



Emergency Use of Wells for Public Water Supplies

This document is intended to help public water systems (PWSs) understand the processes and requirements for obtaining authorization for emergency use of water wells that have not been previously approved by the Texas Commission on Environmental Quality (TCEQ) for use as a source for public drinking water. A well cannot be placed in service as a PWS source unless it has received TCEQ approval for use. The TCEQ is aware that there are times when an emergency source of water may be required to meet community needs. This document covers only the most basic guidelines and is not a substitute for the rules. It is a guide for operators to understand the requirements and approval process, and to prepare for such an emergency beforehand.

The TCEQ has different procedures for (1) an actual emergency and (2) planning in case of an emergency.

- (1) A PWS loses a TCEQ-approved well because of equipment failure or a drop in the water table and does not have another approved source of water that will meet customer water demands. In these cases, the PWS normally seeks authorization for the use of an existing, unapproved well. TCEQ approval to use the well and any piping to connect it will only be temporary—for use during the time it will take to repair or replace the failed equipment or drill a new TCEQ-approved well. After the emergency has been resolved, the existing well and associated piping will have to be disconnected from the PWS.
- (2) A PWS is planning for an emergency and requests TCEQ approval to convert an existing well to an emergency PWS supply source, construct a new emergency PWS well, or make an interconnection with another PWS.

In either case, before TCEQ approval, a PWS may be required to take specific actions to protect public health. Wells intended solely for irrigation or domestic uses that do not meet the provisions of Title 30, Texas Administrative Code, Section 290.41 (30 TAC 290.41) should only be considered for emergency PWS use when no other option is viable.

What information does the Utilities Technical Review Team (UTRT) require before it authorizes the *temporary* use of an emergency water well?

The UTRT has developed procedures for placing an existing well (for irrigation or domestic supply) that has not been approved as a PWS source into service as a drinking-water well for a community. The PWS needs to supply the following information:

- well logs
- well plans and specifications
- well bacteriological and chemical analyses
- A survey of potential sources of pollution within $\frac{1}{4}$ mile of the existing well

When possible, the PWS should submit this information to the UTRT prior to an emergency so the team can review it thoroughly. However, if an emergency is interrupting, or will interrupt, the distribution system's pressures and flow rates, the system may not have all of the above information readily available. The PWS must notify the TCEQ regional office of the emergency, and submit the information to the UTRT as soon as possible.

The UTRT authorizes emergency water-well construction and the interim approval to use the well in an emergency. Regional personnel can help supply the PWS with specific information, such as data from the time of well completion (bacteriological and chemical analyses, the well log and report, etc.). The region also verifies that there is an actual emergency, such as low pressure or a water outage. Under this scenario, the TCEQ can expedite temporary authorization with minimal information (bacteriological and nitrate-nitrite analysis and a survey of potential pollution sources).

How can a PWS request an expedited review?

A public water system that seeks quick approval can request a review by the UTRT in writing. When an emergency actually exists, a PWS has run out of water or will run out of water in a short time, and TCEQ regional personnel confirm the emergency, the UTRT will automatically expedite the review. The UTRT then reviews the water system's request in coordination with the appropriate regional office. Expedited reviews are carried out in the order received.

The UTRT may give initial approval for emergency use of a well pending a more thorough review of the completion data. It is important that the PWS wait to hear back from the UTRT before putting the emergency well into use.

What should a PWS consider before converting a temporary well into a drinking-water well?

Many emergencies pose a potential public-health risk. Before a PWS places any TCEQ-approved PWS well into service, it must collect samples from the well and submit them to a laboratory accredited under the National Environmental Laboratory Accreditation Conference (NELAC)-certified Program (NELAP) accredited laboratory for microbiological analysis until three successive daily raw-water samples are free of coliform organisms. The temporary emergency use of an existing well may be allowed without chemical analyses with adequate public-health protection measures in place. Bottled water can be furnished temporarily for drinking, food preparation, cooking and other uses in which a contaminant might be ingested by customers, while the TCEQ's temporary approval to use water from an unapproved source is needed for general sanitation such as the flushing of toilets. There may not be enough time to gather and provide construction and raw water quality data to the TCEQ before the customers run out of water. Piping has to be laid to connect the unapproved source to the PWS facilities. Therefore, the PWS is normally required to issue a Boil Water notice. The PWS may also be required to provide bottled water for drinking if the TCEQ determines there could be a public health risk due to the presence of contaminants.

