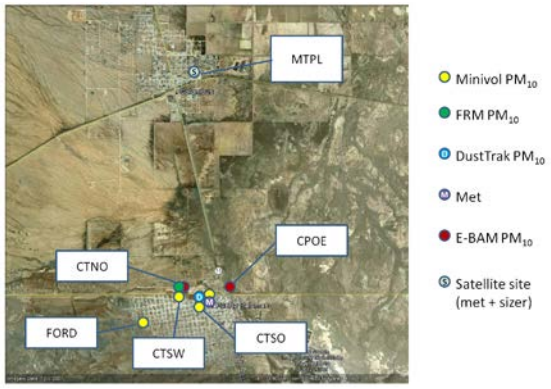
Overview of the Spring 2012 Columbus and Palomas Dust Study

Exposure to high levels of dust is not only a nuisance but presents a hazard both to your respiratory system and to travelling. Breathing in dust can trigger asthma attacks and make allergies worse. Following up on a study completed in 2006 we desired to measure dust in northern Palomas and in NM near the port of entry during the spring dust season.

The purpose of the air quality study was to provide information on the sources and levels of dust in and around the northern border of Palomas and surrounding the cattle holding facilities. It was conducted from March 28 to April 30, 2012. The dust we investigated were those that can be inhaled deep into the lung and smaller than 10 microns or nearly 1/7 the width of human hair. These particles are called PM10 and are regulated by the US Environmental Protection Agency. The objectives of this study were to collect a sufficient number of dust samples from the air to understand typical levels found in the Columbus/Palomas area and during dust storms and to estimate the how dust varied across the towns of Palomas and around the cattle facility over time.



During the study daily PM10 levels were higher than the United States Environmental Protection Agency's health standard on three days in Palomas and twice in Columbus. The two violations of the health standard in Columbus were during dust storms caused by high winds.

These dust storms not only affected the town of Columbus but most of southern New Mexico. The dust was blown across most of New Mexico and even seen crossing the southern Great Plains as the dust plumes were carried by strong winds.

The highest exposures to PM10 were from regional dust storms that caused wind blown dust from locations surrounding the town and outlying areas. Overall the highest daily dust concentrations were measured at just south of the cattle facility. PM10 concentrations at that site over the study period averaged 52 percent of the US EPA standard. The second highest average PM10 concentrations were measured immediately west of the cattle facility. There the average daily PM10 was 49 percent of the standard. We found that dust was highly dependent on location and can vary considerably over small distances of one kilometer.

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