**Notes on Air Cycloning**

**10-11-2010**

Objective is to determine optimum required valve settings for the two air valves. Your goal is to separate the solids into two fractions – less than 48 mesh and greater than 48 mesh.

Valves are interactive so this is a good application for a 2-factorial DOE.

Proposal should provide a procedure to determine the operating limits, and explain how you plan to select high and low limits. Show what will your equation will look like, and what do you expect for the results.

**General procedure:**

Start by running entire sample through Riffle Splitter to produce multiple 500 gram samples. Know why you are doing it this way.

Put 500 grams into hopper with everything turned off.

Place lid on hopper to prevent air from drawing in through the hopper.

Start blower, then start conveyor.

Determine high and low settings for each valve so you have starting points for your 2-factorial experiments.

Conduct the required number of tests at the proper combinations of valve settings.

At end of each test, weigh both products and conduct a sieve analysis to find % passing 48 mesh.