

Total Coliform Monitoring-7/99

All public water systems must monitor for the microbiological quality of their drinking water on a monthly basis. Samples are analyzed for total coliform and, if necessary, fecal coliform. The number of samples submitted each month is dependent on the number of people served by the water system. Samples have to be submitted only during months that water is available to the public. This regulation took effect on December 31, 1990 and applies to all public water systems (community, non-transient non-community, and transient non-community types).

When samples are analyzed, the results are either "Coliform Present" (positive) which means the water is unsafe or "Coliform Absent" (negative) which means the water is safe. Total coliforms are a group of bacteria predominantly inhabiting the intestines of man or animals, but occasionally found elsewhere. Fecal coliforms are a sub-group of the total coliforms and are associated with fecal matter of warm blooded animals. They are indicators of some possible type of fecal contamination while they do not cause disease themselves.

Compliance-All routine and repeat samples are to be included in calculations to determine maximum contaminant level (MCL) compliance.

The coliform MCL's are as follows:

For systems analyzing 39 or fewer samples per month-If more than one sample collected during a month is total coliform positive, the system is out of compliance.

For system analyzing 40 or more samples per month-If more than 5.0% of the samples collected during a month are total coliform positive, the system is out of compliance.

If any system has a repeat sample that is positive for fecal coliform or any repeat sample positive for total coliforms following a routine sample positive for fecal coliforms, the system is out of compliance. (Acute Violation)

A system that is in violation of a microbiological MCL must issue a public notice to its customers and correct the cause of the unsafe samples.

Routine Sampling-Routine samples can be taken on any Monday, Tuesday, Wednesday, or Thursday of a month. If samples are to be mailed, they should be taken just prior to the mail leaving your town (usually late afternoon). The sample form must be completed properly with the Purpose of the Sample marked "Routine". A suggested method for collecting the sample is enclosed as an attachment to this pamphlet.

Systems must collect routine samples at sites which are representative of water throughout the distribution system and are designated on a written sample site plan. Samples may NOT be collected at the wellhead. These plans are subject to State review and revision.

Systems using groundwater as the sole source of their water supply and serving less than 4900 people may collect all of their monthly samples on the same day provided different sampling sites are used.

Repeat Sampling-If the water system has a routine sample positive for total coliform, "repeat" samples must be submitted. Systems serving over 1000 people per day must collect three repeat samples per unsafe routine sample. Systems serving 1000 or less people per day must collect four repeat samples per unsafe routine sample. Repeat samples must be collected from locations as follows:

1. One from the original sampling point of the unsafe routine.
2. One from within five service connections upstream.
3. One from within five service connections downstream.
4. If a fourth sample is required, it may be taken anywhere within five service connections of the original unsafe sample.

REPEAT SAMPLES ARE NOT THE SAME AS ADDITIONAL ROUTINE SAMPLES. THEY ARE COLLECTED AT DIFFERENT SITES AND FOR A DIFFERENT PURPOSE.

The repeat samples should all be collected on the same day and within 24 hours of notification of the unsafe sample. However, if samples must be mailed to the laboratory and notification is received on a Thursday, Friday, or Saturday, repeat sampling should be done on the next Monday. **SYSTEMS SHOULD HAVE AT LEAST FIVE SAMPLE BOTTLES AT ALL TIMES FOR REPEAT SAMPLING PURPOSES.** Systems with a single service connection may collect the required four repeat samples during the same day separating each sample by at least one hour. It is to be noted again, repeat samples are now included in your compliance determination for the same month as your unsafe routine sample (no matter when the repeat samples were actually taken).

When submitting a repeat sample, the sample form should be marked as "REPEAT" and also where each repeat sample collected from (either upstream, downstream, or same site as unsafe). Instructions for taking repeat samples as well as additional routine samples are given on the back of the sampling form.

For systems sampling less than 40 times per month, if any repeat sample is total coliform positive the system exceeds the MCL and is out of compliance. **DO NOT SEND ANOTHER SET OF REPEAT SAMPLES IF THE FIRST SET IS POSITIVE.**

For Rapid City and Sioux Falls only, if any repeat sample is total coliform positive, another set of repeat samples is required. Sets of repeat samples must be submitted until an entire set of repeat samples is negative for total coliforms or until monthly MCL is exceeded.

Additional Routine Samples Following Unsafe Samples-Systems with populations of less than 4101 (four or less routine samples per month) that have an unsafe sample must collect at least five ROUTINE samples during the next month. These additional routine samples must be marked "ROUTINE" and be taken according to the sampling plan.

ADDITIONAL ROUTINE SAMPLES ARE NOT THE SAME AS REPEAT SAMPLES.

Fecal Coliform Sampling-Any routine or repeat sample that is positive for TOTAL COLIFORMS will be analyzed for FECAL COLIFORMS. Any repeat sample that is positive for fecal coliform or any repeat sample positive for total coliforms following a routine sample positive for fecal coliforms is considered an ACUTE RISK TO HEALTH. This MCL violation requires that your public notice be given to a radio or television station.

Record Maintenance-Records of microbiological samples must be kept for five years.

If there are any questions on microbiological sampling, please contact the Drinking Water Program in Pierre (773-3754).