While there may be a public-health risk because of low pressures and flows, its duration is normally short because the PWS can place the TCEQ-approved source in service and then contact the regional office. The PWS will be required to provide water with a minimum disinfectant residual or issue a Boil Water notice to the customers.

Unfortunately, not all emergencies can be controlled quickly. If the TCEQ approves a well to become a PWS source that may present a risk to public health, the PWS will be required to provide additional treatment and meet additional operational, monitoring, and reporting requirements. This risk may be associated with a well's water quality, design, construction, or location. Additional requirements for approval to use a well that does not meet the TCEQ's usual minimum requirements will be based on a case-by-case evaluation under 30 TAC 290.39(l).

What post-approval monitoring is required?

Once a preexisting well is operational, the TCEQ may require ongoing monitoring and reporting of water quality. TCEQ regional personnel will periodically review land use in the vicinity of the well during comprehensive compliance investigations. Preexisting wells are typically more vulnerable to contamination than wells that meet all of the specifications in 30 TAC 290.41. The frequency of chemical and microbiological monitoring will be specified by periodic vulnerability assessments. Monitoring results may result in additional treatment requirements.

How can preexisting water wells be converted into *permanent* public drinking-water wells?

The TCEQ has a process for approval of a preexisting well as a PWS source, whether or not it was constructed according to the provisions of 30 TAC 290.41. There are four stages to the approval and use of a preexisting well: *self-assessment, requesting any needed exceptions, submission of an engineering plan, and post-approval.*

A PWS that is pursuing the use of an existing well should contact the owner of the irrigation or domestic well before the well is considered for emergency use. Both parties should sign a written agreement—such as a memorandum of understanding or contract—to outline the terms, including duration of use or volume of water, compensation, costs for analysis, etc.

Self-Assessment

Assessing the viability of an existing well as a potential new PWS source can establish information that is essential to determining the need for any exceptions to the TCEQ's minimum requirements before the PWS submits engineering plans, saving money. Elements of the study are listed in the order they should be performed to help the system determine if the well is suitable for conversion.

- 1. Subsurface Construction and Local Geology.** The PWS should document the subsurface construction by obtaining the well driller's log, if possible. Well reports submitted before Feb. 5, 2001, are available for access at the TCEQ Records Services Department, 512-239-0900, or online at <gis3.tceq.state.tx.us/waterwellpublic/index.jsp>. More recent information may be available through the Texas Water Development Board website: <www.twdb.state.tx.us/groundwater/data/drillersdb.asp>. After downloading and opening the Submitted Driller's Reports Database, click on the button for the driller reports, then click on the button *Well Reports by County and Date*. You will need to supply an estimated beginning date and the county. Select the well you are considering. If the well log is not available, then information on well construction, along with any possible deterioration, and the local geology will need to be ascertained, by either the UTRT or later on by the preparer of the engineering plan. The existing well should be evaluated for compliance with 30 TAC 290.41, and any deficiencies identified.
- 2. Wellhead Cementation.** Protection from localized flooding and other potential sources of contamination is critical. Documenting the well-casing height, wellhead slab and depth of the cement annulus around the casing need to be evaluated by the PWS's engineer along with the geology.
- 3. Pollution hazards.** The self-assessment should identify all existing or potential sources of groundwater contamination within ¼ mile of the well, as listed in 30 TAC 290.41. Check for any potential sources of

human or animal waste, and chemical contamination, such as electrical transformers leaking fluids onto the ground, or oil and gas exploration activities adjacent to the property. Also make note of farm and ranch activities in the area. The regional office or staff members in TCEQ's Public Drinking Water Section at 512-239-4691 can help you determine pollution hazards.

