

Cleaning Up Water

1. Describe the appearance and smell of the water.
2. Place the cap on the bottle and vigorously shake the bottle for 30 seconds. Continue the aeration process by pouring the water into another bottle or the beaker, then pouring the water back and forth between the two containers several time. Be sure to record how many times you complete the water transfer. Discuss the purpose of aeration while you are aerating the water sample.
3. Add one teaspoon of alum to the aerated water. Slowly stir the mixture for 5 minutes. Describe the appearance and smell of the water.
4. Allow the water to stand undisturbed in the beaker. Observe the water at 5 minute intervals for a total of 20 minutes. Record observations. Prepare your filter while you are waiting.
5. Construct a filter from the plastic bottle with its bottom cut off, using filter paper, pebbles, sand, and activated charcoal. Clean the filter by slowly and carefully pouring through 2L (or more) of clean water.
6. After a large amount of sediment has settled on the bottom of the bottle of lake water, carefully - without disturbing the sediment - pour the top two-thirds of the lake water through the filter. Collect the filtered water in a clean beaker.
7. Compare the treated and untreated water. Has treatment changed the appearance and smell of the water?
8. Measure the water quality parameters of the treated water.

¹ Based on U.S. Environmental Protection Agency activity at: http://www.epa.gov/safewater/kids/flash/flash_filtration.html