

Triggered Source Monitoring

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Triggered Source Water Monitoring

§290.109(c)(4)(A)

- Required for all ground water systems that do not provide 4-log treatment of viruses and have a coliform positive distribution sample (and result is not invalidated)
- Source sample must be collected from each active well within 24 hours

Triggered Source Water Monitoring Exceptions §290.109(c)(4)(D)

- Invalidations
- GWS may submit for review that a TC+ distribution sample was caused by a Distribution Deficiency
 - No chlorine residual
 - Pressure drop
 - Sample collected from location or in a manner that could produce a false positive
 - Other

Triggered Source Monitoring

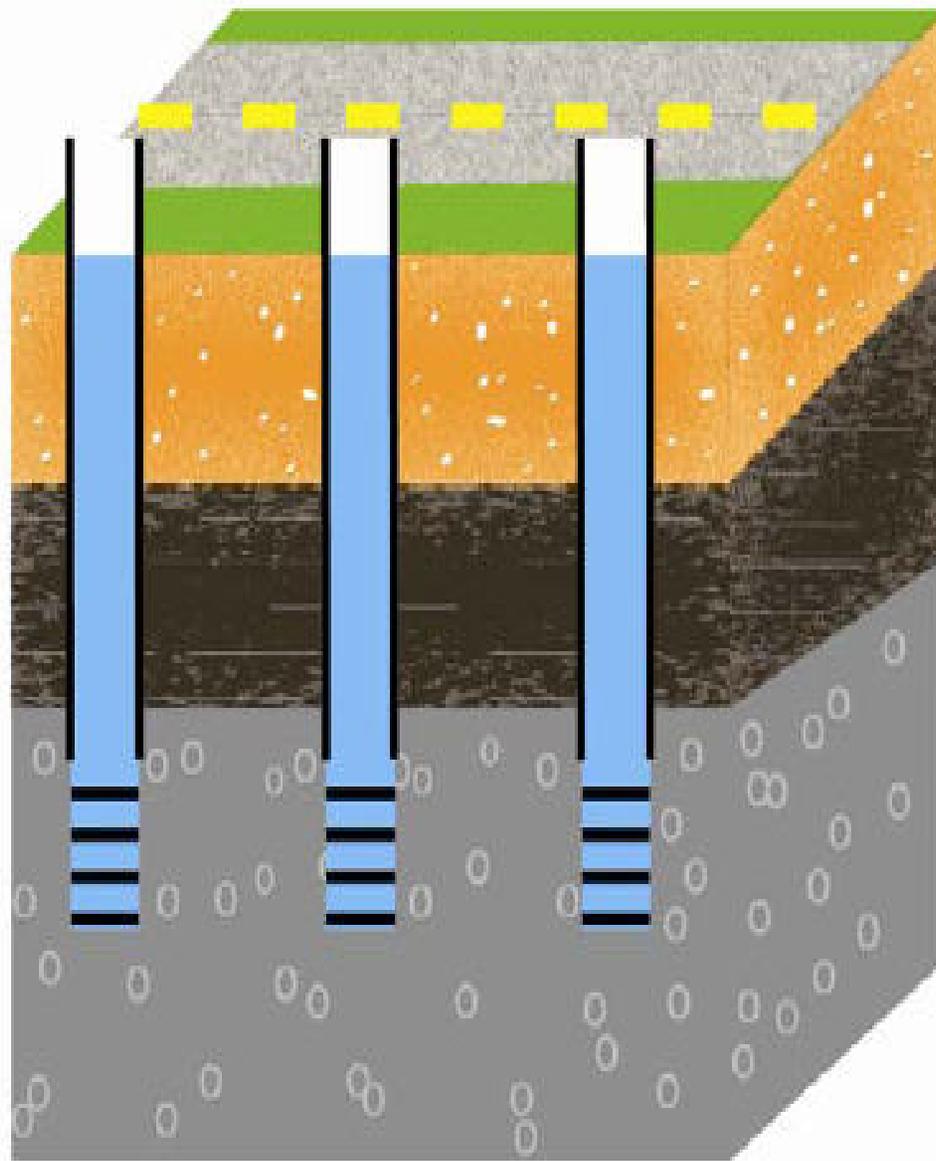
- A positive distribution sample requires a sample from each active well
- PWS may sample only 'representative' wells
IF
- Triggered Source Monitoring Plan approved by TCEQ

