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Ontario

March 20, 2014

File no. EL-WE 540

Municipality of West Elgin
22413 Hoskins Line
Rodney, Ontario N0L 2C0

Attention: Scott Gawley
Administrator/Treasurer

Re: West Elgin Drinking Water System (DWS # 2600091117)
Inspection conducted on Feb. 4, 2014

The enclosed Drinking Water Inspection Report outlines non-compliance, if any, with Ministry legislation, and policies for the above noted water system. Violations noted in this report, if any, have been evaluated based on community risk. These violations will be monitored for compliance with the minimum standards for drinking water in Ontario as set forth under the *Safe Drinking Water Act* and associated regulations. Where risk is deemed to be high and/or compliance is an ongoing concern, violations will be forwarded to this Ministry's Investigation and Enforcement Branch.

In order to measure individual inspection results, the Ministry 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 F 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.

Please note the attached IRR methodology memo describing how the risk rating model has improved 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 Ministry's Chief Drinking Water Inspector's Annual Report.

"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 Ministry has encouraged such individuals, particularly municipal councillors, 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 under "Resources" on the Drinking Water Ontario website at www.ontario.ca/drinkingwater."

If you have any questions regarding the report, please feel free to call me at (519) 873-5019.

Yours truly,

Stephen Dunn
Drinking Water Inspector
Ministry of Environment

cc. Elgin St. Thomas Public Health
Lower Thames Conservation Authority

Ontario

**Ministry of the Environment**

# WEST ELGIN DRINKING WATER SYSTEM

## Inspection Report

| | |
|---|---|
| **Site Number:** | 260091117 |
| **Inspection Number:** | 1-BA75N |
| **Date of Inspection:** | Feb 04, 2014 |
| **Inspected By:** | Stephen Dunn |

## OWNER INFORMATION:

| | | | |
|---|---|---|---|
| **Company Name:** | WEST ELGIN, THE CORPORATION OF THE MUNICIPALITY OF | | |
| **Street Number:** | 22413 | **Unit Identifier:** | |
| **Street Name:** | HOSKINS Line | | |
| **City:** | RODNEY | | |
| **Province:** | ON | **Postal Code:** | N0L 2C0 |

## INSPECTION DETAILS:

| | |
|---|---|
| **Site Name:** | WEST ELGIN DRINKING WATER SYSTEM |
| **Site Address:** | 9210 GRAHAM RD WEST LORNE N0L 2P0 |
| **County/District:** | West Elgin |
| **MOE District/Area Office:** | London District |
| **Health Unit:** | ELGIN-ST. THOMAS HEALTH UNIT |
| **Conservation Authority** | N/A |
| **MNR Office:** | N/A |
| **Category:** | Large Municipal Residential |
| **Site Number:** | 260091117 |
| **Inspection Type:** | Unannounced |
| **Inspection Number:** | 1-BA75N |
| **Date of Inspection:** | Feb 04, 2014 |
| **Date of Previous Inspection:** | Feb 11, 2013 |

### COMPONENTS DESCRIPTION

**Site (Name):** MOE DWS Mapping
**Type:** DWS Mapping Point **Sub Type:**
**Comments:**
Not Applicable

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**Site (Name):** Raw Water Intake
**Type:** Source **Sub Type:** Surface Water
**Comments:**

Raw water is drawn through a 700 mm diameter, polyethylene, primary intake pipe located 610 m into Lake Erie at a depth of 5.7 m. An additional 600 mm diameter stand-by intake is located along the shoreline adjacent to the low lift pumping station. The primary intake pipe is equipped with one (1) 2-inch chlorine solution line for zebra mussel control. A raw water sampling line extends through the primary intake pipe into the intake crib, prior to pre-chlorination. There is no chlorine or raw water sampling line installed for the stand-by intake pipe.

The low lift pumps and wet wells are housed in the low lift pumping station. The chlorination equipment is located inside the chemical building, adjacent to the low lift pumping station.

