**Ministry of the Environment, Conservation and Parks**

**Barrie District**

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

**District de Barrie**

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August 5, 2020

**Attention: John Pinsent Chief Administrative Officer**
**Re: 2020 Drinking Water Inspection Report**
**Val Harbour Subdivision Drinking Water System**

Please find enclosed the Ministry of the Environment, Conservation and Parks Inspection Report for Val Harbour Subdivision Drinking Water System (Water Works # 220010690). The physical inspection process took place on July 14, 2020.

The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks legislation and authorizing documents, as well as evaluating conformance with Ministry drinking water-related policies and guidelines during the inspection review period.

There were no issues of non-compliance identified during the inspection. No Provincial Officer's Orders were issued in conjunction with this inspection.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation and Enforcement Secretariat and advice of internal/external risk experts. The Inspection Summary Rating Record (IRR), included as Appendix A of this 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. If you have any questions or concerns regarding the rating, please contact Sheri Broeckel, Drinking Water Supervisor at (705) 716-3712.

If you have any questions regarding the inspection report, please feel free to contact the undersigned at (705) 716-5655 or laura.kent@ontario.ca.

Sincerely,

Laura Kent

Laura Kent
Provincial Officer
Barrie District Office
Ministry of the Environment Conservation and Parks

CC Medical Officer of Health, Simcoe Muskoka District Health Unit
Overall Responsible Operator, Township of Ramara
Barrie District Office File, Ministry of the Environment, Conservation and Parks

Ontario

**Ministry of the Environment, Conservation and Parks**

# VAL HARBOUR SUBDIVISION DRINKING WATER SYSTEM

## Inspection Report

| | |
|---|---|
| **Site Number:** | 220010690 |
| **Inspection Number:** | 1-O72Y2 |
| **Date of Inspection:** | Jul 14, 2020 |
| **Inspected By:** | Laura Kent |

## OWNER INFORMATION:

**Company Name:** RAMARA, THE CORPORATION OF THE TOWNSHIP OF
**Street Number:** 2297 **Unit Identifier:**
**Street Name:** HIGHWAY 12 Hwy
**City:** BRECHIN
**Province:** ON **Postal Code:** L0K 1B0

### CONTACT INFORMATION

**Type:** Main Contact **Name:** Nick Leroux
**Phone:** (705) 484-5374 x248 **Fax:** (705) 484-0441
**Email:** nleroux@ramara.ca
**Title:** Senior Operator

**Type:** Owner **Name:** John Pinsent
**Phone:** (705) 484-5374 x222 **Fax:** (705) 484-0441
**Email:** jpinsent@ramara.ca
**Title:** Chief Administrative Officer

## INSPECTION DETAILS:

**Site Name:** VAL HARBOUR SUBDIVISION DRINKING WATER SYSTEM
**Site Address:** 3885 EDGEHILL Road BRECHIN ON L3V 0L1
**County/District:** RAMARA
**MECP District/Area Office:** Barrie District
**Health Unit:** SIMCOE MUSKOKA DISTRICT HEALTH UNIT
**Conservation Authority:**
**MNR Office:**
**Category:** Small Municipal Residential
**Site Number:** 220010690
**Inspection Type:** Announced
**Inspection Number:** 1-O72Y2
**Date of Inspection:** Jul 14, 2020
**Date of Previous Inspection:** Oct 08, 2019

### COMPONENTS DESCRIPTION

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

**Site (Name):** WELL 1 RAW
**Type:** Source **Sub Type:** Ground Water
**Comments:**
Well #1 is located within the boundary of a park situated in an estate subdivision on the shores of Lake Simcoe. The well is situated approximately 200 metres west of the Val Harbour pumphouse and approximately 225 metres from the Lake Simcoe shoreline.