Triggered Source Monitoring Plan (TSMP) §290.109(c)(4)(B)(ii)

- TSMP describes representative wells
 - Wells representing other wells
 - Wells representing distribution sites

Representative Wells

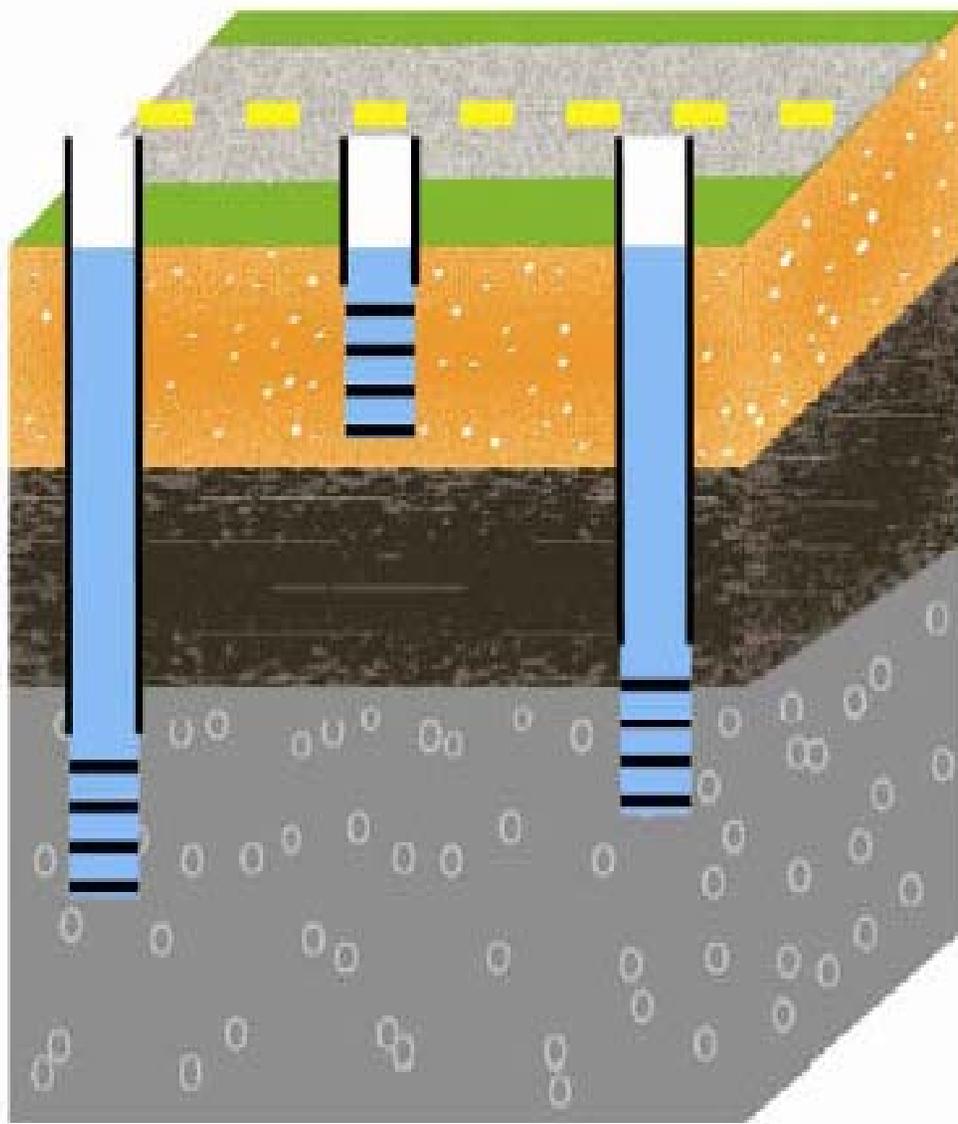
- Wells that are representative of other wells
 - If well field contains several similar wells (same depth, aquifer, construction) PWS may select ONE well in well field to sample (rather than all wells)