4. **Setback distances.** Setback distances are listed in 30 TAC 290.41(c). Increased setback may be required for preexisting wells to ensure that there are no sources of viral and chemical contamination.
5. **Abandoned and inoperative wells may act as conduits for groundwater contamination.** Any wells not in use that lie within a $\frac{1}{4}$ -mile radius of the preexisting well must be identified. The TCEQ also recommends that they be plugged. Guidance for well plugging can be found in *Landowner's Guide to Plugging Abandoned Water Wells* (TCEQ publication RG-347), available online at <www.tceq.state.tx.us/goto/rg-347>.
6. **Sanitary control easement.** Conversion requires that adjacent landowners agree to a 150-foot easement, as mandated in 30 TAC 290.41(c)(1)(F). When one of these adjacent property owners refuses to sign a sanitary control easement the PWS may request an exception to this requirement.
7. **Water quality.** The chemical and microbial quality of the water in the well must meet the standards for public drinking water contained in 30 TAC 290(F). Potential risks include prior use of the well for chemically enhanced irrigation, pesticide mixing and loading, and known, nearby contamination of shallow groundwater.
8. **Costs.** Before continuing with the conversion, take into account potential engineering services, the cost of a video well log, reconstruction of the wellhead, and long-term increases in monitoring, treatment, and assessment.

Submission of Engineering Plans

Approval for conversion of existing wells requires submission of the same information required for any new PWS well, including plans and engineering-oversight information. Before the TCEQ can review engineering plans, the water supplier must have a Texas-licensed professional engineer submit all items on the checklist of exceptions with as-built plans for the proposed preexisting well. PWS well construction and well-completion checklists are available online.

- Well construction:
<www.tceq.texas.gov/assets/public/permitting/watersupply/ud/forms/10205.pdf>
- Well completion:
<www.tceq.texas.gov/assets/public/permitting/watersupply/ud/forms/10234.pdf>

The following requirements for converting preexisting non-drinking-water wells are modifications of, or additions to, those specified in at 30 TAC 290.41:

1. **Exceptions checklist.** Approval of a preexisting well that does not meet all of the minimum requirements specified in 30 TAC 290.41, and modifications to bring the preexisting well up to required specifications, require exceptions to the well-construction requirements, because the well was not originally intended as a public water source. Requests for exceptions must be submitted to the TCEQ Technical Review and Oversight Team before submitting engineering plans to the UTRT. The engineering plans cannot be reviewed until the review of any exception requests is complete.
2. **Evaluation and repair of the well casing.** The PWS must have a licensed professional engineer submit a narrated video well log, accompanied by a written description of the location, shape and estimated size of any holes, breaches, or corroded areas in the casing. The engineering plans for the well must detail how any breaches in the casing will be repaired before the well is placed into operation.
3. **Local hydrogeology.** A copy of the driller's log for the preexisting well should accompany the submitted engineering plans. If the log is not available, it is helpful to submit three to four logs from the nearest available wells. When possible, the location of these wells should be plotted on a topographic map with a scale of 1 : 24,000 or larger. In highly transmissive aquifers (generally those dominated by gravel) the TCEQ may ask for additional information on the local hydrogeology in order to model a setback distance based on a two-year travel time for potential sources of disease-causing organisms.
4. **Hazards survey.** A survey of existing potential sources of groundwater pollution, as specified in 30 TAC 290.41(c)(1)(E), must also accompany the submitted plan. This survey must address all sources of human or animal waste and chemical contamination.
5. **Setback distances and the sanitary-control easement.** Minimum setback distances are listed in 30 TAC 290.41(c). Failure to meet these distances will require an exception from the TCEQ, and may entail additional treatment, monitoring, and reporting.
6. **Wellhead construction.** The submitted as-built plans must contain provisions to meet the requirements for a concrete sealing block of 30 TAC 290.41(c)(3)(J) and document the depth of cementing of the well casing.
7. **Microbiological monitoring and disinfection.** Before a PWS places any TCEQ-approved well into service, it must collect samples from the well and submit them to a laboratory accredited under the National Environmental Laboratory Accreditation Program (NELAP) for microbiological analysis until three successive daily raw-water samples are free of coliform organisms. For an emergency requiring the temporary approval of an existing well, the TCEQ may waive this

requirement if the PWS (1) issues a Boil Water notice to customers or (2) increases disinfectant residual levels to sufficiently inactivate disease-causing organisms in the PWS's storage tank or provides additional approved treatment such as filtration (or both).

