

Ventura County Public Works: Well Pump and Recovery Test Criteria

CRITERIA FOR DEMONSTRATING A LONG TERM DOMESTIC GROUNDWATER SUPPLY

2.12

2.12.1 GENERAL

Various County ordinances and regulations require a demonstration that the proposed domestic water supply for development is likely to be adequate for the expected useful life of structures (the “long term”). When the proposed domestic water supply for a development is to be provided by a water supply system having fewer than five service connections and is to be drawn from wells, the following criteria and procedures in 2.12.1 to 2.12.4 shall be used to demonstrate that the supply is “long term”. Although this method has traditionally been a reliable way to demonstrate a long-term domestic water supply, some wells evaluated under the method will go dry for reasons including drought, earthquake damage, poor well construction, mineralization of the well screen, etc. In connection with the issuance of a permit to operate a state small water system pursuant to Section 64211 of Title 22 of the California Code of Regulations, the following criteria and procedures shall be used in addition to all other applicable state and local regulations for the purposes of demonstrating the sufficiency of the system’s water supply when that supply is to be provided exclusively by wells. In any case, only potable groundwater shall be considered for the purpose of the demonstration.

2.12.2 CATEGORIES

A domestic groundwater supply is divided into two categories, Category 1 and Category 2 wells. These categories cover all potential wells in the County.

2.12.2.1 Category 1 wells are those wells located in areas of the County where the Public Works Agency determines that the sustained yield of water wells may not be adequate to meet minimum County standards, or where existing data is insufficient to assess groundwater availability, and therefore it is necessary to conduct site specific work to demonstrate availability of a long term domestic (potable) groundwater supply. Category 1 wells are often located in bedrock areas which may or may not be near the edge of groundwater basins. If data regarding groundwater availability is insufficient a well test is required.

2.12.2.2 Category 2 wells are those wells located in the County where the presence of groundwater is documented by substantial data to meet the long term requirements of the project. Generally Category 2 wells are located within the groundwater basins listed in the County of Ventura's Groundwater Section Annual Report. In order to determine if a well meets the Category 2 requirement, contact the staff of the Groundwater Section of the Ventura County Watershed Protection District. They will consider, and may request, the following information prior to determining if a well test is required:

- a) location of the well in the groundwater basin (located centrally, or near the margin of a basin),
- b) well construction information (casing size, depth, screen interval),
- c) pump information (capacity, horsepower),
- d) whether the proposed pumping is an increase or decrease of past pumping, and
- e) whether or not the basin is in an overdraft condition and local groundwater level conditions.

If there is insufficient documentation that the groundwater resource can provide a long term water supply, the well is considered a Category 1 well and a well test is be required.

2.12.3 CATEGORY 1 WELL TEST

To demonstrate that a Category 1 well is likely to be adequate for the long term, the applicant shall complete a well pump and recovery test (well test) of the proposed water supply well that meets the following requirements:

2.12.3.1 Well Test Procedures - The following procedures shall apply to the well test.

- 1) The well test shall be performed under the immediate supervision of a California Licensed Water Well or Pump Contractor, or a California Registered Civil Engineer or Geologist.
- 2) The County may inspect a well test in-progress at any time to observe testing methods and results. The County may also measure the water level in the test well prior to and / or within 15 days after the testing has been completed to verify the static water level.
- 3) The well test shall not be initiated until the well has been idle for a period of at least 72 hours and the water level has become static.
- 4) The Water Resources Division of the Public Works Agency shall be notified by the person who will supervise and certify the testing at least 48 hours prior to initiation of the well test. Call staff directly at (805) 654-2024 or (805) 654-2907. Prior notification is needed to insure that the testing is properly conducted so that retesting is not necessary, and so the County will have an opportunity to observe portions of the test.
- 5) Use of the current County test form to record test results is required.
- 6) If the pump breaks suction at any time during the pumping period, the test shall be stopped and restarted after the well has again reached a static level.
- 7) The recovery portion of the well test shall begin immediately upon completion of the pump test. Measurements of the water levels shall be recorded during the time they are returning to static level. The well test may be terminated prior to the required recovery period, if the groundwater level returns to the original static water level before the full recovery period has elapsed.
- 8) Test results shall be submitted to the County Water Resources Division of the Public Works Agency on the current Water Well Pump and Recovery Test recording form, along with any other pertinent information.
- 9) The depth of water in a well shall be determined by electrical sounder, airline or digitized sounding equipment. Tapes and acoustical sounding equipment are not acceptable.
- 10) The well test shall be conducted in accordance with Table 1, below.
- 11) Except as otherwise provided in § 2.12.3.1(12) and § 2.12.3.1(13), the level of use listed in the first column of Table 1 that is applicable to any given well shall be determined by computing the total number of persons to be served by that well. The total number of persons to be served by a well shall be determined as follows:
 - a. Identify every separate structure having a water requirement that is to be served by the well. Structures are separate from each other if they do not share a common roof. A structure has a water requirement if it contains at least one water closet (commode) plus at least one faucet. The division of what would normally be a single structure into separate structures for the purposes of avoiding a water requirement (e.g., by placing the water closet in one structure and the faucet in the other) is not allowed.
 - b. Determine the number of bedrooms (as defined in Policy 6.2 of the County Environmental Health Division) for each of the identified structures.
 - c. Using Table 1, determine the number of persons associated with each of the identified structures.
 - d. Again using Table 1, determine the total number of persons to be served by the well. Examples are: a well serving two identified structures, one with three bedrooms and the other with two bedrooms, would serve seven persons; a well serving one identified structure with five bedrooms would serve six persons.