According to the Groundwater Under Direct Influence (GUDI) Evaluation Report prepared by Dixon Hydrogeology in June 2002, Well #1 was constructed in 1972 by Baldwin Well Drilling using an air percussion drilling rig to a depth of 18.9 metres. Although the well record did not contain any details regarding plugging and sealing of the annulus of the well, it is reported that it was common practice for Baldwin Well Drilling to install an annular seal of bentonite in all wells they drilled in overburden.
As a result of concerns identified in the 2005 inspection relating to potential microbiological contamination of Well #1, a Provincial Officer Order was issued to undertake an evaluation of the well. Based on the results of the evaluation, the owner undertook remedial action on the well in December, 2005 which involved overdrilling the existing 6 inch well and installing an appropriate bentonite grout seal around the casing.
According to the facility Drinking Water Works Permit #147-205, the well is equipped with a submersible deep well pump and a flow control valve rated at 47 litres/minute, with a 50 millimetre diameter discharge line connected to the well pump header in the pumphouse. The flow is monitored using a magnetic flow meter for tracking the total daily flow and the peak instantaneous flow from the well.

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**Site (Name):** WELL 2 RAW
**Type:** Source **Sub Type:** Ground Water
**Comments:**
Well #2 is within an estate subdivision situated on the shores of Lake Simcoe. The well is situated 3 metres east of the Val Harbour pumphouse and approximately 205 metres from the Lake Simcoe shoreline.
According to the Groundwater Under Direct Influence (GUDI) Evaluation Report prepared by Dixon Hydrogeology in June 2002, Well #2 was constructed in 1972 by Baldwin Well Drilling using a cable tool drilling rig to a depth of 15.6 metres. Although the well record did not contain any details regarding plugging and sealing of the annulus of the well, it is reported that it was common practice for Baldwin Well Drilling to install an annular seal of bentonite in all wells they drilled in overburden.
According to the facility Drinking Water Works Permit #147-205, the well is equipped with a submersible deep well pump and a flow control valve rated at 97 litres/minute, with a 50 millimetre diameter discharge line connected to the well pump header in the pumphouse. The flow is monitored using a magnetic flow meter for tracking the total daily flow and the peak instantaneous flow from the well.
Well 2 is equipped with a sensor that continuously records the water level in the well. This complies with Condition 4.2 of PTTW 7653-87TS7U.

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**Site (Name):** WELL 3
**Type:** Other **Sub Type:** Ground Water
**Comments:**
Well #3 is located within the boundary of a park situated in an estate subdivision on the shores of Lake Simcoe. The well is situated approximately 180 metres east of the Val Harbour pumphouse and approximately 225 metres from the Lake Simcoe shoreline.
According to the well record for Well Tag A111794, Well #3 construction was completed on December 22, 2011 by Allan Wright Water Wells using a rotary (conventional) drilling rig to a depth of 18.9 metres. From grade level to a depth of 9 metres bentonite grout was used for the plugging and sealing of the annulus of the well. From grade to 14 metres a bentonite hole plug was used to seal the inner annulus between the inner PVC casing and the outer steel casing.
This well was converted to a static monitoring well in December of 2011. During this time, previous monitoring wells were properly decommissioned. Well 3 was not equipped with a sensor as the establishment of a communication line would prove more difficult than installing the sensor in Well 2 which is adjacent to the pumphouse. The sensor was installed in Well 2 to comply with Condition 4.2 of PTTW 7653-87TS7U. There is no plan to use Well 3 as a supply well.

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

Well #3R is located within the boundary of a park situated in an estate subdivision on the shores of Lake Simcoe. The well is situated approximately 180 metres east of the Val Harbour pumphouse and approximately 225 metres from the Lake Simcoe shoreline.
According to the Well Record for Well Tag A0949294, Well #3R construction was completed on December 22, 2011 by Allan Wright Water Wells using a rotary (conventional) drilling rig to a depth of 18.9 metres. From grade level to a depth of 9 metres bentonite grout was used for the plugging and sealing of the annulus of the well. From grade to 14 metres a bentonite hole plug was used to seal the inner annulus between the inner PVC casing and the outer steel casing.
According to the facility Drinking Water Works Permit #147-205, the well is equipped with a submersible deep well pump and a flow control valve rated at 144 litres/minute, with a 75 millimetre diameter discharge line connected to the well pump header in the pumphouse. The flow is monitored using a magnetic flow meter for tracking the total daily flow and the peak instantaneous flow from the well.