Raw water is conveyed from the low lift pumping station via an inlet valve chamber by four (4) fixed speed vertical turbine pumps each rated at 85L/s at a dynamic head of 77.4m. The low lift station is equipped with two (2) 10 mm coarse wire mesh stainless steel screens which filter larger debris before the source water is transported to four (4) wet wells. Each wet well is equipped with a sonic level sensor to monitor water levels. Two (2) 1500m long and 400mm diameter raw water transmission lines provide raw water from the low lift pumping station to the new water treatment plant.

Backup power is supplied by a 200kW generator located at the low lift electrical building.

**Site (Name):** Water Treatment Plant
**Type:** Treated Water POE **Sub Type:** Treatment Facility
**Comments:**
The water treatment plant building is located approximately one kilometer north of the original facility which has since been decommissioned.

Water is pumped from the low lift pumping station and directed to four (4) self cleaning motorized microstrainers. Downstream of the microstrainers is an on-line continuous turbidity meter and chlorine residual analyzer which is used in conjunction with the addition of chlorine for zebra mussel control.

Water which has passed through the microstrainers is pumped to one of four (4) membrane filtration racks each rated at 75 L/s net capacity. The filtration racks also consist of individual flow and turbidity meters. The SCADA system is programmed so that there is an automatic shutdown when turbidity from the individual filter racks exceed 0.3 NTU for 600 seconds (10 minutes).

There is a backwash and secondary recovery system in place which consists of one (1) 17m$^3$ reverse filtrate recovery tank, two (2) reverse filtrate (backwash) pumps, two (2) reverse filtrate recovery (backwash recovery) pumps and two (2) reverse filtrate recovery strainer (strainer backwash recovery) together with appropriate valving and piping.

Sodium hypochlorite solution addition for primary and secondary disinfection occurs upstream of the treated water reservoir for primary disinfection and downstream of the high-lift pumps for secondary disinfection residual maintenance. Sodium hypochlorite for primary disinfection is applied by one of two (2) chemical metering pumps, each rated at 150L/hr prior to entering one of two (2) 2,276m$^3$ above grade glass fused steel storage tanks. Trim sodium hypochlorite addition is applied by one of two (2) chemical metering pumps, each rated at 60L/hr.

UV can be used for backup primary disinfection if there is a failure in the sodium hypochlorite system.

Backup power is supplied by a 750kW generator, complete with fuel tank and exhaust system, at the membrane filtration plant.

**Site (Name):** Water Treatment Plant
**Type:** Other **Sub Type:** Treatment Facility
**Comments:**
Water directed from the membrane filtration process can also undergo Advanced Oxidation Process (AOP) or backup disinfection. The AOP system consists of two (2) 300mm diameter Ultra Violet (UV) reactors each rated at 83L/s in AOP mode or 166L/s when used in back up disinfection mode. The setup consists of high intensity medium pressure lamps providing a dose of 40mJ/cm$^2$, UV intensity sensor and an automatic on-line sleeve cleaning system. The AOP system utilizes UV light, Hydrogen Peroxide and Sodium Hypochlorite for taste and odour control. Hydrogen peroxide is added prior to the UV reactors via two (2) chemical metering pumps, rated at approximately 11 L/hr.

**Site (Name):** Process Wastewater
**Type:** Other **Sub Type:** Other

**Comments:**

Residual Management consists of one (1) outdoor concrete settling tank with a gravity overflow to a two basin constructed wetland prior to overflow to the municipal drain. Process waste water is generated through back filtration, Enhanced Flux Maintenance (EFM) and Clean-In-Place (CIP) processes. These processes are used for cleaning membrane modules which produce spent chemical wash solution which is then pumped to a neutralization tank. Prior to pumping the wastewater to the settling tank the solution is treated to a neutral pH and zero free chlorine residual.

Citric Acid and Caustic Soda for the CIP membrane cleaning process is supplied by two (2) (1-citric and 1-caustic chemical pump), two (2) 9.5m³ CIP chemical tanks and two (2) 454L day tanks. Sodium bisulphate solution for the neutralization process is supplied by one (1) chemical pump which pumps from one (1) 454L day tank.

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**Site (Name):** West Lorne Standpipe

**Type:** Other **Sub Type:** Reservoir

**Comments:**

Water storage consists of a 38.6 metre steel standpipe constructed in 1984. It has a capacity of 2889 cubic metres and includes a valve chamber with interconnected piping, associated valves and appurtenances.

