



February 1, 2012

The Corporation of the Municipality of Huron East
72 Main St. S
P.O. Box 610
Seaforth, ON
N0K 1W0

Attention: Brad Knight, Administrator, Clerk-Treasurer

**RE: Seaforth Well Supply System
2011 Annual Report**

Dear Brad,

Please find attached the 2011 Annual Operations Report for the Seaforth Water System, in accordance with Section 11(1) of O. Reg. 170/03. This report covers the period from January 1 to December 31 and meets the requirement of being prepared by February 28 of this year.

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

As per Schedule 22 of O. Reg. 170/03, please ensure that at least a copy of the Summary Report is given to the members of municipal council no later than March 31, 2012.

Finally, please ensure that a letter is sent to OMI Canada Inc verifying that this report has been received and accepted by Council.

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

Sincerely,

OMI Canada Inc.

A handwritten signature in cursive script, appearing to read "Joe Arnold".

Joe Arnold
Project Manager
Huron East
Project
519 490 5586

cc. B. Mills, Municipality of Huron East;

2011 ANNUAL REPORT FOR WATER SYSTEMS

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

| | |
|--|---|
| Drinking-Water System Number: | 220001511 |
| Drinking-Water System Name: | Seaforth Well Supply System |
| Drinking-Water System Owner: | The Corporation of the Municipality of Huron East |
| Drinking-Water System Category: | Large Municipal Residential |
| Period being reported: | January 1-December 31, 2011 |

| Complete if your Category is Large Municipal Residential or Small Municipal Residential | Complete for all other Categories |
|---|--|
| Does your Drinking-Water System serve more than 10,000 people? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Number of Designated Facilities served: |
| Is your annual report available to the public at no charge on a web site on the Internet? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Did you provide a copy of your annual report to all Designated Facilities you serve? <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection. Town Office 72 Main St. S. Seaforth, ON | Number of Designated Facilities served: Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? <input type="checkbox"/> Yes <input type="checkbox"/> No |

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

| Drinking Water System Name | Drinking Water System Number |
|----------------------------|------------------------------|
| | |

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

n/a

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

| | | |
|--|--|--|
| <input checked="" type="checkbox"/> Public access/notice via the web | <input checked="" type="checkbox"/> Public access/notice via Government Office | <input type="checkbox"/> Public access/notice via a newspaper |
| <input type="checkbox"/> Public access/notice via Public Request | <input type="checkbox"/> Public access/notice via a Public Library | <input type="checkbox"/> Public access/notice via a Public Library |

Describe your Drinking Water System

As of mid-April 2009, the town of Seaforth draws its water supply from three groundwater wells. All wells are located at 40 Welsh St. The Welsh Street facility consists of an above ground pump house with three groundwater wells each located north of the pump house. TW1 (Test Well #1; but is to be considered to be a production well) is a 150mm diameter, 85m deep groundwater well located at 48m north of the new pump house. It is equipped with a submersible turbine pump rated

at 6.4L/s. PW1 (Production Well #1) is a 300mm diameter, 105m deep drilled groundwater well located 43m north of the pump house. It is equipped with a variable speed submersible turbine pump rated at 35/Ls. PW2 has the same dimensions as PW1 and is located 18m north of the pump house. It contains a variable speed submersible turbine pump rated at 40/Ls. Three vertical turbine high lift pumps (one rated at 26L/s and two rated at 44L/s at 48m TDH) convey the water to the distribution system.

Treatment for the Welsh St. well consists of a chlorination system that includes two sodium hypochlorite metering pumps (one main and one backup) and one 200 L day tank for sodium hypochlorite. Sodium Silicate is also added to the system (three pumps available, 1 dedicated to each well) as well as a 200L day tank. A continuous online chlorine analyzer equipped with alarms monitor the chlorine residual in treated water just prior to the point of entry into the distribution system.

Water in excess of demand in the distribution system is pumped to the elevated storage tank. When a predetermined level in the tower is reached, the distribution pump(s) shut down.

The 1930 m³ elevated storage tank was constructed in 1998 and is located at 85 Daly Street. The elevated tank water level cycles based on demand and provides emergency storage, fire protection and peak demand storage for the Seaforth water supply system.

The distribution system supplies water to the entire Town of Seaforth and the Village of Egmondville. The system is composed of cast iron, ductile iron and PVC pipe with 110 hydrants. One automatic blow-off and seven manual blow-offs are connected throughout the distribution system. The elevated storage tank and the underground reservoir are used as a supplementary supply for emergencies.

The Municipality of Huron East operates and maintains the distribution system with the exception of flushing, which is contracted to Operations Management International Canada Inc.