**Site (Name):** PUMPHOUSE TREATED
**Type:** Treated Water POE **Sub Type:** Pumphouse
**Comments:**
Raw water from Wells 1, 2, and 3R enter the pumphouse through three separate polyvinyl chloride (PVC) raw water headers (50 millimetres (mm), 50 mm, and 75 mm in diameter, respectively). As the raw water enters the pumphouse, it can either be directed through the treatment train or wasted through the wall by operating in-line valves. In addition, each header is equipped with an ABB magnetic flow meter used for measuring raw water flows and a smooth-bore raw water sample tap. In each instance, the raw water waste lines are prior to the flow meters. After passing through the flow meters, the raw water passes through a flow control valve on each raw water header, rated at 45.4 litres per minute (lpm), 94.6 lpm and 144 lpm for Well 1, Well 2 and Well 3R respectively. The water then combines into a single header where it is dosed with sodium hypochlorite.
The sodium hypochlorite disinfection system consists of a pre and post-chlorination system. The pre-chlorination system is comprised of one chemical storage tank with secondary containment and two chemical metering pumps, one duty and one standby. The chemical metering pumps are equipped with alarm, shut down and automatic switch over.
The dosed water then passes through another ABB magnetic flow meter used for measuring combined flows prior to entering the reservoirs.
After chemical dosing, the water is directed to two 43,800 litre pre-cast concrete reservoirs equipped with water level indicators, designed to provide chlorine contact volume and equalization storage. The post chlorination system consists of two chemical feed pumps, one duty and one standby with automatic switchover in case of duty pump failure, each with an injection point, and one chemical solution tank with secondary containment. The addition rate is paced to the flow entering the distribution system.
Three vertical multistage high lift pumps are installed to direct water to the distribution system. Each pump is capable of pumping 2.7 L/s at 28.1 TDH, complete with a pressure relief valve and recirculation line to the water reservoirs. Two of the high lift pumps are connected and automatically operated by the pump control panel, with the third high lift pump only being manually operated in the event of a duty pump failure.
Before discharging to the distribution system, the treated water passes through an ABB magnetic flow meter. In addition, the pumphouse is equipped with continuous chlorine residual and turbidity analysers powered by an uninterruptible power supply, as well as a smooth bore treated water sampling tap which are fed water from a point after the contact time and prior to leaving the pumphouse. The pumphouse is also wired with a 24 hour alarm system which continuously monitors illegal entry, fire, power interruptions, low temperature and low pressure, low and high reservoir levels, chlorine duty pump fail and chlorine system fault as well as treated water quality for turbidity and free available chlorine residuals.

**Site (Name):** DISTRIBUTION (WATER INSPECTIONS)
**Type:** Other **Sub Type:** Other
**Comments:**
The Val Harbour water supply system is designed to service 74 lots on Lot 24, Concession 7 in the Township of Ramara. The Val Harbour Subdivision Well Supply is categorized as a Small Municipal Residential system as

defined by Ontario Regulation 170/03.
The distribution system consists of approximately 1,700 metres of 100 millimetre diameter poly-vinyl chloride (PVC) water mains, isolation valving and three dedicated sample stations. Although there are no hydrants within the system, six blow-offs are installed, one at the end of each street, for maintenance purposes.

# 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.**

  The Val Harbour Subdivision Drinking Water System is comprised of 74 residential lots, not all of which have been built on and connected to the drinking water system. The drinking water system is owned and operated by the Corporation of the Township of Ramara. The Val Harbour Subdivision Drinking Water System is categorized as a small municipal residential drinking water system, as defined by Ontario Regulation 170/03 and operates under DWS number 220010690.
  The Val Harbour Subdivision Drinking Water System consists of three source wells, one monitoring well, three distribution sample points and six blow offs for flushing and maintenance purposes. Treatment is provided by chlorination for primary and secondary disinfection. Two 43,800 L precast concrete treated water reservoirs are used to achieve the necessary contact time and to meet peak demand. There are no storage structures within the distribution system. The distribution system consists of approximately 1,700 m of 100 mm diameter polyethylene watermain.
  This inspection was conducted pursuant to section 81 of the Safe Drinking Water Act in order to assess compliance with the requirements of Ontario Regulation 170/03 and Ministry control documents. The drinking water inspection included: physical inspection of the treatment equipment and facility; interview with Township of Ramara staff; and a review of relevant documents and data from the period of October 8, 2019 to July 14, 2020 (hereafter referred to as the "inspection review period"). The previous inspection of the Val Harbour Subdivision Drinking Water System was conducted on October 8, 2019.

