

**The Corporation of the Township of Emo**

**P.O. Box 520**

**Emo, ON, P0W1E0**

**February 3, 2015**

**Compliance Report for Municipal Drinking Water Licence Number 288-101**

**Pertaining to:**

Emo Water Treatment Plant

South Side of Front Street at Queen Street

Emo Township, District of Rainy River

**Compliance with Terms and Conditions of the Municipal Drinking Water Licence**

The Corporation of the Township of Emo Water Treatment Plant is operated and maintained in accordance with the requirements of the "Ontario Safe Drinking Water Act."

The permit to take water is valid until March 19, 2018

The maximum raw water flow rates of 660 L/min. (instantaneous) or 950 m<sup>3</sup>/day (total daily water intake) stipulated in the permit to take water, have not been exceeded.

The facilities used to disinfect potabal water at the Emo Water Treatment Plant are operated and maintained in accordance with the Procedure for Disinfection of Drinking Water in Ontario.

**Monitoring and Recording:**

The water plant employs a flow meter to record the total amount and instantaneous rates at which water enters the treatment plant. The instantaneous flow rate is recorded and logged into our computer. Similarly the rate at which treated water is supplied to the distribution system is monitored by means of a flow meter, which records the total and instantaneous rate of treated water flow.

The water plant employs continuous monitoring of residual chlorine and turbidity. Chlorine residual is monitored at the distribution system. Turbidity is monitored at the point of effluent from each of the two filters employed in the water treatment process.

The instruments used to measure chlorine residual and turbidity are calibrated yearly in accordance with the manufacturing instructions. (Clear Tech does these calibrations). A computer logs the data from the chlorine analyzer and each of the turbidity meters. No control of the process is exercised by the data logger computer system.

**Operations and Maintenance:**

The water treatment plant is a Class 2 while the distribution is a Class 1. Ed Bullied holds a Class 2 water treatment and a Class 1 water distribution while Jason Smith holds class 1 and Neil MacDonald is Operator in Training in the water treatment and distribution.

## **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.**

**The owner/operating authority was not in compliance with the requirement to prepare Form 1 documents as required by their Drinking Water Works Permit during the inspection period.**

During the summer of 2013 the Township of Emo received funding to upgrade their distribution system and have since been replacing and looping watermains. A Form 1 has not yet been completed for any of the new mains. The Form 1 is intended to be used as a record for FUTURE alterations and should not be prepared retroactively.

The form should demonstrate that an engineer has reviewed the plans for a PROPOSED alteration to a watermain and that the plans are consistent with design criteria standards for watermains and that the owner of the system (or a representative thereof) has confirmed that specific requirements of the Drinking Water Works Permit will be met BEFORE the work takes place. Once the alteration has been completed, the owner then has up to 12 months to ensure that distribution plans and drawings are updated to reflect changes to the system.

On December 4, 2014 the local MOE office received a copy of the necessary Form 1 document for the new watermains that now form part of the Emo distribution system. This submission also included distribution plans/drawings.

No further action is required.

**Action(s) Required:**

**All reporting requirements for lead sampling were not complied with as per schedule 15.1-9 of O. Reg. 170/03.**

Section 15.1-9 requires that if plumbing samples are taken and tested for lead for any sampling period described in Schedule 15.1, O. Reg. 170/03, the owner of the system shall submit a report to the Director, within 30 days after the end of the period, specifying the number of points sampled during the period, the number of samples taken, and the number of points where a sample exceeded the prescribed standard for lead. This requirement was not met for plumbing samples that were taken and tested for lead in September 2014.

On December 3, 2014 a completed Lead Notification Form was submitted to the Director summarizing the September 2014 lead plumbing sample results. No further action is required.

**Action(s) Required:**

## **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.**

**The following issues were also noted during the inspection:**

1. During a comparison between the facility's DWWP (#288-201) and the actual treatment equipment observed on-site, several discrepancies existed between the actual works and Schedule A of the permit.
2. Primarily, trihalomethanes in drinking water are produced by the reaction of chlorine and the naturally occurring organics left in the water after filtration. Since October 2013, the Emo WTP has had difficulty maintaining their trihalomethane running annual average (RAA) below the Ontario Drinking Water Quality Standard of 100 ug/L. The current RAA is 103ug/L. The RAA is based on samples taken from the far end of the distribution system.  
During the inspection an MOECC treated water audit sample was taken and tested for trihalomethanes. The sample came back with a result of 87.7 ug/L. This result suggests that a large portion of the THM formation is occurring at the WTP.
3. The operation guideline for aluminum is 100 ug/L, the MOECC treated water audit sample came back with a result 264 ug/L, +/- 43 ug/L.

### **Recommendation:**

1. The facility has recently submitted a Schedule C amendment to their DWWP. When the DWWP is updated, corrections should also be made to the sections noted above.
2. Due to the elevated level of THM's observed at the west end of Emo and at the water treatment plant, the Township of Emo must take steps to try and reduce the formation of THM's within their drinking water system. The first steps should include assessing the plant's treatment process to determine if there are operational changes that can be made help reduce the formation of THM's at the WTP. In addition, the far east end of the distribution system should be sampled to determine if the formation of THM's is localized or observed at both far ends of the distribution system.
3. It is recommended that the Township of Emo optimize their treatment to try and reduce the observed "residual" aluminum to under the operational guideline of 100 ug/L, to minimize possible negative effects within the systems distribution system.

**Summary of Quantity of Raw Water Taken From January to December, 2014**

Month	Raw Water Average Monthly Flow – m3	Raw Water Total Monthly Flow – m3
January	359	11144
February	322	9031
March	324	10050
April	325	9756
May	335	10399
June	313	9383
July	383	11866
August	494	15321
September	474	14205
October	391	12143
November	380	11416
December	341	10581

At no time during the calendar year 2014 did the raw water intake exceed the limits specified in the permit to take water or the C of A (Water plant capacity 950 m<sup>3</sup> per day).

**Summary of Treated Water Supplied for January to December , 2014**

Month	Peak Instantaneous Daily Flow-L/min	Average Monthly Flow in m3	Maximum Average Daily Flow in m3
January	544	338	531
February	508	300	462
March	482	301	344
April	480	300	363
May	605	321	455
June	531	292	364
July	580	343	445
August	563	374	491
September	728	371	519
October	642	341	552
November	646	354	466
December	476	318	367

Treated water distribution pump capacity is 1362 L/min.

This concludes the compliance report for the Emo Drinking Water System. Drinking Water Licence Number 288-101 for the year 2014.

**Sincerely:**

**Ed Bullied- ORO-OIC**

*Ed Bullied*

**Jason Smith- OIC**

*Jason Smith*