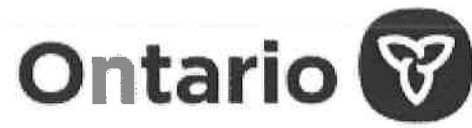


Ministry of the
Environment, Conservation
and Parks

Ministère de l'Environnement, de
la Protection de la nature et des
Parcs



Guelph District Office
4th Floor
1 Stone Road West
Guelph, Ontario N1G 4Y2

Bureau du district de Guelph
4^e étage
1, chemin Stone Ouest
Guelph (Ontario) N1G 4Y2

September 17, 2019

****Sent via email****

Township of Amaranth
374028 6th Line
Amaranth, Ontario
L9W 0M6

Attention: Ms. Susan Stone
CAO/Clerk-Treasurer

Re: Waldemar Drinking Water System Inspection Report
Waterworks #220013553, Our File: SI DU AM C9 540

On August 8, 2019 the Waldemar Drinking Water System was inspected by the Ministry of the Environment, Conservation and Parks (MECP). Please find attached a copy of the Inspection Report #1-KY76F.

In order to measure individual inspection results, the MECP has established an inspection compliance risk framework based on the principles of the Inspection, Investigation & Enforcement (II&E) Secretariat and advice of internal/external risk experts. The Inspection Summary Rating Record (IRR), included as Appendix B of the inspection report, provides the Ministry, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance. The IRR methodology uses a risk rating model to better reflect the health related and administrative non-compliance found in an inspection report. IRR ratings are published (for the previous inspection year) in the MECP's Chief Drinking Water Inspectors' Annual Report. If you have any questions or concerns regarding the rating, please contact Lisa Williamson, Water Compliance Supervisor, at 519-837-6386.

Section 19 of the Safe Drinking Water Act (Standard of Care) creates a number of obligations for individuals who exercise decision-making authority over municipal drinking water systems. Please be aware that the MECP has encouraged such individuals, particularly municipal councilors, to take steps to be better informed about the drinking water systems over which they have decision-making authority. These steps could include asking for a copy of this inspection report and a review of its findings. Further information about Section 19 can be found in "Taking Care of Your Drinking Water: A guide for members of municipal council" found on the MECP website at www.ontario.ca.

If you wish to discuss the results of the inspection in more detail, please feel free to contact me at (519) 837-7457.

Yours truly,

Signature: (Provincial Officer)

A handwritten signature in black ink, appearing to be 'CS', written over the typed name 'Carola Serwotka'.

Carola Serwotka
Provincial Officer/Water Inspector
Guelph District Office
West Central Region

c.c.

Joe Miedema, Dufferin Water Co. Ltd. (email)

Shawn Zentner, Manager, Health Protection Division, Wellington, Dufferin, Guelph Health Unit (email)

Sandra Cooke, Senior Water Quality Supervisor, Grand River Conservation Authority (email)

Lisa Williamson, Water Compliance Supervisor, MECP

Guelph District Office File: SI DU AM C9 540

Electronic Binder



Ministry of the Environment, Conservation and Parks

**WALDEMAR DRINKING WATER SYSTEM
Inspection Report**

Site Number:	220013553
Inspection Number:	1-KY76F
Date of Inspection:	Aug 08, 2019
Inspected By:	Carola Serwotka

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APPENDICES

APPENDIX A: MINISTRY AUDIT SAMPLES

APPENDIX B: INSPECTION SUMMARY RATING RECORD

OWNER INFORMATION:

Company Name: AMARANTH, THE CORPORATION OF THE TOWNSHIP OF
Street Number: 374028 **Unit Identifier:**
Street Name: 6TH LINE AMARANTH
City: ORANGEVILLE
Province: ON **Postal Code:** L9W 2Z3

CONTACT INFORMATION

Type: Operating Authority **Name:** Joe Miedema
Phone: (519) 942-5695 **Fax:** (519) 940-3956
Email: joe_miedema@bell.net
Title: Owner - Dufferin Water Co. Ltd.

