

Waterwork Start-Up Protocol For Waterworks Regulated By Saskatchewan Environment



Protocol Use

This protocol is to be used for the start-up of new waterworks, waterworks with major upgrades, seasonal waterworks and existing waterworks new to Saskatchewan Environment.

The protocol is not intended to apply to dedicated stand-by wells.

Start-Up of New Waterworks or Waterworks with Major Upgrades

1. Saskatchewan Environment (SE) – Environmental Project Officers (EPOs) will follow-up to ensure that all conditions of the Permit to Construct have been met. For newly constructed waterworks a Permit to Operate will be issued if required. Additionally, before the waterworks enters service the system will be placed on a Precautionary Drinking Water Advisory (PDWA).
2. For new distribution systems, ensure that pressure testing of piping, valving and accessories of distribution system is complete, pursuant to Section 26(4).
3. Ensure disinfection of water treatment plant through to distribution system is complete, according to American Water Works Association (AWWA) Standards for Disinfection of Water Mains, Water-Storage Facilities and Water Treatment Plants, standard C651-99, C652-92 and C653-97, respectively.
4. EPOs will confirm bacteriological (BacT) sampling is complete for PDWA removal (two consecutive sets of a minimum of two samples, all with negative results). Confirm required testing pursuant to Section 31(2) (Health and Toxicity, Turbidity) of the regulations is complete.
5. EPOs will need to complete satisfactory compliance inspection.

These steps are to be completed before water is consumed by the customers. When appropriate measures are taken and requirements met, PDWA should be lifted. Regional Health officials will be kept advised of PDWAs, developments and any potential concerns associated with new or major upgrade waterworks at all times.

Start-Up of Extensions to Waterworks or Waterworks with Minor Upgrades

1. SE – EPOs will follow-up to ensure that all conditions of the Permit to Construct have been met.
2. For new distribution systems, ensure that pressure testing of piping, valving and accessories of distribution system is complete, pursuant to Section 26(4).
3. Ensure disinfection of affected portion of the works is complete, according to AWWA Standards for Disinfection of Water Mains, Water-Storage Facilities and Water Treatment Plants, standard C651-99, C652-92, and C653-97, respectively.
4. EPOs will confirm required testing is complete. (Every potential contamination scenario requires BacT sample collection as stated in Section 40 of *The Water Regulations*. A minimum of two BacT samples are required. Based on the discretion of the EPO for the situation, additional test requirements such as confirmation of BacT results or chemical testing may be required.)
5. EPOs will inspect minor upgrades during next routine inspection.

Regional Health officials will be kept advised of minor waterworks upgrades or system extensions.



Saskatchewan
Environment

EPB #260A Nov/07

www.se.gov.sk.ca

SaskH₂

Start-Up of Seasonal Waterworks (Including Parks)

1. EPOs will place waterworks on PDWA (prior to system start-up). In the case of provincial parks, Health Regions shall be given advance notice of the PDWA so that they can be checking with the park's local operation people regarding access to potable water.
2. Ensure disinfection of distribution system, according to AWWA Standards for Disinfection of Water Mains and Water-Storage Facilities, standard C651-99 and C652-92, respectively.
3. EPOs will confirm BacT sampling is complete, as per the conditions of BacT Follow-Up Protocol (EPB 205) for PDWA removal (two consecutive sets of three negative samples).
4. EPOs will confirm required testing is complete (at the discretion of the EPO, testing over and above monitoring requirements may be required). EPOs will verbally communicate with operator of plant.

When appropriate measures are taken and requirements met, PDWA should be lifted. Regional Health officials will be kept advised of issues associated with seasonal waterworks and will be copied on the advisory related information and operational schedules or special circumstances, such as if a seasonal waterworks continues to operate a tank fill well/facility after the distribution system closes.

Existing Waterworks New to Saskatchewan Environment Regulation Authority

1. EPOs will perform site visit to assess the present situation (water quality, plant conditions, treatment system, waterworks inadequacies, etc), explain the regulations, determine areas of the operation that will require improvement to meet regulations and provide community with an application for Permit to Operate Waterworks.
2. EPOs will place community on PDWA, if required. Note: PDWA may not need to be issued if the site visit shows favourable results.
3. EPOs receive and review the application for Permit to Operate and issue a Permit to Operate.

Regional Health officials will be kept advised of PDWAs, developments and any potential concerns associated with existing waterworks at all times in accordance with the Bacteriological Follow-up Protocol.

Bacteriological Verification and Time Restrictions

Time restrictions are faced while undergoing drinking water mains commissioning procedures. Once a pipe has bacteriological sample sets taken which passed, the pipe must be either connected to the mains system and water must flow for human consumptive use within seven days or the pipe must be flushed within seven days from the sample passing bacterial tests. (Note: The timeline starts at a passed set of BacT tests which follow the initial disinfection). If regulated minimum chlorine residual levels are not maintained within the pipe after the sample passes bacterial tests, the pipe must then be flushed by day seven and connected for human consumptive use within a further seven days or it must be re-chlorinated, re-sampled and the time period restarts.

The maximum time from successful testing to human consumptive use is to be 14 days (which would include a single flushing at seven days). After that time, re-disinfection and bacteriological re-testing of the watermain must be conducted. Note: Maintaining regulated chlorine residual levels within the pipe is equivalent to human consumptive use from the pipe. For example, if there is minimal contractor use of water or if water is bled or if nothing is done or any other activity displays the ability to meet regulated chlorine levels in the pipeline, then this activity is equivalent to human consumptive use and re-chlorination and re-testing is not required. Once the pipe is connected for human consumptive use, Operating Permit conditions apply. It is essential that Municipalities, Contractors and Developers liaise to plan commissioning otherwise the connection may not be available before the sample results expire.