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**Site (Name):** Rodney Tower

**Type:** Other **Sub Type:** Reservoir

**Comments:**

An elevated water storage tank that consists of a 40 metre metal tower constructed in 1993. It has a capacity of 1200 cubic metres and contains an overflow pipe and drain pipe which discharge into a storm sewer. The tower houses an altitude valve and associated piping and valves as well as electrical and control panels.

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**Site (Name):** Distribution System

**Type:** Other **Sub Type:** Other

**Comments:**

The West Elgin Water Treatment Plant supplies water to the following communities: Eagle, New Glasgow, Rodney, West Lorne, Dutton-Dunwich, Southwest Middlesex, Bothwell and Newbury as well as a Highway #401 Service Station. The primary transmission line from the Water Treatment Plant consists of 6 km of 16" AC line installed in 1980 and ends at the West Lorne Standpipe. The West Elgin Water Supply System serves a population of approximately 2700 individuals in the municipality of West Elgin. The West Elgin Distribution System consists of the Rodney Tower, approximately 190 fire hydrants, five metering chambers and seven air release chamber. The meter pits on Talbot Line, Silver Clay, Marsh Line and Pioneer serve the Rodney area.

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**Site (Name):** Iona Re-Chlorination Facility

**Type:** Other **Sub Type:** Treatment Facility

**Comments:**

The Iona Re-Chlorination Facility is composed of one (1) re-chlorination station with an above-ground building located near the hamlet of Iona on the Talbot Line at Iona Road (NAD 27, UTM Zone 17, 0467141 m East, 4730881 m North). The facility includes one (1) constant speed sodium hypochlorite solution feed pump, together with associated chemical solution feed lines, control panel, ventilation system,valves and piping. The chlorination system includes:

- secondary/standby equipment for the existing sodium hypochlorite feed system including one (1) sodium hypochlorite metering pump rated at 1.29 L/h and paced to flow;

- one (1) 200 L sodium hypochlorite solution tank;
- secondary spill containment ; and
- two (2) on-line free chlorine residual analyzers, one (1) analyzer measuring the residual of the incoming supply and one (1) analyzer measuring the residual of the outgoing supply.

# INSPECTION SUMMARY

## INTRODUCTION

- **The primary focus of this inspection is to confirm compliance with Ministry of the Environment legislation and control documents, as well as conformance with Ministry drinking water related policies for the inspection period. The Ministry is implementing a rigorous and comprehensive approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as water system 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.**

Documents and records reviewed in association with this report include, but are not restricted to:

- Ministry of the Environment Drinking Water System Profile Information (DWIS) for West Elgin Water Supply System

- The West Elgin Water Supply System Operation and Maintenance Manual for the Distribution System

- The Ontario Clean Water Agency (OCWA) Operation and Maintenance Manual for the Water Treatment Plant

- The Ministry of the Environment Drinking Water Inspection Report #1-AJYM1 conducted February 11, 2013

- The Ministry of the Environment Municipal Drinking Water Works Licence (Licence No. 043-101)

- The Ministry of the Environment Drinking Water Works Permit (Permit No. 043-201)

- Municipality of West Elgin New Water Treatment Plant Design Brief by Stantec Consulting Inc. (June 27, 2007)

- Ontario Safe Drinking Water Act (2002), O. Reg. 170/03 and O. Reg. 128/04 operational documents and records maintained by the owner and operating authority from December 1, 2012 to December 31, 2013.

## SOURCE

- **The drinking water system management was aware of the potential sources of pollution or activities that could impair source water quality as contained in the approved Assessment Report.**

- **There were no obvious potential sources of pollution or activities in or around the source that could impair source water quality.**

## PERMIT TO TAKE WATER

- **The owner had a valid PTTW for all of the production sources.**

The Corporation of the Municipality of West Elgin was granted the Permit To Take Water (PTTW) No. 0515-8L9GX7 from the Ministry of the Environment on September 1, 2011. Under the PTTW the Municipality is permitted to take a maximum of 13,500,000 litres per day for 365 days of the year from Lake Erie. The permit also specifies that no more than 9,400 litres per minute can be taken from Lake Erie. The PTTW expires on July 15, 2021.

