
Process for Drinking Water Advisories

ISSUE

In response to a City Council inquiry, the Administration has reviewed the current process for issuing Drinking Water Advisories (DWA) and has identified opportunities to further improve the processes to ensure the safety of our residents during water disruption events.

BACKGROUND

In 2011, the City of Saskatoon (City) in conjunction with the Water Security Agency (WSA) and Public Health, developed a framework for a water outage notification system to improve communication and notification of water service outages and the associated risk of potential water quality and safety for customers connected to the City's water distribution network. Consequently, a Drinking Water Advisory (DWA) notification process was developed to ensure appropriate communication with all customers via hand-delivered notices to all affected locations prior to water service being restored. Notification occurs anytime the water mains on the City-owned portion of the system are isolated (turned off) or the pressure in the water system falls below 20 psi.

The City's notification method, which was approved by the WSA and Public Health in 2011, is in the form of yellow door hangers for residential dwellings and/or posters for apartments, condominiums, businesses, and other large facilities. The notices indicate the location, date and time the DWA was issued, information on what to do when the water service returns, and instructions on how to safely use the water until water quality tests have passed and service returns to normal. Once all water quality tests pass, all customers who received a yellow DWA are notified via a hand-delivered green DWA Lifted notice that they can resume normal water usage. Samples of the notices are included in Appendices 1 and 2.

Water samples are tested for bacteriological contamination, chlorine residual and turbidity at the accredited City Laboratory located at the Water Treatment Plant and must meet water quality parameters as stipulated in the Municipal Drinking Water Quality Monitoring Guidelines as set by the WSA. For increased safety, the City follows even more stringent bacteriological limits that far exceed provincial standards.

City Council, at its meeting held on April 26, 2021, considered an inquiry from Councillor R. Donauer and resolved:

That the Administration evaluate our current process for Drinking Water Advisories and report on options to improve the system to ensure the safety of our residents during water maintenance events.

CURRENT STATUS

The DWA program is administered by a City management group known as Direct Responsible Managers (DRM). The City is considered a Level IV Facility and as such requires a Provincially Certified Level IV operator always be available to ensure the DWA process, among other duties, is carried out and supported.

Since inception in 2011, there have been a total of 7,783 DWA's issued by the Water and Waste Operations and Construction and Design departments combined (to June 30, 2022). This represents more than 150,000 individual DWAs delivered, and an equal number lifted. These should not be confused with Boil Water Orders issued by Saskatchewan Health Authority, in which there has only been one within the same period.

All city employees involved in water and sewer operations are trained in the DWA and water sampling processes to ensure advisories are issued and lifted quickly and accurately and that water samples are drawn and handled correctly. In most emergency situations the water is shut off immediately to protect public safety and health, or to prevent or limit damage to infrastructure and property. If conditions allow, the responding crew may give advance warning to customers of the need to shut off water. The DWA is delivered prior to water service being restored to ensure customers are notified to take adequate precautions once the water is turned on again.

Once test results have been received from the lab, the DRM reviews the results and posts them on an internal record keeping system. As soon as possible, staff on duty deliver the green "Lifted" DWA notice to all affected locations. Like the "Yellow" notice, the 'Green' lift notifications have contact numbers and information to inform residents that they can safely consume the water.

This DWA process has passed several audits by the WSA and has been emulated by other Saskatchewan communities.

Prior to May 1, 2020, the WSA required the City to secure one water sample from every affected location. After that date, the WSA mandated that the City secure two water samples taken 24 hours apart, from every affected location. While this extends the length the DWA is in effect, it aligns with industry best practice. An outline of the process is included in Appendix 3.

DISCUSSION / ANALYSIS

In the two-year period from June 1, 2020, to May 31, 2022, 1,343 DWA's were issued affecting approximately 21,000 properties. During this time there was only one verified incident where a DWA notification did not occur prior to water service being restored. Once discovered, DWA notices were delivered immediately. This represents a 99.93% accuracy based on the number of advisories issued, and a 99.94% accuracy based on the number of customers affected.

Investigations are completed for all instances where there are issues or deviations from established practices. Over this same two-year period, nine such incidents occurred. All were operational in nature and did not pose any risk to public health or safety. Aside from these incidents, the City receives customer complaints, comments or questions separately. While not formally tracked, the majority of calls relate to the dissatisfaction of the property being under a DWA and the disruption it can cause, or lack of advance notification that there would be a disruption to water services.

Internal investigations have noted that the main cause for exceptions or incidents where this process has not been followed have been the direct result of communication issues. Each incident is reviewed internally with all staff who issue or lift DWA's to ensure that

all staff understand the process and to mitigate the chance of a repeat occurrence. In addition, ongoing training is provided for all staff that respond to water related problems as well as capital improvement programs.

FINANCIAL IMPLICATIONS

There are no financial implications by receiving this report as information.

OTHER IMPLICATIONS

There are no other implications directly resulting from this information report.

NEXT STEPS

The Saskatchewan Ministry of Environment recently completed a compliance audit of the City's management of drinking water advisories. The audit identified two findings that did not pose a significant threat to human health, safety or the environment and could be easily corrected before the next audit or inspection. The findings related to calibration of field test equipment and WSA sign-off of the established Standard Operating Procedure documents. Corrective actions for both findings are being addressed.

Additionally, the following improvements are being implemented to improve the internal communications processes:

- Water and Waste Operations and Construction and Design departments have recently developed an interdepartmental coordination process to ensure that when both departments are working in the same area there is a clear delineation of responsibilities as it relates to the issuance of advisories, water sampling and lifting of advisories. To date, this process has functioned as intended.
- The City's IT Department is currently developing an application for the City's website that will simultaneously update the status of DWAs as new information becomes available and entered into the comprehensive Intranet site used to manage all aspects of the DWA process. This will allow residents to track the status of their DWA online to see when notices are issued and lifted. This online notification will be provided in addition to the existing door hanger notification system.

APPENDICES

1. Yellow Drinking Water Advisory Notice
2. Green Drinking Water Advisory Lifted Notice
3. Typical Water Outage Timeline for Pipe Repair

Report Approval

Written by: Ron Skwarchuk, Operations Superintendent

Reviewed by: Trent Schmidt, Water and Sewer Manager
Brendan Lemke, Director of Water and Waste Operations
Diran Adenugba, Marketing Consultant
Matthew Hiltz, Senior Project Management Engineer
Greta Kort, Quality Superintendent, Construction and Design

Approved by: Angela Gardiner, General Manager, Utilities and Environment

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