Water

Socorro gets its name from the relief experienced by Oñate's band of settlers when they encountered a friendly village with an abundant supply of spring water. Socorro Spring issues from the eastern foot of the Socorro Mountains and collects its water chiefly from the Magdalena Mountains. During the mining boom, the spring was engineered to fill a reservoir that supplied the town with water of excellent quality with regard to mineral content. It is still an important source (source is the French word for spring), but it is supplemented by well water. In recent years the Environmental Protection Agency has declared that the arsenic level which is 50 ppb must be lowered substantially, but the evidence for harmful effects is scanty and the ruling has been strongly protested because of the high cost of remediation.

Hydrology has been a very important academic subject ever since the School of Mines became the New Mexico Institute of Mining and Technology. Complex mathematical modeling is needed to predict the drawdown of a well based on the spatial distribution of permeability. In the 1950's, Haro von Buttllar and Immo Wendt established a laboratory for tracing the movement of ground water by analyzing the tritium content. At that time the United States and the Soviet Union were testing hydrogen bombs that spiked the rains with tritium at known times. The series of tritium peaks would then appear in ground water after a certain delay corresponding to the travel time through the aquifer. The detection of tritium in ground water is an extremely difficult technical problem requiring a pretreatment for concentration of the tritium and use of a highly shielded anti-coincidence ring of Geiger counters. President E. J. Workman learned that a certain series of U. S. Naval guns was made from an alloy with very low radioactivity and ordered a 12-inch gun to be shipped to Socorro. The powder chamber was cut off and used as a shield for the counters. Since tritium has a half-life of 12 years, the peaks have dropped below the detection limit since the atmospheric testing of hydrogen bombs was discontinued.

Thunderstorm research occupied much of E. J. Workman's time even before he came to Socorro. He based a theory of thunderstorm electrification on the discovery of a high electrical potential at the ice-water interface when water drops freeze in clouds. Staff members and research facilities for thunderstorm research have had a high priority at NMT ever since. A special laboratory was constructed in an area with extreme lightning activity near South Baldy peak in the Magdalena Mountains. It was named the Langmuir Laboratory after Irving Langmuir who headed a large government-funded program to induce thunderstorms in desired locations by seeding with silver iodide. Cloud seeding was found to be only marginally effective, but research on thunderstorm formation was greatly stimulated.

Throughout history, floods have been frequent in the Rio Grande Valley, and they have been a blessing to agriculture and a curse to town buildings. Flooding has lately been brought under control by engineering projects up and down the valley. In the 1960's the Army Corps of Engineers built a flood control channel to divert runoff from the Socorro Mountains northward along the western boundary of Socorro to the Rio Grande at Escondido. There has not been a flash flood since although Escondido was severely flooded by a storm a few years before the channel was completed.
Lady visiting Socorro Spring, probably Mrs. J. E. Smith
Socorro Mountains in background at Socorro Spring and snowy Magdalena Mountains beyond
The Rio Grande in flood passing Socorro
The Harvey House during the 1929 Flood. San Marcial.
Overview of San Marcial in 1929 Flood
House destroyed in 1929 San Marcial Flood
Boating through San Marcial, 1929
AT&SF Roundhouse in San Marcial Flood, 1929
Flooded Railroad Shop in 1929 San Marcial Flood
Manzanares Ave., Socorro, Flooded in 1920 or 1929
Water wheel and mill
Water powered mill
Elephant Butte Dam under construction, 1925-16
Socorro Flood Control Channel after heavy rain, April 2004