List all water treatment chemicals used over this reporting period

12% Sodium hypochlorite solution
Sodium silicate (in the new system only)

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

Repair Soft Start TW1
Replace TW1 Well pump motor and Well piping
Repair Soft start H L # 1 Pump
Replace PW1 New pump motor and wiring

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

| Incident Date | Parameter | Result | Units | Corrective Action | Corrective Action Date |
|---------------|-----------|--------|-------|-------------------|------------------------|
| | | | | | |
| | | | | | |

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period

| | Number of Samples | Range of E.Coli Results (min #) - (max #) | Range of Total Coliform Results (min #) - (max #) | Number of HPC Samples | Range of HPC Results (min #) - (max #) |
|--------------------|-------------------|--|--|-----------------------|---|
| Raw (TW1) | 24 | 0 | 0-3 | 7 | 0-130 |
| Raw (PW1) | 52 | 0 | 0-23 | 6 | 0-320 |
| Raw (PW2) | 52 | 0 | 0 | 5 | 0-10 |
| Treated (40 Welsh) | 52 | 0 | 0 | 52 | 0->2000 |
| Distribution | 208 | 0 | 0 | 126 | 0->2000 |

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report

| | Number of Grab Samples | Range of Results (min #) – (max #) | Units |
|---|------------------------|---------------------------------------|-------|
| Turbidity (TW1) | 17 | 0.20-0.85 | NTU |
| Turbidity (PW1) | 47 | 0.18-0.99 | NTU |
| Turbidity (PW2) | 47 | 0.15-0.81 | NTU |
| Chlorine (Tower) | 8760 | 0.67-1.10 | mg/L |
| Chlorine (40 Welsh) | 8760 | 0.84-1.64 | mg/L |
| Fluoride (If the DWS provides fluoridation) | n/a | | |

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument

| Date of legal instrument issued | Parameter | Date Sampled | Result | Unit of Measure |
|---------------------------------|-----------|--------------|--------|-----------------|
| | | | | |
| | | | | |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|--|-------------|--------------|-----------------|------------|
| Antimony | April 27/09 | ND | mg/L | No |
| Arsenic | April 27/09 | ND | mg/L | No |
| Barium | April 27/09 | 0.024 | mg/L | No |
| Boron | April 27/09 | 0.16 | mg/L | No |
| Cadmium | April 27/09 | ND | mg/L | No |
| Chromium | April 27/09 | ND | mg/L | No |
| Lead-sampling conducted by the Municipality of Huron East; see summary below | | | | |
| Mercury | April 27/09 | ND | mg/L | No |
| Selenium | April 27/09 | ND | mg/L | No |
| Sodium | April 27/09 | 55 | mg/L | No |
| Uranium | April 27/09 | 0.0056 | mg/L | No |
| Fluoride | April 27/09 | 1.7 | mg/L | yes |
| Nitrite | Jan/11 | <0.005 | mg/L | No |
| Nitrate | Jan /11 | <0.13 | mg/L | No |
| Nitrite | April/11 | <0.005 | mg/L | No |
| Nitrate | April/11 | <0.13 | mg/L | No |
| Nitrite | July/11 | <0.005 | mg/L | No |
| Nitrate | July/11 | <.013 | mg/L | No |
| Nitrite | Oct/11 | <0.005 | mg/L | No |
| Nitrate | Oct/11 | <0.13 | mg/L | No |

Summary of Lead Results* None during this reporting period

| Sampling Period | Range of Results (µg/L) from Residential Samples (# of locations sampled) | Non-residential locations | Distribution System | Any Adverse Water Quality Incidents? |
|-----------------|---|---------------------------|---------------------|--------------------------------------|
| n/a in 2011 | | | | |
| n/a in 2011 | | | | |

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

| Parameter | Sample Date | Result Value | Unit of Measure | Exceedance |
|--------------------------------------|-------------|--------------|-----------------|------------|
| Alachlor | Apr 27/09 | ND | mg/L | No |
| Aldicarb | Apr 27/09 | ND | mg/L | No |
| Aldrin + Dieldrin | Apr 27/09 | ND | mg/L | No |
| Atrazine + N-dealkylated metabolites | Apr 27/09 | ND | mg/L | No |
| Azinphos-methyl | Apr 27/09 | ND | mg/L | No |
| Bendiocarb | Apr 27/09 | ND | mg/L | No |
| Benzene | Apr 27/09 | ND | mg/L | No |
| Benzo(a)pyrene | Apr 27/09 | ND | mg/L | No |
| Bromoxynil | Apr 27/09 | ND | mg/L | No |
| Carbaryl | Apr 27/09 | ND | mg/L | No |
| Carbofuran | Apr 27/09 | ND | mg/L | No |
| Carbon Tetrachloride | Apr 27/09 | ND | mg/L | No |
| Chlordane (Total) | Apr 27/09 | ND | mg/L | No |
| Chlorpyrifos | Apr 27/09 | ND | mg/L | No |
| Cyanazine | Apr 27/09 | ND | mg/L | No |