-  Sand
-  Clay
-  Gravel

50 Feet

**Representative
Wells -
Acceptable**



-  Sand
-  Clay
-  Gravel

50 Feet

**Not
Representative**

Importance of Well Logs

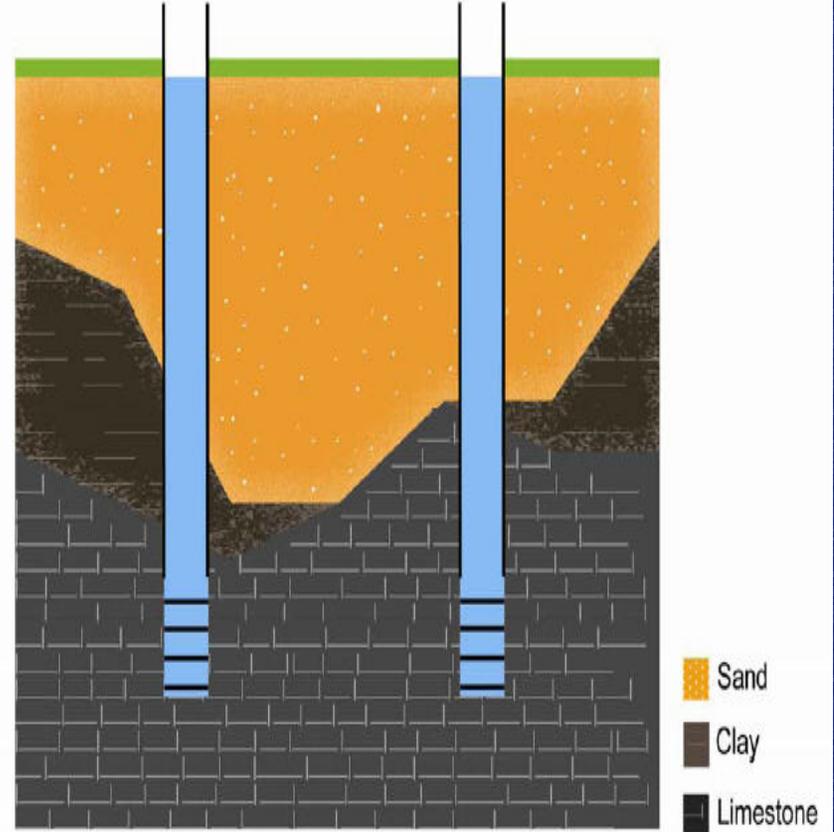
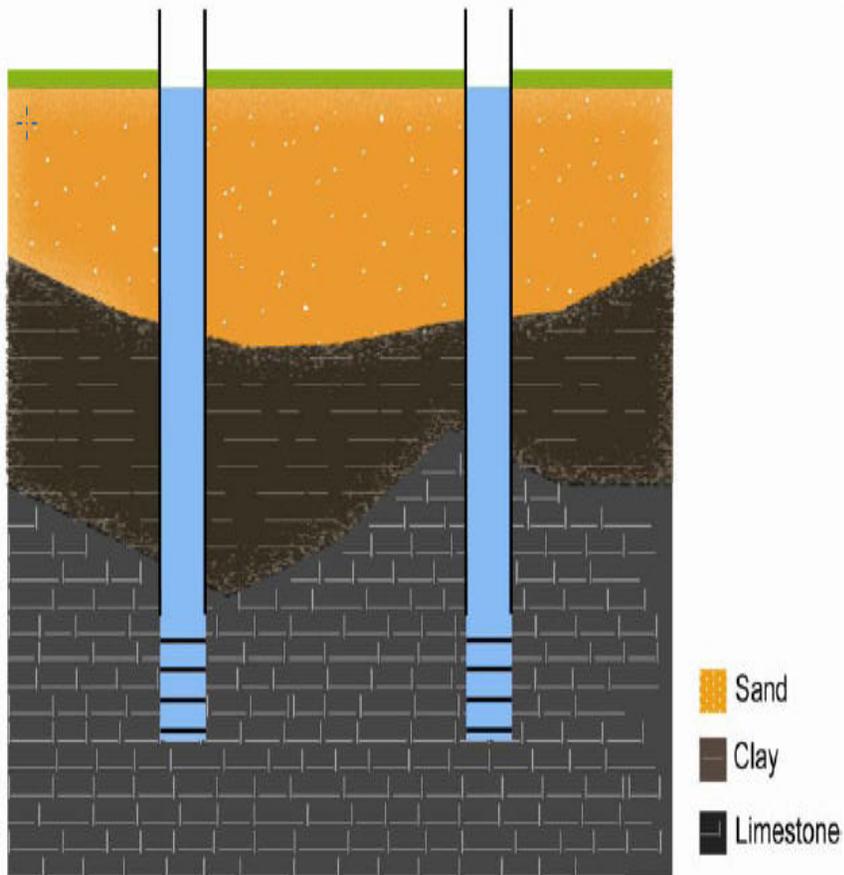