2.12.3.1 Well Test Procedures - (Continued)

- 12) When the development is residential and the number of structures to be served by a well cannot be determined (e.g., when the development is a subdivision intended to create residential lots for sale as vacant land) the level of use shall be deemed to be two single family dwellings, each including three bedrooms (or four persons) for each lot served by the well.
- 13) When the development is industrial or commercial, the Public Works Agency shall determine on a case-by-case basis the appropriate level of use to be assumed for the well test. If that level of use is equivalent to one of the levels listed on Table 1, the well test specified for that level on Table 1 shall be conducted. If that level is higher than the highest level on Table 1, the Public Works Agency shall also determine on a case-by-case basis the maximum number of hours the well test is to be conducted and the minimum number of gallons that the well must produce during the test.
- 14) The output of two or more wells serving the same development may be combined for the purposes of the well test provided the following requirements are met:
 - a. A minimum flow of 5 GPM shall be maintained for each well for the entire time it is pumped; and
 - b. The wells are either all tested concurrently or they are each separated from any other well by at least 500 feet.
- 15) The minimum number of gallons specified in the last column of Table 1 is based upon the assumption that each person will require 100 gpd and each legal lot on which the structure or structures are located may require an additional 2,678 gpd for outside use. The gpd required for personal use is multiplied by a safety factor of 4.
 - i. For example (U. S. Units): the total required gpd for a two bedroom residence (3 persons) plus a one bedroom second dwelling unit (2 persons) located on a single lot would be 4678 gpd ($5 \text{ persons} \times 100 \text{ gpd} \times 4(\text{SF}) + 2678 = 4678$). In Table 1, the next to last column lists the total required gpd for various levels of use, and the last column lists that total rounded up to the nearest 100 gallons.

When a well to which Table 1 applies is to serve more than 8 persons, the last two columns of the table shall be adjusted in accordance with methodology specified in § 2.12.3.1(15), above.

2.12.3.2 Well Test Pass-or-Fail Criteria. The following criteria shall be used to evaluate the well test.

- (1) The well must produce the applicable minimum number of gallons specified in the last column of Table 1 within a maximum of 24 consecutive pumping hours. A minimum flow of 5 GPM shall be maintained for the entire time the well is pumped. A well that fails to meet the applicable minimum flow requirement at any time during the well test will not pass even if it produces the applicable minimum number of gallons within 24 hours.
- (2) During the last hour of pumping, the water level in the well must remain static.
- (3) A well, after 24 hours of rest, must fully recover to the before test water level. Instrumentation error will be considered in evaluating recovery.

Table 1 (U.S. Units)

Level of Use	gpd per bdrm.	gpd with (SF)=4	gpd for Land	Total gpd	Pump Test min. gallons
1 bedroom = 2 persons	200	800	2678	3478	3500
2 bedrooms = 3 persons	300	1200	2678	3878	3900
3 bedrooms = 4 persons	400	1600	2678	4278	4300
4 bedrooms = 5 persons	500	2000	2678	4678	4700
5 bedrooms = 6 persons	600	2400	2678	5078	5100
6 bedrooms = 7 persons	700	2800	2678	5478	5500
7 bedrooms = 8 persons	800	3200	2678	5878	5900

2.12.4 CATEGORY 2 WELL QUALIFICATIONS

A Category 2 well is documented to provide a domestic water supply that is adequate for the long term requirements of the project. To qualify a well as a Category 2 well, the applicant shall provide documentation that demonstrates that the well is located in a Category 2 area. If there is any uncertainty as to whether the well is located in a Category 2 area, the well shall be deemed a Category 1 well.