1. What was your average percent recovery? Explain what step(s) you could have improved.

My average percent recovery was 90.54%. I could have used tweezers to remove the filter paper from the filter apparatus. I also could have scraped the residue off of the filter paper when transferring it into beakers. I also noticed when removing the watch glass and filter paper from the ovens, the residue was dry and easily trailed off of the filter paper when we were removing it. I could have used tongs or two gloves so I had two hands to remove it.

1. WHICH COMPONENT WAS THE EASIEST TO ISOLATE? WHICH COMPONENT WAS THE MOST DIFFICULT? EXPLAIN.

The NaCl was the easiest to isolate. It didn’t need much handling which caused less room for error. Once the NaCl was in the pre weighed beaker, all we had to do was boil it till all the water evaporated. Then once we weighed the beaker with the NaCl we just did the calculations to obtain what was in the beaker. We never had to physically scrape the component or transfer it from beaker to filter paper or filter paper to oven. The most difficult was the CaCO₃. When we added the 30 mL of 1 M K₂CO₃ and were asked to swirl it, we lost some of the solution. When transferring it to the filter apparatus, we noticed when all the residue came out, it left a little bit of the CaCO₃ resulting in having to scrape it out. We also had to use a little bit of water to get the pasty part onto the filter paper.

1. IF THE MIXTURE CONTAINED CaCl2 INSTEAD OF NaCl WOULD YOU HAVE BEEN ABLE TO RECOVER EACH COMPONENT (CaCl2, CaCO3, SiO2) FOLLOWING THE SAME PROCEDURE USED IN THE LAB. EXPLAIN

Yes we would still have been able to recover the components. According the Solubility Rules, Chlorine is soluble with the exception when paired with Mercury, Lead and Silver.

1. IF THE MIXTURE CONTAINED Na2CO3 INSTEAD OF NaCl, WOULD YOU HAVE BEEN ABLE TO RECOVER EACH COMPONENT (Na2CO3, CaCO3, SiO2) following the same procedure. explain.

Yes we would still have been able to recover the components. According to Solubility Rules, Carbonate is insoluble, but when paired with Sodium it is an exception to the rule making it an insoluble component when paired together.

1. IF THE MIXTURE CONTAINED Na2CO3 INSTEAD OF CaCO3, WOULD YOU HAVE

BEEN ABLE TO RECOVER EACH COMPONENT (Na2CO3, NaCl, SiO2)

following the same procedure. Explain

No we would not have been able to recover the components. According to Solubility Rules, Carbonate is insoluble.

1. IF A 1M SOLUTION OF K2SO4 WAS USED IN LIEU OF THE K2CO3 solution in part 3, would the calcium be recovered? IF SO, WOULD THE MASS RECOVERED BE THE SAME? EXPLAIN The calcium would be recovered.

Ca2+ (aq) + K2SO4 2- 🡪 CaSO4