



American Water Canada Corp.
701 Main Street West, Suite 100
Hamilton, ON L8S 1A2
www.amwater.com

P 905.521.1988
F 905.521.9613

February 26, 2013

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

Attention: Ken Gould, Public Works Manager

**RE: Durham Drinking Water System
2012 Annual Report**

Dear Ken,

Please find attached the 2012 Annual Operations Report for the Durham 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, 2013.

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, Ontario Regional Projects

cc. G.Timmerman, AWC West Grey

2012 ANNUAL REPORT FOR WATER SYSTEMS

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

Drinking-Water System Number:	220001771
Drinking-Water System Name:	Durham Drinking Water System
Drinking-Water System Owner:	Municipality of West Grey
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 – December 31, 2012

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. Municipality of West Grey Grey Road #4 Durham, ON NOG 2V0	Number of Designated Facilities served:	n/a
American Water Canada Corp. 701 Main St. W, Suite 100 Hamilton, ON L8S 1A2	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

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 type="checkbox"/> Public access/notice via other method INCLUDED WITH TAX NOTICE

Describe your Drinking Water System

Well No. 1B Pumphouse

A GUDI well, 300mm diameter and 77 m deep equipped with a VFD submersible well pump rated at 17

L/s at a TDH of 71-133 m. The pumphouse enclosure building is 4.9 m x 3.1 m x 3.3 m high and houses the water treatment equipment including, but not limited to, flow meters, UV disinfection system, cartridge filters, sodium hypochlorite disinfection system, online chlorine and turbidity analyzers, low level alarms, autodialer and backup diesel generator.

Well No. 2 Pumphouse

A GUDI well, 300mm diameter and 74.7 m deep equipped with a VFD submersible well pump rated at 17 L/s at a TDH of 75-139 m. The pumphouse contains the water treatment equipment including, but not limited to, flow meters, UV disinfection system, cartridge filters, sodium hypochlorite disinfection system, online chlorine and turbidity analyzers, low level alarms, autodialer and backup power source available.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite 12% v/v

Please provide a brief description and a breakdown of monetary expenses incurred

SCADA system upgrades \$170K total (Durham and Neustadt)

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
None					

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 1B)	52	0	0	n/a	n/a
Raw (well 2)	52	0	0	n/a	n/a
Treated POE 1	52	0	0	52	0-2
Treated POE 2	52	0	0	52	0-2
Distribution	156	0	0	65	0-1

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 – well 1B Treated	8760	0.02-0.50	NTU
Turbidity – Well 2 Treated	8760	0.00-0.96	NTU
Chlorine – Well 1B Treated	8760	0.00*-2.00	mg/L
Chlorine – Well 2 Treated	8760	0.11*-2.00	mg/L
Chlorine - Distribution	471	0.61-1.34	mg/L

All turbidity exceedances of 1 NTU(regulatory limit) are due to spikes on pump start up. None lasted long enough to be identified as adverse.

There were no instances of untreated water being delivered into the distribution system. Well pumps automatically shut off when chlorine levels drop below a preset value.

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 (#1B)	Jan-Dec. 2012	97.0-99.0	% transmittance
December 1, 2009	UV transmittance (#2)	Jan-Dec. 2012	96.0-98.0	% transmittance

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

Parameter	Sample Date	Result Value POE 1	Result Value POE 2	Distribution	Unit of Measure	Exceedance
Antimony	Aug. 20/12	ND	ND	-	mg/L	NO
Arsenic	Aug. 20/12	ND	ND	-	mg/L	NO
Barium	Aug. 20/12	0.013	0.012	-	mg/L	NO
Boron	Aug. 20/12	0.013	0.021	-	mg/L	NO
Cadmium	Aug. 20/12	ND	ND	-	mg/L	NO
Chromium	Aug. 20/12	ND	ND	-	mg/L	NO
Lead-see summary below						
Mercury	Aug. 20/12	ND	ND	-	mg/L	NO
Selenium	Aug. 20/12	ND	ND	-	mg/L	NO
Sodium	Aug. 20/12	6.1	5.4	-	mg/L	NO
Uranium	Aug. 20/12	0.0016	0.0035	-	mg/L	NO
Fluoride	Aug. 8/11	0.2	0.7	-	mg/L	NO
Nitrite	Feb 6/12	ND	ND	-	mg/L	NO
Nitrate	Feb 6/12	1.5	0.5	-	mg/L	NO
Nitrite	May 7/12	ND	ND	-	mg/L	NO
Nitrate	May 7/12	1.1	1.1	-	mg/L	NO
Nitrite	Aug 20/12	ND	ND	-	mg/L	NO
Nitrate	Aug 20/12	1.5	0.41	-	mg/L	NO
Nitrite	Nov 12/12	ND	ND	-	mg/L	NO
Nitrate	Nov 12/12	1.4	0.18	-	mg/L	NO

Summary of Lead Results during this reporting period (Winter: Dec. 15/11-April 15/12; Summer: June 15-Oct. 15/12)