**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.**

  Subsection 1-2. (1) 1. of Schedule 1 of Ontario Regulation 170/03 requires that the owner of a drinking water system shall ensure that any well that serves as an entry point of raw water supply is constructed and maintained to prevent surface water and other foreign materials from entering the well.
  There are three supply wells for the Val Harbour Subdivision Drinking Water System. Each of the wells has a secure cap and screened vents. The grading around the base of the wells does not promote the pooling of water at

**Source**

the base. Operators check the exposed parts of each of the wells weekly. During one week of the inspection review period Well 1 had a result of 1 CFU/100 ml for total coliforms and during another week had a result of 3 CFU/100 ml for total coliforms. Well 3a had a result of 1 CFU/100 ml for total coliforms during one week of the inspection review period. All other results for total coliforms and Escherichia coli were zero for the three supply wells during the inspection review period.

- **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.**

  Condition 16.2.8 of Schedule B of Municipal Drinking Water Licence 147-105 Issue Number 3 requires an inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells.
  Condition 16.2.9 of Schedule B of Municipal Drinking Water Licence 147-105 Issue Number 3 requires well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components.
  Condition 16.2.10 of Schedule B of Municipal Drinking Water Licence 147-105 Issue Number 3 requires remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.
  The Operating Authority has developed a Well Inspection, Maintenance and Monitoring Plan. The Plan outlines the schedule for inspection of the three production wells supplying water for the Val Harbour Drinking Water System. The inspection schedule includes both above and below grade well components, as well as comparison of well level monitoring data and calibration of the flow meters. The Plan includes a list of conditions that may indicate a problem with the well casing or structure. The Plan includes a weekly well inspection checklist, monthly well checks, water level monitoring and checks for the monitoring well, yearly well inspection performance inspection check list and a 5-year checklist for the unexposed well structure.

**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.**

  Condition 2.1 of Schedule C of Municipal Drinking Water Licence 147-105 Issue Number 3 requires that for each treatment subsystem, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system, and the flow rate and daily volume of water that flows into the treatment subsystem.
  There is a magnetic flow meter installed on each of the three raw water lines, as well as on the combined raw water header, and a magnetic flow meter installed on the distribution header. Each of the flow meters provides a 4-20 mA signal. Raw and treated water flows are continuously recorded on the SCADA system. Daily log print outs include the 24 hour flows, min, max and average from each of the raw water wells as well as the combined raw water header and treated water flows. The 24 hour flow as well as the amount of flow since midnight (the print out occurs at approximately 6:00 am) is indicated.

- **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.**

  Table 1 of Schedule C of Municipal Drinking Water Licence 147-105 Issue Number 3 states that the rated capacity for Val Harbour Water Works is 207.36 m3/day. This value was not exceeded during the inspection review period.
  Table 2 of Schedule C of Municipal Drinking Water Licence 147-105 Issue Number 3 does not have a maximum flow rate associated with the Val Harbour Water Works.

**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.**

**Treatment Processes**

During the inspection, installed equipment appeared to meet the description contained in Schedule A of Drinking Water Works Permit 147-205 Issue Number 2. In the system description overview it notes that the Val Harbour Subdivision Drinking Water System obtains its drinking water from Wells Nos. 1 and 2. The overview does not make mention of the third supply well. The Water Works description contained in Schedule A does include the third supply well, 3R, and notes that it is connected to the well pump header in the pump house.
The Operating Authority sent an email to the Ministry Approvals Branch requesting that the system description be updated to include Well 3R in the Schedule A overview on November 5, 2019.
There is not a Schedule C associated with the 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.**

