

UNIVERSITY OF HAWAII

Environmental Center

Office of the Director

April 26, 1973

Dr. Walter B. Quisenberry
Director of Health
Kinau Hale
1250 Punchbowl Street
Honolulu, Hawaii 96813

Dear Dr. Quisenberry:

Revisions to PHR Chapt. 37 & 37-A

This responds to your request of 11 April for comments on Chapters 37 and 37-A of the State Public Health Regulations in relation to their appropriate revision to meet federal requirements. It represents the collective comments of Doak C. Cox, Gordon L. Dugan, Henry K. Gee, Jerry M. Johnson, L. Stephen Lau, and Reginald H. F. Young.

Your suggestion of a meeting to discuss proposed changes was a very appropriate one. Unfortunately, we did not receive your letter until 16 April and hence had no time to arrange a meeting for this purpose. However, Jerry Johnson of our Center, L. S. Lau of the Water Resources Research Center, and I took advantage of a meeting scheduled for another purpose to discuss the needs briefly with Henri Minette, Harold Youngquist, and Denis Lau of your Department. If a further meeting subsequent to your receipt of these comments is desirable, I shall be pleased to make arrangements for it. Such a meeting might usefully involve Charles Seeley from EPA and a representative of OEQC.

We wish to make it clear that the suggestions for revisions to Chapter 37 and 37-A below are restricted to those revisions which appear necessary to meet federal requirements. Much more general revision is desirable in the light of the finding that some of our numerical standards are unattainable and some are even violated by nature. The faults have been clear for some time, and also the directions of their remedy, but I have not urged revisions pending the development of better information on what the revised values should be. As you know, the Coastal Water Quality Study under the University of Hawaii's Water Resources Research Center and Sea Grant is devoted to developing this information, and a major thrust in the next year will be the development of recommendations for revisions of the standards from this information.

The suggestions and comments presented in what follows refer specifically to the EPA lists of 12 January 1973 of "Changes to Hawaii's...water quality standards required by the Federal Water Pollution Control Act

Amendments of 1972." The 12 January list refers to interstate waters and the 6 March list refers to intrastate waters. However, Hawaii has but one set of ambient water quality standards, that in Chapter 37-A of the Public Health Regulations. Hence we consider that both EPA lists refer to that chapter.

The suggestions and comments below are numbered in accordance with the numbering of the changes in the two EPA lists. Section citations refer to sections in PHR Chapt. 37-A unless otherwise identified.

A. EPA 12 January 1973 List

1. Specific identification of objectives

The EPA recommendation that protection of water recreation and aquatic life be indicated as objectives for all classes of waters is probably based on the interim goal of water quality expressed in PL 92-500, a goal "which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." This goal seems explicitly and completely expressed in the present protected uses for Class 2 waters (Sec. 3.B.2) and only slightly less explicitly expressed in the protected uses for Class A waters (Sec. 3.A.2), which include fishing and hence implicitly the support of aquatic life.

The objectives for Class 1 waters (Sec. 3.B.1) and Class AA waters (Sec. 3.A.1) go beyond the interim goal expressed in PL 92-500 and coincide with or approach the ultimate goal "that the discharge of pollutants into the navigable waters be eliminated." We cannot believe that EPA considers the objectives of these water use classes defective because they are in accord with the ultimate goal rather than the interim goal of PL 92-500.

The protected uses of Class B waters (Sec. 3.A.3) include small boat harbors, bait fishing, and aesthetic enjoyment. Hence even these waters are to be protected to a considerable extent in terms of the interim goal expressed in PL 92-500. Practical technological limitations will, however, prevent elevating the quality of Class B waters to meeting Class A standards. There may, therefore, be some slight impairment of water-contact-recreation and support of aquatic life. We draw attention, however, to the restriction of the waters of the Class B "to a limited area next to boat docking facilities in bays and harbors."

We have, therefore, no changes to recommend in the specific identification of objectives for various water classes.

2. Inclusion of waters of other islands

We assume that in recommending changes to include the waters of "other" islands, EPA has reference to the major islands of Kahoolawe and Niihau, the offshore cones of Molokini and Lehua, the remnant island of Kaula, and

the various small islands and reefs of the Leeward Islands from Nihoa to Pearl and Hermes Reef. None of these islands have natural perennial streams or lakes. Hence the waters of concern at these islands are coastal waters. We believe that there is no significant current threat to water quality on any of these islands except perhaps the acceleration of sediment transport resulting from practice bombing on Kahoolawe. Hence we believe that Class AA status is appropriate for all of the coastal waters of these islands. This status is particularly appropriate for the waters of the Leeward Islands that are included in the Hawaiian Islands National Wildlife Refuge and are being considered for inclusion in the National Wilderness Preservation System.

We suggest that an additional subsection be added to Sec. 5.A. to read:

7. Other islands

(a) Class AA waters

The coastal waters of all islands not classified in subsection 5.A.1. through 6.

3. Hazardous substances

We are concerned that any standards adopted for Hawaiian waters be based better than the present standards on sound knowledge of natural concentrations and the biological effects of quality parameters, including pollutants and hazardous substances, so as to avoid the problems associated with standards violated by nature, unattainable by practicable technology, or attainable only by means clearly not in the public interest.

At the present time we feel that it is premature to attempt to identify the kinds and concentrations of hazardous substances that would be detrimental in Hawaiian waters. However, the Coastal Water Quality Study Group is continuing their effort to develop certain definitive guidelines for this purpose, and we will assure that their results are brought promptly to your attention.

