STANDARD OPERATING PROCEDURE

SOP #	15	REASON CODE:	F6—Viruses detected (e.g., Hepatitis A, Norwalk).	REV:	0	DATE:	Dec. 2015

BWA CAUSE IDENTIFICATION

Complete Assessment Tool

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Identify Potential Cause(s)

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Cause #1

Virus contamination of water

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RECOMMENDED STEPS TO ADDRESS BOIL WATER ADVISORY

Implement Short Term Corrective Measures

- ☐ Take appropriate emergency responses in conjunction with Department of Health and Community Services - Disease Control Manual (HCS, 2013) and input from other government departments (including Service NL, and MAE).
- ☐ Investigate source water and distribution system for sources of pathogenic contamination via human or animal waste, such as on-site septic systems, cross-connections, sewer overflows, animal feces (domestic and wildlife), storm runoff, broken sewer mains/ services, and other sources of sewage.
- ☐ Remove source of contamination.
- ☐ Eliminate pathways for pathogens into the drinking water system. Pathways may include non-potable water intrusion into the distribution system (e.g., via pressure loss, cross-connections, fire fighting/flush activities) treatment breakthrough, pipe wall biofilms and corrosion tubercles, sediment buildup in pipes and storage tanks, lack of vermin proof well caps, tank vents, etc., vandalism, exposure of water infrastructure components (e.g., pipes), and lack of preventative maintenance.
- ☐ Owner should assess performance of treatment process to determine if additional treatment processes are required.
- ☐ Verify that CT requirements are being met to achieve virus inactivation. Owner should increase disinfection residuals in accordance with provincial standards.
- ☐ Owner to ensure primary and secondary disinfection systems meet Drinking Water Treatment Standard log inactivation requirements for target pathogens.

Confirm Operation and Lift BWA

- ☐ Owner to test disinfectant residuals to confirm compliance with the Drinking Water Treatment Standards.
- ☐ Owner to contact Service NL office to request an Environmental Health Officer to re-sample the drinking water system for compliance with provincial drinking water bacteriological and disinfection standards.

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Implement Long Term Corrective Measures

- ☐ Owner should provide opportunities for training to increase operators knowledge associated with cause and corrective measures.
- ☐ Owner should ensure operators have appropriate level of training/education to allow operators to be eligible for certification in accordance with provincial standards. Operator training may be obtained via ACWWA, on-line courses, and MAE Operator Education, Training and Certification.

Capital Works Funding

- ☐ Contact nearest MAE regional office to initiate evaluation of existing water infrastructure.
- ☐ Owner to work with stakeholders (MAE, engineering consultants, etc) to identify sustainable options.
- ☐ Owner to make an application to MAE for project funding. Online applications can be made at: http://www.mae.gov.nl.ca/ capital_works/cwfunding.html.

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IMPLEMENT PREVENTATIVE MAINTENANCE

DAILY

- ☐ Measure and record flow rates.
- ☐ Complete daily disinfection and treatment logs.
- ☐ Visual inspection of chemical feed pumps and feed lines.
- ☐ Measure and record chemical usage.
- ☐ Measure and record free and total chlorine residual throughout the distribution system (first user, end of main and branch lines).

WEEKLY

- ☐ Visual inspection of chlorine injector for leaks and ensure operating normal.

MONTHLY

- ☐ Inspect and clean intake structure, intake screens and pipeline.
- ☐ Inventory all consumables and order supplies as necessary.
- ☐ If a back-up metering pump is available, replace operating pump with back-up pump and inspect internal components.

3 MONTHS

- ☐ Clean chemical feed lines and solution tanks.

6 MONTHS

- ☐ Inspect watershed for potential sources of contamination (including development activity, storage of chemicals/fuels and animal activity).

ANNUAL

- ☐ Inspect dam and spillway for signs of deterioration, malfunction, blockages and public safety.

For more detailed information on preventative maintenance schedules for water infrastructure visit http://www.mae.gov.nl.ca/waterres/waste/ community.html