Table 2-7. Requirements for Representative Well Group Table

Well proposed to be sampled as representative of the group *	Backup Well ID	Source IDs of Wells Represented	Names of Wells Represented	Well Depth / Aquifer	Entry Point(s) associated with wells
The well that you propose to sample as representative of the group of wells.	Well to be sampled if primary representative well is offline.	TCEQ source IDs for wells that are proposed to be represented by the well listed in the first column.	System's name for well.	Depth of well / aquifer that those wells draw water from.	Usually a group of wells will feed the same entry point, but not always.

Table 2-8. Example of Representative Well Table (for One Group with Two Wells)

Representative Well ID	Backup Rep Well ID	Source IDs of Wells Represented	Names of Wells Represented	Well Depth / Aquifer	Entry Point(s) associated with wells
G1019999A	G1019999B	G1019999A	Well 1	Chicot / 280'	EP001
		G1019999B	Well 2	Chicot / 300'	

Table 2-9. Example of Representative Well Table (for Two Groups with Eight Wells)

Representative Well ID	Backup Rep Well ID	Source IDs of Wells Represented	Names of Wells Represented	Well Depth / Aquifer	Entry Point(s) associated with wells
G2550001A	G2550001B	G2550001A	Well 1	Glen Rose / 1233'	EP001
		G2550001B	Well 2	Glen Rose / 1200'	
		G2550001C	Well 3	Glen Rose / 1188'	
		G2550001D	Well 4	Glen Rose / 1046'	
G2550001E	G2550001F	G2550001E	Well 5	Trinity / 541'	EP002
		G2550001F	Well 6	Trinity / 540'	
		G2550001G	Well 7	Trinity / 555'	
		G2550001H	Well 8	Trinity / 539'	