PERMIT TO TAKE WATER

* **The maximum water takings were in accordance with those allowed under the PTTW.**

A review of the Annual Water Taking and Transfer Report provided by the Ontario Clean Water Agency (OCWA) dated January 20, 2014 shows maximum water takings were in accordance with the terms and conditions specified on the PTTW No. 0515-8L9GX7.

CAPACITY ASSESSMENT

* **There was sufficient monitoring of flow as required by the Permit and Licence or Approval issued under Part V of the SDWA**

OCWA monitors water flow via SCADA in a number of areas within the treatment process as well as in the distribution system to regulate the movement and storage of water throughout the water system. In summary, water storage volumes are monitored at the water treatment plant at the raw water Low Lift Intake Wet Wells and treated water in two (2) above grade glass fused steel storage tanks as well as the West Lorne Standpipe and the Rodney Water Tower within the West Elgin Water Supply System. Flow monitoring meters are available for raw water intake (2), treated water discharged by the plant (2) into the distribution system, Eagle East Line that services Dutton-Dunwich, Eagle West Line that services the west portion of West Elgin, Marsh Street that services Dutton-Dunwich, the Iona Interconnect at the junction between the townships of Southwold and Dutton-Dunwich, Pioneer Line that services the Highway #401 Service Centre and Silver Clay Line.

* **Flow measuring devices were calibrated or verified in accordance with the requirements of a Permit and Licence or Approval issued under Part V of the SDWA.**

The flow measuring devices for the West Elgin Drinking Water system were verified/calibrated in April and May 2013.

* **The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Permit and Licence or Approval issued under Part V of the SDWA.**

As specified within the Municipal Drinking Water Licence (Licence No. 043-101, Issue No. 2) Schedule C (System-Specific Conditions), the Rated Capacity, or maximum daily volume of treated water that flows from the treatment subsystem to the distribution system is 12,160 cubic metres per day for the West Elgin Drinking Water System and 1,600 cubic metres per day for the Iona Interconnect. The Rated Capacity was not exceeded for the inspection period from December 1, 2012 to December 31, 2013.

* **Records of flows and any capacity exceedances were made in accordance with the Permit and Licence or Approval issued under Part V of the SDWA.**

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.**

A physical inspection of the West Elgin Water Treatment Plant was conducted on Tuesday, February 4, 2012 and it is confirmed that the equipment is installed in accordance with Schedule A of the latest Drinking Water Works Permit No. 043-201.

* **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Permit, Licence or Approval issued under Part V of the SDWA at all times that water was being supplied to consumers.**

**TREATMENT PROCESSES**

- **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.**

  Documentation reviewed for the inspection period, indicate that the free chlorine residual for the distribution system was within acceptable limits during the course of this inspection period.

- **The owner had evidence indicating that all chemicals and materials that come in contact with water within the drinking water system met the AWWA and ANSI standards in accordance with the Permit and Licence issued under Part V of the SDWA.**

- **Up-to-date plans for the drinking-water system were available in accordance with the Permit and Licence issued under Part V of the SDWA.**

- **The facility and equipment appeared to be maintained and in a fit state of repair.**

- **The Operator-in-Charge had ensured that all equipment used in the processes was monitored, inspected, and evaluated.**

  Logbook entries and OCWA work orders demonstrate that the owner/operating authority monitor, inspect and evaluate equipment used in the distribution system. The OCWA Facility Work Order Summary from December 1, 2012 to December 31, 2013 provides the work order number, equipment identification/description, activity description and scheduling/completion dates as well as comments of activity upon its completion.

**TREATMENT PROCESS MONITORING**

- **Primary disinfection chlorine monitoring was being conducted at a location approved by Permit, Licence or Approval issued under Part V of the SDWA, or at/near a location where the intended CT had just been achieved.**

- **Operators were aware of the operational criteria necessary to achieve primary disinfection within the drinking water system.**

  The West Elgin Water Treatment Plant SCADA system has a CT Calculator which provides real time CT calculations. OCWA operators monitor this information daily. It also contains a feature that allows operators to input data to calculate CT and make any changes to the parameter, if required.

