

WHAT ARE THE GWR TRIGGERED SOURCE MONITORING REQUIREMENTS?

Triggered Source Water Monitoring

According to the Groundwater Rule (GWR), within 24 hours of being notified of a positive total coliform result under routine Total Coliform Rule (TCR), a groundwater system (GWS) must collect at least one ground water source sample from each source in use when the positive total coliform was collected.

Sample Identification, Labeling, and Reporting

Triggered source samples **MUST** be labeled as a TRIGGERED (TG) SOURCE sample when submitted to the laboratory for testing. In addition, the SOURCE NUMBER must be identified and correspond to the source number listed on the system inventory report. For example: **TG - WS001** Smith Well, or **TG - WS002** North Spring, or **TG - WS003** South Spring.

GWS That Have One Ground Water Source

When a system has only one groundwater source, the source is typically identified on the system inventory reports as WS001. For the purposes of meeting the GWR requirements, collecting and labeling the triggered source sample, the system will collect ONE source sample from the only source, label the sample **TG – WS001**, and submit the sample to the laboratory for testing.

GWS That Have More than One Ground Water Source

When a system has more than one groundwater source, the DDW will expect one sample from each source in-use at the time the positive TCR sample was collected. EACH of the samples should be labeled **TG - WS001** or **TG -WS002 (the appropriate source number)** and submitted to the laboratory for testing. There must be as many GWR triggered source samples collected and submitted to the laboratory for testing as there are active and operational sources listed on the system inventory report.

Samplers MUST Identify Which Sources are NOT In-Use ?

The system inventory report indicates the **ACTIVITY STATUS** and **PERIOD OF OPERATION** for each source. If a source is marked “ACTIVE” and the time the positive TCR sample was collected is within the reported period of operation, the DDW will expect one GWR triggered source sample from each of these sources. If one of these sources was NOT operational, or NOT in-use, at the time the positive TCR sample was collected the system operators or samplers need to inform the DDW at DDWReports@utah.gov or FAX 801-536-4211.

Samplers MUST Identify Sources NOT Supplying the Area of the Positive TCR

If the system has active and operational sources which are NOT providing water to the area the positive TCR sample was collected, system operators or samplers need to inform the DDW at DDWReports@utah.gov or FAX 801-536-4211. Otherwise, the DDW will expect one GWR triggered source sample from each active and operational source listed on the system inventory report.

Representative Source Water Monitoring

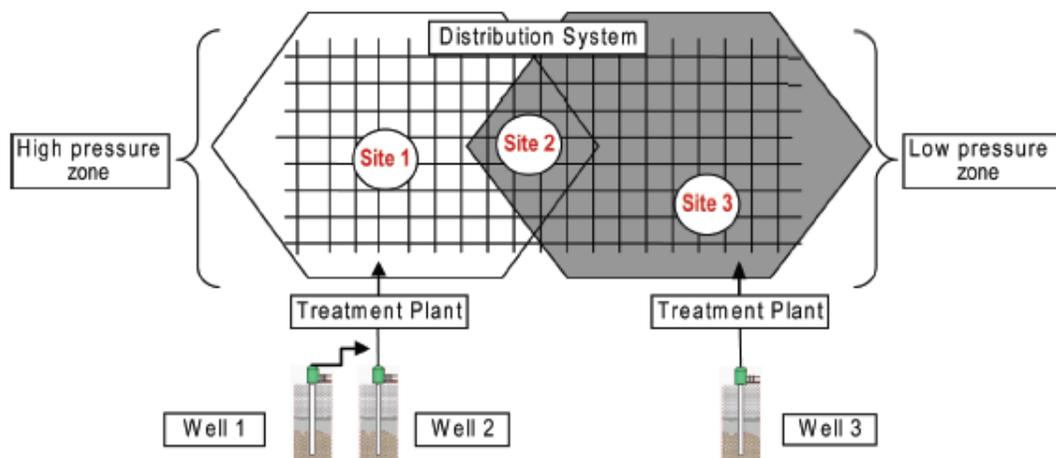
With State approval, GWS with more than one ground water source may fulfill the GWR triggered source water monitoring requirements by taking a ground water sample from a REPRESENTATIVE SOURCE MONITORING LOCATION. Representative source water sampling allows systems to collect samples from the sources that represent (serve) the TCR monitoring site rather than from ALL sources. In order to get an approved representative source monitoring location, GWS are required to submit a triggered source water monitoring plan that identifies the sources that are representative of its TCR sampling sites.

Triggered Source Water Monitoring Plan

A triggered source water monitoring plan need not be complicated but MUST be approved by the DDW. Plans must include:

1. A map of the water system with location of groundwater sources, location of pressure zones, and location of storage and disinfection facilities,
2. A written explanation of how the GWS knows which source feeds which section of the distribution system, and
3. Seasonal or intermittent ground water sources and when they are used.