  Primary disinfection for Val Harbour Subdivision Drinking Water System is achieved by chlorination and the use of the chlorine contact/concentration time (CT) concept to ensure the provision of effective pathogen inactivation. The effective disinfectant contact time required for the CT concept is attained within the two 43,800 L reservoirs, prior to the conveyance of the treated water to consumers. Following completion of the intended contact time, free chlorine residuals are maintained within the distribution system for secondary disinfection purposes.
  In efforts to ensure minimum treatment is provided at all times a series of fail safes have been incorporated into the SCADA system. Fail safes include the low chlorine alarm and reservoir alarm levels being set at values which afford sufficient time for an Operator to respond prior to primary disinfection being compromised. Operators perform CT calculations where appropriate to confirm disinfection.
  During the inspection review period, primary disinfection was achieved. Logsheet notes explained actions taken and reasons for readings outside of the normal operating range, such as low chlorine alarm testing and calibration of the continuous analysers.

- **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.**

  Section 1-2. (2) 4. of Schedule 1 of Ontario Regulation 170/03 requires that if the drinking water system's water treatment equipment provides chlorination or chloramination for secondary disinfection, the equipment is operated so that, at all times and at all locations within the distribution system, the free chlorine residual is never less than 0.05 mg/L, if the drinking water system provides chlorination and does not provide chloramination.
  During the inspection review period there were no free chlorine residual results in the Val Harbour distribution system below 0.05 mg/L. The lowest recorded distribution free chlorine reading during the inspection review period was 0.41 mg/L. At the time of inspection the inspector measured a free chlorine residual of 0.96 mg/L the Bonnie Sample Station.

- **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.**

  Condition 2.3 of Schedule B of Drinking Water Works Permit 147-205 Issue Number 2 states that all parts of the drinking water system in contact with drinking water which are:
  2.3.1 Added, modified, replaced, extended; or
  2.3.2 Taken out of service for inspection, repair or other activities that may lead to contamination,
  shall be disinfected before being put into service in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:
  a) The ministry's Watermain Disinfection Procedure, effective January 29, 2017;
  b) AWWA C652 – Standard for Disinfection of Water Storage Facilities;
  c) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
  d) AWWA C654 - Standard for Disinfection of Wells.

**Treatment Processes**

The Val Harbour Water Works Contingency and Emergency Plan, which was updated in January 2019, references the most recent version of ANSI/AWWA C651 Standard for Disinfecting Water Mains where required. The ministry's Watermain Disinfection Procure is appended in the Contingency Plan. The ministry Procedure references the ANSI/AWWA C651 document.

**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 continuous chlorine analyser is fed sample water from a point after the reservoirs and the intended CT, prior to water entering the distribution system.

- **The secondary disinfectant residual was measured as required for the distribution system.**

  Subsection 7-2. (5) of Schedule 7 of Ontario Regulation 170/03 requires that the owner of a small municipal residential system that provides secondary disinfection and the operating authority for the system shall ensure that at least two distribution samples are taken each week in accordance with subsection (6) and are tested immediately for free chlorine residual, if the system provides chlorination and does not provide chloramination.
  Subsection (6) states that at least one of the distribution samples referred to in subsection (5) must be taken at least 48 hours after, and during the same week as, one of the other distribution samples referred to in subsection (5).
  During the inspection review period free chlorine residuals were measured in the Val Harbour Subdivision distribution system as required.

- **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**

  Subsection 6-5. (1) 3. of Schedule 6 of Ontario Regulation 170/03 requires that test results recorded under paragraph 1 or 2 must be examined within 72 hours after the tests are conducted by a certified operator in the case of a small municipal residential system, such as Val Harbour Subdivision Drinking Water System.
  An Operator reviews the data recorded by the continuous monitoring equipment within 72 hours of the records being made. Operators review the daily sheets which contain minimum, maximum and average values of flows and all the continuous analyser results. The Operating Authority has implemented a system by which Operators can review the data remotely with their phones. As part of the review the time and name of the Operator who performs the review is electronically recorded and included on the daily log print out along with any notes made by the Operator.

