**SPECIAL USE PERMIT FOR**
**CAMPGROUND AND RELATED GRANGER-THYE CONCESSIONS**
**Authority: Granger-Thye Act, 16 U.S.C. 580d**
**(Ref. FSM 2710)**

# FS-2700-4h, APPENDIX F:

## OPERATION OF FEDERALLY OWNED DRINKING WATER SYSTEMS

## I. INTRODUCTION

The requirements set forth in this Appendix pertain to holders of Forest Service special use permits that authorize the holder to operate federally owned drinking water systems. This includes special use permits authorized under the Granger-Thye Act, 16 U.S.C. § 580d.

The requirements set forth below are derived from Chapter 7420 of the Forest Service Manual (FSM), which describes the Forest Service Drinking Water Program. The objective of the Forest Service Drinking Water Program is to protect the health of the public and Forest Service personnel by ensuring that water provided by the Forest Service for human consumption is safe and protected. Where this objective cannot be met, the Forest Service policy is to make such waters unavailable for human consumption. "Human consumption" includes the use of water for drinking, food preparation, dishwashing, oral hygiene, or bathing/showering.

When a permit holder operates federally owned water systems, both the Forest Service and the permit holder are considered suppliers of the water. Therefore, permit holders authorized to operate federally owned water systems must operate and maintain the systems to meet the objective and policy of the Forest Service Drinking Water Program. Failure to operate these drinking water systems accordingly may result in revocation of the permit.

In addition to fulfilling the requirements set forth below, permit holders operating federally owned water systems must comply with all applicable federal, State, interstate, and local requirements applicable to drinking water systems, and must follow the Operation and Maintenance Plan developed in conjunction with the Forest Service to address the specific system(s).

Nothing in this Appendix should be interpreted as diminishing any obligation imposed by federal, State, interstate, or local authority.

## II. APPLICABLE DEFINITIONS

**A. Average Daily Population (ADP).** For classification purposes, the sum of the daily transient and daily resident population served or having access to the drinking water system, per month, divided by the days of the month. Where actual or sample counts are not available at recreation sites, determine ADP by multiplying Persons-At-One-Time (PAOT) by the percentage of site use where PAOT equals four people per site.

**B. Condition Survey.** An onsite review of the facilities, equipment, and operation and maintenance of the a drinking water system to evaluate the adequacy of those elements for producing and distributing safe drinking water and meeting FSM and regulatory requirments. Condition surveys are an integral part of the sanitary surveys and serve as a supplement to the last current sanitary survey.

**C. Confluent Growth.** A continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete. This does not necessarily include coliform growth. Non-coliform growth is often called heterotrophic growth.

**D.** **Drinking Water System.** A system for providing water suitable for human consumption via service connections (including handpump wells).

**E.** **Human Consumption.** Use of water for drinking, food preparation, dishwashing, oral hygiene, or bathing/showering.

**F.** **Maximum Contaminant Level (MCL).** As defined by federal, State, or local law, but generally: The maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

**G.** **Non-Public Water System.** A system not meeting the public water system definition. A non-public water system is subdivided into the following categories:

- **Non-Public, Non-Transient (NPNT).** A system serving less than 25 year-round residents or serving less than 25 of the same persons ADP more than 180 days per year (for example, some housing sites).

- **Non-Public, Transient (NPT).** A system serving less than 25 individuals ADP and not meeting the requirements of NPNT water system (for example, some smaller recreation sites).

**H** **Population Served.** The holder shall use the drinking water system classification provided by the authorized officer to determine the system class and applicable FSM Chapter 7420 and state, federal, and local regulatory requirements.

**I.** **Public Water System.** As defined in the Safe Drinking Water Act, 42 U.S.C. § 300f *et seq.*, as amended, and in the National Primary Drinking Water Regulations, 40 CFR Part 141, or by State or local regulation if more stringent.

**J.** **Repeat Samples.** A set of samples taken when a routine sample is total coliform-positive or when a repeat sample is total coliform-positive. Repeat samples shall be collected within 24 hours of notification of a positive result.

**K.** **Routine Sample.** A sample that is representative of the water throughout the distribution system, taken by properly trained personnel on a routine basis when the system is operational, used to determine the microbial quality of the water.

