

Operational Guideline for Manitoba Water Suppliers

Bacteriological Assessments

Purpose

This guideline has been established to provide public and semi-public drinking water suppliers throughout Manitoba with information on conducting a bacteriological assessment of their drinking water supply.

Legislation

Under section 9(2)(a) of [The Drinking Water Safety Act](#), *“the director may require a water supplier to conduct, or cause to be conducted an assessment of the water system’s infrastructure or water supply source at any time, in the manner required by the director, if the director reasonably believes the water supply presents or may present a risk to health.”*

Under section 10 of The Drinking Water Act, *“On receiving a written report of an assessment under section 9, the director may order the water supplier to perform any further investigation and any repair, upgrade, or other work that the director reasonably considers necessary to address any matters that, in the director’s opinion, present or may present a risk to the safety of water obtained from the water system.”*

Bacteriological Assessments

The goal of a bacteriological assessment is to increase public health protection by identifying and remediating as many factors as possible within the water system, water distribution system (including reservoirs), and water sampling protocols that are under the water system’s control to mitigate contamination of the water supply.

The bacteriological assessment is based on the *USEPA Revised Total Coliform Rule Assessment and Corrective Actions Guidance Manual*.

Assessment Triggers

A water supplier will be directed by a Drinking Water Officer to conduct a bacteriological assessment when a water supply experiences abnormal bacteriological results including:

- persistent total coliform positives from the same sampling location;
- multiple positives within the same sampling period;
- or *E-coli*;

and the reason for the positives cannot be clearly identified and easily corrected.

Level I Assessment

- A basic examination of the source water, treatment, distribution system (including reservoirs) and relevant operational practices and procedures.
- The operator in charge of the water supply conducts the assessment via a desk top review.
- A *Bacteriological Assessment Form* is completed and submitted to the Office of Drinking Water

Level II Assessment

- Includes a level 1 assessment and field investigations which may include additional water quality sampling.
- The operator in charge or a third party, depending on the critical nature and the potential public health impact of the trigger event, conducts the assessment
- A *Bacteriological Assessment Form* is completed and submitted to the ODW along with findings from field investigations and any water quality

testing taken in response to the contamination event.

A drinking water officer will direct the water supplier on the level of assessment that is required and in the event of a Level II Assessment, if a third party is required and amount of additional water quality sampling.

Assessment Submission

The assessment must be initiated as soon as directed by a regional Drinking Water Officer.

Depending on the assessment level and the complexities of the water supply, a water supplier will be required to complete the assessment and any identified corrective actions within one to three months.

In cases where corrective actions cannot be completed within the time period given, the water supplier must provide a schedule for the corrective actions and notify the regional Drinking Water Officer when they have been completed.

Assessment Outcome

If a critical defect is identified during the assessment, the water supplier is required to take corrective actions to address the defect. Should the assessment identify several areas, the water supplier is required to take corrective actions to address all areas.

If no defects are identified, the water supplier must document this on the

Bacteriological Assessment Form. The regional Drinking Water Officer may ask for supporting documentation such as water sampling protocols and standard operating procedures for routine maintenance.

Follow-up via Inspection

The regional Drinking Water Officer will track and comment on corrective actions through the inspection process.

Public Water System Annual Reports

Section 32(1) of the Drinking Water Safety Regulation (MR 40/2007) requires that a water supplier that services 1,000 or more persons must provide an annual report on the operations of the water system.

Where a water supplier was required to conduct a bacteriological assessment, the bacteriological assessment requirement, findings, and corrective actions must be included in the annual report.

Office of Drinking Water

Regional [Drinking Water Officers](#) are available for operational and monitoring advice and to provide technical assistance.

After hours, please call the Environmental Emergency Response line at 204-944-4888 and ask for the on-call drinking water officer.

For more information related to Manitoba's drinking water and how it is regulated visit: www.manitoba.ca/drinkingwater

BACTERIOLOGICAL ASSESSMENT FORM



WATER SYSTEM: _____

WATER SYSTEM CODE: _____

OPERATOR-IN-CHARGE: _____

PERSON UNDERTAKING ASSESSMENT: _____

OPERATOR WHO COLLECTED SAMPLES: _____

Reason for Assessment (brief description of the event):

Questions	Reviewed? (✓ if site visit, X if desk top or use n/a)	Issues found? (Y/N)	Issue Description	Corrective Actions Taken (Include dates)
1) Sample Site				
Location of tap (sink, janitor rm, boiler rm)				
Condition of tap (leaking, dirty)				
Point of Entry/Point of Use treatment systems/filters/softners				
Removable aerator				
Regular use of tap				
Type of facility (ex carwash, school, office)				
Is this an routine sampling tap?				
<i>NOTE: A water supplier cannot eliminate the sampling location unless approved by a regional drinking water officer</i>				
2) Sampling protocol followed and reviewed				
Adequate disinfectant residual present				
Appropriate sampling tap				
Flush tap				
Aerator removed				
Tap sterilized				
Fresh sample bottles used				
Sample storage to laboratory appropriate				
SOP version and last training date				

Questions		Reviewed? (✓ if site visit, X if desk top or use n/a)	Issues found? (Y/N)	Issue Description	Corrective Actions Taken (Include dates)
3) Has any of the following occurred at the positive locations prior to the collection of bacteriological samples?					
	Have there been any other bacterial tests in the last two years reported positive other than routine bacterial samples submitted: ex. In result of flushing, water main installations, repairs etc				
	Any interruptions in the treatment process				
	Any reported loss of pressure events (< 20 psi)				
	Operation and maintenance activities that could have introduced bacteria				
	Any reported taste, odor or colour complaints				
	Has there been a fire fighting event, flushing operation, sheared hydrant, etc.?				
	Reported vandalism and/or unauthorized access to facilities				
4) Have there been any reported Operational changes in the system?					
	Any new or inactive sources recently introduced?				
	Treatment or operational changes				
	Potential sources of contamination				
5) Distribution System - review/changes					
	System pressure				
	Cross connections (list potential sites)				
	Pump stations				
	Air relief valves: in vaults? Subject to flooding? Last inspection				
	Fire hydrants or blow offs				
	Breaks				
	Repairs				
	Operation and maintenance				
	Bulk fill stations, backflow preventer, signed				
	Any service connections with alternate source of water (i.e abandoned water intakes or wells)				
6) Storage tanks/reservoirs					
	Overflow and vent screens inspected				
	Security				
	Access openings				
	Condition of tanks				
	Pressure tank				
	Operation and maintenance schedule? Date and results of last cleaning/inspection				
	SOP list and last training/review date				

Questions	Reviewed? (✓ if site visit, X if desk top or use n/a)	Issues found? (Y/N)	Issue Description	Corrective Actions Taken (Include dates)
7) Treatment Process				
Interruptions				
Rechlorination				
Operation and Maintenance scheduals - Date and result of last maintenance				
8) Source - Well				
Completed well head inspection form				
Sanitary seal				
Vent screened				
Cross Connection				
Security				
Any changes to area near well (ex. new excavations)				
Pitless adapter in place				
Bollards				
Is the well in a pit?				
9) Source - Surface water				
Spring run off				
Heavy rain event				
Any changes to area near intake				

Additional Comments:

Likely reason for the positive results:

Submitted by (Print): _____ Signature: _____

Date: _____

For Office of Drinking Water Use Only

Reviewed by: _____ Follow-up Date: _____

Date: _____

	(Y/N)
Do you agree with the outcome of the assessment?	
Did the OIC consider all areas of the assessment?	
Was the assessment submitted on time?	
Are the timelines for corrective action(s) appropriate?	