- **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.**

  Subsection 6-5. (1.1) of Schedule 6 of Ontario Regulation 170/03 requires that the continuous monitoring equipment must cause an alarm to sound immediately at the following locations if the equipment malfunctions or loses power or a test result for a parameter is above the maximum alarm standard or below the minimum alarm standard specified in the Table to this section for the parameter:
  i. The location where the equipment conducts tests.
  ii. A location where a person is present, if a person is not always present at the location where the equipment conducts tests.
  iii. Every designated facility served by the drinking water system, unless the system is a large municipal residential system or a small municipal residential system.
  In the event that the continuous chlorine analyser records a value below or above the set points, an audible alarm is initiated. The setpoints exceed the requirements of the Table in Schedule 6 of Ontario Regulation 170/03. After

**Treatment Process Monitoring**

two minutes the alarm is sent to the phone of the on call Operator and the auxiliary chlorine pump is activated. Operators regularly test the low chlorine alarm to ensure it is functioning properly.

- **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 instructions or the regulation.**

  Subsection 6-5 (1) 8 of Schedule 6 of Ontario Regulation 170/03 states that the continuous monitoring equipment must be checked and calibrated in accordance with the manufacturer's instructions. Subsection 6-5(1)10 states that if the manufacturer's instructions do not indicate how often to check and calibrate the continuous monitoring equipment and paragraph 9 does not apply, the equipment must be checked and calibrated as often as necessary to ensure that test results are within the following margins of error: i. In the case of free chlorine residual, 0.05 milligrams per litre, if the concentrations usually measured by the equipment are less than or equal to 1.0 milligrams per litre, and proportionally higher if the concentrations usually measured are greater than 1.0 milligrams per litre, ii. In the case of free chlorine residual and total chlorine residual measured for the purpose of determining combined chlorine residual, 0.05 milligrams per litre, if the concentrations usually measured by the equipment are less than or equal to 1.0 milligrams per litre, and proportionally higher if the concentrations usually measured are greater than 1.0 milligrams per litre, iii. 0.1 Nephelometric Turbidity Units (NTU), in the case of turbidity.
  On the majority of days that Operators attend the pumphouse a comparison is done of the free chlorine residual measured by a hand held colorimeter and the continuous analyser. The Operations and Maintenance Manual indicates the comparison is to be done at last weekly. The hand hold colorimeter units undergo a verification with secondary standards periodically and are serviced by the manufacturer if the secondary verification is not within the required range. In accordance with the Operations Manual in the event that the discrepancy is greater than 0.2 mg/L, the span of the continuous analyser is changed. The continuous analyser probe is changed and calibrated as required. The continuous analyser is calibrated annually by a service technician. Metcon calibrated the continuous turbidity and chlorine analyser installed in the Val Harbour pumphouse in January 2020.

**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.**

  Section 16.2 of Schedule B of Municipal Drinking Water Licence 147-105 Issue Number 3 requires that the operations and maintenance manual or manuals, shall include at a minimum:
  16.2.1 The requirements of this licence and associated procedures;
  16.2.2 The requirements of the drinking water works permit for the drinking water system;
  16.2.3 A description of the processes used to achieve primary and secondary disinfection within the drinking water system, including where applicable:
  a) A copy of the CT calculations that were used as the basis for primary disinfection under worst case operating conditions; and
  b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;
  16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;
  16.2.5 Procedures for the operation and maintenance of monitoring equipment;
  16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
  16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the

**Operations Manuals**

nature of the complaint and any investigation and corrective action taken in respect of the complaint;
16.2.8 An inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells;
16.2.9 Well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components; and
16.2.10 Remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.
The Val Harbour Water Works Operations and Maintenance manual meets the requirements of the Municipal Drinking Water Licence. The Operating Authority updated the Val Harbour Operations Manuals in January 2019 to ensure that the descriptions contained and procedures outlined were accurate. In March 2020 the Operators and Classification section was updated to reflect changes to Operator certification.
The name of the former Overall Responsible Operator (ORO) is still indicated in the Operations Manual. The Operating Authority has updated the name to the current ORO with the Director. The Operating Authority will be changing in the near future, and at that time the update to the manual will be completed.

**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, sample stations, reservoir hatches and pumphouse are locked. The pumphouse is also alarmed for forced entry. There is a fence with a locked gate around the reservoir. There are no other storage structures within the distribution system.

**Certification and Training**

- **The overall responsible operator had been designated for each subsystem.**

  The Val Harbour Subdivision Drinking Water System is comprised of a Water Distribution Class 1 and Water Treatment Class 1 subsystem. The Overall Responsible Operator is designated for both of the subsystems.

