**White River Partnership**

# *Water Quality Monitoring Protocols*

Please view WRP's 4 instructional videos on water quality sampling as a supplement to these protocols. The videos can be found on the WRP website at: https://whiteriverpartnership.org/water-quality-volunteers/.

Consider your safety first. Choose an area at your site that you consider representative of the reach as a whole. Sample in moving, not stagnant, water. If the site contains a pool, try to sample just above the pool where water is flowing into it. In shallow stretches, carefully wade out into the center current to sample. In high water, please do not wade into center of current; moving water can be sampled closer to the banks. ***Samples should be collected facing upstream and away from the bank toward the central area of the stream where water is visibly moving*** or where you think the main current may be.

**Conductivity Pen Type 1 –** *Equipment: Oakton ECTestr Low conductivity pen and yogurt cup*


1. Collect water sample in a large yogurt container (you can measure directly in the current, but the read-out may take longer to stabilize).
2. Remove electrode cover, turn pen on and place the pen just below the water's surface so that the electrodes are submerged.
3. When readout has stabilized, record the number on the data sheet and **on the E. *coli* sample bottle**. Please remember to turn off the pen when you are finished.

**Conductivity Pen Type 2 –** *Equipment: Oakton EcoTestr EC1 conductivity pen*

1. Collect water into the cap of the pen; fill to the line on the cap
2. Turn pen on and insert the pen into the cap filled with water
3. When readout has stabilized, record the number on the data sheet and **on the E. *coli* sample bottle**. Please remember to turn off the pen when you are finished

**Turbidity –** *Equipment: turbidity tube, yogurt container, large binder clip*

1. Make sure that the clamp on the rubber tube is closed; **if the clamp breaks, fold the rubber tube in half and secure with the large binder clip provided**.
2. Fill the turbidity tube with water collected mid-way between the water surface and river bottom either with the yogurt container or directly into the tube.
3. In the shade and/or with the sun to your back, find the point at which you can just see the secchi image at the bottom of the tube. Look directly down through the water column into the tube and rotate the tube to see if the black and white areas of the secchi image are distinguishable.
4. Use clamp on the hose to release water until you can just see the secchi image.
5. Record the depth on the data sheet and **on the E. *coli* sample bottle** to the nearest 1 cm. If you can still see the secchi image when the tube is completely filled, record the depth as ">120 cm".

***E. coli –*** *Equipment: sealed 120mL bottle, label, permanent marker or pencil*

1. Just before sampling, remove the cap from the bottle being careful not to touch the inside. If you accidentally touch the inside, use a new bottle.
2. Holding the bottle by its base, plunge the bottle with the open end down, straight into the water. When it is 8 to 12 inches below the surface (or midway between the water surface and the river bottom at shallow sites) turn the bottle upstream and allow it to fill. Fill the bottle (make sure you fill over the line; sample must be over the line to be useable)
3. Recap the bottle carefully, remembering not to touch the inside.
4. Dry-off the bottle and secure the label that should include the site name, date, and time the sample was taken **and the conductivity and turbidity readings**.
5. **Put your sample on ice in a cooler** until you reach the drop-off site cooler. From there it will then be transported back to the lab for processing and analysis.

***E. coli* Quality Assurance –** *Equipment: Ziploc with Bottle #1, Bottle #2, and Distilled Water bottle*

On one monitoring date during the season, you will be asked to collect additional samples as part of our quality assurance plan. These samples should be handled just like the others you collect. On your QA date you should:

1. Fill **Bottle #1** with river water exactly as you do for the usual sample (this is the QA "Field Duplicate**"**)
2. Simply empty the contents of the **Distilled Water** bottle into the pre-labeled **Bottle #2**. Be careful not to touch the inside of either bottle or cap during the transfer (this is the QA "Field Blank").
3. Put both QA samples on ice in a cooler – with your regular water sample – until you reach the drop-off site cooler. From there, all 3 samples will be transported back to the lab for processing and analysis

You only need to collect samples for QA one time during the season.

Your date to collect QA samples is: _____