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SONOMA COUNTY
Tim Smith
Pamela Torliatt

Jack P. Broadbent
EXECUTIVE OFFICER/APCO

QUESTION 7: PURPOSE OF EXPERIMENT

December 19, 2005

Dear Sir or Madam:

The Bay Area Air Quality Management District (BAAQMD) is a government agency in the San Francisco Bay Area in charge of controlling local sources of air pollution. The BAAQMD is the applicant for this authorization. The BAAQMD is proposing to operate a radar wind profiler within District boundaries. The site itself will be in Dublin, California at north latitude of 37° 44' 05" and west longitude of 121° 55' 50".

A radar wind profiler is used to measure the atmospheric winds from near the ground to a height of two to three kilometers directly above the profiler. The profiler consists of a stationary antenna and supporting electronic equipment (amplifier and computer) in a nearby equipment shelter. The radar will operate at a frequency of 915 MHz. The radar detects fluctuations in atmospheric density, caused by the turbulent mixing of volumes of air with slightly different temperatures and moisture content. Through a series of calculations using these fluctuations of temperature and moisture, wind speed and wind direction at different heights are derived.

The BAAQMD wishes to operate the radar profiler to measure hourly values of wind direction and wind speed at multiple heights above the ground. These data will be used in computer modeling studies of air pollution formation and transport in and around the San Francisco Bay Area. Results from these studies will help in preparing pollution reduction strategies.

The BAAQMD is lacking an operational radar wind profiler. Without such an instrument, research into how air pollution forms and is transported at heights far above the ground will be severely hampered.

If you have any questions, I can be contacted at (415) 749-5104 or jcordova@baaqmd.gov.

Regards,

James F. Cordova
Air Quality Meteorologist