

### Lab 5.5 & 5.1 Check for Understanding

1. What is this overall topic for this unit (Ch.5) and why is it important to know/understand?
2. What was the purpose of lab 5.5 (in your own words)?
3. EXPLAIN what you did for lab 5.5. DO NOT REWRITE PROCEDURE!!! Try and explain in your own words so that you can repeat this lab for the **sludge test**. Be detailed in your explanations.
4. Why did you add water to the solid mixture? What were you trying to accomplish by doing this?
5. How did you separate the solid from the liquid in the mixture?
6. After filtering, what was the liquid portion that was collected in the test tube called?
7. What did you do with the collected liquid and WHY?
8. What is the goal of lab 5.1? (in your own words)
9. Why is lab 5.1 titled FRACTIONAL distillation? Explain the “fractional” part.
10. How does distillation separate liquids? In other words, why are liquids able to separate from each other using distillation?
11. Explain what you need to do to find the density of a liquid. (Step-by-step)
12. In Part B of lab 5.1, why are we distilling the mixture and taking temperature of the vapor every 30 seconds?

### Rest of the Year Check for Understanding

1. Explain in detail how you would find the volume of a regular shaped object? What about an irregular shaped object.
2. Explain the law of conservation of mass, and how we determined it in the labs we completed.
3. How many centimeters are there in 104 m?
4. Chicago uses  $1.2 \times 10^9$  of water per day. How many liters per second must be pumped from the lake every day to supply the city?
5. An irregularly shaped solid is placed into a graduated cylinder filled with 25.8 mL of water and the water level rises to 33.9 mL. If the mass of the object is 5.88 g, what is the density of the solid?
6. Does the boiling point of a liquid depend on the amount of liquid is present? Why or why not?
7. Suppose we placed a hot test tube in a freezer until the water froze. DRAW a graph that would show what would happen to the temperature of the water over time.
8. What can be said about the freezing point and the melting point?
9. If a substance doesn't dissolve in water, what is one thing we might try to get that substance to dissolve?
10. What is the concentration of a solution that contains 16.2 g of potassium dichromate in 925 mL of water? In g / 100 mL?
11. Why was there a POP when we placed the flaming splint into the mouth down test tube that contained the gas created with magnesium and sulfuric acid? BE SPECIFIC!
12. How do we know the 2 gases in experiment 4.8 were hydrogen and carbon dioxide? BE SPECIFIC!