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

| | | | | |
|---|------------|------|------|----|
| Diazinon | Apr 27/09 | ND | mg/L | No |
| Dicamba | Apr 27/09 | ND | mg/L | No |
| 1,2-Dichlorobenzene | Apr 27/09 | ND | mg/L | No |
| 1,4-Dichlorobenzene | Apr 27/09 | ND | mg/L | No |
| Dichlorodiphenyltrichloroethane (DDT) + metabolites | Apr 27/09 | ND | mg/L | No |
| 1,2-Dichloroethane | Apr 27/09 | ND | mg/L | No |
| 1,1-Dichloroethylene (vinylidene chloride) | Apr 27/09 | ND | mg/L | No |
| Dichloromethane | Apr 27/09 | ND | mg/L | No |
| 2,4 Dichlorophenol | Apr 27/09 | ND | mg/L | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | Apr 27/09 | ND | mg/L | No |
| Diclofop-methyl | Apr 27/09 | ND | mg/L | No |
| Dimethoate | Apr 27/09 | ND | mg/L | No |
| Dinoseb | Apr 27/09 | ND | mg/L | No |
| Diquat | Apr 27/09 | ND | mg/L | No |
| Diuron | Apr 27/09 | ND | mg/L | No |
| Glyphosate | Apr 27/09 | ND | mg/L | No |
| Heptachlor + Heptachlor Epoxide | Apr 27/09 | ND | mg/L | No |
| Lindane (Total) | Apr 27/09 | ND | mg/L | No |
| Malathion | Apr 27/09 | ND | mg/L | No |
| Methoxychlor | Apr 27/09 | ND | mg/L | No |
| Metolachlor | Apr 27/09 | ND | mg/L | No |
| Metribuzin | Apr 27/09 | ND | mg/L | No |
| Monochlorobenzene | Apr 27/09 | ND | mg/L | No |
| Paraquat | Apr 27/09 | ND | mg/L | No |
| Parathion | Apr 27/09 | ND | mg/L | No |
| Pentachlorophenol | Apr 27/09 | ND | mg/L | No |
| Phorate | Apr 27/09 | ND | mg/L | No |
| Picloram | Apr 27/09 | ND | mg/L | No |
| Polychlorinated Biphenyls(PCB) | Apr 27/09 | ND | mg/L | No |
| Prometryne | Apr 27/09 | ND | mg/L | No |
| Simazine | Apr 27/09 | ND | mg/L | No |
| THM (NOTE: show latest annual average) | Q1-Q4 2011 | 20.7 | µg/L | No |
| Temephos | Apr 27/09 | ND | mg/L | No |
| Terbufos | Apr 27/09 | ND | mg/L | No |
| Tetrachloroethylene | Apr 27/09 | ND | mg/L | No |
| 2,3,4,6-Tetrachlorophenol | Apr 27/09 | ND | mg/L | No |
| Triallate | Apr 27/09 | ND | mg/L | No |
| Trichloroethylene | Apr 27/09 | ND | mg/L | No |
| 2,4,6-Trichlorophenol | Apr 27/09 | ND | mg/L | No |
| 2,4,5-Trichlorophenoxy acetic acid (2,4,5-T) | Apr 27/09 | ND | mg/L | No |

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

| Parameter | Sample Date | Result Value | Unit of Measure | ODWS Criteria |
|-----------|-------------|--------------|-----------------|---------------|
| Fluoride | April 27/09 | 1.7 | mg/L | 1.5 |

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

Non – Compliance with Legislations, Regulations, Approvals & Orders

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

| Requirement | Duration of Failure | Measures to Correct the Failure |
|-------------|---------------------|---------------------------------|
| None | | |

System Capability Assessment

Comparison of Flow Rates (m³/d):

| Month | Avg. Flow TW1 | Max. Flow TW1 | Avg. Flow PW1 | Max. Flow PW1 | Avg. Flow PW2 | Max. Flow PW2 | Max Daily Total (PW1+PW2+TW1) |
|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------------------|
| January | 30 | 101 | 509 | 831 | 738 | 1198 | 1592 |
| February | 0 | 0 | 488 | 788 | 740 | 1250 | 1615 |
| March | 0 | 0 | 454 | 684 | 731 | 1002 | 1501 |
| April | 0 | 0 | 498 | 771 | 795 | 1220 | 1617 |
| May | 0 | 0 | 517 | 886 | 825 | 1077 | 1570 |
| June | 21 | 141 | 589 | 1639 | 936 | 1462 | 2227 |
| July | 0 | 0 | 753 | 1390 | 950 | 1317 | 2034 |
| August | 0 | 0 | 538 | 1043 | 1048 | 1418 | 1892 |
| September | 0 | 0 | 418 | 761 | 941 | 1329 | 1709 |
| October | 81 | 157 | 235 | 778 | 987 | 1399 | 1736 |
| November | 126 | 186 | 117 | 619 | 1015 | 1397 | 1583 |
| December | 65 | 114 | 468 | 755 | 643 | 887 | 1402 |
| AVERAGE | 27 | - | 465 | - | 862 | - | - |
| MAXIMUM | - | 157 | - | 1639 | - | 1462 | 2227 |
| Total Rated CAPACITY | 3456 | 3456 | 3456 | 3456 | 3456 | 3456 | 3456 |
| %CAPACITY | .8% | 5.4% | 13.2% | 47.4% | 24.9% | 42.3% | 64.4% |