Type: Owner **Name:** Susan Stone
Phone: (519) 941-1007 **Fax:** (519) 941-1802
Email: suestone@amaranth-eastgary.ca
Title: CAO / Clerk-Treasurer

INSPECTION DETAILS:

Site Name: WALDEMAR DRINKING WATER SYSTEM
Site Address:
County/District: AMARANTH
MECP District/Area Office: Guelph District
Health Unit: WELLINGTON-DUFFERIN-GUELPH HEALTH UNIT
Conservation Authority: Credit Valley Conservation
MNR Office: Guelph District Office
Category: Large Municipal Residential
Site Number: 220013553
Inspection Type: Unannounced
Inspection Number: 1-KY76F
Date of Inspection: Aug 08, 2019
Date of Previous Inspection: Oct 11, 2018

COMPONENTS DESCRIPTION

Site (Name): WELL 1 RAW
Type: Source **Sub Type:** Ground Water

Comments:
 Well PW1 is a 107 m deep drilled groundwater well located outside between 18 and 20 St. John Street in the Waldemar subdivision. It has a 150 mm diameter steel casing and is equipped with a submersible well pump rated at 341 L/min at a Total Dynamic Head (TDH) of 40.0 m. The well is complete with a pitless adapter, vermin proof vented well cap, level monitoring tube and a 75 mm diameter transmission line connected to a 50 mm diameter well pump header in the pumphouse.
 Each well pump header is equipped with a pressure gauge, sample tap, flow control valve, raw water flow meter, isolation valving and chlorine injection point.

Site (Name): WELL 2 RAW
Type: Source **Sub Type:** Ground Water

Comments:
 Well PW2 is a 117 m deep drilled groundwater well located outside in front of 39 Russel Hill Road in the Waldemar subdivision. It has a 150 mm diameter steel casing and is equipped with a submersible well pump rated at 273 L/min at a Total Dynamic Head (TDH) of 71.6 m. The well is complete with a pitless adapter, vermin proof vented well cap, level monitoring tube and a 75 mm diameter transmission line connected to a 50 mm diameter well pump header in the pumphouse.
 Each well pump header is equipped with a pressure gauge, sample tap, flow control valve, raw water flow meter, isolation valving and chlorine injection point.

Site (Name): WELL 3 RAW
Type: Source **Sub Type:** Ground Water

Comments:
 Well PW3 is a 91 m deep drilled groundwater well located outside between 34 and 36 St. John Street in the Waldemar subdivision. It has a 200 mm diameter steel casing and is equipped with a submersible well pump rated at 318 L/min at a Total Dynamic Head (TDH) of 45 m. The well is complete with a pitless adapter, vermin proof vented well cap, a steel well head enclosure, and approximately 690 m length of 100 mm diameter transmission line connected to a 75 mm diameter well pump header in the pumphouse.
 Each well pump header is equipped with a pressure gauge, sample tap, flow control valve, raw water flow meter, isolation valving and chlorine injection point.

Site (Name): PUMPHOUSE TREATED
Type: Treated Water POE **Sub Type:**

Comments:
 The Pumphouse is located at 10 Station street in Waldemar, Ontario. Treatment consists of disinfection with a 12 percent sodium hypochlorite solution. The chlorination system consists of one 100 L chemical solution tank with spill containment and four chemical metering pumps (3 duty and one shelf spare), each rated at 0.59 L/hr with feed lines discharging into their respective well pump headers. Contact time is provided in a two celled below ground reservoir, with a storage capacity of approximately 273 m3. A continuous chlorine analyzer provides online monitoring of the treated water.
 Water is delivered to the distribution system via three high lift pumps with a rated capacity of 378 L/min at a TDH of 60.0 m. The high lift pump discharge line is equipped with a sample tap. Each pump is equipped with isolation valves to facilitate taking individual pumps out of service. There is also one fire pump with a rated capacity of 1930 L/min at a TDH of 66.0 m. Pressure is maintained in the system by three hydropneumatic pressure tanks, each with a volume of 1226 L. A 75 kW standby diesel generator is located within the pumphouse.