  In addition, the operators calculate CT for the worst case scenario for the month. After reviewing the monthly reports, they select worst case parameters which include highest pH, highest flow, lowest storage tank level, lowest chlorine residual and lowest temperature. They use a worksheet to assist them in calculating CT. This exercise increases the operators awareness of the operational criteria necessary to achieve primary disinfection within the drinking water system.

- **Continuous monitoring of each filter effluent line was being performed for turbidity.**

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

  Distribution system samples are tested twice weekly for free chlorine residual with at least four (4) samples typically taken on Mondays and at least three (3) on Fridays.

## TREATMENT PROCESS MONITORING

* **Records confirmed that the maximum free chlorine residual in the distribution system was less than 4.0 mg/L or that the combined chlorine residual was less than 3.0 mg/L.**

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

  The operating authority has established a Standard Operating Procedure entitled "72 Hour Review of Continuous Monitoring Equipment" to ensure compliance with O. Reg. 170/03 Schedule 6 s. 6-5(1) 3. Logbook entries confirm that an operator examines the continuous monitoring equipment every 72 hours at the West Elgin Water Treatment Plant.

* **Samples for chlorine residual analysis were tested using an acceptable portable device.**

* **All continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or approval or order, were equipped with alarms or shut-off mechanisms that satisfied 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 instructions or the regulation.**

## PROCESS WASTEWATER

* **The process wastewater and residual solids/sludges were being treated, handled and disposed of in accordance with the design requirements approved under the Permit and Licence or Approval issued under Part V of the SDWA.**

  The process wastewater from the water treatment process is collected in a concrete settling tank at the rear of the plant. Gravity overflow from the settling tank allows the effluent to discharge into a constructed wetland prior to discharge into a municipal drain.

* **The process wastewater discharge quality and discharge monitoring program complied requirements established in the Permit and Licence or Approval issued under Part V of the SDWA.**

  Records maintained by OCWA show that the conditions prescribed Municipal Drinking Water Licence (Licence No. 043-101 Issue No. 2) Schedule C for Residue Management (Condition 1.5) and Environmental Discharge Parameters (Condition 4.2-4.4) were met.

## DISTRIBUTION SYSTEM

* **The owner did not have up-to-date documents describing the distribution components as required.**

  The distribution system drawing referenced in Table 1 of Schedule A of the Drinking Water Works Permit has not been updated within 12 months of the completion of all Form 1 projects.

**DISTRIBUTION SYSTEM**

* **There is a backflow prevention program, policy and/or bylaw in place.**

  The Corporation of the Municipality of West Elgin instituted a backflow prevention by-law initially in 2002 (By-Law 2002-62). The by-law was amended on a few occasions since its initial creation. The current by-law is designated as By-Law 2009-66 and includes an implementation schedule based on the degree of hazard. Records pertinent to the by-law are maintained at the West Elgin Municipal Office in Rodney.

* **The owner had a program or maintained a schedule for routine cleanout, inspection and maintenance of reservoirs and elevated storage tanks within the distribution system.**

* **Existing parts of the distribution system that were taken out of service for inspection, repair or other activities that may lead to contamination, and all new parts of the distribution system that came in contact with drinking water, were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit.**

* **The owner had implemented a program for the flushing of watermains as per industry standards.**

  The operating authority flushes watermains in the spring and fall. In addition, the operational staff maintain records for 12 auto-flushers strategically installed throughout the distribution system. The auto-flushers are inspected regularly and calibrated as required for water flow to maintain adequate chlorine residual within the distribution system.

* **Records confirmed that disinfectant residuals were routinely checked at the extremities and "dead ends" of the distribution system.**

* **A program was in place for inspecting and exercising valves.**

* **There was a program in place for inspecting and operating hydrants.**

  The operating authority inspects and operates hydrants twice per year typically in the spring and fall.

* **There was a by-law or policy in place limiting access to hydrants.**

  There is no bylaw in place at the present however the Municipality only allows under rare circumstances a contractor to connect to a hydrant and only with a backflow preventer and a water meter.

