

**REVISED TOTAL COLIFORM RULE (RCTR) SUMMARY
ARKANSAS PUBLIC WATER SYSTEMS**

I. ROUTINE SAMPLING

A. Samples are to be representative of water throughout the distribution system, and are to be taken in accordance with a written sampling plan which should contain all the elements listed herein (See Section VIII). A sample log sheet approved by the Department of Health must be submitted by the 10th of the following month to the Engineering Section.

B. Samples are to be taken monthly based on population served in accordance with Table 1.

TABLE 1. MONITORING FREQUENCY

<u>Population</u>	<u>Minimum #/Month</u>
25 to 1,000	1*
1,001 to 2,500	2*
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,000 to 450,000	180

*Transient Non-Community Systems only, ADH requires a minimum of 3 samples/month for Community and Non-Transient Systems.

C. All total coliform positive samples must be analyzed for E.coli.

D. Groundwater systems which are under the direct influence of surface water and which have not yet installed filtration must collect a bacteriological sample near the first service connection for each day that the raw water turbidity exceeds 1 NTU. The sample must be collected within 24 hours of the turbidity exceeding 1 NTU unless such collection would cause the sample to be "Too Old" when analyzed by the State laboratory. In this case the sample is to be collected as soon as feasible. The result of this sample(s) to be included in determining compliance.

E. All systems collecting more than 1 sample per month, with the exception of Groundwater systems serving less than 4900 population, must divide the collection of monthly samples into not less than two regular periods per month, preferably bi-weekly.

II. REPEAT and REPLACEMENTSAMPLLES

A. If any routine sample is total coliform positive, the water system must collect a set of repeat samples within 24 hours of the receipt of the sample results unless the collection and return of the repeat samples would be on a Friday, Saturday, or Sunday, or a business day preceding a state holiday such that the sample would be "Too Old". In this case the repeat samples are to be collected as soon as feasible.

B. The system must collect no fewer than three repeat samples for each total coliform positive sample.

C. At least one repeat sample is to be collected at the sampling tap where the original total coliform positive sample was taken, one repeat sample is to be taken within five service connections upstream, and one repeat sample is to be taken within five service connections downstream. If this is not possible because of the layout of the distribution system, repeat samples are to be taken at the original site and either upstream or downstream, or all repeat samples taken at the original site.

D. All repeat samples are to be collected on the same day.

E. All repeat samples are to be used in determining compliance.

F. If any repeat sample is total coliform positive, an additional set of repeat samples must be collected as outlined above. This process must be repeated until one complete set of repeat samples is negative for total coliform or it is determined that either an Assessment has been triggered or the MCL has been exceeded.

G. A sample invalidated because of interference from non-coliform bacteria (Too Numerous To Count or Confluent Growth without coliform) must be replaced with a single sample from the same location within 24 hours of the receipt of sample result unless the collection and return of the sample would be on a Friday, Saturday, or Sunday, or a business preceding a state holiday such that the sample would be "Too Old". In this case, the replacement sample is to be collected as soon as feasible. This must continue until a valid sample result is obtained.

I. A sample invalidated because of being too old, form incomplete, or other such reason is to be replaced with a single sample as soon as possible.

J. All Repeat and Replacement samples shall include the reference to the Original Laboratory Number of the initial sample.

III. INVALIDATION OF POSITIVE SAMPLES

Total coliform positive samples may be invalidated only for the following reasons.

A. Laboratory error.

B. The State determines that the positive sample is the result of a domestic or plumbing problem and all repeat samples from the original location are total coliform-positive while the upstream and downstream repeat samples are total coliform-negative.

C. The State has substantial grounds to believe that the positive sample is due to a condition which does not reflect water quality in the distribution system, and documents in writing the specific cause for that condition. Repeat samples must still be taken and the results used for MCL compliance determination.

IV. MAXIMUM CONTAMINANT LEVEL

A. Any E.coli positive repeat sample, or any total coliform positive repeat sample following an E.coli positive sample is an MCL violation and is considered an acute risk to public health. Notify the Department of Health immediately. Notice of the violation must be provided to customers by the water system within 24 hours through the broadcast media, hand delivery, posting or other method approved by the Department of Health. In addition, a Boil Order Advisory shall also be issued. The system is also required to have a Level 2 System Assessment completed within 30 days.

V. SYSTEM ASSESSMENTS

A. System Assessments are required based on the presence or absence of total coliform in multiple samples.

- i. For a water system collecting fewer than 40 samples per month, no more than one sample per month can be total coliform positive.
- ii. For a water system collecting 40 or more samples per month, no more than 5.0 % can be total coliform positive.
- iii. Failure to collect all required repeat samples after any single total coliform-positive sample.