Site (Name): DISTRIBUTION SYSTEM
Type: Other **Sub Type:**

Comments:
 The Waldemar system supplies water to 106 residences, providing water to a community of approximately 380 people. The distribution system consists of 150, 200 and 300 mm diameter PVC piping that is installed in a loop format to minimize dead ends. The system also has 21 fire hydrants and 28 mainline valves. There are no storage reservoirs or standpipes in the distribution system.

Site (Name): MOE DWS Mapping
Type: DWS Mapping Point **Sub Type:**

INSPECTION SUMMARY:

Introduction

- The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water related policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment and distribution components as well as management practices.

This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O.Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

This report is based on a "focused" inspection of the system. Although the inspection involved fewer activities than those normally undertaken in a detailed inspection, it contained critical elements required to assess key compliance issues. This system was chosen for a focused inspection because the system's performance met the ministry's criteria, most importantly that there were no deficiencies as identified in O.Reg. 172/03 over the past 3 years. The undertaking of a focused inspection at this drinking water system does not ensure that a similar type of inspection will be conducted at any point in the future.

This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

This unannounced inspection began on August 7, 2019 and covered the period from November 1, 2018 to August 7, 2019. The inspection was attended by Rick Neubrand, MECP Water Inspector, and Joe Miedema, Dufferin Water Co. Ltd., Overall Responsible Operator (ORO). The Mansfield DWS comprises of 3 wells and a water treatment plant. The treatment system was physically inspected by Rick Neubrand, in addition, a review of logbooks, monitoring data, sampling records, operator certification and maintenance information was done by Carola Serwotka.

Source

- The owner was maintaining the production well(s) in a manner sufficient to prevent entry into the well of surface water and other foreign materials.

The three wells were secure at the time of the inspection.

- Measures were in place to protect the groundwater and/or GUDI source in accordance with any the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA.

Inspections are completed every 6 months of all three wells document checking the well cap, vent, seal, security and drainage around the well casings.

Capacity Assessment

- There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Drinking Water Works Permit issued under Part V of the SDWA.
- The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Municipal Drinking Water Licence issued under Part V of the SDWA.

Based on flow data provided for the inspection period, the following capacity assessment was generated for

Capacity Assessment

average and maximum flowrates as a percent of the limits:

- Well #1 - 14% average, 58% maximum
- Well #2 - not used
- Well #3 - 12% average, 54% maximum
- Distribution - 9% average, 21% maximum

Treatment Processes

- **The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.**
- **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Drinking Water Works Permit and/or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers.**
Based on logbook entries free chlorine residuals leaving the water treatment plant ranged from 0.65 to 2.18 mg/L. The minimum required free chlorine residual is 0.068 mg/L based on 2- log removal of viruses and retention time of 43 minutes.
- **Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.**
During the inspection period, the free chlorine residuals were measured daily in the distribution system which ranged from 0.71 to 1.91 mg/L.
- **Where an activity has occurred that could introduce contamination, all parts of the drinking water system were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit.**

Treatment Process Monitoring

- **Primary disinfection chlorine monitoring was conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved.**
- **The secondary disinfectant residual was measured as required for the distribution system.**
Samples for free chlorine residuals are taken and tested daily.
- **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**
Data is reviewed Monday, Wednesday and Friday.
- **All continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.**
- **Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.**
- **All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's**

Treatment Process Monitoring

instructions or the regulation.

Handheld monitors are calibrated annually and used to verify continuous monitors daily.

Operations Manuals

- The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.
- The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.

Logbooks

- Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.

Security

- The owner had provided security measures to protect components of the drinking water system.
The wells and the treatment plant were locked and secure at the time of the inspection.

Certification and Training

- The overall responsible operator had been designated for each subsystem.
- Operators-in-charge had been designated for all subsystems which comprised the drinking water system.
- All operators possessed the required certification.
The drinking water system has a Water Distribution and Supply Subsystem Class II certificate #5244, issued on January 25, 2008.
- Only certified operators made adjustments to the treatment equipment.
The ORO and the operator are the only operators that attend to the system.

Water Quality Monitoring

- All microbiological water quality monitoring requirements for distribution samples were being met.
There are two to three distribution samples taken and tested per week to meet the minimum 8 samples required per month.
- All microbiological water quality monitoring requirements for treated samples were being met.
One treated sample is taken weekly and tested as required.
- All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.
The last set of inorganic sampling and testing occurred on October 5, 2018 and is required every three years.

