

According to an analysis of particle size made by the Bayonne Laboratory of a sample of Raw (30-60 grade Attapulugus Clay) No.1, No.3, and No.8 Wedge clays, the following is the size classification or distribution:

	<u>Raw Clay</u>	<u>#1 Clay</u>	<u>#3 Clay</u>	<u>#8 Clay</u>
Coarser than 100 mesh	98.5%	99.4%	98.7%	98.3%

Diameter of Particles		Raw Clay	#3 Clay	#8 Clay
Millimeters	Microns	Per Cent	Per Cent	Per Cent
.149 to .074	149 to 74	0.14355	1.00750	0.54159
.074 " .044	74 " 44	0.55095	0.17186	0.08449
.044 " .035	44 " 35	0.29760	0.05369	0.04585
.035 " .025	35 " 25	0.21555	0.03887	0.01603
.025 " .015	25 " 15	0.17550	0.01729	0.00847
.015 " .005	15 " 5	0.11640	0.01027	0.00336
.005 " .001	5 " 1	0.00045	0.00052	0.00021

About 85% of the dust particles in samples taken during the charging of #3 clay were slightly angular in appearance and five microns or less in size; 15% were rounded semi-opaque, ten microns or over in size. About 75% of the particles in samples taken during the charging of #10 clay were slightly angular crystalline, five microns or less in size; about 20% were over ten microns in size and were semi-opaque about 5% were round semi-opaque between five and ten microns in size. All of the larger particles appear to contain small bubbles. There are numerous small black specks about one-quarter micron in size.

Charging of filters is usually done by one man per shift for each filter house. There are three shifts a day. These men have an average service of about 20 years and work eight hours a shift, nine shifts out of fourteen.

Ventilation is provided in the newer filter houses by eighteen-inch roof ventilators extending about twelve inches above the roof and also by windows which occupy about 80% of the wall space in front of the top of the filters.

DUMPING FILTERS - After the filters are charged with clay they are plated up and the oil is allowed to percolate through the clay for several hours, the length of time depending upon the nature of the oil run and the "yield" of the clay. The oil is all drained off and the clay is then washed with naphtha or "Varsol" and steamed to remove all trace of the naphtha. After this the filter is dumped on to a canvas belt conveyor and the clay returned to the kiln for burning or reconditioning. Filter clay is used as many as fourteen times before it is finally discarded. In order to determine what effect the reconditioning of filter clay had on its free silica content samples were analyzed by the New York State Department of Labor, Division of Industrial Hygiene with this result:

<u>Times Burned</u>	<u>% Free Silica</u>
Raw Clay.....	6.30
Once.....	8.50
Three.....	9.20
Eight.....	9.30

Considerable steam is usually given off during the dumping which probably