



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Office of Air Quality Planning and Standards  
Research Triangle Park, North Carolina 27711

November 2, 1988

MEMORANDUM

SUBJECT: Surface Temperature Data for Mixing Height Calculations

FROM: Roger W. Brode *Roger W. Brode*  
Techniques Evaluation Section, (MD-14)

TO: Dean Wilson  
Techniques Evaluation Section, (MD-14)

At its October 14, 1988, meeting, the On-site Meteorological Data Work Group reached a consensus on the question of what surface temperature data to use with an upper air sounding to determine mixing heights by the Holzworth method. This issue was first identified in a November 16, 1987, Region V memorandum to the Model Clearinghouse involving the State of Indiana meteorological preprocessor program.

The work group recommends that the surface temperature data used in the determination of mixing heights following the current methodology be taken from the same station as the upper air sounding. It naturally follows that the mixing heights thus determined should be evaluated for representativeness of the site being modeled. However, the use of "more representative" surface temperature data from the site being modeled does not necessarily lead to more representative mixing heights. In the absence of any methodology to account for elevation differences between the upper air location and the surface station, the effects of intervening terrain, or to correct for advection affects, the use of surface data from a different location than the upper air sounding site can lead to anomalous or unrepresentative mixing height values.

cc: J. Tikvart  
J. Dicke  
D. Bailey, TVA  
B. Baker, AREAL  
E. Bennett, NY DEC  
R. Burkhart, Region I  
M. Garrison, Region III  
J. Irwin, AREAL  
M. Koerber, Region V  
T. Lockhart, MSI  
K. McGee, Region IV  
R. Wilson, Region X