**L.** **Sanitary Survey.** As defined by applicable Federal, State, or local regulations, but generally: An onsite review performed by the State or qualified Forest Service engineer of the water source, facilities, equipment, operation, and maintenance of a public water system for the purpose of evaluating the adequacy of the source, facilities, equipment, operation, and maintenance for the purpose of ensuring the distribution of safe drinking water.

**M.** **Service Connection.** The structure by which drinking water is conveyed from the distribution system to the user. Examples of service connections include: an individual building (residence, crew quarters, office, or mobile home -- not including utility hose bibs stubbed from building plumbing); a building exterior drinking fountain provided for public use; an individual yard or campground hydrant; a handpump on a well.

**N.** **Special Sample.** A sample collected to determine the success of corrective actions. Special samples may also be taken to determine whether seasonal systems are ready to be opened, or whether disinfection practices are sufficient following pipe or tank repair or replacement. Special samples must be marked as such when sent in to the laboratory for analysis.

## III. Requirements for Operating Federally Owned Drinking Water Systems

**A.** **Compliance With Applicable Standards.** All federally owned public water systems shall comply with the

requirements of Appendix F of this permit (Operation of Federally Owned Drinking Water Systems) , the Safe Drinking Water Act, 42 U.S.C. § 300f *et seq.*; the National Primary Drinking Water Regulations (NPDWR), 40 CFR 141; the National Secondary Drinking Water Regulations (NSDWR), 40 CFR 143; any other applicable federal law; and applicable State, interstate, and local requirements, in addition to the standards stated in this document.

Federally owned **non-public** water systems shall conform to Appendix F of this permit (Operation of Federally Owned Drinking Water Systems) which requires monthly total coliform sampling for non-public systems, among other requirements and to any federal, State, interstate, and local requirements that may apply.

**B. Classification.** All drinking water systems are classified by the Forest Service as either public water systems or non-public water systems. Public water systems shall be further classified in accordance with federal, state, or local requirements (e.g., "community" or "non- community," and so on). Non-public water systems shall be further classified as NPNT or NPT. The regulatory authorities and the Forest Service are responsible for making the final determination of how a water system is classified.

**C. Certified Water System Operators.** All personnel operating and testing water systemsshall be certified as required by federal, State, and local regulations. The permit holder shall provide the name of the water system operator in writing to the Forest Service and notify the authorized officer within 72 hours of a change in personnel.

**D. Initial Survey.** Sanitary surveys shall be performed and documented for a new drinking water supply source and system before it becomes available for public use. If deficiencies are found, the Forest Supervisor shall approve a corrective action plan prepared to address the deficiencies, and the system may not be used until corrective action is completed and is demonstrated to have corrected any deficiencies.

**Subsequent Sanitary Surveys.** Sanitary surveys shall be conducted on all systems in accordance with applicable State regulations, or more frequently if there are recurring deficiencies. The Forest Service shall conduct regularly scheduled sanitary surveys and the holder shall assist the Forest Service by providing laboratory test results, locating components at the site, operating valves and equipment. However, the permit holder is responsible for coordinating with the Forest Service to ensure that additional sanitary surveys are performed as required in the event of system violations, in accordance with the required follow-up actions set forth below.

**E. Condition Surveys.** The permit holder shall coordinate with the Forest Service to ensure performance of condition surveys. Condition surveys must be performed whenever:

1. Routine bacteriological analysis indicates, and a bacteriological repeat sample confirms, that coliform bacteria exist.

2. A seasonal system is opened for the season.

3. There is a significant event or change in conditions that may affect the supply or system (e.g., a significant earthquake).

**F. Treatment and Disinfection.** Drinking water systems having surface water sources or groundwater sources under the direct influence of surface water shall be disinfected and filtered in accordance with federal, State, and local regulations. Direct influence of surface water for individual sources shall be determined by the State and/or qualified Forest Service Engineer. The determination is typically based on State criteria which may include site-specific measurements of water quality and/or documentation of source construction, characteristics and geology.

Water systems utilizing ground water sources not under the direct influence of surface water shall be disinfected if there is a history of microbiological contamination or when a condition or sanitary survey determines that microbiological contamination could occur, or as required by other applicable law.