* **The owner has not undertaken efforts to identify, quantify and reduce sources of apparent water loss.**

  No formal leak detection program is in place for the West Elgin distribution system. Leaks are usually reported by residents based on observations of excess water volume rising rapidly to the surface or from reports by the water treatment plant operations staff of excess flow through a meter, a reduction in water pressure or rapid drops in the water tank elevations.

* **The distribution system pressure was monitored to alert the operator of conditions which may have lead to loss of pressure below the value under which the system is designed to operate.**

  OCWA monitors pressure at the Iona interconnect, two (2) forcemains at Eagle and water tower storage facilities in Rodney, West Lorne and at the water treatment plant through the SCADA system. The points are alarmed with pressure set points.

## DISTRIBUTION SYSTEM

* **Based on the records available the owner was able to maintain proper pressures in the distribution system.**

## OPERATIONS MANUALS

* **Operators and maintenance personnel had ready access to operations and maintenance manuals.**

* **The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**

  The Owner/Operating Authority provided documentation confirming that the operators and maintenance personnel in the subsystem have been provided ready access to comprehensive operation and maintenance manuals that contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the subsystem as required by O. Reg. 128/04, s. 28.
* **The operations and maintenance manuals did meet the requirements of the Permit and Licence or Approval issued under Part V of the SDWA.**

## LOGBOOKS

* **Logs for the drinking water subsystem(s) contained the required information.**

* **Logbook entries were made in chronological order.**

* **The record system allowed the reader to unambiguously identify the person who made the logbook entry.**

* **Entries in the logbook were made only by appropriate and authorized personnel.**

* **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.**

  All log records regarding O. Reg. 170/03 7-5 reviewed during the inspection period, identified the names of all operators of the facility and their respective signatures and/or initials.
* **For every required operational test and every required sample, a record was made of the date, time, location, name of the person conducting the test and result of the test.**

* **The operator-in-charge ensured that records were maintained of all adjustments made to the processes within his or her responsibility.**

* **Logs or other record keeping mechanisms were available for at least five (5) years.**

## CONTINGENCY/EMERGENCY PLANNING

CONTINGENCY/EMERGENCY PLANNING

* **Spill containment was provided for process chemicals and/or standby power generator fuel.**

* **Clean-up equipment and materials were in place for the clean up of spills.**

* **Standby power generators were tested under normal load conditions.**

The West Elgin Water Treatment Plant has two (2) backup power generators. They include:

- a 200 kW generator located at the low lift electrical building, and

- a 750 kW generator located at the membrane filtration plant.

The generators are tested under normal operating conditions monthly. The generators are also inspected and operated by a third party once per year. These records are available through the Supervisory Control and Data Acquisition (SCADA) maintained by OCWA at the West Elgin Water Treatment Plant.

SECURITY

* **All storage facilities were completely covered and secure.**

OCWA operates and maintains two 2,276 cubic meter above grade glass fused steel storage tanks at the water treatment plant and one (1) 2, 889 cubic meter capacity standpipe at West Lorne and a 1,200 cubic meter elevated storage tank at Rodney. All storage facilities are surrounded with a security fence and intrusion alarms on the access doors.

* **Air vents and overflows associated with reservoirs and elevated storage structures were equipped with screens.**

* **The owner had provided security measures to protect components of the drinking-water system.**

CONSUMER RELATIONS

* **Water conservation was being practiced by the owner or operating authority.**

* **Required documents were available free-of-charge during normal business hours at a location accessible to the public.**

Information specified in O. Reg. 170/03 s. 12. (1) can be accessed from the owner by a member of the public during normal business hours from the West Elgin Municipal Office on 22413 Hoskins Line in Rodney. Records for the operating authority OCWA can be accessed at the West Elgin Water Treatment Plant in Eagle.

* **The owner did take effective steps to advise users of the water system of the availability of Annual Reports, including posting a copy on a web site, if applicable.**

The Corporation of Municipality of West Elgin makes the drinking water system Annual Report available of the municipal web site at http://westelgin.net/node/25.

CERTIFICATION AND TRAINING

## 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 activities that were undertaken by uncertified persons in the DW subsystems were overseen by persons having the prescribed qualifications.**

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

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

  Documentation provided at the time of inspection, (logbooks and other record keeping mechanisms) indicated that only certified operational staff made adjustments to treatment system processes.

