

Public Well Completion Data Checklist for Approval to Use (Step 2)

Texas Commission on Environmental Quality
Water Supply Division
Plan Review Team MC-159
P.O. Box 13087, Austin, Texas 78711-3087

Public Water System I.D. No. _____
TCEQ Log No. P- _____

The following list is a brief outline of the "Rules for Public Water Systems", 30 TAC Chapter 290 regarding proposed Water Supply Well Completion. Failure to submit the following items may delay project approval. Copies of the rules may be obtained from Texas Register, 1019 Brazos St, Austin, TX, 78701-2413, Phone: (512) 463-5561 or downloaded from the website: <http://www.tceq.texas.gov/rules/indxpdf.html>

Any well proposed as a source of water for a public water supply must have plans approved for construction by TCEQ. Please include the well construction approval letter with your submittal of well completion data listed below for TCEQ evaluation. Based on review of this submitted data, approval may be given for use of the well.

1. Site map(s) at appropriate scales showing the following: [§290.41(c)(3)(A)]
 - (i) Final location of the well with coordinates;
 - (ii) Named roadways;
 - (iii) All property boundaries within 150 feet of the final well location and the property owners' names;
 - (iv) Concentric circles with the final well location as the center point with radii of 10 feet, 50 feet, 150 feet, and ¼ mile;
 - (v) Any site improvements and existing buildings;
 - (vi) Any existing or potential pollution hazards; and
 - (vii) Map must be scalable with a north arrow.
2. A copy of the recorded deed of the property on which the well is located showing the Public Water System (PWS) as the landowner, and/or any of the following: [§290.41(c)(1)(F)(iv)]
 - (i) Sanitary control easements (filed at the county courthouse and bearing the county clerk's stamp) covering all land within 150 feet of the well not owned by the PWS (for a sample easement see TCEQ Form 20698);
 - (ii) For a political subdivision, a copy of an ordinance or land use restriction adopted and enforced by the political subdivision which provides an equivalent or higher level of sanitary protection to the well as a sanitary control easement; and/or
 - (iii) A copy of a letter granting an exception to the sanitary control easement rule issued by TCEQ's Technical Review and Oversight Team.
3. Construction data on the completed well: [§290.41(c)(3)(A)]
 - (i) Final installed pump data including capacity in gallons per minute (gpm), total dynamic head (tdh) in feet, motor horsepower, and setting depth;
 - (ii) Bore hole diameter(s) (must be 3" larger than casing OD) and total well depth;
 - (iii) Casing size, length, and material (e.g. 200 lf of 12" PVC ASTM F480 SDR-17);
 - (iv) Length and material of any screens, blanks, and/or gravel packs utilized;
 - (v) Cementing depth and pressure method (one of the methods in latest revision of AWWA Standard A-100, Appendix C, excluding the dump bailer and tremie methods);
 - (vi) Driller's geologic log of strata penetrated during the drilling of the well;
 - (vii) Cementing certificate; and

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- (viii) Copy of the official State of Texas Well Report (some of the preceding data is included on the Well Report).
- 4. A U.S. Geological Survey 7.5-minute topographic quadrangle map (include quadrangle name and number) or a legible copy showing the location of the completed well; [§290.41(c)(3)(A)]
- 5. Record of a 36-hour continuous pump test on the well showing stable production at the well's rated capacity. Include the following: [§290.41(c)(3)(G)]
 - (i) Test pump capacity in gpm, tdh in feet, and horsepower of the pump motor;
 - (ii) Test pump setting depth;
 - (iii) Static water level (in feet); and
 - (iv) Draw down (in feet).
- 6. Three bacteriological analysis reports for samples collected on three successive days showing raw well water to be free of coliform organisms. Reports must be for samples of raw (untreated) water from the disinfected well and submitted to a laboratory accredited by TCEQ, accredited to perform these test; and [§290.41(c)(3)(F)(i)]
- 7. Chemical analysis reports for well water samples showing the water to be of acceptable quality for the most problematic contaminants listed below. Reports must come from a laboratory accredited by TCEQ; accredited to perform these tests. Maximum contaminant level (MCL) and secondary constituent level (SCL) units are in milligrams per liter (except arsenic which is in micrograms per liter). [§290.41(c)(3)(G) and §290.104 and §290.105]

Table 1: Primary Constituents with Maximum Contaminant Level (MCL)

