TOTAL COLIFORM RULE SUMMARY
ARKANSAS PUBLIC WATER SYSTEMS

I. 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 VII). A sample log sheet provided 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

Population	Minimum #/Month
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. Surface water systems and groundwater is under the direct influence of surface water serving greater than 1000 population and groundwater systems serving greater than 4900 population, must divide the collection of monthly samples into not less than two regular periods per month, preferably bi-weekly.

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) is to be included in determining MCL compliance.

II. MAXIMUM CONTAMINANT LEVEL

A. The MCL is based on the presence or absence of total coliform in a sample. All total coliform positive samples must be analyzed for either fecal coliform or E.coli.

B. For a water system collecting fewer than 40 samples per month, no more than one sample per month can be total coliform positive.

C. For a water system collecting 40 or more samples per month, no more than 5.0 % can be total coliform positive.

D. Any fecal positive or E.coli positive repeat sample, or any total coliform positive repeat sample following a fecal coliform or 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.

III. REPEAT SAMPLES

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 resample bottles 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. A system which collects more than one routine sample per month must collect no fewer than three repeat samples for each total coliform positive sample. A water system collecting one routine sample per month or which samples on a quarterly basis must collect not less than four 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 except that systems which have a single service connection may collect repeat samples on each of four consecutive days.

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 the MCL has been exceeded.

G. If a water system collects fewer than five routine samples per month (≤ 4100 population) and has one or more total coliform positive samples which are not invalidated, the system must collect at least five routine samples the following month. This requirement can be waived if:

1. The State performs an onsite inspection of the system and determines before the end of the next month whether additional monitoring and/or corrective action is needed.
2. The State documents in writing the reason for the total coliform positive sample and establishes that the problem has been or will be corrected by the end of the next month. At least one repeat sample is still required.

H. A sample invalidated because of interference from noncoliform 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 a replacement bottle 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 feasible.

IV.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 such that the resample from the original location is still positive while the upstream and downstream repeat samples are 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.

V. PUBLIC NOTIFICATION

A. Owners or operators of public water systems must give notice to the persons they serve if the requirements of the Total Coliform Rule are not met in a time frame and manner approved by the State. 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 violation, the notice must contain the following mandatory language.

Total Coliform.
"Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems."

Fecal Coliform / *E.coli*.
"Fecal coliforms and *E.coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. The may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems."

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.

D. A consecutive system purchasing or receiving water from another system with an MCL violation must also notify the customers it serves in a time frame and a manner approved by the State.

VI. BEST AVAILABLE TREATMENT

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

A. Protection of wells from contamination by appropriate placement and construction.

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

C. 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.

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

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

VII. 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 acute maximum contaminant violation occur.

ARKANSAS

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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