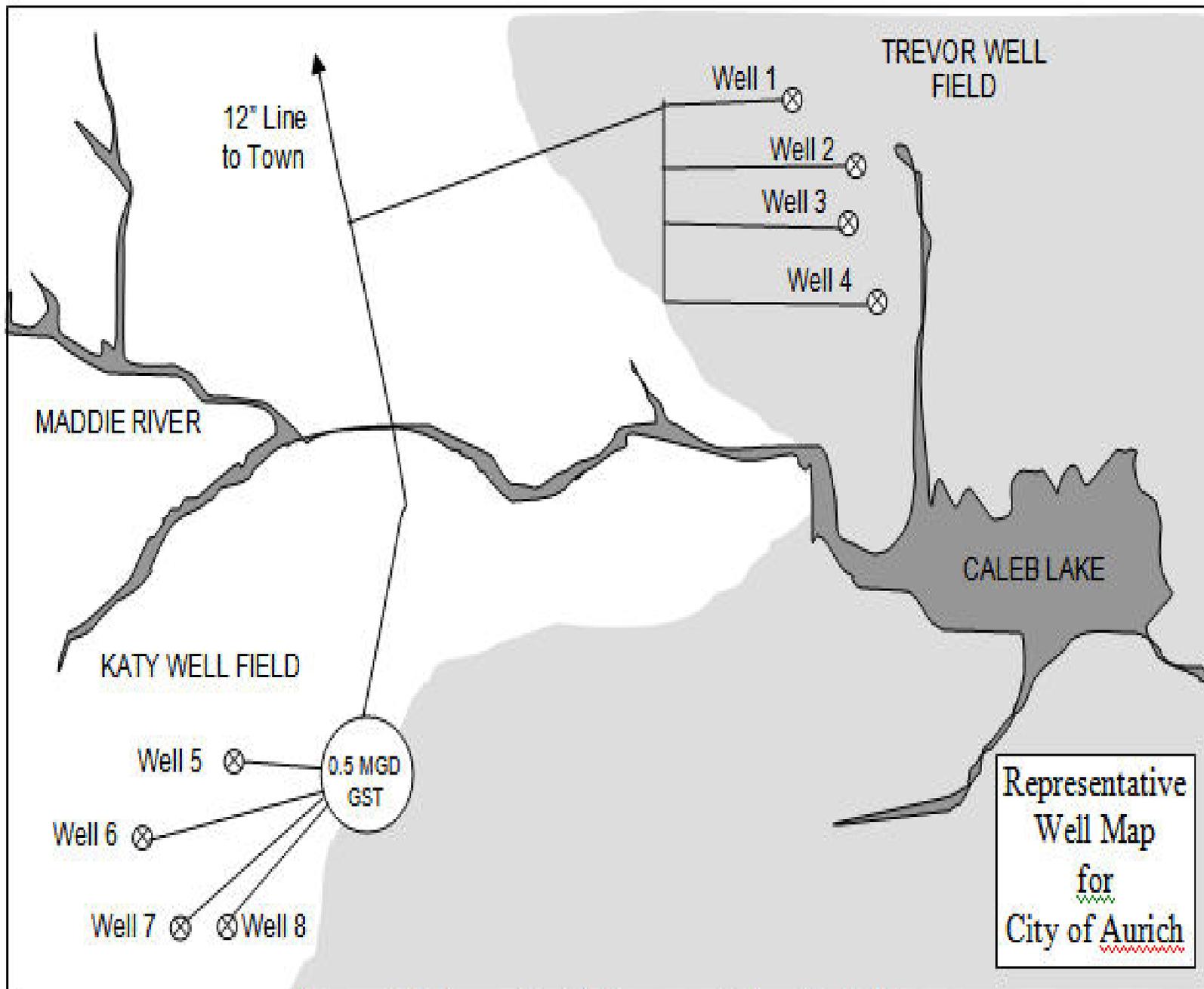
