

UNIVERSITY OF HAWAII

Environmental Center

Office of the Director

STATEMENT FOR DEPARTMENT OF HEALTH PUBLIC HEARING
ON SECOND AMENDMENT TO CHAPTER 43
July 24, 1973

Dr. Quisenberry and members of the Board of Health:

My name is Anders Daniels. I am Assistant Professor of Meteorology at the University of Hawaii and Acting Chairman of the Air Quality Task Force of the Environmental Center of the University. The statement I am presenting has been prepared by the Task Force whose members include Wilfrid Bach (absent), Geography; Robert Buddemeier, Hawaii Institute of Geophysics and Oceanography; Samuel Yoshida, American Lung Association of Hawaii; George Sheets, Center for Engineering Research; and Michael Chun, Public Health and Civil Engineering. Doak Cox and Jerry Johnson, ex officio members of the Task Force as Director and Assistant Director of the Environmental Center, have participated in the preparation of this statement and have authorized its presentation as an Environmental Center product. The statement does not represent, however, an institutional position of the University of Hawaii.

The present amendment of the implementation plan, as well as the whole implementation plan, is based solely on the so-called proportional model. In evaluating the implementation plan it is therefore of utmost importance to determine if use of this model is appropriate for our region and if the model is correctly applied. In the following testimony we will show that none of these fundamental requirements are met.

The proportional model can be used if and only if two fundamental requirements are met, namely:

1. That there exists somewhere a sampling location which is representative of the maximum concentration in the area under investigation and that this area can uniquely be located.
2. That over the area meteorological conditions are such that the air is uniformly mixed or at least that the winds blow equally frequently from all directions.

Let us begin by examining the representativeness for Oahu of the maximum sampling location at Kalihi Kai as propagated by DOH. To scrutinize this question one must know which criteria DOH used in determining the representativeness of this location. Did they put out a larger number of

samplers all over the island and run a significant analyses of the results of long term sampling? Or did they perform detailed concentration calculations to find the variations and significance of the concentrations at different points on the island? The answer to both these questions is unfortunately an unqualified no. Only a few samplers were located on the island at locations which were picked without critical evaluation of what they actually would be sampling. This conclusion is clearly supported by the fact that DOH themselves deleted from their sampling network, two of their most polluted locations as being non representative. Why were these locations picked in the first place, did DOH not know that construction was going on up-wind of the Ala Moana sampler and thus would bias data collected? One can only be extremely reluctant to believe that DOH now has found a representative maximum sampling location, representative of an Oahu wide maximum. Had for instance this sampler been moved closer to CNH the measured concentration would have been higher. Why would such a location not have been equally representative? Or why not select a location further away from the influence of this industry? Why would not such a location be more representative for the whole region? From this discussion it is obvious that there is neither any criteria for selecting a representative maximum sampling location nor is there in fact such a location. From this point alone it is obvious that the proportional model is not applicable to rational and equitable implementation plans.

The second requirement of the proportional model is that of uniform wind-direction statistics. Hawaii with its overwhelming prevailing north-easterly tradewind could hardly be less suited in this respect. For instance the assumption that it is possible to base a control strategy for agricultural burning in western parts of Oahu on the sampling site data at Kalihi Kai is incredible since the smoke from this source would seldom if ever reach Kalihi Kai. It would be almost as logical to regulate the burning on Maui from the readings at this location because this smoke can at least theoretically reach the aforementioned sampler.

On top of everything DOH appears to completely misunderstand how to apply the proportional model to a control strategy which prescribes that all sources must be reduced by the same percentage. DOH arbitrarily cut emissions by different proportions among stationary sources on Oahu.

We can only conclude that the present amendment to the implementation plan is merely an illogical juggling of figures. It does not meet the intent of the Clean Air Act by optimizing social and economic costs; this is a fundamental requirement of any implementation plan. We therefore strongly recommend that the present amendment be rejected.

Finally we do not understand the rationale for including a permit system for agricultural field burning in a revised implementation plan. The proposed permit system is not a strategy by which particulate emissions on Oahu are to be reduced to meet National primary or secondary standards. Establishment of such a system, therefore, would be for reasons other than Amendments of 1970 (P.L. 91-604); its inclusion would rigidly lock the State into a system whose rationale, formulation and implementation should be given more careful consideration.