4. Zones of mixing

We assume that the Department can comply with EPA requirements for the specifications of existing zones of mixing.

We suggest that the following be added to the last paragraph of Sec. 7 to comply with EPA's general requirement.

The establishment of any zone of mixing shall be subject to the concurrence of the federal Environmental Protection Agency that the establishment is consistent with terms of the Federal Water Pollution Act Amendments of 1972.

5. Implementation plan

We have no knowledge of the EPA requirements under this point.

6. Monitoring system

We have commented elsewhere on the state water quality monitoring system.

B. EPA 6 March 1973 List

1. Specific identification of objectives

Refer to Point 1 in response to 12 January 1973 list.

2. Objectives of Class 1 waters

The objective "that these waters remains as nearly natural state as possible" (Sec. 3.B.1) automatically implies retention of the aquatic biota in a natural state. We do not believe that change should be considered necessary to meet the requirement of PL 92-500 in this respect. As EPA points out, control of recreational use in such waters may be necessary. We trust this control is not prohibited by PL 92-500.

3. Additional standards for Class 1

The adoption of absolute standards for pH, DO as a percent of saturation, or temperature for natural streams, including Class 1 waters, is quite impracticable in Hawaii because of the wide range in the quality of such streams with respect to these characteristics under natural conditions. Standards expressed as departures from natural concentrations have more pertinence, however, very little verified information is presently available to define the natural conditions of most streams in the State of Hawaii. Hence we have no recommendations to make now concerning such standards.

The inclusion of a turbidity standard for stream waters, including Class 1 waters, would be quite inappropriate. Under natural conditions, the waters of Hawaiian streams have very low turbidity under low-flow conditions but very high turbidity under flood conditions. Better control of accelerated sediment transport by streams is necessary, but a standard for turbidity in the ambient waters would not be a useful reference for such control. At present such control is exercised through the application of the basic standard that:

All waters shall also be free from soil particles resulting from erosion on land involved in earthwork, such as the construction of public works, highway, subdivisions, recreational, commercial, or industrial developments, or the cultivation and management of agricultural lands.

This standard shall be deemed met if it can be shown that the land on which the erosion occurred or is occurring is being managed in accordance with soil conservation practices acceptable to the Director, and that a comprehensive conservation program is being actively pursued, or that the discharge has received the best practicable treatment or control.

The difficulty of defining what soil conservation practices should be acceptable to the Director is indicated by the failure of the Environmental Center as yet to provide the Director with the advice in this matter he requested some time ago. In spite of the difficulty, we believe that the most effective control with respect to sediment transport from subdivisions and highways will be achieved through adoption by the Director of guidelines as to soil conservation practices under which he can determine the acceptability of county ordinances regulating grading in subdivision development, and specifications of the Department of Transportation regarding grading controls in highway construction. It may be desirable to amend Act 100 to allow the Director to delegate the control with respect to subdivision development to counties, providing they adopt ordinances and provide implementation plans acceptable to him and providing they enforce the ordinances and follow the plans. Control of sediment transport from agricultural lands is best achieved through the regulations of soil conservation districts, and it may be appropriate to tie these regulations also to Department of Health authority through amendment of Act 100.

It does not seem to us that prohibitions or discharges of various materials to Class 1 waters are appropriate in ambient standards for such waters. We note that among the objectives of this class is already the allowance of only "an absolute minimum of pollution from any source."

4. Non-tidal saline and brackish waters

We agree that the failure to cover non-tidal saline and brackish waters is a defect in the present standards. There are very few examples, for example Salt Lake (Oahu) and Kealia and Kanaha Ponds (Maui). (The brackish coastal fish ponds are all tidal and hence already included in Class A or Class AA.)

We suggest that the defect be remedied by amending Subsection 5.B.4 to read as follows (Proposed additions are underlined):

B. Fresh water areas (and non-tidal brackish and saline water areas).

1. Class 1 waters

All sources of fresh surface water on all islands whether publicly or privately owned, used for domestic, culinary or food processing purposes.

2. Class 2 waters

All fresh water streams and rivers on all islands and included in Class 1, and all non-tidal brackish and saline surface waters not included in any other water-use classification.

5. Nutrient standards

a. It would be very difficult to supplement the narrative basic standard 6.A.5 which now reads "substances and conditions or combinations which produce undesirable aquatic life." Any attempt at greater precision is likely to make the standard not generally applicable.

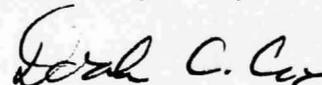
b. Numerical standards for nutrients applicable to all waters of Classes A, AA, and B are already included in the present standards (Sec.6.B.3). They are, as a matter of fact among those which are rendered unreasonable by their exceedence by nature. The present numerical standards do not include nutrient standards for waters of Class 1 or 2. The current state of data and knowledge concerning nutrient concentrations in the streams of the State of Hawaii preclude at this time any rational extrapolation to all Class 1 and 2 waters.

6. Minor changes

References to interstate waters and the Secretary of the Interior are found in Chapter 37, Section 2, paragraph 3. We suggest that this sentence be amended as follows (proposed additions are underlined; proposed deletions are bracketed):

In implementing the policy of this paragraph as it relates to waters under federal jurisdiction, the [Secretary of the Interior] federal government will be kept advised and provided with such information [as he will need] may be needed from time to time to protect the interests of the United States [and the authority of the Secretary] in maintaining high quality of [interstate] these waters.

Yours very truly,



Doak C. Cox
Director

cc: G. L. Dugan
H. K. Gee
J. M. Johnson
L. S. Lau
R.H.F. Young