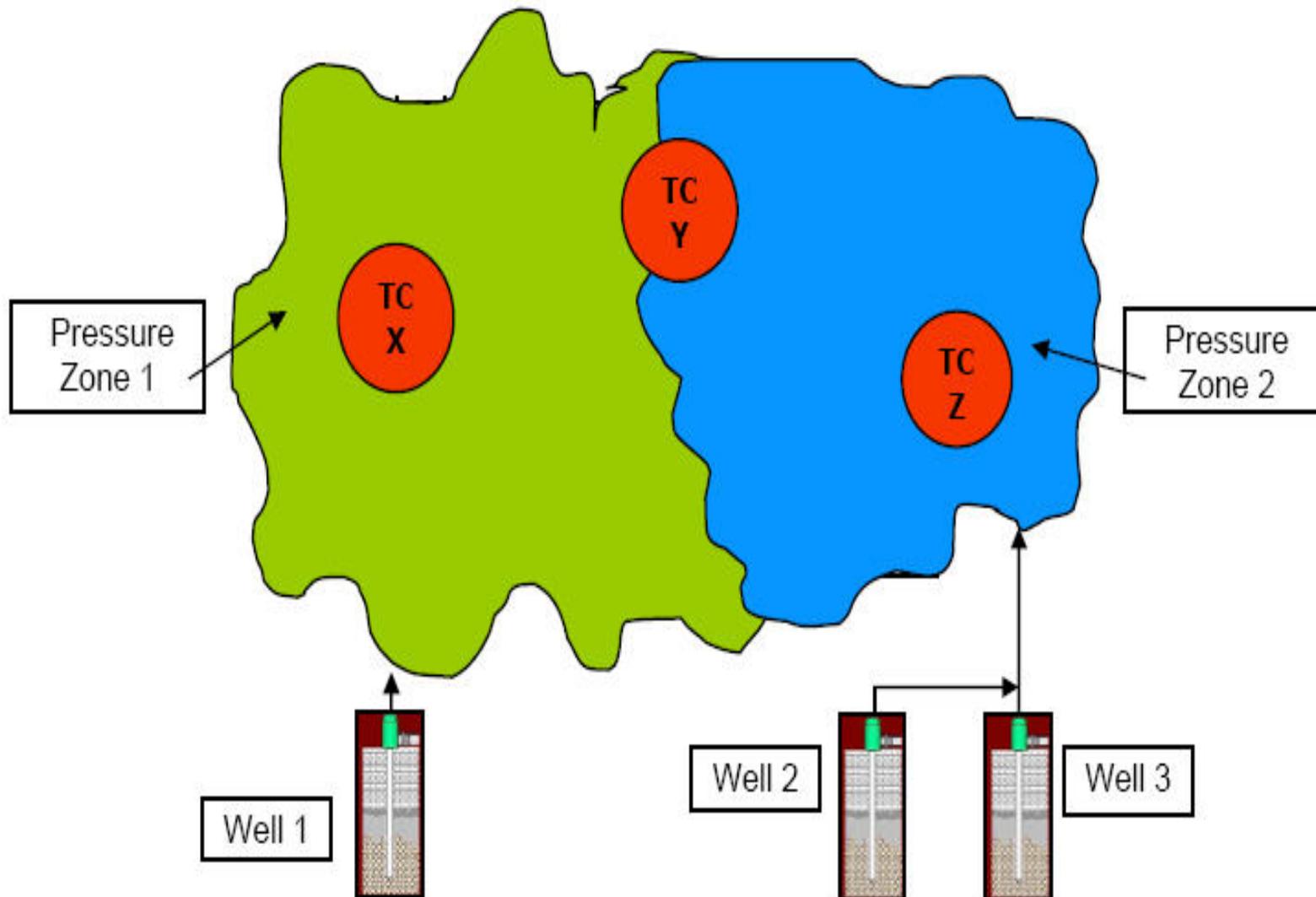


