### Describe your Drinking Water System

Three GUDI wells: Well No. 2 with a submersible pump capable of delivering 10.6 L/s; Well No. 3 with a submersible pump capable of delivering 6.1 L/s; and Well No. 1 with a submersible pump capable of delivering 3.2 L/s. Pumping station No. 2 transfers flow monitored raw water from Well No. 2 and Well No. 3 (each well with online turbidity meters) to Well No. 1 pumphouse. Well No. 1 pumphouse contains the treatment equipment, including, but not limited to, flow meters, sodium hypochlorite disinfection system (primary disinfection), UV disinfection system, cartridge filters, online chlorine and

turbidity analyzers, low level alarms and auto dialer.  
 There is a water tower with a volume of 1200m<sup>3</sup>. It is equipped with an on-line chlorine analyzer. Post chlorinators are in place to booster chlorine levels leaving the tower, if required.

**List all water treatment chemicals used over this reporting period**  
 Sodium Hypochlorite 12%

**Please provide a brief description and a breakdown of monetary expenses incurred**  
 No significant expenses in 2016

**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	Units	Corrective Action	Corrective Action Date
July 27, 2016	Total Coliforms	1	Counts/100 mL	Resample, restore disinfection	July 30, 2016

**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 Results (min #) - (max #)	Range of Total Coliform Results (min #) - (max #)	Number of HPC Samples	Range of HPC Results (min #) - (max #)
Raw Well #1	51*	0	0	n/a	n/a
Raw Well #2	51*	0	0-1	n/a	n/a
Raw Well #3	51*	0	0-7	n/a	n/a
Treated (POE)	51*	0	0	51*	0-1
Distribution	105*	0	0-1	51*	0-1

\*samples during week of Nov. 21 not delivered to lab in time. See Non-compliance section

**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 #)	Units
Turbidity - Treated	4860	0.04-2.72*	NTU
Chlorine-Treated	4860	0.69-1.36	mg/L
Chlorine - Distribution	424	0.66-1.19	mg/L
Fluoride (If the DWS provides fluoridation)	NA	NA	

\* High POE (Treated) turbidity events did not exceed regulations for duration (>15min)

**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	Range of Results	Unit of Measure
December 1, 2009	UV transmittance	2016 (monthly)	97.0-100.0	% transmittance

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

Parameter	Sample Date	Result Value POE	Distribution	Unit of Measure	Exceedance
Antimony	Aug 15/16	ND	-	mg/L	NO
Arsenic	Aug 15/16	0.0021	-	mg/L	NO
Barium	Aug 15/16	0.13	-	mg/L	NO
Boron	Aug 15/16	0.021	-	mg/L	NO
Cadmium	Aug 15/16	ND	-	mg/L	NO
Chromium	Aug 15/16	ND	-	mg/L	NO
Lead-see results below					
Mercury	Aug 15/16	ND	-	mg/L	NO
Selenium	Aug 15/16	ND	-	mg/L	NO
Sodium	Aug 15/16	4.7	-	mg/L	NO
Uranium	Aug 15/16	0.00031	-	mg/L	NO
Fluoride	Aug. 15/16	0.73	-	mg/L	NO
Nitrite	Feb 1/16	<0.01	-	mg/L	NO
Nitrate	Feb 1/16	<0.1	-	mg/L	NO
Nitrite	May 16/16	<0.01	-	mg/L	NO
Nitrate	May 16/16	<0.1	-	mg/L	NO
Nitrite	Aug 8/16	<0.01	-	mg/L	NO
Nitrate	Aug 8/16	<0.1	-	mg/L	NO
Nitrite	Nov 14/16	<0.01	-	mg/L	NO
Nitrate	Nov 14/16	<0.1	-	mg/L	NO

**Summary of Lead Results during this reporting period (Winter: Dec. 15/15-April 15/16; Summer: June 15-Oct. 15/16)**

Sampling Period	Range of Results (µg/L) from Residential Samples (# of Samples taken)	Non-residential locations (µg/L)	Distribution System (µg/L)	Any Adverse Water Quality Incidents?
Winter	n/a	n/a	ND (1)	NO
Summer	n/a	n/a	ND (1)	NO

As per O. Reg 170/03 Schedule 15.1-5, residential lead sampling is no longer required

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Aug 15/16	ND	µg/L	NO
Atrazine + N-dealkylated metabolites	Aug 15/16	ND	µg/L	NO
Azinphos-methyl	Aug 15/16	ND	µg/L	NO
Benzene	Aug 15/16	ND	µg/L	NO
Benzo(a)pyrene	Aug 15/16	ND	µg/L	NO
Bromoxynil	Aug 15/16	ND	µg/L	NO
Carbaryl	Aug 15/16	ND	µg/L	NO