► The diagram below provides an example of a system schematic that could be used to determine representative sources and develop a triggered source water monitoring plan, based on where in the distribution system the total coliform-positive sample is found. If approved by the State, the system could sample sources 1 and 2 after a total coliform-positive at Site 1 since Site 1 is in the zone served by those sources. A total coliform-positive at Site 2 would require source sampling from all sources since this area is served by all sources.



Sample Identification, Labeling, and Reporting

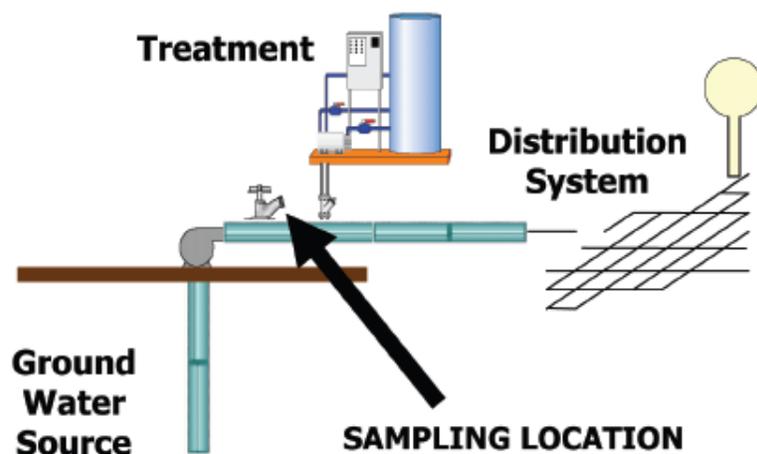
Triggered source samples collected from an approved representative location **MUST** be labeled as a **TRIGGERED (TG) SOURCE** sample when submitted to the laboratory for testing. In addition, the **REPRESENTATIVE SOURCE NUMBER**, following approval from the DDW, is identified as **SSG01**. Samples collected from an approved GWR representative source monitoring location should be labeled: **TG – SSG01**. Note: Group sampling locations for chemistry samples are not an approved GWR source monitoring location for triggered source monitoring.

The Basics of Collecting and Analyzing GWR Triggered Source Water Monitoring Samples

When triggered source water monitoring is required, GWS must:

1. Collect at least one ground water source sample from an approved representative source monitoring location, or at each source in use at the time the total coliform-positive sample was collected.
2. Samples must be collected within 24 hours of being notified of the total coliform-positive sample (unless the 24-hour limit is extended by the State)
3. Sample must be taken before treatment and disinfection or at a State-approved location after treatment and disinfection.
4. Samples must be analyzed for the presence of a fecal indicator (e.g. *E. coli*, enterococci, or coliphage) using an approved GWR method.
5. If a fecal indicator-positive source sample is invalidated by the State, the GWS must collect another source water sample within 24 hours of being notified by the State of the sample invalidation.

► The diagram below represents an appropriate sampling location for triggered source water monitoring. GWSs should have a sample tap at each source that enables triggered source water monitoring.



Small Systems

GWS serving fewer than 1,000 people that have a total coliform-positive result under the TCR may use the triggered source water monitoring sample collected from the ground water source to meet both the triggered source water monitoring requirement of the GWR as well as part of the repeat sampling requirement of the TCR.

Consecutive Systems

A consecutive system with a positive routine total coliform result under the TCR must notify its wholesale system(s) within 24 hours of being notified of the positive sample. A copy of the notification should be sent to the DDW at DDWReports@utah.gov or FAX 801-536-4211.

Wholesale Systems

A wholesale system that receives notice from a consecutive system of a positive total coliform result under routine monitoring of the TCR must collect a triggered source water sample from its ground water source(s) and analyze the source water sample(s) for a fecal indicator within 24 hours of being notified by the consecutive system. If the triggered source water sample is positive for the fecal indicator, the wholesale system must notify all consecutive systems served by that source within 24 hours of the positive sample result. The wholesale system and any consecutive systems served by the fecal indicator-positive source must all notify their consumers within 24 hours of learning of the result. The wholesale system must take corrective action or collect five additional source water samples from the same source within 24 hours of being notified of the fecal indicator test result. If any one of the five additional samples is fecal indicator-positive, the wholesale system must take corrective action.

Triggered Source Water Monitoring Exemptions

GWS providing at least 99.99 percent (4 log) treatment of viruses (using inactivation, removal, or a state-approved combination of inactivation and removal) of all of their groundwater can notify the state of this treatment and would not be required to conduct triggered source water monitoring. Those systems are, however, required to conduct compliance monitoring to show they are providing consistent and sufficient treatment.