

Chemical Engineering 201
Fall 2002
Group: Paul Blowers
August 29, 2002

Problem statement for #3.18:

A suspension of calcium carbonate particles in water flows through a pipe. Your assignment is to determine both the flow rate and the composition of this slurry. You proceed to collect the stream in a graduated cylinder for 1 minute; you then weigh the cylinder, evaporate the collected water, and reweigh the cylinder. The following results are obtained:

Mass of empty cylinder: 65.0 g

Mass of cylinder + collected slurry: 565 g

Volume collected: 455 ml

Mass of cylinder after evaporation: 215 g

Calculate

- a) the volumetric flowrate and mass flowrate of the suspension
- b) the density of the suspension.
- c) the mass fraction of CaCO_3 in the suspension.