The permit holder is responsible for ensuring that water systems are disinfected and treated as required. The

permit holder is responsible for operating and monitoring any treatment and disinfection system installed by the Forest Service, and for notifying the Forest Service in the event of any treatment system malfunction.

**G. Sampling, Monitoring, and Follow-up Actions.** As indicated above. The permit holder shall institute a drinking water monitoring program according to Appendix F (Operation of Federally Owned Drinking Water Systems) NPDWR, NSDWR, and State and local regulations to monitor the level of primary and secondary contaminants in the water system and take appropriate follow-up actions.

The permit holder shall consult with the Forest Service to develop a written sample siting plan for each public and non-public water system. The siting plan should be designed to ensure that the system is routinely sampled at varied representative locations and that contamination in any portion of the distribution system is eventually detected.

Testing laboratories must be EPA and/or State approved. Samples shall be collected and handled in compliance with laboratory requirements. The Forest Service authorized officer shall approve of the manner in which the laboratory notifies the permit holder of violations. The Forest Service requires that the laboratory notify the authorized officer of violations directly. The holder is responsible for providing the name and address of the authorized officer to ensure the laboratory sends copies of samples results that indicate violation to the Forest Service. The laboratory should be able to report results immediately if a test result is total or fecal coliform positive.

The Forest Service imposes additional sampling, monitoring, and follow-up actions, set forth below, per the requirements of FSM Chapter 7420 and Appendix F (Operation of Federally Owned Drinking Water Systems).

1. a. **Routine Sampling for All Systems.** The permit holder shall perform microbiological testing for total coliform bacteria at a minimum of one routine sample per month for every full or partial calendar month of operation, for all systems. Each handpump should be considered a separate water system.

   Microbiological sampling shall be conducted every month. Samples should be taken at approximately 30-day intervals. Samples shall be taken early in the month to allow sufficient time for follow-up samples to be taken. A higher frequency of routine sampling may be required for public water systems by NPDWR and State regulation.

   The permit holder shall notify and consult with the Forest Service within 24 hours or on the next business day after notification by the laboratory of a sample that tests positive for microbiological contamination. The permit holder shall notify and consult with the Forest Service within 48 hours of notification of a MCL violation or an acute violation.

   b. **Special Samples for All Systems.** At least one special sample shall be taken and shall test total coliform negative before that system may be opened. Special samples do not count in determining MCL violations or in meeting the monthly sampling requirements.

   c. **Microbiological Contaminant Monitoring for Non-Public Water Systems.** The permit holder shall monitor non-public water systems for microbial contamination in the same manner as is required in the Forest Service Manual Chapter 7420 for non-community public systems and any federal, State, and local regulations (except for reporting to the regulatory agency). In addition to federal and State requirements, the permit holder shall take the appropriate follow-up actions as described in **Exhibit 1** of this document whenever a routine sample tests total coliform positive.

2. **Disinfectant Residuals Monitoring for All Systems.** The permit holder shall perform residual disinfectant monitoring in accordance with federal, State, and local regulations for all public systems requiring disinfection, and shall monitor and take follow-up action for non-public systems requiring disinfection in the same manner (except for reporting to regulatory agencies).

3. **Turbidity Monitoring.** The permit holder shall perform turbidity monitoring and follow-up in compliance with federal, State, and local regulations for all public systems, and also for non-public systems using surface water sources ground water sources determined to be under the direct influence of surface water, and for any systems designated by the State.

4. **Additional Monitoring of Primary and Secondary Contaminants, Regulated and Unregulated Organic and Inorganic Chemicals, and Other Contaminants.** All public water systems are required to be monitored for primary and secondary contaminants in accordance with the NPDWR, NSDWR, and applicable State and local regulations. Comply with federal, State, and local monitoring schedules for all contaminants in public systems.

   Additionally, the permit holder shall perform one baseline sampling, as a minimum, for the primary and secondary contaminants shown in **Exhibit 2** of this document on all non-public systems and public transient non-community systems. For new systems, conduct the sampling and analyses before opening the system. If the one-time test results exceed the MCL established for public systems, perform follow-up monitoring and take action in accordance with the regulations applicable to public water systems (except for reporting to the regulatory agency).

5. **Radioactivity.** At a minimum, perform radionuclide monitoring on public community and public non-transient, non-community water systems in accordance with the federal, State, and local standards.