Figure 2.3 Example of Representative Well Map



Distribution System with Multiple Pressure Zones



Pressure Zone Table

TCR Site	Pressure Zone	Contributing Wells
1	South	South Ave Well 1 South Ave Well 2 Diehl Drive Well Main Well 1 Main Well 2 Main Well 3 West Side Well
2	North Central	Main Well 1 Main Well 2 Main Well 3
3	West Side	Main Well 1 Main Well 2 Main Well 3 West Side Well
4	West Side	Main Well 1 Main Well 2 Main Well 3 West Side Well

Table 2-1. Source Sample Site Table Field Definitions

Source	TCEQ Source ID	Sample Site	Notes
List the source(s). Use the system's name for the source.	The 9-digit code that you can find in TCEQ documentation. The first letter is a code for the type of source, then the 7-digit PWS ID, then a letter code to distinguish each unique source.	A brief description of the place where you sample the source water. For a well, this is often "Tap at Well Head," for a purchased water source it is often "Tap at Take Point," for a SWTP it is often "Lab Raw Tap."	Make any comments that are important. Note if the well is only used on an emergency basis. For emergency wells, note the 5-year sample cycle.

Table 2-2. Example Source Sample Site Table for a System with One Well

Source	TCEQ Source ID	Sample Site	Notes
Well 1	G3560046A	Wellhead	

Table 2-3. Example Source Sample Site Table for a System with Wells, Surface Water, and Purchased Water

Source	TCEQ Source ID	Sample Site	Notes
Well 1	G2550001A	Wellhead	Emergency (5-yr samples due in 2010)
Well 2	G2550001B	Wellhead	
Raging River	S2550001A	Raw sample tap in SWTP lab	
Purchased water from the City of Aquadulce	P2550001A	Sample station at 123 Elm Street	<u>Aquadulce PWS 2550003</u>

Table 2-4. Requirements for Source Monitoring Plan: Distribution Sites and Sources Link Table

<u>Routine Distribution Coliform Sample Site</u>	Entry point that feeds that site	Wells that feed that entry point
List all routine distribution coliform sites. This list should already be in your monitoring plan under the "Distribution" section. If the sites are numbered, include them.	List any entry points that feed each routine distribution coliform site. If that changes under different operating conditions, list all the entry points that might feed that part of the system. If you know that a site gets water from a different entry point in the summer and winter, note that.	List all the wells that feed each entry point. Include emergency and demand wells.

Table 2-5. Example of Source Monitoring Plan Distribution Sites and Sources Link Table Showing Various Types of Sources and Sites for Ground or Surface Water

Routine Distribution Coliform Sample Site		Entry Point that feeds that site	Wells that feed that Entry point
1	City Hall	EP001	Well 1 (emergency), Well 2
2	Fire Department		
3	123 Apple Street	EP002	Well 3
4	15401 Querca Street		
5	20 Industrial Park Road	EP003	Purchases treated ground water from Frio WSC (PWS 3210009)
6	456 Fleet Street (Operator's house – Alternate sample site)	EP001	Well 1 (emergency), Well 2

Table 2-6. Example of Source Monitoring Plan Distribution Sites and Sources Link Table For Figure 2-1, A Community PWS with Two Wells and Seven Coliform Sites

City of County Seat, Source Monitoring Plan			
Routine Distribution Coliform Sample Site		Well / EP	
		Summer Well 1 (demand)	Winter Well 2 Only
SS-A	Sample Station at 765 FM 4691	Well 1 / Entry Point 1	Well 2 / Entry Point 2
SS-B	Hose bib at NE corner of Court House	Well 2 / Entry Point 2	
SS-C	Sample Station at High School (Bldg 4)	Well 2 / Entry Point 2	
SS-D	Hose bib at SW corner of Middle School	Well 1 / Entry Point 1 or Well 2 / Entry Point 2	
SS-E	Sample Station at 987 S East Avenue	Well 2 / Entry Point 2	
SS-F	(alt) Hose bib at back of roadhouse	Well 1 / Entry Point 1	
SS-G	(alt) Hose bib on side of church	Well 2 / Entry Point 2	