B. If either condition of item V.A is exceeded, the system is required to conduct a Level 1 Assessment.

C. The water system must conduct the Level 1 Assessment and report the results to the Engineering Section within 30 days of notification of the need for the Assessment.

D. Systems that trigger a second Level 1 Assessment within 12 months, must conduct a Level 2 Assessment in lieu of the second Level 1 Assessment.

E. The Engineering Section will conduct Level 2 Assessments with the water system when E.coli is confirmed or if a second Level 1 Assessment within 12 months of the previous Assessment.

F. The Assessment report shall include the reason for the presence of coliform bacteria, if determined, and identify any sanitary defects that may exist in the system.

G. The report shall also document that the sanitary defects have been corrected or include a time table for their correction.

H. All identified sanitary defects must be corrected in accordance to the time table approved by the Engineering Section.

VI. PUBLIC NOTIFICATION

A. Owners or operators of public water systems must provide notice to the persons they serve if the requirements of the RCTR are not met. The notices must contain the following:

- A description of the violation.
- When the violation occurred
- Potential health effects.
- The population at risk.
- Whether alternate water supplies should be used
- Actions consumers should take.
- What is being done to correct the violation.
- When the system expects to return to compliance
- Name, number, and business address for more information.
- Statement encouraging the distribution of the information to others.

B. For a maximum contaminant (MCL) and treatment technique (TT) violations, the notice must contain the following mandatory language.

i. E.coli - MCL

"E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems."

ii. Level 1 & 2 Assessments non E.coli - TT

"Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found."

iii. Level 2 Assessments for E. coli - TT

MCL language in addition to, "We violated the standard for E.coli, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found."

iv. All Assessments - TT

"We failed to conduct the required assessment."
And/or

"We failed to correct all identified sanitary defects that were found during the assessment(s)."

v. Seasonal Systems - TT

"We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we 'did not monitor or test' or 'did not complete all monitoring or testing' for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time."

C. Water systems conducting their own compliance testing must report to the state within 24 hours an acute MCL or within 48 hours the failure to comply with any other requirement of this rule.

VII. BEST AVAILABLE TREATMENT

EPA identifies the following as the best technology available for achieving compliance with the MCL for total coliforms.

A. Protection of water sources from contamination by appropriate placement and construction.

B. Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, flushing program, proper operation and maintenance of storage tanks and reservoirs, a cross connection control program, and continual maintenance of positive water pressure in all parts of the distribution system.

C. Filtration and disinfection of surface water, or disinfection of groundwater using strong oxidants such as chlorine.

D. Maintenance of a disinfectant residual throughout the distribution system.

E. Development and implementation of an approved wellhead protection program.

VIII. SAMPLE SITE PLAN

Elements of the sample site plan are to be in written or printed form and maintained in the water system office with copies distributed, as needed, to all appropriate personnel. The plan should be submitted to the Engineering Section as soon as completed, but is subject to review at any time upon request by the Department of Health. Sample plans will be reviewed as a minimum during the sanitary survey.

The plan must contain the following:

1. An accurate map (city map, county map, quadrangle map, engineering layout sheet, etc) of the distribution system showing the service area and the routine monthly bacteriological sampling points with a description of each sample site. It is recommended that the map also contain the locations of water system structures such as wells, treatment plants, storage tanks, booster stations, major distribution mains, etc.

2. Sample sites are to be evenly distributed geographically. A community water system, regardless of size, should have at least five separate identified routine sample sites even if less than five samples are collected each month.

3. Identify repeat sample locations within 5 service connections of each routine sample site. At least one resample location should be upstream and one downstream of each sample site.

4. A log sheet provided by the Department of Health to record sample collection dates, locations, distribution chlorine residuals, and lab results. This sheet or a copy must be submitted by the 10th of the following month to the Engineering Section.

The plan should also contain name and office phone numbers of personnel with the Engineering Section, and a public notification protocol should an E.Coli maximum contaminant violation occur.

IX. CONSUMER CONFIDENCE REPORT

Information on all violations and Assessments shall be included with the annual Consumer Confidence Report.

Level 1 & 2 Assessments non E.coli

Text in Section VI.ii. in addition to "During the past year we were required to conduct [insert number] Level 1 assessment(s). [insert number] Level 1 assessment(s) were completed. In addition, we were required to take [insert number] corrective actions and we completed [insert number] of these actions." Repeat for Level 2 assessments.

Level 2 Assessments for E. coli

Text in Section VI.i. in addition to "We found E. coli bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments. We were required to complete a Level 2 assessment because we found E. coli in our water system. In addition, we were required to take [insert number] corrective actions and we completed [insert number] of these actions."

ARKANSAS

REVISED TOTAL COLIFORM RULE SUMMARY

for

PUBLIC WATER SYSTEMS

promulgated under

THE NATIONAL PRIMARY DRINKING WATER REGULATIONS

40 CFR Parts 141 and 142

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