**H. Record-Keeping.** The permit holder shall establish a permanent file for each drinking water system including all test results, corrective actions taken, documentation that the state and Forest service were notified within 48 hours of a known violation, and annual condition surveys. The permit holder shall maintain original documents of records as required by 40 CFR 141.33 and applicable State and local regulations. The permit holder shall maintain original documents of records pertaining to additional requirements imposed by the Forest Service for public and non-public water systems in a comparable fashion.

The permit holder shall forward copies of microbiological test results for federally owned water systems to the Forest Service by the 15th of the month following the sampling date. Copies of other required records for federally owned systems shall be forwarded annually to the Forest Service within 15 days of the end of the operating season for seasonal sites or within 15 days of the end of the calendar year for year-round operations. The holder shall surrender all records for a federally owned system to the Forest Service upon permit termination or revocation.

**I. Infeasibility.** Where compliance with any applicable standard is physically infeasible, such as in certain wilderness areas, cross-country trails, or roadside springs, in addition to coordinating with the Forest Service to secure any necessary variances or exemptions to ensure compliance with the law, the holder shall keep such water sources in an undeveloped condition indicating the water source is unprotected. When providing the public with information about these water sources through trail guides, brochures, maps, etc., the permit holder shall include a warning statement as to potability of undeveloped water sources. Undeveloped water sources shall not be identified on such information in a way that may mislead users into believing the water is protected and safe. The permit holder shall take any additional measures to protect the public as are required by Federal, State, or local law with regard to such water sources.

**J. Range and Wildlife Water Systems.** The requirements stated herein should not be applied to range or wildlife water systems if their design and construction features clearly indicate that they are not for human use. However, if range or wildlife water systems are an integral part of a drinking water system, such integral parts shall meet the requirements for drinking water. The Forest Service and/or State shall make the final determination of which water systems must be treated as water systems that supply water for human consumption.

**K. Hoses and Similar Equipment.** Hoses that convey drinking water shall have a smooth interior surface made of food-grade standard materials. The permit holder shall keep pumps, hoses, fittings, valves, and similar equipment

in a manner which prevents contamination, and shall keep them closed or capped when not in use.

## Exhibit 1

Follow-up Actions for Microbiological Sampling

**A. Public Systems.** Whenever a routine sample result is total coliform-positive, take follow-up action as required by federal, State, and local regulation, but at a minimum take a set of four repeat samples within 24 hours of notification by the lab. Take the samples at locations as directed by law, in accordance with the sample siting plan, and as follows:

1. One at the same tap where the contamination occurred.
2. One at a downstream tap.
3. One at an upstream tap.
4. One within five service connections of the original sample.

If a system has only one service connection (such as a handpump), sample according to applicable law, but at a minimum collect a single 400 milliliter sample.

In addition, take follow-up action as indicated in the chart and instructions below within 24 hours, based on the results of repeat sampling.

For any routine sample that is total coliform-positive, perform a minimum of five routine samples during the next month the system is open.

**B. Non-Public Systems.** Whenever a routine sample result is total coliform positive, take one repeat sample within 24 hours of notification of the result.

In addition, take follow-up action as indicated in the chart and instructions below within 24 hours, based on the results of repeat sampling.

**C. All Systems.** Temporary closure of a water system for the purpose of performing corrective action or seasonal closure does not relieve the responsibility for compliance with repeat sampling, additional routine sampling, reporting to EPA or the State, and public notification as set forth in the federal, State, and local regulations.

At sites with water-carried sewage systems, if follow-up action is to close the system, the toilet supply may be left open if all points of drinking, including sinks and showers, can be isolated and shut off. Otherwise, shut off the entire system.

In the case of a waterborne disease outbreak at a federally owned water system, close the system, contact the Forest Service and the State for special provisions for public notification and monitoring, and take whatever additional measures the law requires.

