

UNIVERSITY OF CALIFORNIA

Los Angeles

The Criteria Pollutant Elements of the Clean Air
Standards Act of 1987: An Evaluation for the
Greater Los Angeles Area

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Environmental
Science and Engineering

by

Barry R. Wallerstein

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The dissertation of Barry R. Wallerstein is approved.



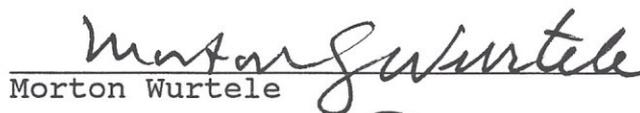
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DEDICATION

To my mother and father for their love and support through the highs and lows of my college career. To Margaret, Emily and Brian for the love given, and sacrifices made, during completion of my doctorate.

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ABSTRACT OF THE DISSERTATION

The Criteria Pollutant Elements of the Clean Air
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Professor Richard L. Perrine, Chair

During the 100th Congress, the Senate Committee on Environment and Public Works forwarded S. 1894 -- Clean Air Standards Act of 1987 -- to the full Senate for consideration. S. 1894 specifies requirements for areas which have failed to achieve the national ambient air quality standards by December 31, 1987 as mandated in the 1977 Amendments to the Clean Air Act. There are over 60 such post-87 areas nationwide, including the greater Los Angeles metropolitan area. S. 1984 prescribes new attainment deadlines, pollutant emission reduction requirements, sanctions for inadequate control

efforts, and other policies for these areas.

The criteria pollutant provisions of S. 1894 are evaluated herein relative to the Los Angeles metropolitan area. The criteria pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead. Analysis is presented regarding the Los Angeles area's ability to comply with the Bill's criteria pollutant provisions and the level of control resulting from implementation of the provisions.

This evaluation shows that the Los Angeles metropolitan area will probably not be able to comply with the extension provisions as well as other elements of the Bill. This relates to the region's unique combination of meteorological conditions and varieties of emission sources. Recommendations are presented for modification of the Bill to provide a stringent, but achievable, framework for achieving federal standards in the Los Angeles area. These recommendations include short-range control opportunities and long-range strategies not included in the Bill. It is concluded that 20 or more years will be needed to achieve all federal standards in the greater Los Angeles area.