Water Quality Monitoring

- **All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**
The last set of organic sampling and testing occurred on October 5, 2018 and is required every three years.
- **All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.**
HAAs are sampled and tested quarterly.
- **All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.**
THMs are sampled and tested quarterly and ranged from 6.56 g/L to 10.6 ug/L during the inspection period. The limit is 100 ug/L as an annual average.
- **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.**
Nitrate/nitrites are sampled and tested quarterly. The results were below 0.10 mg/L for the inspection period where the limit is 10 mg/L.
- **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**
Sodium is required to be sampled and tested every 5 years and was measured at 20 mg/L. The aesthetic objective is 200 mg/L and the reportable limit is 20 mg/L for notification to those on sodium reduced diets. The local health unit is aware of the levels as required.
- **All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**
Fluoride is required to be sampled and tested every 5 years and was measured at 1.8 and 1.9 mg/L during the inspection period. Fluoride is naturally occurring in the area. The limit is 1.5 mg/L and the local health unit was notified as required.
- **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**
Chain of Custody records were reviewed which showed that free chlorine residuals are taken as required.

Water Quality Assessment

- **Records did not show that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O.Reg. 169/03).**
Fluoride is naturally occurring in the Waldemar area and the Ontario Drinking Water Quality Standard (ODWQS) is 1.5 mg/L. On October 18, 2018 a sample was taken and tested for fluoride where the results were 1.8 mg/L, after resampling and testing results were 1.89 mg/L. The local health unit was notified as required.

Reporting & Corrective Actions

- **Corrective actions (as per Schedule 17) had been taken to address adverse conditions, including any other steps that were directed by the Medical Officer of Health.**
Resampling for the Fluoride exceedence took place as required by O. Reg. 170/03 and the local health unit did not require any additional actions.
- **All required notifications of adverse water quality incidents were immediately provided as per O. Reg.**

Reporting & Corrective Actions

170/03 16-6.

- **Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.**

During the inspection, alarms were tested and performed as required.

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

Not Applicable


SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

This section provides a summary of all recommendations and best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following issues and consider measures to address them.


Not Applicable

SIGNATURES

Inspected By:
Carola Serwotka

Signature: (Provincial Officer)


Reviewed & Approved By:
Lisa Williamson

Signature: (Supervisor)


Review & Approval Date:

September 17, 2019

Note: This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or operating authority to ensure compliance with all applicable legislative and regulatory requirements.

**APPENDIX A
MINISTRY AUDIT SAMPLE RESULTS
(NOT APPLICABLE)**

**APPENDIX B
INSPECTION RATING RECORD**

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2019-2020)

DWS Name: WALDEMAR DRINKING WATER SYSTEM
DWS Number: 220013553
DWS Owner: Amaranth, The Corporation Of The Township Of
Municipal Location: Amaranth

Regulation: O.REG 170/03
Category: Large Municipal Residential System
Type Of Inspection: Focused
Inspection Date: August 8, 2019
Ministry Office: Guelph District

Maximum Question Rating: 495

Inspection Module	Non-Compliance Rating
Source	0 / 14
Capacity Assessment	0 / 30
Treatment Processes	0 / 77
Operations Manuals	0 / 28
Logbooks	0 / 14
Certification and Training	0 / 42
Water Quality Monitoring	0 / 112
Reporting & Corrective Actions	0 / 66
Treatment Process Monitoring	0 / 112
TOTAL	0 / 495

Inspection Risk Rating | 0.00%

FINAL INSPECTION RATING: | 100.00%

Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2019-2020)

DWS Name: WALDEMAR DRINKING WATER SYSTEM
DWS Number: 220013553
DWS Owner: Amaranth, The Corporation Of The Township Of
Municipal Location: Amaranth

Regulation: O.REG 170/03
Category: Large Municipal Residential System
Type Of Inspection: Focused
Inspection Date: August 8, 2019
Ministry Office: Guelph District

Maximum Question Rating: 495

Inspection Risk Rating | 0.00%

FINAL INSPECTION RATING: | 100.00%