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

No further residential sampling is required for this system

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

Parameter	Sample Date	Result Value POE 1	Result Value POE 2	Unit of Measure	Exceedance
Alachlor	Aug. 20/12	ND	ND	µg/L	NO
Aldicarb	Aug. 20/12	ND	ND	µg/L	NO
Aldrin + Dieldrin	Aug. 20/12	ND	ND	µg/L	NO
Atrazine + N-dealkylated metabolites	Aug. 20/12	ND	ND	µg/L	NO
Azinphos-methyl	Aug. 20/12	ND	ND	µg/L	NO
Bendiocarb	Aug. 20/12	ND	ND	µg/L	NO
Benzene	Aug. 27/12	ND	ND	µg/L	NO
Benzo(a)pyrene	Aug. 27/12	ND	ND	µg/L	NO
Bromoxynil	Aug. 20/12	ND	ND	µg/L	NO
Carbaryl	Aug. 20/12	ND	ND	µg/L	NO
Carbofuran	Aug. 20/12	ND	ND	µg/L	NO
Carbon Tetrachloride	Aug. 27/12	ND	ND	µg/L	NO
Chlordane (Total)	Aug. 20/12	ND	ND	µg/L	NO
Chlorpyrifos	Aug. 20/12	ND	ND	µg/L	NO
Cyanazine	Aug. 20/12	ND	ND	µg/L	NO
Diazinon	Aug. 20/12	ND	ND	µg/L	NO
Dicamba	Aug. 20/12	ND	ND	µg/L	NO
1,2-Dichlorobenzene	Aug. 27/12	ND	ND	µg/L	NO
1,4-Dichlorobenzene	Aug. 27/12	ND	ND	µg/L	NO
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Aug. 27/12	ND	ND	µg/L	NO
1,2-Dichloroethane	Aug. 27/12	ND	ND	µg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	Aug. 27/12	ND	ND	µg/L	NO
Dichloromethane	Aug. 27/12	ND	ND	µg/L	NO
2,4 Dichlorophenol	Aug. 20/12	ND	ND	µg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug. 20/12	ND	ND	µg/L	NO
Diclofop-methyl	Aug. 20/12	ND	ND	µg/L	NO
Dimethoate	Aug. 20/12	ND	ND	µg/L	NO
Dinoseb	Aug. 20/12	ND	ND	µg/L	NO
Diquat	Aug. 20/12	ND	ND	µg/L	NO
Diuron	Aug. 20/12	ND	ND	µg/L	NO
Glyphosate	Aug. 20/12	ND	ND	µg/L	NO

Heptachlor + Heptachlor Epoxide	Aug. 20/12	ND	ND	µg/L	NO
Lindane (Total)	Aug. 20/12	ND	ND	µg/L	NO
Malathion	Aug. 20/12	ND	ND	µg/L	NO
Methoxychlor	Aug. 20/12	ND	ND	µg/L	NO
Metolachlor	Aug. 20/12	ND	ND	µg/L	NO
Metribuzin	Aug. 20/12	ND	ND	µg/L	NO
Monochlorobenzene	Aug. 20/12	ND	ND	µg/L	NO
Paraquat	Aug. 20/12	ND	ND	µg/L	NO
Parathion	Aug. 20/12	ND	ND	µg/L	NO
Pentachlorophenol	Aug. 20/12	ND	ND	µg/L	NO
Phorate	Aug. 20/12	ND	ND	µg/L	NO
Picloram	Aug. 20/12	ND	ND	µg/L	NO
Polychlorinated Biphenyls(PCB)	Aug. 20/12	ND	ND	µg/L	NO
Prometryne	Aug. 20/12	ND	ND	µg/L	NO
Simazine	Aug. 20/12	ND	ND	µg/L	NO
THM (NOTE: show latest annual average)	Q1-Q4 2012	5.4 (distribution)		µg/L	NO
Temephos	Aug. 20/12	ND	ND	µg/L	NO
Terbufos	Aug. 20/12	ND	ND	µg/L	NO
Tetrachloroethylene	Aug. 27/12	ND	ND	µg/L	NO
2,3,4,6-Tetrachlorophenol	Aug. 20/12	ND	ND	µg/L	NO
Triallate	Aug. 20/12	ND	ND	µg/L	NO
Trichloroethylene	Aug. 27/12	ND	ND	µg/L	NO
2,4,6-Trichlorophenol	Aug. 20/12	ND	ND	µg/L	NO
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Aug. 20/12	ND	ND	µg/L	NO
Trifluralin	Aug. 20/12	ND	ND	µg/L	NO
Vinyl Chloride	Aug. 27/12	ND	ND	µg/L	NO

ND = Non-Detect

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 (paraphrased from MOE inspection report 1-963MS:

1. Logs or other record keeping mechanisms were not available for at least five (5) years. Logged SCADA records are not readily available for detailed evaluation over a shorter time interval

Actions Required:

- a) Ensure logs and other record-keeping mechanisms are accessible at the subsystem, as required by the Regulation

Actions Taken:

SCADA system has been altered to allow for the retrieval of detailed alarm incidents and other recorded events. The Operating Authority now retains copies of SCADA records of all alarm events

System Capability Assessment						
Comparison of Flow Rates (m ³ /d):						
Month	Average Flow Well #1B	Maximum Flow Well #1B	Max. Instant. Well #1B Flow (L/s)	Average Flow Well #2	Maximum Flow Well #2	Max. Instant. Well #2 Flow (L/s)
January	787	1022	14.0	412	699	11.0
February	689	863	14.0	304	635	11.0
March	766	1070	14.0	279	836	11.0
April	784	959	14.0	249	539	11.0
May	793	918	14.0	278	516	11.0
June	810	1036	14.0	294	467	11.0
July	832	994	14.0	474	781	11.0
August	764	902	14.0	297	482	11.0
September	774	905	14.0	214	401	11.0
October	745	964	14.0	274	481	11.0
November	742	927	14.0	255	488	11.0
December	730	878	14.0	269	638	11.0
AVERAGE	768	n/a	n/a	300	n/a	n/a
MAXIMUM	-	1070	14.0	-	836	11.0
SYSTEM CAPACITY	1375	1375	18.9	1636	1636	18.9
% CAPACITY	55.8%	77.8%	n/a	18.3%	51.1%	n/a