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

Carbofuran	Aug 15/16	ND	µg/L	NO
Carbon Tetrachloride	Aug 15/16	ND	µg/L	NO
Chlorpyrifos	Aug 15/16	ND	µg/L	NO
Diazinon	Aug 15/16	ND	µg/L	NO
Dicamba	Aug 15/16	ND	µg/L	NO
1,2-Dichlorobenzene	Aug 15/16	ND	µg/L	NO
1,4-Dichlorobenzene	Aug 15/16	ND	µg/L	NO
1,2-Dichloroethane	Aug 15/16	ND	µg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	Aug 15/16	ND	µg/L	NO
Dichloromethane	Aug 15/16	ND	µg/L	NO
2-4 Dichlorophenol	Aug 15/16	ND	µg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug 15/16	ND	µg/L	NO
Diclofop-methyl	Aug 15/16	ND	µg/L	NO
Dimethoate	Aug 15/16	ND	µg/L	NO
Diquat	Aug 15/16	ND	µg/L	NO
Diuron	Aug 15/16	ND	µg/L	NO
Glyphosate	Aug 15/16	ND	µg/L	NO
Malathion	Aug 15/16	ND	µg/L	NO
MCPA	Aug 16/16			
Metolachlor	Aug 15/16	ND	µg/L	NO
Metribuzin	Aug 15/16	ND	µg/L	NO
(Mono)chlorobenzene	Aug 15/16	ND	µg/L	NO
Paraquat	Aug 15/16	ND	µg/L	NO
Pentachlorophenol	Aug 15/16	ND	µg/L	NO
Phorate	Aug 15/16	ND	µg/L	NO
Picloram	Aug 15/16	ND	µg/L	NO
Polychlorinated Biphenyls(PCB)	Aug 15/16	ND	µg/L	NO
Prometryne	Aug 15/16	ND	µg/L	NO
Simazine	Aug 15/16	ND	µg/L	NO
THM (NOTE: show latest annual average)	Q1 – Q4 2016	10.8	µg/L	NO
Terbufos	Aug 15/16	ND	µg/L	NO
Tetrachloroethylene	Aug 15/16	ND	µg/L	NO
2,3,4,6-Tetrachlorophenol	Aug 15/16	ND	µg/L	NO
Triallate	Aug 15/16	ND	µg/L	NO
Trichloroethylene	Aug 15/16	ND	µg/L	NO
2,4,6-Trichlorophenol	Aug 15/16	ND	µg/L	NO
Trifluralin	Aug 15/16	ND	µg/L	NO
Vinyl Chloride	Aug 15/16	ND	µg/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	Sample Date	Result Value	Unit of Measure	ODWS Criteria
None				

## Part 2 – SUMMARY REPORT (as required by O. Reg. 170/03, Schedule 22)

### Non-Compliance with Legislations, Regulations, Approvals & Orders

During this period, the Facility was operated in full compliance with the Act, the regulations and the Facility's approval, save and except for the following:

There were no non-compliances in 2016

System Capability Assessment								
Comparison of Flow Rates (m <sup>3</sup> /d):								
Month	Average Flow	Maximum Flow	Well 1 Avg Flow	Well 1 Max Flow	Well 2 Avg Flow	Well 2 Max Flow	Well 3 Avg Flow	Well 3 Max Flow
January	120.7	166	25.5	69.0	57.2	140	41.7	108
February	120.5	162	26.3	56.0	56.8	162	45.0	95.0
March	118.1	205	19.1	47.0	68.2	205	36.9	93.0
April	112.9	289	19.2	52.0	62.6	289	36.0	94.0
May	114.2	186	21.4	47.0	56.6	173	41.0	88.0
June	129.9	286	22.0	91.0	71.6	286	43.0	180
July	137.2	181	25.0	60.0	63.7	181	48.5	117
August	145.6	280	23.7	72.0	76.1	280	45.8	172
September	115.0	154	15.5	49.0	69.1	152	30.1	95.0
October	99.3	117	19.5	43.0	50.3	117	37.6	83.0
November	97.2	130	18.8	45.0	54.7	146	36.1	85.0
December	95.3	117	14.8	42.0	63.8	117	28.5	78.8
<b>AVERAGE</b>	117.2		20.9		62.6		39.2	
<b>MAXIMUM</b>	-	286	-	91.0	-	289	-	172
<b>SYSTEM (PTTW) CAPACITY</b>	916	916		276		916		527
<b>% CAPACITY</b>	12.8%	31.2%		33.0%		31.6%		32.6%

\*Due to rounding, the sum of the monthly well average totals may not equal the total average flow