8. **Chemical monitoring.** The TCEQ will not grant interim approval for use of a new PWS source for potential future emergencies until it receives the results of chemical monitoring from a NELAP-accredited laboratory for public drinking water. At a minimum, the TCEQ will initially require analyses for minerals and metals, and may request analysis for potential site-specific contaminants.

Requesting Exceptions

A public water system that does not meet a TCEQ design standard may request an exception by proposing another way it can meet the intent of the rules. Not all exception requests are granted. Two types of emergency requests are those for alternative capacity requirements (ACRs) and exceptions to sanitary control easements.

Requests for ACRs are not available to groundwater systems serving fewer than 50 connections without total storage capacity, nor to noncommunity public water systems. However, the agency may still review requests for reductions in the minimum capacity requirements for these two types of public water systems as exceptions under 30 TAC 290.39(l).

ACR Requests

All requests must be submitted in writing by the water system's owner or responsible official, its professional engineer, or another designated representative. All supporting information must be included with the written request if the necessary data are not included. The reviewer will develop written correspondence denying the request and listing any additional data required.

More information about ACR requests can be found at www.tceq.texas.gov/goto/well-exceptions (this link downloads a PDF file).

Requests for Sanitary Control Easements

The TCEQ requires that each public water well be protected by a 150-foot sanitary control easement to protect it from pollution hazards [30 TAC 290.41(c)(1)(F)]. If a public water system does not own all of the property within a 150-foot radius of each well, it must ask the adjacent landowners to grant a sanitary control easement. If the landowners refuse to grant the easement, the water system's owner, representative, or professional engineer may request an exception to the TCEQ's requirements for

sanitary control easements in writing. The request must provide the following information **for each well**:

- An explanation of why a sanitary control easement cannot be obtained from each property owner who refuses to supply one.
- Documentation of attempts to obtain sanitary control easements from adjacent property owners and any denials of the easements. Correspondence to adjacent landowners must:
 - include a 30-day review period for the easement request
 - be within one year of the date of the exception request
 - be documented by a certified mail receipt
- Copies of all sanitary control easements that have been obtained and recorded in the county deed of record.
- A description of the well construction, which includes the State of Texas Well Report (well-driller's log) and cementing report.
- A statement confirming the presence and location, or absence, of all sanitary hazards in the area.
- A drawing, plat, or map of sufficient scale showing:
 - the location of the well or wells
 - locations of all sanitary hazards within the 150-foot radius
 - property owned by the PWS within the 150-foot radius
 - boundaries for all adjacent properties within the 150-foot radius (including property for which sanitary control easements have been obtained and recorded and property for which easements have not been obtained or recorded)—including, for each property:
 - the name and address of its owner
 - a description of the property (e.g., subdivision name, block number, lot number)

More information about requesting an exception to the sanitary control easement requirements can be obtained at:

<www.tceq.texas.gov/drinkingwater/technical_guidance/staff_guidance/exceptions/sg_21.html>.

What basic guidelines apply when seeking approval for the use of a well?

- **Contact your regional office** and keep its personnel involved in the process. A list of regional offices is available at <www.tceq.texas.gov/goto/region>.
- **Include a cover letter or appendix with your request** justifying the emergency and the temporary use of the existing well. A PWS should not expect to use a well approved for this purpose indefinitely. The TCEQ

may require that the water supplier find an alternative, continuous means of providing water to its customers.

- **Where does a PWS submit well information?** Contact the Utilities Technical Review Team via—

Phone: 512-239-4691

E-mail: <utildist@tceq.texas.gov>:

Regular mail:

Water Supply Division, MC-159
Texas Commission on Environmental Quality
PO Box 13087
Austin TX 78711-3087

Visit the Utilities Technical Review Team's Web page at
<www.tceq.texas.gov/goto/pws_plan_review>.

You can request copies of publications mentioned in this document from TCEQ Publications at 512-239-0028, or online at
<www.tceq.texas.gov/publications>.

Official copies of TCEQ rules are available from the Office of the Secretary of State at 512-305-9623, or you can view or print rules at
<www.tceq.texas.gov/rules>.