Traditional refluxing and distilling set-ups waste countless gallons of water and possess the potential for floods. The new set-up utilizes a fountain pump that re-circulates water through the condenser saving water and limits flood hazards (a).

1. Set-up under the hood.
Under each experiment hood there is two water re-circulating set ups. Each set up contains a bucket with a fountain pump completely submerged in ~3 gallons of water (b). The bucket also contains a hinged lip so that an ice pack can be added without disrupting water re-circulation. On the outside of the lid there are two connections; one feeding water out of the bucket and the other feeding water into the bucket (c).

2. Set-up above the hood.
The two lines of tubing feeding out of the bucket are properly secured to the hood by mounting adhesives and zip ties. The tubing ends with two elbow joints from which the student will connect their water condenser accordingly (d).

The water pump begins to circulate water once it is switched “on”. The electrical cord of the water pump connects to a white “on/off” switch (e). Once the fountain pump is on it will begin to circulate water; if the student has not made the proper rubber tubing connections, water will spill out quickly.

Below are operating procedures labeled in the fume hoods:
How to Use the Re-circulating Water Pump System

1st Connect rubber tubing to elbow spouts:
- Water is issued via “Cold Water From Pump” spout. Connect to condenser where water should flow IN.
- Water is re-cycled back to pump via “Cold Water Return” spout. Connect to condenser where water should flow OUT.
- Use metal tubing clamps (from kit) on all connections to safeguard against leaks. Throw away any cracked or leaky rubber tubing.

WARNING: MAKE SURE ALL CONNECTIONS ARE COMPLETE BEFORE INITIATING WATER FLOW

2nd To Activate Water Flow:
- Flip white switch to “ON” position

3rd To De-Activate Water Flow:
- Flip white switch to “OFF” position.
- Wait 20 seconds for water to flow out of condenser and back into pump bucket before disconnecting rubber tubing.