



RG:0027

University of Hawaii at Manoa

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Office of the Director

March 9, 1976

MEMORANDUM

TO: Ralph Yukumoto
Department of Health

FROM: Doak C. Cox

RE: Review of the Guidelines for the Water Quality
Monitoring Program, Oahu Ocean Outfall Systems

Following your request of July 1, 1975 for our review and comment on the above cited report, we solicited the assistance of the Water Resources Research Center (WRRRC). WRRRC has been most directly involved in matters related to water quality research and evaluation in the Mokapu area. The Environmental Center staff concurs with the following comments which were prepared by L. Stephen Lau, Director of WRRRC.

The document prepared for the City and County of Honolulu is scientifically rational and comprehensive and reflects methods that either have been locally tested and found to be useful or are currently being developed locally. The guidelines are judged acceptable subject to future review. Several specific comments are offered:

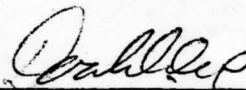
1. Regarding monitoring the microbiological quality of the receiving water, it is noted that enterococcus is included in the optional Microbial Activity (4a) on page 47. Actually fecal streptococcus is a slightly more preferred term than enterococcus. Since microbiological quality can be best assessed on the basis of the ratio of fecal coliform to fecal streptococcus concentration rather than the total coliform and fecal coliform concentrations as presently given in PHR 37-A, it is recommended that fecal streptococcus be included among the coastal water quality parameters to be monitored.
2. With regards to receiving water monitoring in ocean water, it may be desirable to test for chemical oxygen demand (COD) or total organic carbon (TOC) for areas of known discharge of wastewater effluent. This will offer a measure of degradable organics and a substitute for biochemical oxygen demand (BOD) which is correctly not required because of great dilution and whose analysis is known to be interfered with by high salinity.
3. Regarding the optional phytoplankton productivity, a minor point of data

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interpretation is that total population measurements using chlorophyll a analyses will not eliminate interpretation uncertainties associated with species composition (p. 41). Chlorophyll a concentrations actually reflect both environmental and nutritional factors and species composition changes.



Doak C. Cox, Director

cc: L. S. Lau, WRRRC