

# **Iowa Department of Natural Resources Public Water Supply Bacterial Sampling Plan Requirements for Systems Collecting One Monthly Sample**

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The Iowa Administrative Code 567 IAC 41.2(1)"c", requires that public water supply systems collect total coliform samples at sites which are representative of water throughout the distribution system according to a written sample siting plan. Major elements of the plan shall include, but are not limited to:

1. a map of the distribution system,
2. notation or a list of routine sample location(s) for each sample period,
3. resample locations for each routine sample, and
4. a log of samples taken.

The plan shall be reviewed or updated by the public water supply system every two years and shall be retained on file at the facility. The plan must be made available to the department upon request and during sanitary surveys and must be revised by the system as directed by the department.

Attached is a model sampling plan for a public water supply that is required to collect bacterial samples on a monthly basis. The model bacterial sampling plan has the following components:

- Guidelines for proper sample site selection and sampling techniques;
- list of routine sampling sites per sampling period;
- list of checks sites for each routine sample site;
- form for drawing a map of the distribution system and;
- sample collection log sheet

The model plan can be modified as needed as long as the required components listed in the rules are contained in the plan.

This plan should be provided to and reviewed by all persons responsible for collection of bacterial samples.

If you should have any questions please contact the IDNR Field Office or the Water Supply Sec. contact:

## **Iowa Department of Natural Resources Contacts**

On the web: [www.state.ia.us/epd/](http://www.state.ia.us/epd/)

### **Field Office #5**

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### **Water Supply Section**

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Be sure to 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 handy when contacting your contract lab or the department.

Assistance can also be obtained from the following sources:

- Iowa Rural Water Association, 1-800-747-7782
- Your contract lab

# Public Water Supply Bacterial Sampling Plan

PWSID #: \_\_\_\_\_

Coliform bacteria samples for this supply are required to be collected on a monthly basis.

## Proper Bacterial Sampling Technique for Drinking Water Samples:

The following recommendations regarding sample 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 improperly collected.

1. Be sure that you have the correct sample bottle for coliform bacterial sample analysis. The sample bottle must contain sodium thiosulfate if the water is chlorinated.
2. Avoid collecting a sample from the following locations:
  - a. Faucets with aerator screen, hose, sprayer or strainer attached;
  - b. Are connected to a water treatment device,
  - c. Swivel "bar type"/"swing arm" faucets,
  - d. Frost-proof hydrants,
  - e. Sprinkler systems for fire protection,
  - f. Meter pits,
  - g. Fire hydrants, blow-offs, or clean-outs
  - h. Taps that are leaking at any point, cracked, worn or otherwise in disrepair,
  - i. Taps that are dirty
3. Collect the sample using the following procedure:
  - a. Remove any hose attachments, aerator, or "screen" on the end of the faucet;
  - b. Ensure that the faucet or tap itself is clean from contamination;
  - c. Open cold water tap to obtain a smooth flowing stream at a moderate pressure,
  - d. Allow water to run to waste for 2-3 minutes or sufficient time to clear the service line;
  - e. Reduce water flow slightly (about a pencil width); ensure that the water does not splash; do not adjust the flow while sampling;
  - f. Remove the cap, do not rinse out the bottle; do not touch the inside of cap or the lip or inside of the bottle; do not set the cap down;
  - g. Fill the bottle to within  $\frac{1}{2}$  inch of the top;
  - h. Remove the bottle from the stream of water and immediately replace cap. Do not overly tighten the cap or it may split.
  - i. Fill out lab sheet and be sure to include PWSID #, sample date, time, location, collector, type of sample and chlorine residual if supply is chlorinated.

Bacterial samples should be collected early in the month to allow for collection of repeat samples if necessary. Bacterial samples must arrive at the lab within 30 hours of collection.

4. Persons authorized to collect bacterial samples are:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_

## ROUTINE SAMPLES:

The routine monthly samples must be collected from sites which are representative of water throughout the distribution system.

**REPEAT (CHECK) SAMPLES:**

Four repeat samples must be collected when you are notified that one of the routine samples listed above is found to be positive for bacteria. The system must collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, at least one at a tap within five service connections upstream and at least one at a tap within five service connections downstream of the original sampling site. The fourth should be taken from somewhere else in the distribution system. When possible the check samples should be taken the same month of the positive result. Notify IDNR if this cannot be done. If at least three check sites are not available allow at least 12 hrs. between collecting two samples from the same tap.

The monthly sampling plan on the following page should be followed by those responsible for sample collection.

**Required Distribution Samples Collected Following an Unsatisfactory Result and the Repeat Samples:**

Five samples must be collected in the next month following month of the positive result. Any five sites listed above can be used. (e.g.: positive result in July → 4 repeats due in July → 5 distribution samples due in August)

**Repeat Sample Requirements for the above Sampling:**

If any of the above five samples is found to be positive for bacteria, then three repeat samples must be collected for each sample found to be "unsafe." One sample must be collected from the tap where an unsafe sample was found and the remaining two must be collected from any of the other sites listed above. If more than one of the five samples is found to be bacterially "unsafe," contact the IDNR Field Office for instructions on how many check samples must be collected.

**January:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**February:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**March:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**April:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**May:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**June:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_

**July:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**August:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**September:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**October:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**November:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**December:**

Routine Sample Location: \_\_\_\_\_

Repeat Locations: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Map of the Distribution System



### Bacterial Sampling Log

Date Collected	Sample Location	Sample Type*	Collector	Comments (i.e.: chlorine residual)

\* = S- Special, D- Distribution, R- Repeat