Follow-up Actions for Microbiological Sampling

Based on the results of the repeat sampling, initiate the appropriate follow-up actions within 24 hours:

| | SAMPLE RESULT | | | |
|---|---|---|---|---|
| ROUTINE SAMPLE | REPEAT SAMPLE | MCL VIOLATION | ACUTE VIOLATION | FOLLOW-UP ACTION |
| TC- | None | No | No | None. Quality Satisfactory. |
| TC+ FC-/EC- | TC- | No | No | Public systems must have five routine samples taken the next month the system is open. |
| TC+ FC-/EC- | TC+ FC-/EC- | Yes | No | See Action 1 (below). |
| TC+ FC-/EC- | TC+ FC+/EC+ | Yes | Yes | See Action 2. |
| TC+ FC+/EC- | TC- | No | No | Public systems must have five routine samples taken the next month the system is open. |
| TC+ FC+/EC+ | TC+ FC-/EC- | Yes | Yes | See Action 2. |
| TC+ FC+/EC+ | TC+ FC+/EC+ | Yes | Yes | See Action 2. |
| Confluent Growth | See Action 3 | No | No | See Action 3. |

TC = Total Coliform
EC = E. Coli
FC = Fecal Coliform

\- = Negative test results
\+ = Positive test results

**ACTION 1: MCL VIOLATION**

**A**. **All Systems.** Search for the source of the contamination by having a condition survey done. Take corrective action when the source of contamination is found. Take daily special samples until two consecutive special samples are TC negative. If three samples are TC positive, close the system. Open the system only after the problem has been corrected and two consecutive daily special samples are TC negative.

Notify users according to appropriate State or NPDWR notification procedures including: posting, hand delivery, or media (newspaper, radio, or television), depending on the classification of the system and corresponding State direction. For non-public systems where State or EPA regulations have not established public notification procedures, notify users as soon as possible but always within 14 days by posting signs at the facility, visitor information site, etc. For systems serving residential populations, make notification by letter, in addition to posting signs.

**B**. **Public Systems.** Notify, consult, and coordinate with the State within the time period required by law after notification of the positive result. Take five routine samples the next month the system is open.

**ACTION 2: ACUTE VIOLATION**

**A**. **All systems.** Close the water system. At sites with water-carried sewage systems, the toilet supply may be left open if all points of drinking, including showers and sinks, can be isolated and shut off. Otherwise, shut off the entire system. Search for the source of contamination by having a condition survey done. Take corrective action when the source is found. Open the system only after the problem has been corrected and two consecutive daily special samples are TC negative.

Notify users according to appropriate State or NPDWR notification procedures including: posting, hand delivery, or media (newspaper, radio or television), depending on the classification of the system and corresponding State direction. For non-public systems where State or EPA regulations have not established public notification procedures, notify users as soon as possible but always within 72 hours by posting signs at the facility, visitor information site, etc. For systems serving residential populations, make notification by letter, in addition to posting signs.

**B**. **Public Systems.** Notify, consult, and coordinate with the State within the time period required by law after notification of the positive result. Take five routine samples the next month the system is open.

**ACTION 3: CONFLUENT GROWTH**.

Take another routine sample at the same location within 24 hours of being notified of the result. If the second sample has confluent growth, search for the cause and correct it. Continue sampling until a valid sample is obtained. If the valid sample is TC positive, take follow-up actions as required by law and as outlined above.

**Exhibit 2**

Primary and Secondary Contaminants

| PRIMARY CONTAMINANTS | SECONDARY CONTAMINANTS |
|---|---|
| Arsenic | Aluminum |
| Barium | Chloride |
| Cadmium | Color |
| Chromium | Copper |
| Fluoride | Foaming Agents (Surfactants) |
| Lead | Iron |
| Mercury | Manganese |
| Nitrate | Odor |
| Nitrite | pH |
| Selenium | Silver |
| Sodium | Sulfate |
| | Total Dissolved Solids |
| | Zinc |

Whenever the maximum contaminant is exceeded, analyze a repeat sample for confirmation of the test results. Judge the acceptability of the water quality using the MCLs established in the NPDWR and NSDWR. These MCLs shall apply to both public and non-public systems.

For both public and non-public systems serving residential populations, correct any deficiency in water quality that would result in noncompliance with federal, State, and local regulations for public water systems. Report any system with a contaminant in excess of established MCLs to the Forest Service for review on a case-by-case basis.

For public systems, send sampling results to the State and follow the applicable public notification requirements if there is an MCL violation. For non-public water systems, follow the public notification requirements applicable to public non-community systems if contaminants exceed the MCL levels.