

## How to Use the QWD: Six Easy Steps

**Step 1:** Attach Qwater well development tool to half-inch riser PVC or polyethelene pipe (for the 1-inch QWD, attach 3/8 ID polyethelene tubing).

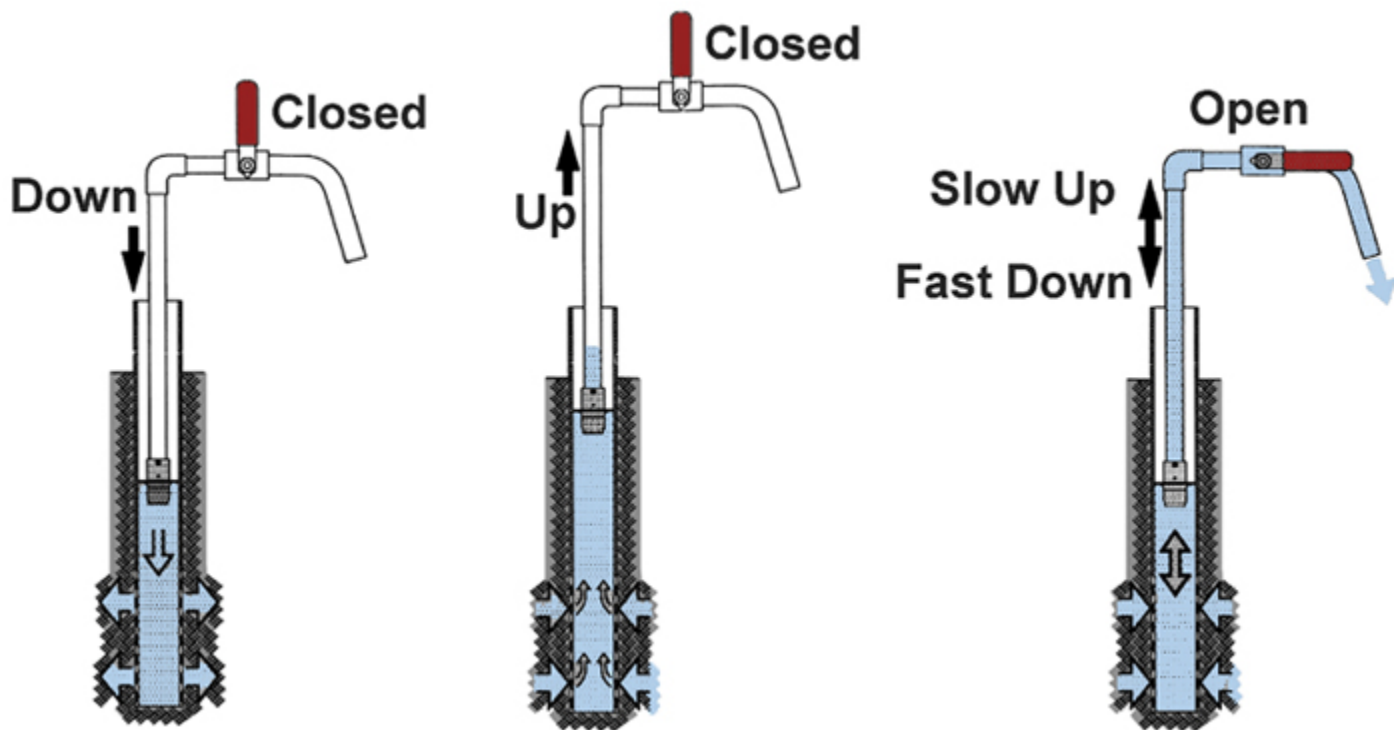
**Step 2:** Lower surge block to bottom of well and attach valve assembly and tubing to top of PVC pipe.

**Step 3:** With upper check valve closed surge valve up and down five strokes.

**Step 4:** Open upper valve and surge (fast - down and slow - up) until water flows out of tubing.

**Step 5:** Continue to surge well until discharge is sediment free and / or water clears.

**Step 6:** Dispose of tool to avoid cross well contamination.



## **Tubing Riser Instructions**

### **1-inch, 1.5-inch, and 2-inch Qwater Well Developers - Polyethylene Tubing Riser Instructions**

Use off-the-shelf polyethylene tubing from a roll. Cut the end of polyethylene square (clear, white or black) and screw the tubing four turns, or until tight, into the Qwater Well Developer. Roll the tubing, with the Qwater Well Developer attached, to the bottom of the well. Cut the tubing 5 to 6 feet above the top of the well. Insert the tubing end into a 5-gallon bucket (white, if available). Either clamp the tubing onto the bucket or drill a 1/2-inch hole into the bucket near the top and insert the tubing through the hole. Surge slow-up and fast down. Allow one stroke per foot of distance to water level to bring water to surface (i.e., 20 foot water level = 20 strokes, etc).

### **1.5-inch and 2-inch Qwater Well Developer- PVC Riser Instructions**

Use 1/2-inch Schedule 40 or "thin wall" (DWV) PVC pipe from your local hardware store for the Qwater Well Developer riser. Tighten the small set-screw on top of the Qwater Well Developer into the PVC pipe. Lower the Qwater Well Developer into the well, adding PVC lengths as needed. Once the Qwater Well Developer is on the bottom, cut the PVC 2 to 3 feet above the top of the well casing and add the 1/4-turn valve, 90-degree elbow, and 6 to 7 feet of 1/2-inch ID clear vinyl tubing. Insert the tubing end into a 5-gallon bucket (white, if available). Either clamp the tubing onto the bucket or drill a 5/8-inch hole into the bucket near the top and insert the tubing through the hole. Surge slow up and fast down.

### **Development Procedures**

Beginning at the bottom of the screen, push the tubing up and down (up slowly / down fast). If the well is unable to produce enough water, pinch or close off the flow with a quarter turn valve so that the muddy slurry can be used to surge fluid back and forth through the screen. Development time (usually 5-10 minutes per 5 foot of screen) depends on the average grain size, range of grain sizes, screen size, and clay content. Generally, development should continue until the gritty material is no longer being pumped into the bucket. Note that since the Qwater Well Developer surge block method is a very aggressive method, the muddy water color may continue. Removing the flexible wiper from the PVC body after a few minutes of surging will allow the valve to be less aggressive and clean the water more quickly if so desired.