- **Operators-in-charge had been designated for all subsystems which comprised the drinking water system.**

  The Val Harbour Subdivision Drinking Water System is comprised of a Water Distribution Class 1 and Water Treatment Class 1 subsystem. The Operators In Charge are designated for both of the subsystems.

- **All operators possessed the required certification.**

- **Only certified operators made adjustments to the treatment equipment.**

**Water Quality Monitoring**

- **All microbiological water quality monitoring requirements for distribution samples prescribed by legislation were being met.**

  Subsection 11-2 of Schedule 11 of Ontario Regulation 170/03 requires that the owner of a drinking water system and the operating authority for the system shall ensure that at least one distribution sample is taken every two weeks, if the system provides treatment equipment in accordance with Schedule 1 or 2 and the equipment is operated in accordance with that Schedule. The owner of the drinking water system and the operating authority for

**Water Quality Monitoring**

the system shall ensure that each of the samples taken is tested for Escherichia coli, total coliforms and general bacteria population expressed as colony counts on a heterotrophic plate count (HPC) if secondary disinfection is provided.
During the inspection review period two microbiological samples were collected in the Val Harbour Subdivision distribution system each week and tested for the required parameters.

- **All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Subsection 13-2 of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a small municipal residential system and the operating authority for the system shall ensure that, at least one water sample is taken every 60 months and tested for every parameter set out in Schedule 23.
  The most recent treated water samples tested for all Schedule 23 parameters were collected on August 21, 2019. Prior to that, treated water sampling for Schedule 23 parameters was done on August 16, 2016.

- **All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Subsection 13-4 of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a small municipal residential system and the operating authority for the system shall ensure that, at least one water sample is taken every 60 months and tested for every parameter set out in Schedule 24.
  The most recent treated water samples tested for all Schedule 24 parameters were collected on August 21, 2019. Prior to that, treated water sampling for Schedule 24 parameters was done on August 16, 2016.

- **All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.**

  Section 13-6.1 of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system shall ensure that at least one distribution sample is taken in each calendar quarter from a point in the drinking water system's distribution system or plumbing that is connected to the drinking water system that is likely to have an elevated potential for the formation of haloacetic acids (HAA), and have the samples tested for haloacetic acids.
  The requirement to sample for HAA came into effect on January 1, 2017. The standard for HAA as a reportable limit came into effect on January 1, 2020.
  During the inspection review period a sample was collected from the Val Harbour distribution system in November 2019, February 2020 and May 2020 and tested for HAA as required. The average for HAA during the inspection review period was below the method detection limit of 5.3 ug/L.

- **All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.**

  Section 13-6 of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system shall ensure that at least one distribution sample is taken every three months from a point in the drinking water system's distribution system or plumbing that is connected to the drinking water system that is likely to have an elevated potential for the formation of trihalomethanes (THMs). The samples are to be tested for THMs.
  During the inspection review period samples were collected from the Val Harbour distribution system and tested for THMs in November 2019, February 2020 and May 2020 as required. The average for THMs during the inspection review period was 17.33 ug/L.

- **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.**

  Section 13-7 of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a drinking water system and the operating authority for the system shall ensure that at least one water sample is taken every three months and

**Water Quality Monitoring**

tested for nitrate and nitrite.
During the inspection review period samples tested for nitrate and nitrite were collected from the treated water point of entry for Val Harbour Subdivision Drinking Water System in November 2019, February 2020 and May 2020 as required.

- **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-8 of Schedule 13 of Ontario Regulation 170/03 requires that the owner of a drinking water system and the operating authority for the system shall ensure that at least one water sample is taken every 60 months and tested for sodium.
  Section 6-1.1 (7) of Schedule 6 of Ontario Regulation 170/03 states that if this Regulation requires at least one water sample to be taken every 60 months and tested for a parameter, the owner of the drinking water system and the operating authority for the system shall ensure that at least one sample that is taken during a 60-month period for the purpose of being tested for that parameter is taken not more than 90 days before or after the fifth anniversary of the day a sample was taken for that purpose in the previous 60-month period.
  A treated water sample was collected on August 25, 2015 and tested for sodium. A sodium resample was collected on September 3, 2015. Prior to the August 2015 sample, a treated water sample tested for sodium was collected on August 24, 2010.

