

## Yield Testing Methods for Private Wells in Baltimore County

Official yield tests for private water supplies must be performed under the direct supervision of a Master Well Driller or Pump Installer licensed by the Maryland State Board of Well Drillers or a Master Plumber licensed by the Baltimore County Plumbing Board

A. Yield tests for new wells prior to installation of a submersible pump and connection to a water distribution system shall be performed in accordance with the Maryland Code of Regulations (COMAR 26.04.04.07Q(2)) as summarized below:

- (1) The pump shall be placed as close as practical to the bottom of the well (typically 10-20 feet off the bottom) and a measurement of the static water level recorded.
- (2) Pumping shall begin at a rate of at least 8 gallons per minute until the water level drops to a point close to the pump. (Water from the well should be discharged at least 50' from the well and directed away from septic systems.)
- (3) When the water level reaches this point, the pumping rate shall be adjusted so that the water level remains constant (i.e., the discharge of the pump is equal to the water flowing into the well).
- (4) The water level and flow rate must be recorded every 15 minutes for the duration of the test. The well yield is equal to the sustained flow rate at a constant water level.
- (5) The minimum acceptable well yield for a new well is 1 gallon per minute during a 6 hour test period. If the sustained well yield is 4 gallons per minute or greater or the water cannot be pumped down to the pump intake during step A(2) above, the well yield test may be terminated after 3 hours.

B. Yield tests for existing wells in which a submersible pump has been installed and connected to a water distribution system may be performed in accordance with the following procedure:

- (1) The contractor performing the test shall provide a testing manifold consisting of an inlet for connection to the pressure line from the well and a tee with a pressure gauge graduated with intervals of at least 2 pounds per square inch (psi) and capable of measuring up to 200 psi.
- (2) The testing manifold must be connected so that the pumping switch mechanism is by-passed.
- (3) The pump should be turned on and the manifold valve opened completely. Time, flow rate, and pressure readings must be recorded every 15 minutes.
- (4) If the water level is drawn down to the pump intake; turn the pump off and record the time. Wait a set period of time (15 minutes); turn the pump back on and measure the discharge of the water until the water level is drawn down to the pump intake again. Record the time and repeat this process for at least 3 times to determine the recovery rate (well yield). The well yield is determined by dividing the average discharge (in gallons) by the average interval (in minutes) between each time the pump was shut off.
- (5) For well yields less than 4 gallons/minute, the yield test shall continue by valving down the discharge to the approximate well yield determined in step (4) and recording the flow rate and pressure every 15 minutes until 6 hours has passed from the commencement of the test.
- (6) For recovery rates of 4 gallons/minute or greater, testing may be terminated after 3 hours if:
  - (a) The water level is determined to have dropped no greater than 200 feet through the duration of the test; or
  - (b) The discharge pressure does not vary by more than 5 psi.