* **Operator certificates or water quality analyst certificates were displayed in a conspicuous location at the workplace or at the premises from which the subsystem was managed.**

  Operator certificates are displayed at the West Elgin Water Treatment Plant located in Eagle.

* **The classification certificates of the subsystems were conspicuously displayed at the workplace or at premises from which the subsystem was managed.**

* **The owner/operating authority was aware of the operator training and record keeping requirements, and they were taking reasonable steps to ensure that all operators receive the required training.**

## WATER QUALITY MONITORING

* **All microbiological water quality monitoring requirements for raw water samples were being met.**

* **All microbiological water quality monitoring requirements for distribution samples were being met.**

  Documentation provided by the operating authority during the inspection period, indicates that all distribution water microbiological monitoring requirements have been met.

  In accordance with O. Reg. 170/03, Schedule 10-2, and based on the population served of approximately 4,000 persons, the Owner is required to take a minimum of twelve (12) distribution system samples each month, ensuring that at least one sample is taken in each week of the month. Each of the distribution samples are to be analyzed for E. coli and total coliform and 25% of the samples must be analyzed for background colony counts based on a heterotrophic plate count (HPC).

**WATER QUALITY MONITORING**

* **All microbiological water quality monitoring requirements for treated samples were being met.**

  Documentation provided by the Operating Authority during the inspection period indicates that all treated water microbiological monitoring requirements have been met. In accordance with O. Reg. 170/03, Schedule 10-3, the Owner and Operating Authority are required to collect one (1) treated water sample each week and analyze the sample for E.coli, total coliform and HPC.

  A review of the statement of analytical results for the inspection period confirmed that at least one (1) treated water sample was taken each week and analyzed for E. coli, total coliform and HPC.

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

  In accordance with O. Reg. 170/03, Schedule 13-2, the Owner and Operating Authority for the West Elgin Drinking Water System shall continue to ensure that at least one (1) set of treated water samples are taken and analyzed for inorganic parameters (Schedule 23) every 12 months.

  Documentation provided by the Operating Authority during the inspection period, indicates that all inorganic (Schedule 23) water quality monitoring requirements have been met. Sample results provided by the owner were conducted on January 7, 2013, and then again on January 6, 2014.

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

  In accordance with O. Reg. 170/03, Schedule 13-4, the Owner and Operating Authority for the West Elgin Drinking Water System shall continue to ensure that at least one (1) set of treated water samples are taken and analyzed for organic parameters (Schedule 24) every 12 months.

  Documentation provided by the Operating Authority during the inspection period, indicates that all organic (Schedule 24) water quality monitoring requirements have been met. Sample results provided by the owner were conducted on January 7, 2013, and then again on January 6, 2014.

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

  In accordance with O. Reg. 170/03 Schedule 13-6, the owner shall continue to ensure that samples for trihalomethanes are collected and analyzed from the distribution system every three (3) months. Documentation provided by the operating authority during the inspection period indicates that all quarterly trihalomethanes water quality monitoring requirements have been met.

* **Trihalomethane samples were being collected from a point in the distribution system or connected plumbing system that was likely to have an elevated potential for the formation of trihalomethanes.**

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

  In accordance with O. Reg. 170/03 Schedule 13-7, the Owner/Operating Authority for the West Elgin Drinking Water System shall continue to ensure that a sample is collected from the treated water supply and tested every three (3) months for nitrate and nitrite.

  Documentation provided by the operating authority during the inspection period indicates that all quarterly nitrate/nitrite water quality monitoring requirements have been met.

## WATER QUALITY MONITORING

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

  In accordance with O. Reg. 170/03, Schedule 13-8, the Owner/Operating Authority of the West Elgin Drinking Water System sampled and tested for sodium within sixty (60) months.

  Documentation provided by the operating authority during the inspection period, indicate that sodium water quality monitoring requirements have been met as the last sample was taken on May 19, 2009.

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

  In accordance with O. Reg. 170/03, Schedule 13-9, the Owner/Operating Authority of the West Elgin Drinking Water System shall continue to ensure that one (1) sample is taken every sixty (60) months and tested for fluoride.

