dismantling an old cracking coil 4" tar line, the average dust concentration was 2,322,240 particles per cubic foot. In appearance these particles were clear crystalline, rather rounded, and five microns or less in size. No fibres were observed in any of the dust samples from dismantling operations. After a few weeks or months service, insulation on hot lines dries out and appears to disintegrate. This is probably due to the fact that such insulation is usually covered with a weather-proof material which prevents absorption of moisture from the air.

CRUSHING SCRAP ASBESTOS: Scrap asbestos insulation, usually the 85% magnesia type, is crushed in a belt-driven Williams crusher to pass through a screen with one-inch holes or slots, and is then mixed with new asbestos to make insulating plaster. This operation, which is a very dusty one, is performed by two men, with an average service credit of about twelve years. Goggles and MSA. "Comfo" or Willson Dust Respirators are worn. Considerable dust is produced in breaking up the scrap insulation by hand prior to crushing (10,195,200 particles, ten microns or less, per cubic foot), and also when feeding the crusher which is done by shovelling the broken-up pieces into the hopper and poking them down with a short wooden stick (14,839,680 particles per cubic foot). Dust counts as high as 27,527,040 particles per cubic foot were found in samples taken from over the hopper. These dust concentrations are dangerously high. About 95% of these particles are sharply angular, crystalline in appearance and five microns or less in size; 5% are opaque scale-like, six microns or more in size. Crushing scrap asbestos is not a steady routine operation, the exposure varying from eight hours a month to about twelve hours a week.

CRUSHING OLD CORK INSULATION: This operation is performed approximately twice a year and takes about twenty or thirty minutes. The insulation is crushed on a belt-driven Williams crusher, by the same men who crush the scrap asbestos. This crushed cork is used for insulating lines in the cold settling plant. The average amount of dust produced is 20,016,178 particles, ten microns or less in size per cubic foot. About 80% of the particles are slightly angular, crystalline, in appearance, and five microns or less in size; 20% are round, semi-opaque, ten microns or more. There are also a large number of very small black or dark grey specks.

IV - GUNITING OPERATION

What is Gunite and How is it Applied? - Gunite is a mixture of approximately one part (one 94 pound bag) of Portland Cement and two parts (twelve scoop shovels) of clean sharp sand. The sand and cement are mixed dry, shoveled into the hopper of a Gunite machine, using water under about 40-pounds per square inch pressure and compressed air at thirty to ninety pounds per square inch. It is applied under pressure, as a semi-fluid, against the surface to be protected (usually process equipment, such as, cracking coil soaking drums and storage tanks). In practically every case where guniting is done, it follows immediately, after the sand blasting job used to clean the surface. In most cases, the work is performed by the same crew. The individual holding the gunite nozzle is provided with the same protection as is the operator of the sand blast nozzle, and the men tending the gunite machines are provided with respirators and are required to use them while actually handling the sand and cement. This involves mixing the materials and charging them into the machines (the two dustiest parts of a guniting job). Samples taken during these operations showed the following dust counts of particles ten microns or less in size: