

Iowa Department of Natural Resources Public Water Supply Nitrite Sampling Plan

Nitrite monitoring in the distribution system was assigned in the Water Supply Operation Permit and must be conducted according to a written Nitrite Monitoring Sampling Plan. Nitrite monitoring locations must be selected based on conditions within the distribution system that present the greatest risk for nitrification to occur. Consider areas of the distribution system with

- decreased flow,
- higher heterotrophic plate count, or HPC (your lab can run these),
- increased water temperature, and
- increased customer complaints.

Age of pipe can also be a factor as older pipe may have a greater disinfectant demand that can result in nitrification. Reductions in pH and alkalinity can also be a symptom of nitrification; chloramine residuals decay more slowly at pH values above 8.5.

The plan should be reviewed by the public water supply system based on modifications in the distribution system or changes to the water quality served to the public. The plan must be made available to the Iowa DNR upon request and during sanitary surveys, and must be revised by the system as directed by the Iowa DNR.

A required nitrite sample for compliance purposes should be labeled Routine (RT). Any time a system wishes to collect a nitrite sample for operational control purposes or for a special study, such sample should be labeled Special (SP). Special samples cannot be used for compliance purposes and results do not trigger additional monitoring. Samples cannot be changed from Special to Routine or from Routine to Special once the results have been transmitted by the laboratory, without Iowa DNR approval.

This sampling plan should be provided to and reviewed by all persons responsible for collection of the sample(s) for nitrite analysis. The model plan may be modified as needed by the system.

If you should have any questions please contact the DNR:

Regional Field Offices

FO 1, Manchester	563-927-2640
FO 2, Mason City	641-424-4073
FO 3, Spencer	712-262-4177
FO 4, Atlantic	712-243-1934
FO 5, Des Moines	515-725-0268
FO 6, Washington	319-653-2135

Water Supply Sections, Des Moines

See operation permit for ES phone number
515-725-8200 (general number)
FAX: 515-725-8202

Include your 7-digit Public Water Supply Identification number (PWSID)/Permit Number located on the front page of your operation permit on all correspondence and sampling sheets. This number should also be used when contacting your contract lab or the Iowa DNR.

Nitrite Monitoring Plan

PWS Name: _____ PWSID: _____

One Sample per Quarter Nitrite Sampling Plan

A. Sampling Plan for System

Collect sample as early as possible during DNR scheduled monitoring time period. The sampling locations to be used each quarter are listed below and are shown on the attached Distribution System Map.

QTR 1 _____ QTR 2 _____
QTR 3 _____ QTR 4 _____

B. Proper Sampling Technique for Collection of Drinking Water Samples for Nitrite

The following recommendations regarding sample collection technique are to ensure that the sample is representative of the drinking water quality in the distribution system, and not the result of a drinking water sample that was improperly collected.

- Be sure ice packs are frozen prior to sample collection.
- Contact your DNR regional field office if you have permit questions.
- Collect sample as early as possible during DNR scheduled monitoring time period.
- Run water for at least 2-3 minutes to flush the line.
- Fill container slowly with water to within half an inch from top – do not overflow.
- Seal the container tightly.
- Complete information on the container label.
- Begin cooling sample to less than 6 degrees C (or 43 degrees F).
- Fill out the sample collection form provided.
- Package sample with frozen ice packs or bagged ice for shipment to the laboratory.
- Sample must arrive at the laboratory within 36 hours of collection and received at less than 6 degrees C. Maximum holding time is 48 hours.

List persons authorized to collect nitrite samples:

C. Compliance Calculations of Drinking Water Samples for Nitrite

Compliance with the maximum contaminant level for nitrite of 1.0 mg/L as N is determined based on one sample if the level is below the MCL. If the level of nitrite exceeds the MCL in the initial sample, a confirmation sample may be required in accordance with 41.3(1)“c”(7)“2,” and compliance shall be determined based on the average of the initial and confirmation samples.

Nitrite monitoring will continue quarterly for at least one year following any one sample in which the concentration is greater than or equal to 0.50 mg/L as N. The Iowa DNR may allow a system to reduce the sampling frequency to annually after determining the system is reliably and consistently less than 0.50 mg/L. Nitrite monitoring will be increased to monthly for at least one year following any nitrite result at, or above, the MCL.

Map of System

Indicate all sample locations, source/entry point(s), and storage facilities