- **All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-9 of Schedule 13 of Ontario Regulation 170/03 requires that if a drinking water system does not provide fluoridation, the owner of the system and the operating authority for the system shall ensure that a water sample is taken at least once every 60 months and tested for fluoride.
  Section 6-1.1 (7) of Schedule 6 of Ontario Regulation 170/03 states that if this Regulation requires at least one water sample to be taken every 60 months and tested for a parameter, the owner of the drinking water system and the operating authority for the system shall ensure that at least one sample that is taken during a 60-month period for the purpose of being tested for that parameter is taken not more than 90 days before or after the fifth anniversary of the day a sample was taken for that purpose in the previous 60-month period.
  A sample was collected from the treated water sample point at Val Harbour Subdivision Drinking Water System on August 15, 2017 and tested for fluoride. Prior to that sample, a sample was collected and tested for fluoride on August 22, 2012.

- **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**

  Subsection 6-3. (1) of Schedule 6 of Ontario Regulation 170/03 states that if this Regulation requires a water sample to be taken and tested for a microbiological parameter, the owner of the drinking water system and the operating authority for the system shall ensure that another sample is taken at the same time from the same location and is tested immediately for free chlorine residual, if the system provides chlorination and does not provide chloramination.
  During the inspection review period free chlorine residuals were tested at the same time and from the same location as treated water and distribution microbiological samples.

**Water Quality Assessment**

- **Records showed 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).**

  All samples collected during the inspection review period as well as the most recent samples tested for all Schedule 23 and 24 parameters and fluoride, met the Ontario Drinking Water Quality Standards.

**Other Inspection Findings**

- **The following items are noted as being relevant to the Drinking Water System:**

  The Owner is in the process of switching the Operating Authority from the Township of Ramara to the Ontario Clean Water Agency (OCWA). At the time of inspection the date of the transition had not been confirmed.

## 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: | Signature: (Provincial Officer) |
| Laura Kent |  |
| Reviewed & Approved By: | Signature: (Supervisor) |
| Sheri Broeckel |  |
| Review & Approval Date: | August 5, 2020 |

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.

## Inspection Summary Rating Record

**Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2020-2021)**

| | |
|---|---|
| **DWS Name:** | VAL HARBOUR SUBDIVISION DRINKING WATER SYSTEM |
| **DWS Number:** | 220010690 |
| **DWS Owner:** | Ramara, The Corporation Of The Township Of |
| **Municipal Location:** | Ramara |
| **Regulation:** | O.REG 170/03 |
| **Category:** | Small Municipal Residential System |
| **Type Of Inspection:** | Focused |
| **Inspection Date:** | July 14, 2020 |
| **Ministry Office:** | Barrie District |

**Maximum Question Rating:** 408

| 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 / 91 |
| Treatment Process Monitoring | 0 / 112 |
| **TOTAL** | **0 / 408** |

| | |
|---|---|
| **Inspection Risk Rating** | **0.00%** |

| | |
|---|---|
| **FINAL INSPECTION RATING:** | **100.00%** |

**Inspection Rating Record Generated On 04-AUG-20 (Inspection ID: 1-O72Y2).**

**Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2020-2021)**

| | |
|---|---|
| **DWS Name:** | VAL HARBOUR SUBDIVISION DRINKING WATER SYSTEM |
| **DWS Number:** | 220010690 |
| **DWS Owner:** | Ramara, The Corporation Of The Township Of |
| **Municipal Location:** | Ramara |
| **Regulation:** | O.REG 170/03 |
| **Category:** | Small Municipal Residential System |
| **Type Of Inspection:** | Focused |
| **Inspection Date:** | July 14, 2020 |
| **Ministry Office:** | Barrie District |

**Maximum Question Rating:** 408

| | |
|---|---|
| **Inspection Risk Rating** | **0.00%** |

| | |
|---|---|
| **FINAL INSPECTION RATING:** | **100.00%** |

**Inspection Rating Record Generated On 04-AUG-20 (Inspection ID: 1-O72Y2).**