

### Orthophosphate – Low Range Test (Hach PO-19)



1. Fill one square bottle to the 20 mL mark with the sample A water; fill the other square mixing bottle with sample B water.
2. Add the contents of one PhosVer 3 Phosphate Reagent packet to each bottle and swirl (not shake) to mix. Allow at least 8 but no more than 10 minutes for full color development. If phosphate is present, a blue-violet color will develop. While you wait, proceed to step 3.
3. Fill a clean test tube to the top line (1 cm below the opening) with sample water. Place this tube (with no stopper) in the outermost opening of the black box.
4. After 8 to 10 minutes fill an empty test tube to the top line (1 cm below the opening) with the prepared sample from the square bottle. Place this tube (with no stopper) in the center-most opening of the black box. Hold the black box so a light source (sky, window, or lamp) shines down on the tubes. Be careful not to spill the samples. View the tubes through the openings on the front of the box. Rotate the disc to obtain a color match. Divide this value by 150 to obtain the mg/L of total phosphorus. Record this value for each sample. Rinse all glassware with distilled water.  
If the color is too dark, and is off the scale, proceed to the mid range test (See **Creek Connections Handbook**). If the solution is clear, record 0 mg/L. **Over ↓**

### Nitrate Test-Low Range (Hach NI-14)



1. Rinse each test tubes twice with the water sample to be tested by capping the tube and shaking vigorously. After rinsed, fill each tube to the bottom mark or line (5 mL) with the water sample. Do all these steps for both sample A & B.
2. Add the contents of one NitraVer 6 Nitrate Reagent packet to each tube. Cap the tubes and shake for three minutes. Then allow the tubes to stand undisturbed for 30 seconds. Unoxidized particles of cadmium metal may form (unlikely); if they do, they will settle to the bottom of the tube.
- 3a. **IF** you see Cadmium particles: **You must refer to the CREEK CONNECTIONS HANDBOOK for instructions. Do not proceed with the following steps.**
- 3b. **IF** you do NOT see Cadmium particles: proceed to the next step.
4. Add the contents of one NitriVer 3 Nitrite Reagent packet to each tube. Cap the tubes and shake for 30 seconds. A red/pink color will develop if nitrate is present (no color = 0 mg/L nitrates). Allow the tubes to sit for at least 10 minutes, but no longer than 20 minutes before using the color comparator (black box). While waiting, continue to step 5.

**Over ↓**

### Orthophosphate – Low Range Test (Hach PO-19)



5. Fill another test tube to the 5 mL mark (bottom line on tube) with untreated water sample. Place this tube in the outermost opening of the black box.
6. After at least 10 minutes has passed, insert the tube with chemicals added into the centermost opening of the black box. Hold the box up to a light source (sky, window, or lamp) and view through the openings in front. Rotate the disc to obtain a color match, then read the mg/L nitrate value through the scale window. Record this value on the data sheet. If this value is 1mg/L of nitrate or greater, the results are not accurate enough and you must proceed to the high range (1-10 mg/L nitrate) test instructions (See Creek Connections Handbook). Rinse all glassware with distilled water.