PRIMARY	MCL
Nitrate	10 (as N)
Nitrite	1 (as N)
Arsenic	10
Fluoride	4.0

Table 2: Secondary Constituents with Secondary Contaminant Level (SCL)

SECONDARY	SCL
Aluminum	0.2
Copper	1.0
Iron	0.3
Manganese	0.05
Zinc	5.0
Total Dissolved Solids	1,000
Fluoride	2.0
Sulfate	300
Chloride	300
pH	> 7.0

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Table 3: Water Quality Parameters

PARAMETER	UNITS
Alkalinity as CaCO ₃	mg/L
Calcium as CaCO ₃	mg/L
Sodium	mg/L
Free Ammonia*	mg/L
Lead**	mg/L

*Systems that use free chlorine as their disinfectant and have raw water free ammonia readings above 0.1 mg/l may lose disinfectant residuals or may be using excessive amounts of chlorine due to unintended formation of chloramines. When naturally occurring ammonia is present, the system may consider using chloramine as the disinfectant instead of chlorine. Free available ammonia (referred to as 'free ammonia') is a field test conducted by the Indophenol Method and is not to be confused with Total Ammonia, which also includes the portion that exists as ammonium (NH₄). There is no available accredited method for free ammonia and it is not listed as an "approved Drinking Water or approved Public Water System Lab" analyte on the agency's Drinking Water Lab Approval Form: <https://www.tceq.texas.gov/downloads/drinking-water/form-10450-drinking-water-lab-approval.pdf>. Therefore, please note the following requirements for analyzing raw water free ammonia:

- Required test accuracy is plus or minus 0.1 mg/L.
- Free ammonia must be analyzed in the field.
- Ammonia is measured as free available ammonia as nitrogen.
- Check the range of your kit. The most common one pegs out at 0.55 mg/L. Samples over that level should be diluted and reanalyzed.
- Follow all instructions provided by the field test kit manufacturer.

If you find raw water free ammonia readings above 0.1 mg/l in a well proposed as a source of water for a public water supply, please ensure your submittal addresses the type of disinfectant to be used. The most common methods to address naturally occurring ammonia are to breakpoint chlorinate or create chloramines as the disinfectant. For systems choosing to create chloramines, please be aware that you may need to install ammonia injection to have a reliable level of ammonia. If you would like to discuss any questions about this topic before finalizing and sending in your submittal, please send an email to PTRS@tceq.texas.gov and a staff member will assist you.

**Lead is regulated by the lead and copper rule. This analyte is to document the amount of lead in the source water. The level shall be less than 0.010 mg/L for approval to use.

List of Counties Where Radionuclide Testing is Required

Please be aware that we have added the requirement for analysis for radionuclides for high-risk counties. For elevated levels of any contaminants found in a test well, treatment or blending may be required. All systems located in a high-risk county (see page 4) shall submit radiological analysis reports for water samples showing the water to be of acceptable quality for the contaminants listed below. Reports must come from a TCEQ accredited laboratory for approval to use of the well.

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Table 4: Radionuclides with Maximum Contaminant Level (MCL)

CONTAMINANT	MCL
Gross alpha	15 pCi/L
Radium-226/228	5 pCi/L
Beta particle	50 pCi/L
Uranium	30 µg/L

WHERE: pCi/L = pico curies per liter, µg/L = micrograms per liter

Please be aware when you review your radiological data that if the report has gross alpha over 15 pCi/L and individual uranium isotopes are not reported, you will have to resample or reanalyze and resubmit radionuclide results. If you see gross alpha plus radium-228 over 5 pCi/L, and don't have radium-226, you will have to resample or reanalyze and resubmit complete results.

Table 5: List of Counties where Radionuclide Testing is required

COUNTY				
Atascosa	Bandera	Bexar	Bosque	Brazoria
Brewster	Burnet	Concho	Culberson	Dallam
Dawson	Erath	Fort Bend	Frio	Garza
Gillespie	Gray	Grayson	Harris	Hudspeth
Irion	Jeff Davis	Jim Wells	Kendall	Kent
Kerr	Kleberg	Liberty	Llano	Lubbock
McCulloch	Mason	Matagorda	Medina	Midland
Montgomery	Moore	Parker	Pecos	Polk
Presidio	Refugio	San Jacinto	San Saba	Tarrant
Travis	Tyler	Upton	Val Verde	Victoria
Walker	Washington	Wichita	Williamson	Zavala