  Documentation provided by the operating authority during the inspection period, indicate that fluoride water quality monitoring requirements have been met as the last sample was taken on May 19, 2009.

* **The owner ensured that water samples were taken at the prescribed location.**

* **All water quality monitoring requirements imposed by the Permit and Licence or Approval issued under Part V of the SDWA were being met.**

  The Municipal Drinking Water Licence requires the owner to sample and test for suspended solids each quarter from the point of discharge from the lagoons. Documentation provided by the operating authority during the inspection period, indicate that suspended solids water quality monitoring requirements have been met.

* **All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were being met.**

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

  During the documentation review, it was verified that chlorine residuals are being collected at the same time and location as microbiological samples from the treatment system and distribution.

  The Owner/Operating Authority have fulfilled the requirements prescribed by O. Reg. 170/03 6-3(1) which requires that a water sample is 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.

* **The drinking water system owner had submitted written notices to the Director that identified the laboratories that were conducting tests for parameters required by legislation, Order Certificate of Approval (OWRA) or a Permit, Licence or Approval issued under Part V of the SDWA.**

* **Based on information provided by the owner/operator, samples were being taken and handled in accordance with instructions provided by the drinking-water system's laboratories.**

## WATER QUALITY MONITORING

* **The owner indicated that the required records are kept and will be kept for the required time period.**

## WATER QUALITY ASSESSMENT

* **The audit samples collected by the inspector met the applicable Ontario Drinking Water Quality Standards and/or the aesthetic objectives or operation guidelines. The results of the audit sampling are summarized as follows:**

  Audit samples were collected on Feb. 4, 2014 by the inspecting officer and the sample results are included in Appendix B of this report.

* **Records show that all water sample results taken during the review period met the Ontario Drinking Water Quality Standards (O. Reg. 169/03).**

## REPORTING & CORRECTIVE ACTIONS

* **All reporting requirements for lead sampling were complied with as per schedule 15.1-9 of O. Reg. 170/03.**

* **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.**

* **The Annual Report containing the required information was prepared by February 28th of the following year.**

* **Summary Reports for municipal council were completed on time, included the required content, and were distributed in accordance with the regulatory requirements.**

## 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.**

1. **The owner did not have up-to-date documents describing the distribution components as required.**

   The owner has been provided with as built drawings for the watermain replacement but the distribution system drawing referenced in Table 1 of Schedule A of the Drinking Water Works Permit has not been updated within 12 months of the completion of all Form 1 projects.

   **Action(s) Required:**

   As per condition 3.5 of Schedule B of the Drinking Water Works Permit, the document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension. This contravention is a non-compliance to paragraph 31 (1) (b) of the Safe Drinking Water Act, which stipulates:

   31. (1) No person shall,

   (a) establish a new municipal drinking water system or replace or carry out an alteration to a municipal drinking water system except under the authority of and in accordance with an approval under this Part or a drinking water works permit; or

   (b) use or operate a municipal drinking water system that was established before or after this section comes into force except under the authority of and in accordance with an approval under this Part or municipal drinking water licence.

   The owner shall forward a copy of the updated document which shows all the updated changes to Stephen Dunn, Ministry of the Environment by April 30, 2014.

## 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.**

1. **The owner has not undertaken efforts to identify, quantify and reduce sources of apparent water loss.**

   No formal leak detection program is in place for the West Elgin distribution system. Leaks are usually reported by residents based on observations of excess water volume rising to the surface or from reports by the water treatment plant operations staff of excess flow through a meter, a reduction in water pressure or rapid drops in the water tank elevations. The owner also does review a cost analysis of the water produced and billed to consumers on an annual basis as part of their budgetary process. For 2013, there was less than a 15% loss for the primary and secondary systems.

   **Recommendation:**
   If excess water loss is detected in the future, it is recommended that the owner and operating authority conduct a comprehensive leak detection program.

## SIGNATURES

Inspected By: Stephen Dunn

Signature: (Provincial Officer):

Reviewed & Approved By: Tom Clubb

Signature: (Supervisor): Tom Clubb

Review & Approval Date: March 18, 2014

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.