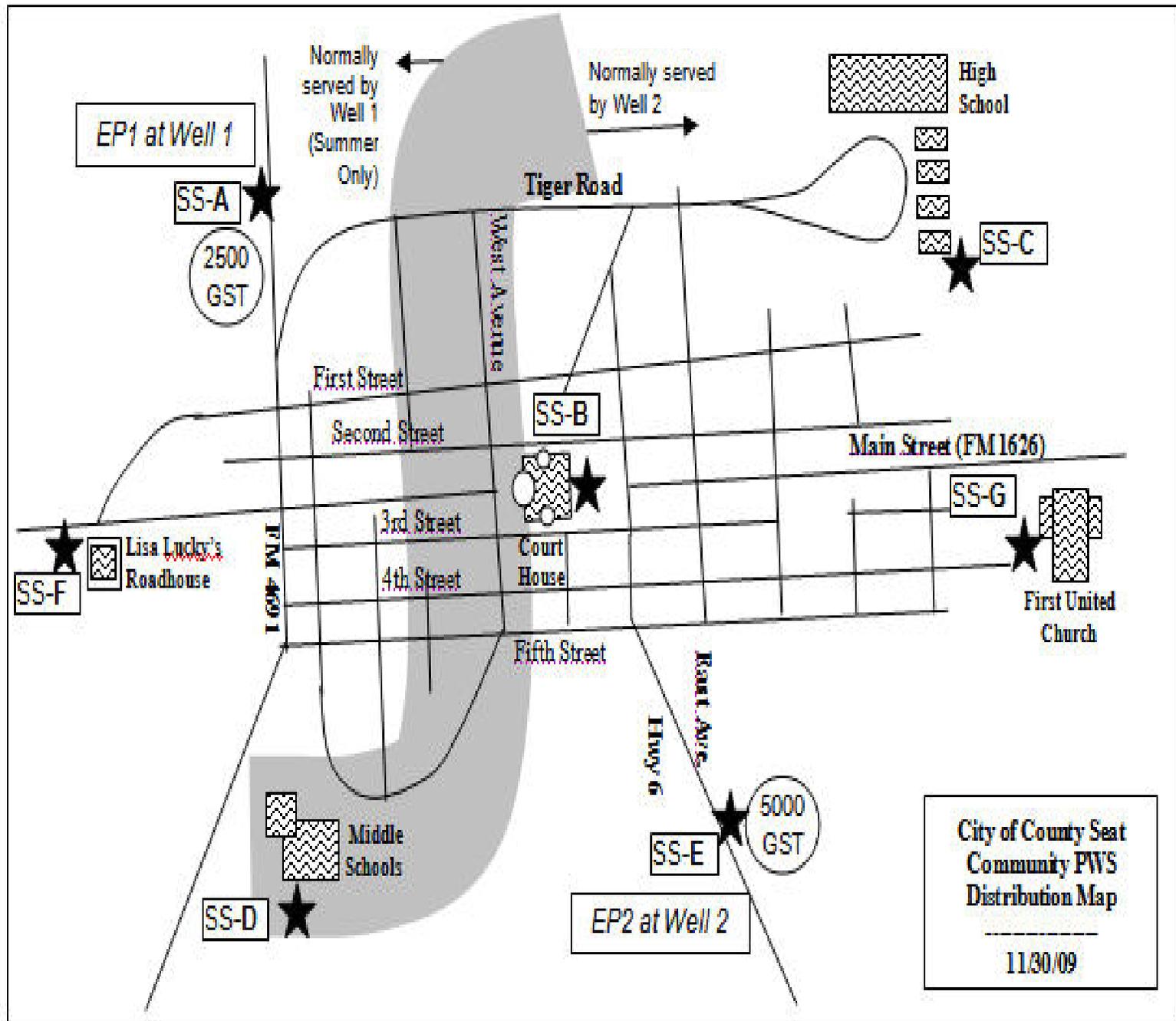


Figure 2-1 Example of Source Monitoring Plan Distribution Map



Data Required for Triggered Source Monitoring Plan

- Well logs
- Well output (gpm)
- Operational status of well
- Maps
- Sources with raw monitoring requirements
- Tables

Providers of Ground Water

- Receiver PWS must notify Provider PWS within 24 hours of distribution sample TC+ result
- Providers must collect source sample within 24 hours

Important Timeframes

- Labs must be aware of the 24-hr source sample requirement
- If GWS request:
 - Invalidations
 - Or review of Distribution Deficiency Reason
- Purchaser of GW with distribution TC+

Public Notification (PN)

§290.109(g)

§290.122

90-Day PN Required

- When a GW PWS fails to:
 - Conduct triggered source water monitoring

Thank You

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